OCCUPATIONAL ANALYSIS

PLASTICS INDUSTRY

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ABSTRACT

An Occupational Analysis (OA) is the process of identifying the work scope of the occupational area in terms of competencies. It is used to analyse skilled human resource competency requirement for the industry. The development of the Occupational Structure is a preliminary process in developing relevant National Occupational Skills Standard (NOSS). The NOSS in turn will be developed to be used as the basis to conduct skills training and certification of competent personnel. In order to complete the Occupational Analysis on the Plastics Industry job areas, all the information related to the job area was gathered through literature survey and interviews with the experts from the public and private sectors. A workshop was held in an attempt to get a better understanding of the organisational structure, job titles, hierarchy objectives and primary activities of the job titles. This document is divided into several chapters, the first being an industry overview highlighting the definition and scope of the industry, the current analysis of the local industry and its skilled worker requirements, Government bodies and development plans supporting the growth of the industry, then the next chapter will explain the methodology of the Occupational Analysis development. The final chapters will present the findings of the Occupational Analysis that is translated into the Occupational Structures, levels of competencies and critical areas. These findings will in turn be the basis of reference for the development of the National Occupational Skills Standard (NOSS) document. The NOSS will serve not only as a reference of skills standards for certification but also as a guide to develop the skills training curriculum. In order to conduct the Occupational Analysis on the Plastics Industry job areas, all the information related to the aforesaid industry was gathered through literature survey and further discussed in workshop sessions with experts from the industry. During the development workshops, the panel members had identified three sub sectors, 14 job areas and a total of 153 job titles that reflect the main category of Plastics Industry in Malaysia. The three Green Technology sub sectors are Product Engineering, Process Engineering and Production Operation. Plastics Industry focus in area where business activities give high impact to

the environment and require strict control and monitoring to mitigate the impacts. In Malaysia, this sector has great employment opportunities. Furthermore, with strong support from the government and private sectors, these areas could expand further in the future.

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LIST OF ABBREVIATIONS

DESCUM	Development of Standard and Curriculum
DSD	Department of Skill Development
ETP	Economic Transformation Programme
EU	European Union
GDP	Gross Domestic Product
OA	Occupational Analysis
OAA	Occupational Area Analysis
OD	Occupational Description
OS	Occupational Structure
OAS	Occupational Area Structure
MOSQF	Malaysian Occupational Skills Qualification Framework
MQA	Malaysia Qualification Agency
MSC	Malaysian Skills Certificate
NOSS	National Occupational Skills Standard

1. PLASTICS ENGINEERING INDUSTRY OCCUPATIONAL ANALYSIS (OA)

1.1 INTRODUCTION

This chapter will explain the objectives, scope and problem statement of the Occupational Analysis for the Plastics Engineering Industry. The background of Occupational Analysis and its function in skills training and curriculum development is also elaborated in this chapter.

1.2 INTRODUCTION TO OCCUPATIONAL ANALYSIS DEVELOPMENT

An Occupational Analysis (OA) is the process of identifying the sectors, sub-sectors, job areas and job titles for a particular industry in the form of Occupational Structure (OS). The Occupational Analysis (OA) will also look at other elements such as common job titles and levels of competency for skilled personnel in the industry, job functions, industry overview, skills demand and individual job descriptions. Job scopes of each job title will be detailed out in the Occupational Description (OD).

Every job title will be identified according to its level as defined in the Malaysian Occupational Skills Qualification Framework (MOSQF) level descriptor (refer to Annex 1). It must be highlighted that the occupational Structure should not reflect the Organisational Structure but rather the competency levels and possible career path for personnel under a particular sector in the industry. The OA requires input from all parties especially industry players, statutory bodies, training institutions among others. The identified job titles obtained during the OA will be used as reference during National Occupational Skills Standard (NOSS) development. By developing the NOSS, personnel in the industry can be deemed certified by undergoing three methods of skills training certification.

The first of the three methods are certification through full time training where the candidate will undergo training from a minimum of 3 months for entry level certificates (Malaysia Skills Certificate 1,2 and 3) or up until over a year for Malaysian Skills Diploma or Advanced Diploma. The second method is via the apprenticeship scheme which is called the National Dual Training System (NDTS) where the candidate can undergo training for a certain block of time then be attached to a company in the related industry as approved by the Department of Skills Development, Ministry of Human Resources. The third method is via Accreditation of Prior Experience where the candidate that possesses working experience may be able to be certified based on duration of experience and proof of work.

Therefore, it can be said that with the development of the OA and subsequently the relevant NOSS will provide wider opportunities for personnel to be trained and certified. Figure 1.0 shows the significance of the Occupational Analysis (OA) for policy and NOSS development used in Malaysian skills training.

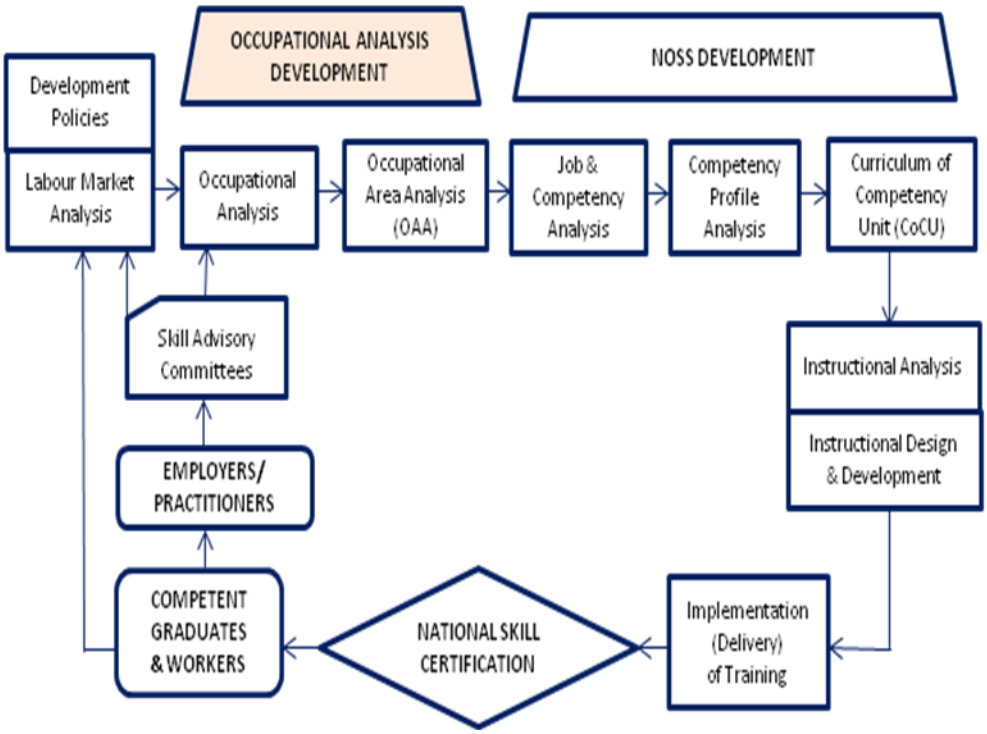


Figure 1.0: A Competency-Based Model for Skills Training in Malaysia

1.3 MALAYSIAN OCCUPATIONAL SKILLS QUALIFICATION FRAMEWORK (MOSQF)

The development of the OA is ensured to comply with the MOSQF. MOSQF is a framework that describes all skills qualifications awarded under the Malaysian Skills Certification System. It is an 8-tier framework that consists of 8 levels which reflect skills competencies in an occupational area (refer to Annex 1). However, for training purposes, only the first 5 levels are being offered with skills qualifications namely Malaysian Skills Certificate (MSC) Level 1, MSC Level 2, MSC Level 3, MSD Level 4 (Malaysian Skills Diploma) and MSAD Level 5 (Malaysian Skills Advance Diploma).

MOSQF will serve as an instrument that develops and classifies skills qualifications based on a set of criteria guided by the National Skills Development Act 2006 (Act 652). It was benchmarked against international good practices in defining its level description and was developed in line with the Malaysian Qualifications Framework (MQF). It is aspired to become the national skills framework for all parties of interest such as individuals, skills training providers, the Government, associations, professional bodies, the industry sectors and the Malaysian communities.

1.4 OBJECTIVES OF PLASTICS ENGINEERING INDUSTRY OCCUPATIONAL ANALYSIS

The objectives of this Occupational Analysis are as below:

i. To identify the Occupational Structure and job titles available in the Plastics Engineering Industry

ii. To identify the levels of competency required beginning at the entry levels until the highest level of competency

iii. To identify the job scope, job area and role of each job title identified including the possibility of multi skilling between different areas as to increase employability

iv. To identify the specific job titles that are considered critical and require immediate development of Standards & Curriculum

1.5 SCOPE OF OCCUPATIONAL ANALYSIS

The scope of this particular OA is focused on the Plastics Engineering Industry and all areas that are defined to be under the Plastics Engineering Industry. Due to the wide scope, it can only be done in another analysis as to be identified and suggested later in this report. The Occupational Analysis on the Plastics Engineering Industry will cover the scope of:

i. Occupational Structures;

ii. Occupational Area Analysis; and

iii. Job Descriptions.

1.6 PROBLEM STATEMENT

There have been various National Occupational Skills Standard (NOSS) documents developed for the Plastics Industry covering areas of Plastic Injection Moulding and Plastic Production Technology. (Details of the existing NOSS relevant to the Plastics Industry are included in Chapter 2). However, a complete analysis on the Occupational Structure of the Plastics Industry has not been undertaken before this. Therefore, in order to identify the overall structure and available career paths in the industry, the Occupational Analysis must be done on the Plastics Industry.

1.7 CHAPTER CONCLUSION

In the light of recent economic development in the Plastics Industry, the demand for sufficient skilled personnel has increased and the development of skilled manpower is timely. By going through the mechanism provided by the Skills Training system in Malaysia, one of the important steps is to identify the Occupational Structure of the Plastics Industry. With the Occupational Structure clearly defined, the industry stakeholders will be able to identify areas that will require more intensive efforts in human capital development. Although there have been past efforts in National Standards Development for the industry, the need for an Occupational Analysis is required to determine the overall areas that may not yet have been focused on. We can assume that the Occupational Analysis to be a 'blueprint' of the manpower planning for the Plastics Industry.

2. OVERVIEW OF THE PLASTICS INDUSTRY IN MALAYSIA

2.1 INTRODUCTION

This chapter will focus on the explanation of the plastics sector, the current scenario in Malaysia and industrial competitiveness at the international level pertaining to the plastics sector.

Findings in this chapter were obtained via literature review, observation, interviews with industry practitioners and discussions during workshops with development panel members. This literature review is also discussed with panel members to obtain insight on the matters at hand from a practitioner's perspective.

2.2 DESCRIPTION OF THE PLASTICS INDUSTRY

The plastics and plastics products industry is one of the most dynamic and vibrant growth sectors within the Malaysian manufacturing sector. The Malaysian plastics industry has developed into a highly diversified sector producing an array of products including automotive components, electrical and electronic parts as well as components for the telecommunications industry, construction materials, household goods, acrylic sheets, bags, bathroom accessories, battery casings, bottles, containers, toys, games and packaging materials. [1]

Malaysia is one of the largest plastics producers in Asia, with over 1,550 manufacturers, employing some 99,100 people. The country's plastics products are exported worldwide including the European Union (EU), China, Hong Kong,

[1] Market Watch 2012. The Malaysian Plastic Industry.http://www.malaysia.ahk.de/fileadmin/ahk_malaysia/Market_reports/The_Malaysian_Plastic_Industry.pdf

Singapore, Japan and Thailand. Even though, the bulk of Malaysia's exports in the plastics sector are plastics in non-primary forms, there are also exports for plastics in primary forms such as Polyethylene (PE), Polyvinyl chloride (PVC) or Polyethylene terephthalate (PET).[1]

Malaysia produces more than 60% of the resins used for the manufacture of plastics. China, Hong Kong, Singapore, Japan and Indonesia are the major consumers of Malaysian plastics in primary forms which include [1]:

- Polyethylene (PE)
- Polypropylene (PP)
- Polyacrylonitrile-co-butadine-co-styrene (ABS)
- Polysterene (PS)
- Polyvinyl chloride (PVC)
- Polyethylene terephthalate (PET)

With the plastics in primary form, Malaysia produces for example films or cables as described below.

Films and sheets

Malaysia produces Linear Low Density Polyethylene (LLDPE) film grades that are ideal as general purpose and heavy duty films. It also exports High Density Polyethylene (HDPE) film grades for the production of carrier bags and thin film applications such as shrinkable polyethylene films and bags.

Wire and Cables

Malaysia also manufactures Polyethylene and PVC wire and cable compounds for export. These are used in the telecommunications and power industries due to their excellent properties for cable insulation and jacketing.[1]

Although, plastics will be used even more for higher value-added electronics and electronical products such as digital cameras, computers or televisions. Secondly, the packaging sector will use more metallocene PP and PE as well as multi-layer barrier films. Moreover, PET packaging is charting new growth milestones in the rigid plastics packaging segment. With regard to the automotive industry, the MPMA sees for example an increase of plastics in order to replace metal parts in car production.[2]

Another factor that could lead to an increased use of plastics is the fact that the automotive industry wants to achieve production efficiency, noise reduction as well as cost and weight reduction. In addition, plastics will also be used to create advanced composites for the aerospace, aviation and military industries.

However, an overall trend that has arisen over the last few years also in the plastics industry is the environmental saving attitude of consumers. Since issues such as global warming and environmental impacts have came up, environmental friendly packaging in the plastics industry has became an often discussed topic. It is not only that consumers are buying products that are eco-friendly but manufacturers also realize the potential of cost savings from materials and packaging, making pro-environment designs and materials become the preferred choice of houseware producers and buyers. Besides, manufacturers use more recycled content in their production and make their products more readily recyclable. Above all, according to the MPMA the use of biodegradable plastics will reduce the proportion on non biodegradable and ozone depleting plastics bags. [2]

Prospects for future developments are still bright as plastics will continue to be the materials for the future in many industrial and consumer applications. According to the Malaysian Plastics Manufacturers Association (2011), there

[2] Malaysian Plastics Manufacturers Association. http://www.mpma.org.my

are benefits for the industry in various ways. The three most important benefits are arising from the export sector and the local demand. First of all, an increase in the exports for plastics packaging is expected since for example the food sector will need more packaging material. Moreover, the local demand will increase as well since the automotive sector in Malaysia itself needs plastics due to improving consumer spending. Finally, the increase in in-direct export for electrical and electronics appliances will lead to bigger production in the plastics sector which can be lead back to a stronger purchasing power. [2]

The globalization nowadays will increase trade opportunities for the resins and plastics industry, however at the same time it will also expose Malaysian manufacturers to competition. Thereby, the major problems that come with globalization are higher production costs and environment concerns. Furthermore, regulations such as the Registration, Evaluation and Authorization of Chemical Substances (REACH) or Waste Electrical and Electronics Equipment (WEEE) initiated by the European Union (EU) and other economies, make the use of plastics stricter for the global plastics industry. Thus it is crucial for the Malaysian plastics industry to strengthen its competitiveness through the continued acquisition of the appropriate technologies as well as enhance skills training and marketing capabilities. If they do so, Malaysia can continue to penetrate new markets in developed and developing economies successfully. [2]

According to the Malaysian Investment Development Authority (MIDA), the growth of domestic downstream plastics processing activities can be attributed to the existence of a developed petrochemical sector in Malaysia. The sector provides a steady supply of materials for the plastics industry with world-scale resin production facilities. Other engineering plastics, such as polyamides (nylons) and polycarbonates (PC), continue to be imported. These engineering plastics are mainly used for the production of parts and components for the

E&E, automotive, medical equipment and construction industries. In flexible packaging, more bio-, photo- or chemical- degradable plastics are being introduced with increasing awareness on environment protection.

As mentioned before, Malaysia exports mainly plastics in non- primary forms. This plastics product industry can be divided into four sub-sectors, namely plastics packaging, E&E and automotive components, consumer and industrial products. With 40% of the total industry output, the largest sub-sector for the plastics industry remains plastics packaging involving both flexible and rigid (including bags, films, bottles and containers). In fact, Malaysia is one of the world's leading suppliers of plastics bags.

Plastics manufacturing processes are influenced by the particular plastic used and the characteristics of the product manufactured. The commonly used manufacturing processes in Malaysia are:

- Blow moulding
- Compression moulding
- Extrusion
- Foam Moulding
- Injection moulding
- Rotational moulding
- Thermoforming of sheet
- Compounding
- Film Blowing
- Dipping

The processes above are elaborated in Chapter 4 of this report regarding the occupational structure and brief explanation of each process.

2.3 EXISTING INDUSTRY NATIONAL OCCUPATIONAL SKILLS STANDARD (NOSS) AND OCCUPATIONAL STRUCTURES RELATED TO THE PLASTICS INDUSTRY

In order to analyse the industry, the existing National Occupational Skills Standard (NOSS) and Occupational Structure documents were referred. In the DSD's NOSS Registry, the existing OA Matrices can be seen in the following figures included in this section.

Table 1.0: Existing Plastics Industry NOSS

	Termoplastik *(Thermoplastic)*				Termoset *(Thermoset)*	
	Penyemperitan *(Extrusion)*	Putaran *(Rotation)*	Pengacuan *(Injection)*	Tiupan *(Blow)*	Pengacuan *(Injection)*	Mampatan *(Compression)*
L5	MC-100-5:2012 Teknologi Pengeluaran Plastik *Plastic Production Technology* (16-12-99) (18-11-08) (18-12-2012)					
L4	MC-100-4:2012 Teknologi Pengeluaran Plastik *Plastic Production Technology* (16-12-99) (18-11-08) (18-12-2012)					
L3	MC-100-3:2012 Operasi Pengeluaran Plastik *Plastic Production Operation* (17-12-98) (18-11-08) (18-12-2012)					
L2	Tiada Tahap *(No Level)*					
L1						

Source: Department of Skills Development NOSS Registry (December 2012)

Table 1.0 : Existing Plastics Industry NOSS (Continued)

	Pemesinan Logam *(Metal Machining)*	
L5	**MC-031-5** Ahli Teknologi Cap Terap Logam *Metal Stamping Die Technologist* (17-12-98) (17-07-12)	**MC-030-5** Ahli Teknologi Acuan Suntikan Plastik *Plastic Injection Mould Technologist* (17-12-98) (17-07-12)
L4	**MC-031-4** Pembantu Ahli Teknologi Cap Terap Logam *Assistant Metal Stamping Die Technologist* (17-12-98) (17-07-12)	**MC-030-4** Pembantu Ahli Teknologi Acuan Suntikan Plastik *Assistant Plastic Injection Mould Technologist* (17-12-98) (17-07-12)
L3	**MC-031-3** Pembuat Perkakasan Kanan – Cap Terap Logam *Senior Toolmaker – Metal Stamping Die* (28-11-95) (30-05-2002) (01-10-09)	**MC-030-3** Pembuat Perkakasan Kanan – Acuan Suntikan Plastik *Senior Toolmaker – Plastic Injection Mould* (28-11-95) (30-05-2002) (01-10-09)
L2	**MC-031-2** Pembuat Perkakasan – Cap Terap Logam *Toolmaker – Metal Stamping Die* (28-11-95) (30-05-2002) (01-10-09)	**MC-030-2** Pembuat Perkakasan – Acuan Suntikan Plastik *Toolmaker – Plastic Injection Mould* (28-11-95) (30-05-2002) (01-10-09)
L1	**MC-050-1** Pemesin Am *General Machinist* (26-10-93) (16-12-99)	

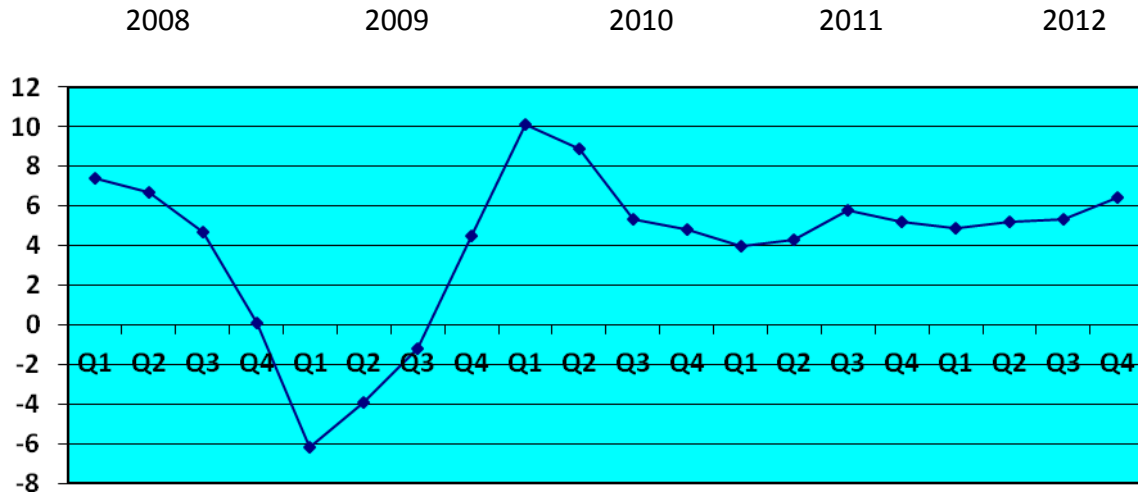
	Filem OPP *(OPP Filem)*
L5	Belum Ada *(Not Available)*
L4	
L3	**PG-090-3** Penyelia Pengeluaran Plastik – OPP Filem *Plastic Production Supervisor – OPP Filem* (25-10-10)
L2	**PG-090-2** Juruteknik Pengeluaran Plastik – OPP Filem *Plastic Production Technician – OPP Filem* (25-10-10)
L1	Tiada Tahap *No Level)*

Source: Department of Skills Development NOSS Registry (December 2012)

2.4 CURRENT ANALYSIS OF THE PLASTICS INDUSTRY IN MALAYSIA

Despite the challenging global economic environment, the Malaysian economy recorded a higher growth of 5.6% in 2012 (2011: 5.1%), supported by the continued strength in domestic demand, which rose by 10.6%. Private sector investment advanced strongly, supported by capital spending in the domestic-oriented manufacturing and consumer-related services sub-sectors, namely, telecommunications, real estate and aviation and the on-going implementation of projects in the oil and gas sector. Net export of goods and services grew by a mere 0.1% compared to 4.2% in 2011.[3]

Annual change (%)



Source: Bank Negara Quarterly Reports 2012

Figure 2.0: Malaysia's Quarter GDP Growth (2008-2012)

The strong Gross Domestic Product (GDP) growth was mainly driven by domestic-oriented sectors, namely, the construction and service sub-sectors.

[3] Performance of the Malaysian Plastics Industry 2012. Malaysian Plastics Manufacturers Association

Table 2.0: GDP Growth 2012 by Sub-sector

Quarter/Sector	Q1	Q2	Q3	Q4
Real GDP (annual change)	5.1%	5.6%	5.3%	6.4%
Agriculture	2.1%	-4.7%	0.5%	5.6%
Mining	0.3%	2.3%	-1.2%	4.3%
Manufacturing	4.4%	5.6%	3.3%	5.8%
Construction	15.5%	22.2%	18.3%	18.1%
Service	5.7%	6.6%	6.3%	6.3%

Source: Bank Negara Quarterly Reports 2012

Going forward, there are emerging signs of improvement in the global economy. Latest economic indicators also suggest further stabilisation in the growth performance in Asia. For the Malaysian economy, the sustained expansion in domestic activity is expected to continue to drive growth, supported by the sustained private sector expansion. The stabilisation of external conditions is also expected to lend support to the economic growth prospects. The GDP for the first half of 2013 is projected to grow between 5% and 5.5% but will strengthen to between 5.5% and 6% for the second half.[2]

From January to December 2012, the sales value of the manufacturing sector recorded a growth of 5.5% to register RM622.3 billion, compared to RM590.1 billion in 2011. The expansion was broad-based, with all clusters registering better growth in line with the continued expansion in both domestic demand and the external demand for manufactured products. Growth in the export-oriented industry was led by the primary-related cluster, driven in particular by higher demand for chemicals and refined petroleum products. Growth in the electrical and electronics (E&E) cluster also benefited from the low base in the fourth quarter of 2011 when the global E&E supply chain was disrupted by floods in Thailand.

Performance of the domestic-oriented industries also strengthened further, driven primarily by the strong expansion in the construction-related cluster, which continued to benefit from robust domestic construction activity. Production in the consumer-related cluster also expanded favourably, especially in transport equipment due to higher production of motor vehicles and related parts. [3]

Table 3.0: Performance of the Manufacturing Sector

Year	2011	2012
Products	Annual Change (%)	
Value Added (RM million at constant 2005 prices)	4.7	4.8
Overall Manufacturing Production1	4.5	5.0
Export-oriented industries	3.4	3.9
Electronics and electrical products cluster	-3.6	2.2
of which:		
Electronics	-11.7	4.2
Electrical products	8.4	-0.2
Primary-related cluster	7.4	4.8
of which:		
Chemicals and chemical products	8.8	8.2
Petroleum products	6.2	4.3
Rubber products	13.9	3.0
Off-estate processing	8.7	0.0
Domestic-oriented Industries	8.2	8.4
Construction-related cluster	17.6	8.7
Of which:		
Construction-related products	13.0	0.8
Fabricated metal products	23.8	18.5
Consumer-related cluster	1.3	8.2
Of which:		
Transport equipment	-4.3	14.1
Food, beverages and tobacco products	5.9	5.7

The plastics industry recorded total sales value of RM15.94 billion for 2012, falling marginally short of the previous year's level of RM16.14 billion with a decline of 1.2%.

Export sales declined by 1% from RM10.15 billion in 2011 to RM10.05 billion in 2012. Total exports to total turnover ratio maintained at 63%, as both the domestic and export sectors experienced marginal decline. [3]

Two domestic sub-sectors registered moderate increase. The local demand for building and construction materials registered a strong increase, mainly plastics pipes, due to higher Government spending on infrastructure projects. Higher production of motor vehicles as a result of the improving consumer spending and low interest rate also contributed to the strong demand for plastics parts and components for the automotive sector. [3]

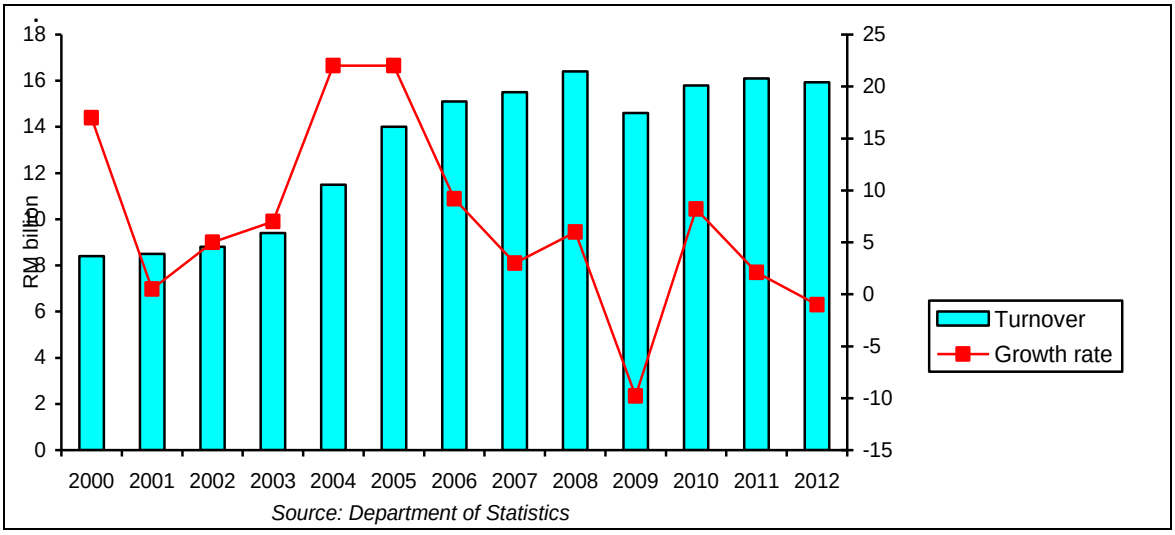


Figure 3.0: Turnover and Growth Rate of the Plastics Industry (2000-2012)

The market share of the major sub-sectors within the plastics industry remained relatively unchanged for 2012. The market leader, the packaging sub-sector, continued to maintain 45% of market share as it registered a mere 0.6% increase in export sales. This sub-sector includes both flexible and rigid packaging, namely, bags, films, bottles and containers. Breakdown of the major market segments is shown below. [3]

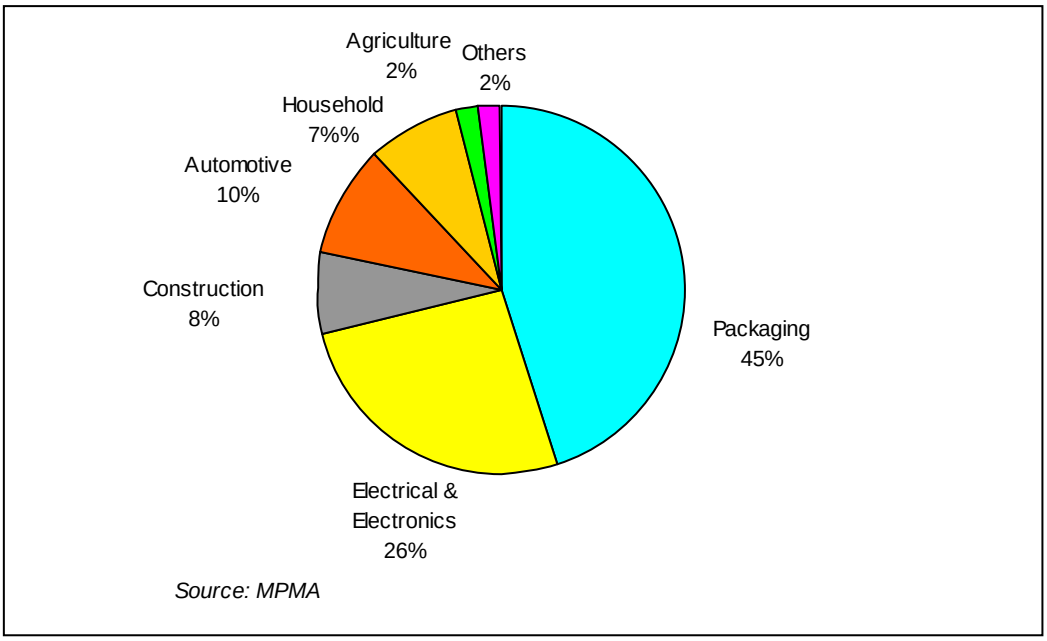


Figure 4.0: Major Market Segments for Plastics Products

2.3.1 Performance of the sub-sectors

i. Automotive sub-sector

Total production of passenger cars by the national car producers increased by 6.1% to 483,402 units for 2012, from 455,621 units in 2011. Sales of passenger cars for 2012 increased by 3.2% from 535,000 units to 552,000 units. However, sales of commercial vehicles had increased strongly by 16% from 65,000 units in 2011 to 75,500 units in 2012. The growth of the automotive sector was a result of the stronger economy. Consumer spending and consumption had increased due to stable employment and increased disposable income. New models launched also helped to attract new car buyers. [3]

During the early part of 2012, vehicle sales were affected by the Financing Practices Guidelines announced by Bank Negara. There was also a disruption in the supply chain of certain Japanese models due to the floods in Thailand. Nevertheless, the total vehicle sales rebounded strongly in the subsequent months. [3]

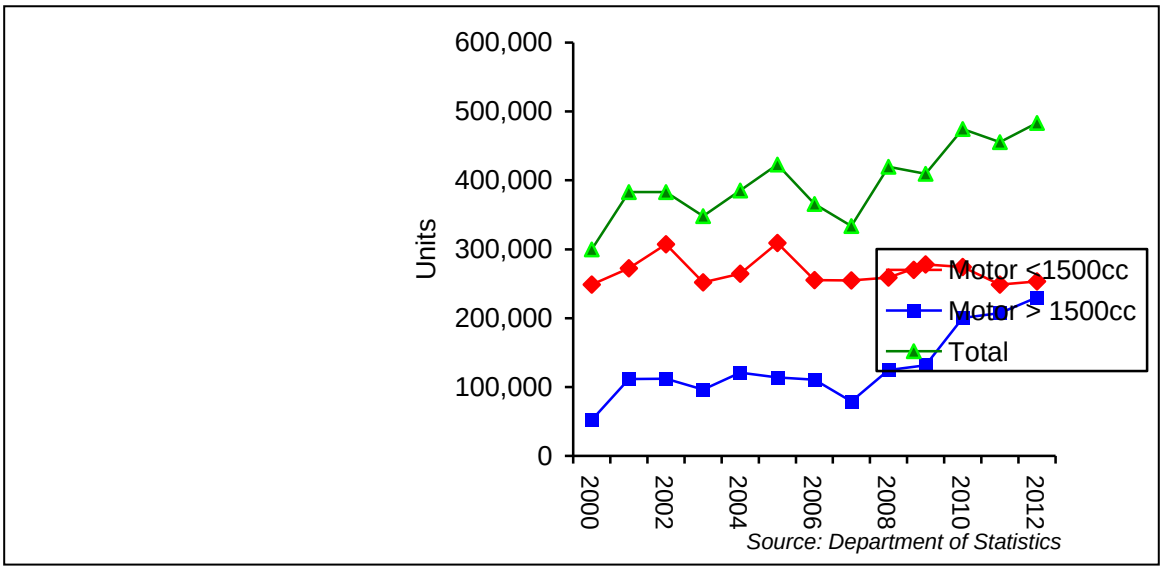


Figure 5.0: Yearly Production Statistics of Motor Vehicles (2000-2012)

ii. Electrical and electronic sub-sector

Production of TV sets for 2012 declined by 6.6% compared to 2011, from 13.97 million units to 13.05 million units. Production of air-cons for 2012 declined by 6.3% to 2.67 million units, from 2.85 million units in 2011. [3]

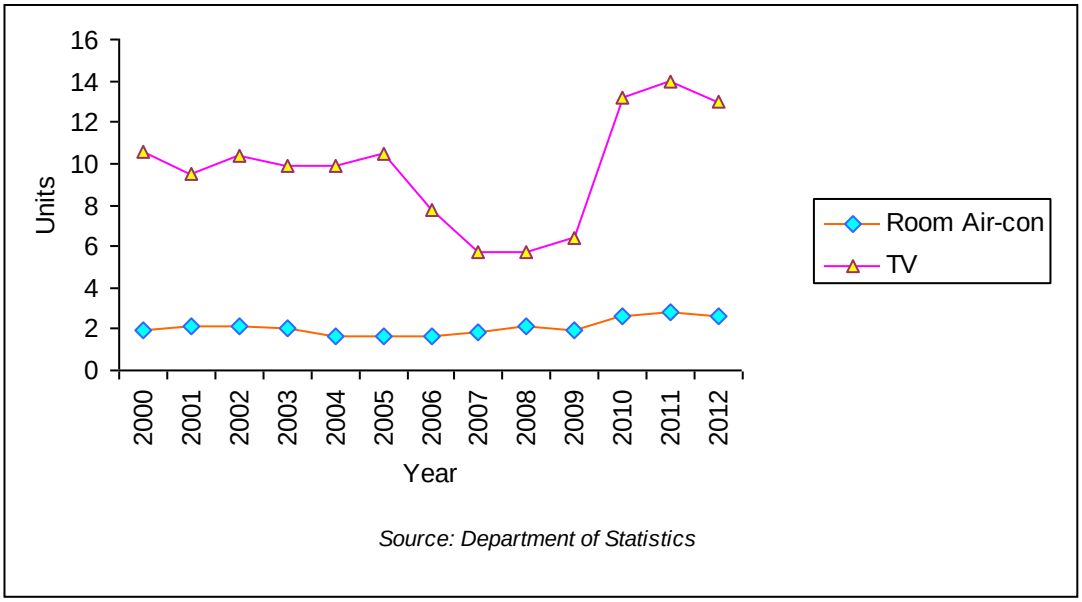
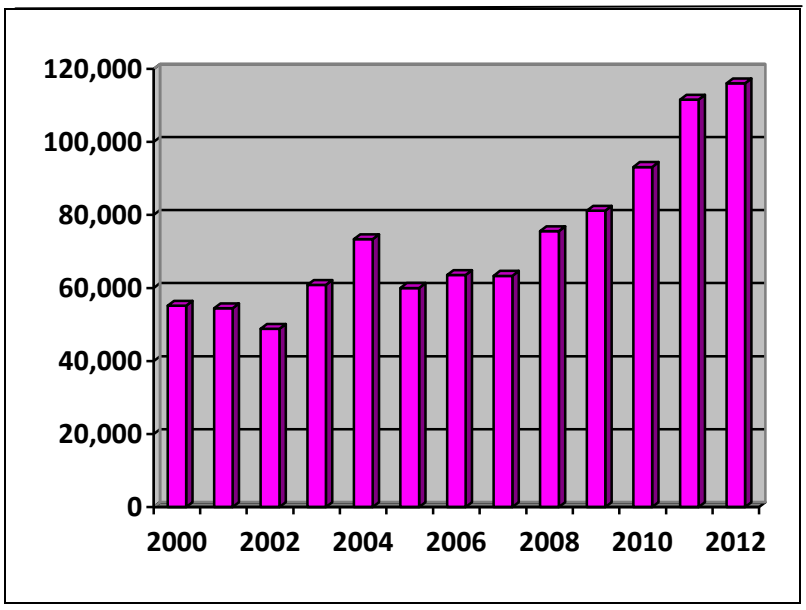


Figure 6.0: Yearly Production Statistics for Electrical and Electronics Goods (2000-2012)

The weaker demand for electrical and electronics goods was due to the fragile global economy as high income nations such as European Union (EU) and United States continued to suffer from volatility and slow growth. [3]

iii. Construction sub-sector

Production of PVC pipes increased by 4% from 111,500 MT in 2011 to 116,000 MT in 2012. Growth in the construction sector continued to be robust, driven by the civil engineering and residential sub-sectors. The strong performance in the civil engineering sub-sector was mainly driven by the progress in the 150 km Kuala Lumpur Mass Rapid Transit (MRT) project, in addition to other infrastructure and oil and gas projects such as the Second Penang Bridge, Janamanjung Power Plant in Perak and Kebabangan Gas Field, offshore Sabah. The residential sub-sector also registered firm growth, underpinned by the construction of high-end properties while the non-residential sub-sector continued to be supported by the construction of commercial buildings. [3]



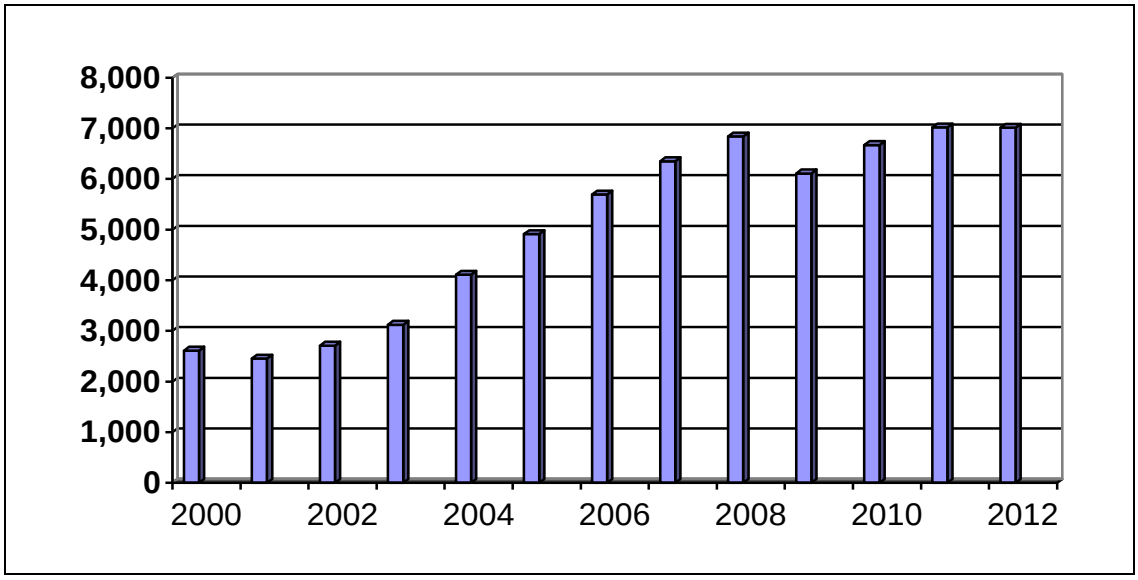
Source: Department of Statistics

Figure 7.0: Yearly Production of PVC pipes

iv. Packaging sub-sector

Total export of plastics bags for 2012 increased marginally by 0.6% to RM3.47 billion, compared to RM3.45 billion in 2011. Total export of plastics films and sheets in 2012 declined by 2% to RM3.63 billion, from RM3.71 billion. Total export of plastics packaging materials in 2012 declined by 0.8% to RM RM7.10 billion, from RM7.16 billion. Exports were affected by the slower consumer spending in the major market, particularly, the European Union (EU). [3]

RM million



Source: Department of Statistics

Figure 8.0: Packaging Sector: Export of Plastics Bags, Films, Bottles, Boxes and Containers (2000-2012)

v. Household wares sub-sector

Exports of plastics household products for 2012 amounting to RM290 million, represents a decline of 9%, from RM319 million in 2011. Exports faced stiff competition from emerging economies like Indonesia and Vietnam, as well as weaker demand from the high income developed countries. [3]

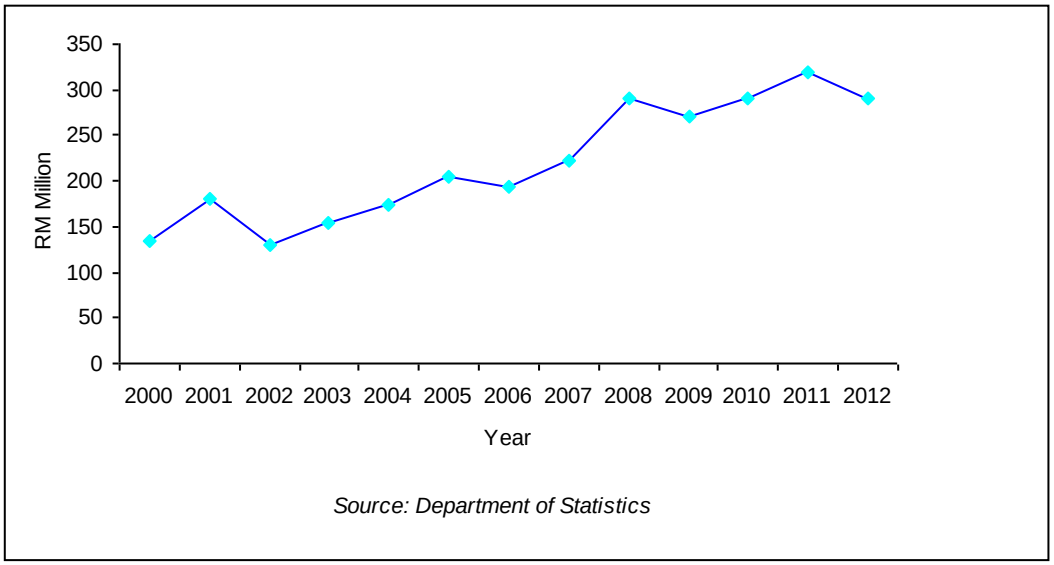


Figure 9.0: Export of Plastics Household Wares (2000-2012)

2.3.2 Total exports

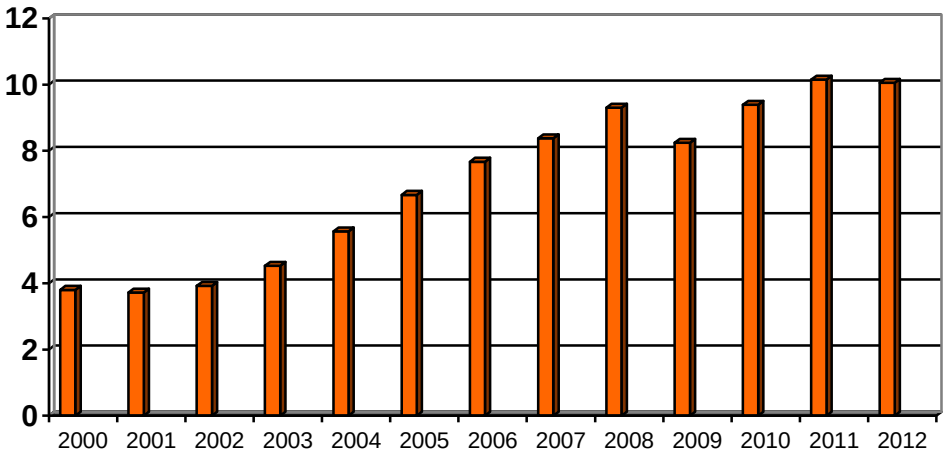
Total exports of plastics products for 2012 declined by 1% from RM10.15 billion to RM10.05 billion in 2011. Exports accounted for about 63% of the total plastics products manufactured (RM15.94 billion). [3]

2.5 INDUSTRIAL COMPETITION AT INTERNATIONAL LEVEL

The increasing exports/turnover ratio over the years indicates that Malaysian producers are expanding their market overseas instead of competing in the limited domestic market.

The main exported plastics items were bags, bottles and containers (34.5%), films and sheets (36%) and other plastics articles (26%, excluding household wares under HS 3924). Details on the breakdown of export items from 2000 to 2012 are shown below. [3]

RM billion



Source: Department of Statistics & Malaysian Plastics Manufacturers Association

Figure 10.0: Total Export of Plastics Products (2000-2012)

Table 4.0: Export of Plastics Products by Types in 2012 (RM10.05 billion)

Item	TC Heading	Product Category	2008	2009	2010	2011	2012
			RM '000	RM '000	RM '000	RM '000	RM'000
1	3917	Tubes, pipes, fittings	201,550	219,900	285,000	292,735	319,028
2	3918	Floor, wall and ceiling coverings	43,616	51,100	65,900	65,278	50,936
3	3919	Self-adhesive plates, sheets, films, foils, strips, tapes, etc	343,507	337,300	193,000	483,457	394,068
4	3920	Plates, sheets, films, foils, strips, tapes, etc; non-cellular and not reinforced, laminated	2,330,395	2,566,500	3,177,000	2,790,496	2,769,409
5	3921	Other plates, sheets, films, foils, strips, tapes,	413,177	381,500	364,000	441,705	465,023
6	3922	Baths, wash-basins, seats and covers and other building materials	28,266	31,900	40,500	53,972	56,105
7	3923	Sacks and bags, boxes, casings, bottles & containers	3,754,614	2,903,800	3,303,000	3,452,900	3,473,557
8	3924	Tablewares, kitchenwares, other household articles and toilet articles	303,594	271,900	291,000	319,200	289,838
9	3925	Windows, doors, frames, tanks and other building materials	171,354	111,100	177,700	188,817	196,850
10	3926	Other plastics articles	1,705,410	1,361,600	1.494,600	2,019,723	1,988,871
Total:			9,295,483	8,236,600	9,391,700	10,152,979	10,050,269

Source: Department of Statistics

The Malaysian plastics industry registered a mild decline in 2012 due to a slowdown in the global economy, particularly, the European Union (EU) region. This has affected both the direct export of plastics packaging materials as well as indirect export of the electrical and electronics sub-sector. There was a moderate increase in the domestic-oriented sub-sectors, namely, the construction and automotive sub-sectors. [3]

Looking forward, the Malaysian economy is expected to grow between 5% and 6% in 2013, underpinned by robust demand and recovery of the external environment. Domestic private consumption is anticipated to record healthy growth due to favourable labour-market conditions, aided by government initiatives and handouts, particularly, the Economic Transformation Programme .

The global economy will experience a gradual recovery in 2013 driven by the optimistic outlook as a result of economic reform measures undertaken in the US and the European Union (EU). Improvement in consumers' confidence and spending would assist in boosting the exports from Malaysia.

2.6 PLASTICS INDUSTRY REGULATORY BODIES, ASSOCIATIONS AND RELEVANT ORGANISATIONS

(i) Malaysian Plastics Manufacturer Association (MPMA)

The Malaysian Plastics Manufacturers Association was established in 1967 and is a trade association providing leadership and quality services to its members and the plastics industry. As the official voice of Malaysia's plastics industry, it represents the members and industry in government interaction, provides platforms to assist members in order to be globally competitive. MPMA currently has about 900 members of whom 60% are plastics manufacturers within the country. These people in return are responsible for 80% of the total plastics production in Malaysia. Besides, they are actively involved in waste management and recycling activities and the Green Partnership Programme (GPP) which is a joint Malaysia - Japan Partnership programme focusing on transfer of technology and information for the environment. Moreover, they work together with other associations such as the Malaysian Petrochemical Association (MPA) and the Plastics Resins Producers Group (PRPG)

(ii) The Malaysian Investment Development Authority (MIDA)

MIDA is the government's principal agency for the promotion of the manufacturing and services sectors in Malaysia.

Incorporated as a statutory body under the Malaysian Industrial Development Authority (MIDA) Act, the establishment of MIDA in 1967 was hailed by the World Bank as "the necessary impetus for purposeful, positive and coordinated promotional action" for Malaysia's industrial development. Today, MIDA's is Malaysia's cutting-edge, dynamic and pioneering force in opening pathways to new frontiers around the globe.

MIDA assists companies which intend to invest in the manufacturing and services sectors, as well as facilitates the implementation of their projects. The wide range of services provided by MIDA includes providing information on the opportunities for investments, as well as facilitating companies which are looking for joint venture partners.

To further enhance MIDA's role in assisting investors, senior representatives from key government agencies are stationed at MIDA's headquarters in Kuala Lumpur to advise investors on government policies and procedures. These representatives include officials from the Department of Labour, Immigration Department, Royal Malaysian Customs, Department of Environment, Tenaga Nasional Berhad and Telekom Malaysia Berhad.

MIDA also evaluates the following applications for projects in the manufacturing and its related services sectors:

- Manufacturing licenses
- Tax incentives
- Expatriate posts
- Duty exemptions on raw materials, components, machinery and equipment

(iii) The Federation of Malaysian Manufacturers (FMM)

The Federation of Malaysian Manufacturers (FMM) is Malaysia's premier economic organisation. Since its establishment in 1968, the FMM has consistently led Malaysian manufacturers in spearheading the nation's growth and modernisation.

Today, as the largest private sector economic organisation in Malaysia representing over 2,500 manufacturing and industrial service companies

of varying sizes, the FMM is the officially recognised and acknowledged voice of the industry.

(iv) SIRIM - Plastics Technology Group (PTG)

SIRIM Berhad is a wholly-owned company of the Malaysian Government under the Ministry of Finance Incorporated. With over forty years of experience and expertise, SIRIM has been the government's mandated machinery for research and technology development, and the national champion of quality.

SIRIM has always played a major role in the development of the country's private sector. SIRIM Berhad has enabled Malaysian products and services to receive due recognition in quality and innovativeness worldwide. SIRIM is recognised the world over as a global research and standards development organisation.

The Plastics Technology Group (PTG) under SIRIM is a leading independent plastics specialist organisation, providing "testing and consultancy services", technology & R&D services, training and information services to the plastics & composites industry.

The Plastics Technology Group (PTG) was established in SIRIM with the objective of assisting the growth of the Malaysian plastics industry. The Plastics Technology Group (PTG) is staffed by a team of full-time dedicated researchers, consultants and technicians, each of whom has years of experience in plastics testing, analysis, consultancy and R&D. The staff members were qualified in-house in order to maintain their areas of expertise. PTG has a pilot plant that houses major plastics processing machines for training and incubator services.

(v) Malaysian Plastics Design Centre (MPDC)

The Malaysian Plastics Design Centre was initiated in 1995 with assistance and support from the Ministry of International Trade and Industry (MITI). MPDC is a company limited by guarantee formed in January 1998 to operate the Centre. The main objective of the Centre is to develop new designs for plastics products aimed at creating own brand names for Malaysian-made plastics products. MPDC provides design services from concept design to engineering design. The other related services rendered by MPDC are graphic design and rapid prototyping. MPDC in collaboration with local and international institution also offers short courses in design in future.

(vi) Rubber Research Institute Malaysia

The first enactment of the Rubber Research Institute of Malaya provided for the principal functions of the Institute for the purpose of research and investigation of all problems and matters relating to rubber and the provision of information in this connection. The scientific work of the Institute is directed towards establishing the facts underlying the cultivation and preparation of rubber and the discovery and application of fundamental principles for the benefit of the industry. The Institute undertakes the supply of scientific and technical information for the dissemination and utilisation in the industry.

(vii) The Plastics & Rubber Institute Malaysia

The Plastics and Rubber Institute of Malaysia (PRIM) formed in 1983, evolved from Institute of the Rubber Industry (Malaysia section) established in 1962. PRIM is affiliated to the Plastics and Rubber

Institute (PRI) United Kingdom, formed in 1975, by fusion of the Institute of the Rubber Industry (established in 1921) and Plastics Institute (1931). The objective of the PRIM is to advance and develop the practice of all aspects of polymer science and technology in Malaysia and to service the professional needs of those working in polymer industry.

2.7 PLASTICS INDUSTRY ACTS AND POLICIES

(i) The Occupational Safety and Health Act (**OSHA**) 1994 - Act 415

The Occupational Safety and Health Act (**OSHA**) 1994 - Act 415 provides the legislative framework to promote, stimulate and encourage high standards of safety and health at work. The aim is to promote safety and health awareness, and establish effective safety organisation and performance through self-regulation schemes designed to suit the particular industry or organisation. The long-term goal of the Act is to create a healthy and safe working culture among all Malaysian employees and employers.

OSHA 1994 defines the general duties of employers, employees, the self-employed, designers, manufacturers, importers and suppliers of plant or substances. Although these duties are of a general character, they carry a wide ranging set of responsibilities. The Act provides a comprehensive and integrated system of law to deal with the safety and health of virtually all people at work and the protection of the public where they may be affected by the activities of people at work.

The general duties of employers, employees, the self-employed, designers, manufacturers, importers and suppliers of plant or substances are clearly defined under OSHA 1994. Employers must safeguard so far as is practicable, the health, safety and welfare of the

people who work for them. This applies in particular to the provision and maintenance of a safe plant and system of work. Arrangements must also be made to ensure safety and health in the use, handling, storage and transport of plant and substances. Under OSHA 1994, definition of '**plant**' includes any machinery, equipment, appliance, tool and component, whilst 'substance' means any natural or artificial substance whether in solid, liquid, gas, vapour or combination thereof, form.

Processes that use hazardous chemicals require competent persons to conduct the air quality and personal monitoring, and a safety and health officer and an occupational health doctor are required to ensure the proper surveillance of the workplace.

There are seven regulations under OSHA 1994 that are enforced by DOSH, which are:

1. Employers' Safety and Health General Policy Statements (Exception) Regulations, 1995
2. Control of Industrial Major Accident Hazards Regulations, 1996
3. Classification, Packaging and Labelling of Hazardous Chemicals Regulations, 1997
4. Safety and Health Committee Regulations, 1996
5. Safety and Health Officer Regulations, 1997
6. Use and Standards of Exposure of Chemicals Hazardous to Health Regulations, 2000
7. Notification of Accident, Dangerous Occurrence, Occupational Poisoning and Occupational Disease Regulations, 2004

(ii) Factories and Machinery Act (FMA) 1967 or Act 139

The Factories and Machinery Act (FMA) 1967 or Act 139 is to provide for the control of factories on matters relating to the safety, health and welfare of persons, and the registration and inspection of machinery. Some high risk machinery such as boilers, unfired pressure vessels, passenger lifts and other lifting equipment such as mobile cranes, tower cranes, passenger hoists, overhead traveling cranes and gondolas, must be certified and inspected by DOSH. All factories and general machinery must be registered with DOSH before they can be installed and operated in Malaysia.

DOSH enforces 16 regulations under FMA 1967. They are:

1. Electric Passenger and Goods Lift Regulations, 1970
2. Fencing of Machinery and Safety Regulations, 1970
3. Notification, Certificate of Fitness and Inspection Regulations, 1970
4. Persons-In-Charge Regulations, 1970
5. Safety, Health and Welfare Regulations, 1970
6. Steam Boilers and Unfired Pressure Vessel Regulations, 1970
7. Certificates of Competency-Examinations Regulations, 1970
8. Administration Regulations, 1970
9. Compounding of Offences Rules, 1978
10. Compoundable Offences Regulations, 1978
11. Lead Regulations, 1984
12. Asbestos Process Regulations, 1986
13. Building Operations and Works of Engineering Construction (Safety) Regulations, 1986
14. Mineral Dust Regulations, 1989
15. Noise Exposure Regulations, 1989
16. Notification, Certificate of Fitness and Inspection (Amendment) Regulations, 2004

2.8 PLASTICS INDUSTRY SUPPLY AND DEMAND

Based on observations of statistics in the Labour Market Report 2012 by the Ministry of Human Resources Malaysia (April, 2013) and with the general understanding that the plastics industry is included in the manufacturing industry, there is currently a large gap between the vacancies in the manufacturing Industry as shown below with a total of 598,180 vacancies in the year 2012.

However as can be seen in the following table, as reported to the Malaysian Labour Department in the year 2012, there was only a placement of only 4326 positions. This shows that a mere fraction of the vacancies were filled up due to insufficient supply of manpower and skilled personnel. The following pie chart of the percentage distribution between the main industries vacancies and placement shows that currently there is a tendency for job candidates to apply for service oriented jobs compared to technology research and labour intensive jobs such as manufacturing, mining and agriculture. The results also show that currently job candidates do not possess sufficient skills required by the technology research and labour intensive industries.

Vacancies Reported to the Labour Department by Industry 2008– 2012 (MSIC-2008)

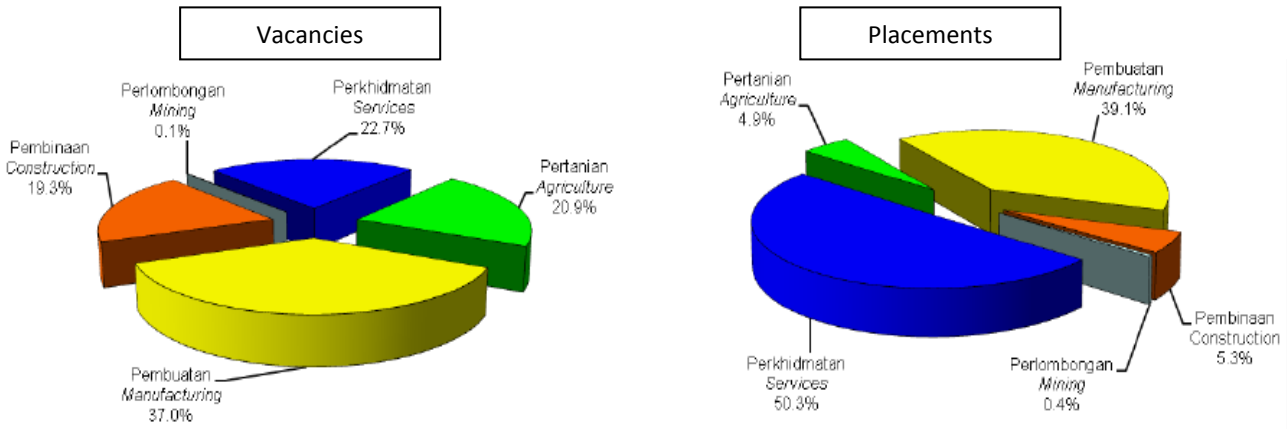
Industri *Industry*	Tahun / *Year*				
	2008	2009	2010*	2011*	2012
Pertanian, Perhutanan dan Perikanan	-	-	169,037	399,522	337,466
Agriculture, Forestry and Fishing	-	-	*21.3*	*17.7*	*20.9*
Perlombongan dan pengkuarian	-	-	1,142	3,369	2,180
Mining and Quarrying	-	-	*0.1*	*0.2*	*0.1*
Pembuatan	-	-	296,749	689,422	598,890
Manufacturing	-	-	*37.3*	*30.5*	*37.0*
Bekalan Elektrik, Gas, Wap dan Pending Udara	-	-	1,080	4,285	2,107
Electricity, Gas, Steam and Air Conditioning Supply	-	-	*0.1*	*0.2*	*0.1*
Bekalan Air, Pembentungan, Pengurusan Sisa dan Aktiviti Pemulihan	-	-	2,631	10,806	4,414
Water Supply; Sewerage, Waste Management and Remediation Activities	-	-	0.3	*0.5*	*0.3*
Pembinaan	-	-	117,801	388,241	310,954
Construction	-	-	14.8	*17.2*	*19.3*
Perdagangan Borong dan Runcit, Pembaikan Kenderaan Bermotor dan Motosikal	-	-	15,616	49,724	30,955
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	-	-	2.0	*2.2*	*1.9*
Pengangkutan dan Penyimpanan	-	-	3,283	11,553	11,184
Transportation and Storage	-	-	*0.4*	*0.5*	*0.7*
Penginapan dan Aktiviti Perkhidmatan Makanan dan Minuman	-	-	51,919	135,853	78,162
Accomodation and Food Service Activities	-	-	*6.5*	*6.0*	*4.8*
Maklumat dan Komunikasi	-	-	5,456	8,547	6,737
Information and Communication	-	-	0.7	*0.4*	*0.4*
Aktiviti Kewangan dan Insurans/ Takaful	-	-	35,892	254,656	62,156
Financial and Insurance/ Takaful Activities	-	-	4.5	*11.3*	*3.8*
Aktiviti Hartanah	-	-	1,122	1,921	1,296
Real Estate Activities	-	-	0.1	*0.1*	*0.1*

Placements Reported to the Labour Department by Industry 2008-2012 (MSIC-2008)

Industri *Industry*	Tahun / *Year*				
	2008	2009	2010	2011	2012
Pertanian, Perhutanan dan Perikanan	-	-	246	410	554
Agriculture, Forestry and Fishing	-	-	*3.3*	*2.0*	*4.9*
Perlombongan dan pengkuarian	-	-	5	11	46
Mining and Quarrying	-	-	*0.1*	*0.1*	*0.4*
Pembuatan	-	-	2,660	9,595	4,346
Manufacturing	-	-	*35.7*	*45.8*	*39.1*
Bekalan Elektrik, Gas, Wap dan Pending Udara	-	-	13	201	15
Electricity, Gas, Steam and Air Conditioning Supply	-	-	*0.2*	*1.0*	*0.1*
Bekalan Air, Pembentungan, Pengurusan Sisa dan Aktiviti Pemulihan	-	-	21	56	10
Water Supply; Sewerage, Waste Management and Remediation Activities			*0.3*	*0.3*	*0.1*
Pembinaan	-	-	433	480	587
Construction			*5.8*	*2.3*	*5.3*
Perdagangan Borong dan Runcit, Pembaikan Kenderaan Bermotor dan Motosikal	-	-	391	1,090	1,587
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	-	-	*5.2*	*5.2*	*14.3*
Pengangkutan dan Penyimpanan	-	-	56	43	164
Transportation and Storage			*0.8*	*0.2*	*1.5*
Penginapan dan Aktiviti Perkhidmatan Makanan dan Minuman	-	-	79	761	570
Accomodation and Food Service Activities			*1.1*	*3.6*	*5.1*
Maklumat dan Komunikasi	-	-	61	124	64
Information and Communication	-	-	*0.8*	*0.6*	*0.6*
Aktiviti Kewangan dan Insurans/ Takaful	-	-	1,356	3,891	1,160
Financial and Insurance/ Takaful Activities	-	-	*18.2*	*18.6*	*10.4*
Aktiviti Hartanah	-	-	1	1	5
Real Estate Activities			*0.0*	*0.0*	*0.0*

Source: Jobs Malaysia, Ministry of Human Resources Malaysia

Figure 11.0: Supply and Demand of Plastic Industry Jobs in Malaysia



Source: Jobs Malaysia, Ministry of Human Resources Malaysia

Figure 12.0 : Percentage Distribution of Vacancies and Placements (2012)

In order to close the gap between supply and demand of Plastics Industry, required personnel must be developed either by higher education institutes or skills training institutes. Higher learning institutes at university level are such as University Malaya, University Kebangsaan Malaysia, University Sains Malaysia (USM), University Putra Malaysia, Universiti Malaysia Sabah (UMS), University Technology Petronas and Universiti Teknologi Malaysia (UTM) to name a few, that also offer courses in Chemical and Process Engineering, Manufacturing and others relevant to the industry.

Currently skills training institutes such as German Malaysia Institute and Kedah Industrial and Management Development Centre (KISMEC) offer Malaysia Skills Certificate programmes on Plastics Technology, Industrial Plastics Product and Mould Design. However, it is hoped that there will be more training centres under the skills and vocational pillar that will start to expand their courses to include programmes relevant to the plastics industry.

The output from these higher learning institutes will be able to make up the demand of plastics industry workers in the more than 1,450 companies in operation, producing products ranging from common household items, packaging materials and conveyance articles to parts and components for the electrical and electronics, automotive, office automation, computer and telecommunications industries.

The Malaysian plastics industry has been rated as among the most competitive in Asia. Globalisation poses both challenges and opportunities simultaneously for Malaysian plastic manufacturers. Therefore, it is imperative for Malaysian manufacturers to sustain their competitiveness, through improved technologies, enhanced skills and penetrating new markets in developed and developing economies. Malaysia offers a pool of talented human resources.

Working professionals also need to be aligned with skills training and certification via intensive short courses. This requires flexibility in program structure to accommodate part time study and qualification.

Malaysia offers investors a young, educated and productive workforce at costs competitive with other countries in Asia. Backed by the government's continued support of human resource development in all sectors, the quality of Malaysia's workforce is one of the best in the region. Literacy levels are high and school leavers entering the job market have at least 11 years of basic education.

The Department of Skills Development (DSD) formerly known as the National Vocational Training Council under the Ministry of Human Resources coordinates the setting up of all public and private training institutions, evaluates the demand for existing and future skills, identifies future vocational and industrial training needs and will continue to develop standards under the National Occupational Skills Standards (NOSS).

Besides the increasing number of public training institutions such as technical schools, polytechnics, industrial training institutes and skills development centres to meet the growing requirements of the industrial sector, collaborative efforts between the Malaysian government, enterprises and foreign governments are encouraged to increase the number of skilled personnel in the plastics industry.

2.9 INTERNATIONAL BENCHMARKING

A "benchmark" is a comparative tool of measurement. It is a standard or point of reference used in measuring and judging quality or value. "Benchmarking" is the process of comparison. The process of continuously comparing and measuring an organisation against business leaders anywhere in the world to gain information that will help the organization take action to improve its performance. In practice it is the *process* of undertaking benchmarking that generates most benefits because it challenges current norms. Benchmarking data can be obtained from international, regional, and national sources. International organisations are one source of benchmarking data, and increasingly make information available for online access through the Internet.

In order to develop a skilled and efficient plastics industry workforce, a benchmark of the occupational structure with other countries must be done in order to measure whether the occupational structure of Malaysia's plastics industry occupational framework is at par with other developing and advanced countries. There are a few countries used as benchmarks which are Germany, Japan, Italy and the United States that known for their competitive contribution to the global Plastics Industry.

The plastic industry is one of the most important industry sectors in Germany as the fact that Germany is the Europe's biggest producer and manufacturer of plastics. The country's plastics industry generates annual turnover of around EUR 90 billion. Its value chain includes plastics manufacturers and processors, machine manufacturers, the application industries and the plastics and rubber recycling industry. As a whole, the country's plastic industry is made up of approximately 7,200 companies. These companies employ a workforce of around 440,000

people. In the year 2009, The German plastics production market, with its 330 companies and 79,000 employees, generated turnover of EUR 34 billion. [4]

Since the year 2012, the United States is set to emerge as a petrochemical superpower, thanks to the country's reserves of cheap-to-produce shale gas and the US had emerged as a "very serious competitor" in manufacturing terms and was "developing into a global hub for petrochemicals" *(Dr Josef Ertl, head of the Wirtschaftsvereinigung Kunststoff (WVK), 2012*).[5]

Throughout the Occupational Analysis development for the Malaysian Plastics Industry, industry panel members had referred to the best practice done in the German, Japanese or Italian companies that had managers to lead each section in their factories, such as having a manager for each section under Production Engineering or Process Engineering. Whereas the current scenario for local companies is that they have managers that cover more than one section at a time thus reducing efficiency.

The second area of benchmarking was research & development expertise and innovation of developing manufacturing machines that is still lacking in Malaysia, as mentioned in the previous paragraphs, countries such as the Germany, Japan, Italy, the United States and even China have a competitive edge in their respective areas. This has been adapted into the Occupational Structure, where there can be seen the areas for research and development under product engineering sector such as materials research and mould design.

Therefore, the development of Malaysia's Plastics Industry Occupational framework is done with these international benchmarks in mind, but is specifically guided by the local Plastics Industry and government human capital development plans.

[4]The Plastics Industry in Germany – Germany Trade & Invest

[5] Plasticnews.com.

2.10 CHAPTER CONCLUSION

It can be summarized in this chapter that the Malaysian Plastics Industry has great potential. In order to support the sustainability and competitiveness of the industry, a sufficient number of professionals are necessary to be produced. It is timely to train and develop technical personnel. By looking at the examples of benchmark countries such as Germany and China, research intensive activities that have served as a competitive advantage for these countries in terms of production and design can be enhanced in Malaysia with a tight collaboration between the government, the industry players, learning institutions and research institutions.

3.0 OCCUPATIONAL ANALYSIS METHODOLOGY

3.1 INTRODUCTION

This chapter describes the methodology of the overall Occupational Analysis process that was conducted throughout the Plastics Industry Occupational Analysis.

3.2 OCCUPATIONAL ANALYSIS PROCESS

Below are the techniques used throughout the research conducted on the Plastics Industry.

(i) Literature review

A literature review on the Plastics Industry was carried out to get some insight of this industry in the context of the Malaysian scenario. The scope covered under this search includes definitions, current analysis of the sector/Sub-Sector, current status of the Plastics Industry, skilled workers requirement in the local sector and the industrial competition at international level.

(ii) Identifying industrial experts

The literature survey findings were used as a guide to identify the scope of occupational study and analysis. Experts from the Plastics s Industry were identified and short listed for further communication and contact. The lists of experts are included in the list of development panel members included in this report.

(iii) Information gathering

In the process of gathering the information, two (2) methods were adopted, namely; brainstorming and Development of Standard & Curriculum (DESCUM) session. The brainstorming and DESCUM sessions were attended by development panel members who discussed the different Sub-Sectors and areas. Facts obtained during the literature survey were also discussed and presented to the development panel members. The information gathered was then used as input to the occupational analysis of the said sector.

(iv) Analysing the information

Based on the activities done as above, substantial data and information were collected. The data and information were discussed and analysed in development workshops, focus group discussions and interviews attended by selected key persons or experts from the public and private sector. The presence of the key persons or experts ensured that the development of the Occupational Analysis is current and relevant. Throughout the development process, the Plastics Industry was analysed using the above methodology to identify the following:

(a) Scope of the Industry and its Sub-Sector;
(b) Main areas;
(c) Occupational groups of the sector;
(d) Job title;
(e) Hierarchy structure (Level 1 – 8); and
(f) Occupational Description.

(v) Development Workshop and interviews with development panel members

Workshops and interviews were conducted during the development of the Plastics Industry Occupational Analysis. Follow up discussions with the expert panel members were done in smaller groups to verify the findings of the Occupational Analysis. The details of the workshop are as below:

Table 5.0: List of Occupational Analysis Development session

Date	Venue	Activity
25th – 26th April 2013	Malaysian Plastics Manufacturers Association , Petaling Jaya	Occupational Structure Development Workshop
26th – 27th May 2013	Malaysian Plastics Manufacturers Association , Petaling Jaya	Occupational Description Development Workshop
4th -5th July 2013	Adimega, Bandar Baru Bangi	Proofeading Session

3.3 OCCUPATIONAL DESCRIPTION DEVELOPMENT

The Occupational Description (OD) is the detailed description of the main job scope of the job title. Below are the main steps in producing an OD for the respective job titles:

(i) determine the main sub-sectors and areas in the sector;
(ii) identify the job titles; and
(iii) identify the job scope.

To describe the Occupational Description clearly, the statement must consist of a ***Verb, Object*** and ***Qualifier***. The rationale of determining the description attributes is to facilitate NOSS development especially in job and competency analysis.

a) Object

The object is determined first before the verb and qualifier. It is the main determinant to distinguish one job to another. The objects are acquired from the industrial experts during a brainstorming session and written on DACUM cards so that all the experts can see the objects identified. Objects of those in the related area or sub-sector are determined as in the example below.

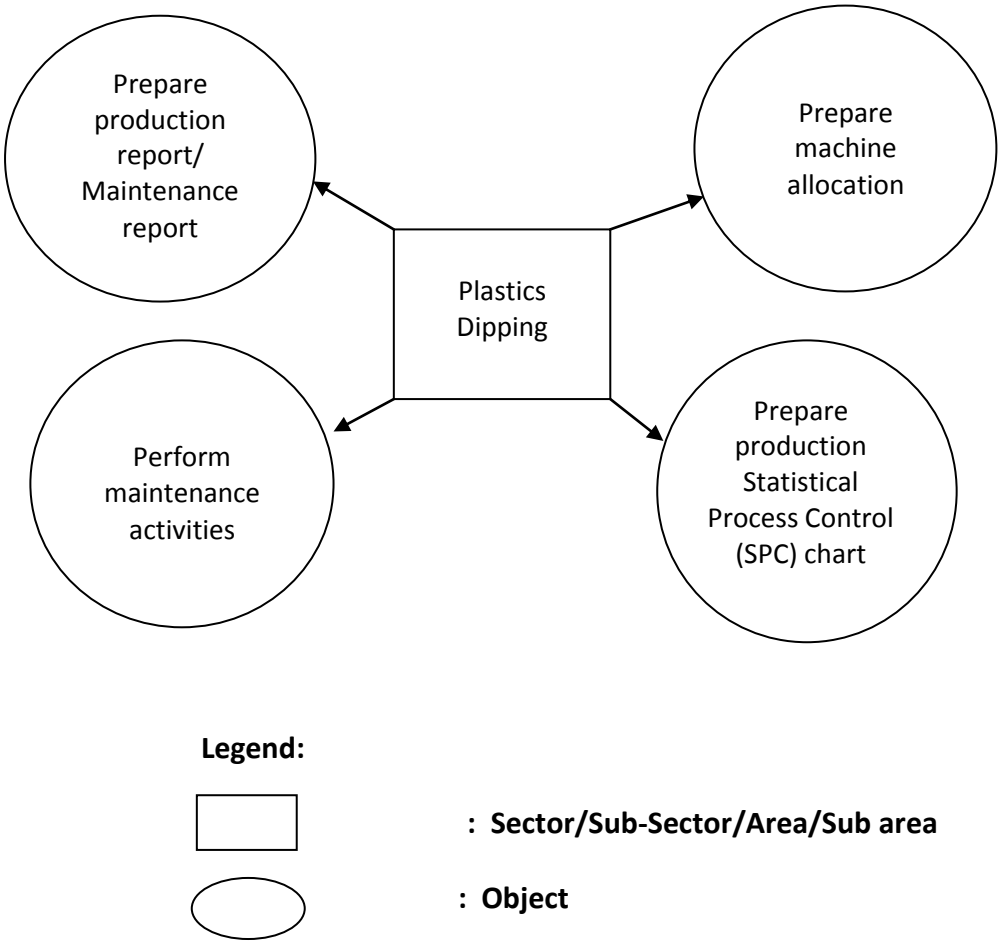


Figure 13.0: Example of Identifying Objects

b) Verb

The verb is then determined based on the level of difficulty of the identified job titles, such as below:

- *Object :* ***Plastics production activities***
- *Verb for Level 3 :* ***Supervise***
- *Verb for Level 4 :* ***Monitor***
- *Verb for Level 5 :* ***Evaluate***

Hence, the contents of the job definitions will be as below:

- Carbon Footprint Lead Auditor (Level 5)
  - ✓ ***Evaluate plastics production*** *+ (qualifier)*
- Carbon Footprint Auditor (Level 4)
  - ✓ ***Verify plastics production*** *+ (qualifier)*
- Plastics Dipping Supervisor (Level 3)
  - ✓ ***Supervise plastics production*** *+ (qualifier)*

c) Qualifier

Based on the example above, the statement is not clear as there is no qualifier for the object, therefore a qualifier must be added to further clarify it. Below is an example:

- ***Supervise plastics production according to determined standard***

3.4 CHAPTER CONCLUSION

This chapter has elaborated on the methodology used in the study which is through literature review, brainstorming sessions and DESCUM (Development of Standard and Curriculum). The development of the Occupational Structure and Occupational Description obtained via brainstorming sessions will be presented in the next chapter, Chapter 4, Findings.

4. FINDINGS

4.1 INTRODUCTION

The identified sectors for the Plastics Industry were obtained through literature research and discussions with industry experts during the development workshop sessions and interviews. Based on the discussions held during development workshops and approval sessions, the development and approval panel members had identified that the main sectors under the Plastics Industry in Malaysia were to be segregated into 3 different Occupational Structures which are:

i) Product Engineering;
ii) Process Engineering; and
iii) Production Operation;

4.2 PLASTICS INDUSTRY OCCUPATIONAL STRUCTURE

The Occupational Structures for these sectors are included in this section, firstly the sectors and relevant areas are shown, then following them will be the Occupational Structures that show the common job titles in the industry and are presented under each relevant Sub-Sector and area.

Following each Occupational Structure framework is an Occupational Area Structure that depicts the common job scope for each of the areas as defined in their respective occupational structures. In the Occupational Area Analysis, job titles under the same area may be combined if the job scope is similar. This is to show the common responsibilities of the personnel regardless of job title, as job titles may vary between different institutions and organizations.

Below are the descriptions of each of the different sectors and sub sectors;

i) Product Engineering

Plastics product engineering encompasses the processing, design, development, and manufacture of plastics products. Plastics engineering encompasses plastics material and plastics machinery. Plastics Machinery is the general term for all types of machinery and devices used in the plastics processing industry. The nature of plastics materials poses unique challenges to an engineer. Mechanical properties of plastics are often difficult to quantify, and the plastics engineer has to design a product that meets certain specifications while keeping costs to a minimum. Other properties that the plastics engineer has to address include; outdoor weatherability, thermal properties such as upper use temperature, electrical properties, barrier properties, and resistance to chemical attack.

In plastics engineering, as in most engineering disciplines, the economics of a product plays an important role. The cost of plastics materials ranges from the cheapest commodity plastics used in mass-produced consumer products to the very expensive, specialty plastics. The cost of a plastics product is measured in different ways, and the absolute cost of a plastics material is difficult to ascertain. Cost is often measured in price per pound of material, or price per unit volume of material. In many cases however, it is important for a product to meet certain specifications, and cost could then be measured in price per unit of a property. Price with respect to processibility is often important, as some materials need to be processed at very high temperatures, increasing the amount of cooling time a part needs. In a large production run cooling time is very expensive.

This area encompasses Plastics Mould Design, Plastics Product Design and Plastics Product Development and Plastics Materials Research & Development. The personnel start at Level 3 as Technicians and may proceed as to Level 4 and then Level 5 as Engineers.

ii) Process Engineering

This sub sector covers the scope of work required when dealing the different process of plastics manufacturing. They may start at Level 2 as Technicians and progress as Engineers at Level 5 according to the different processes respectively. There are many process of plastics manufacturing such as :

- **Plastics Injection Moulding**

  The plastic injection moulding process produces large numbers of parts of high quality with great accuracy, very quickly. Plastic material in the form of granules is melted until soft enough to be injected under pressure to fill a mould. The result is that the shape is exactly copied. Once the plastic moulding has cooled sufficiently to harden the mould opens releasing the part. The whole injection moulding process then repeats. The materials used are widely known as Dough or Bulk Moulding Compounds (DMC or BMC). In sheet form they are known as Sheet Moulding Compound (SMC). Applications include electrical switch and fuse boxes, domestic electrical equipment, microwave containers and tableware. It is also used for business machine housings, gas and electricity meter housing and dish aerials.

- **Plastics Compounding**

  Plastic compounding is a process for adding additional materials into a molten plastic base to produce a material with desired qualities. Additives and modifiers may result in plastic with a particular color, texture, strength, and so on. A manufacturer may incorporate one or more additives into the base material in the process of plastic compounding.

  While the process is different in each facility depending on the product being produced, plastic compounding typically involves several basic steps. Additives in the form of pellets, flakes, or powders are conveyed to a container of a

molten plastic base material. The mixture goes through a number of blending and dispersal steps to incorporate these additives into the base material and achieve a homogeneous final product. Processing may also include steps to reduce the chemical volatility of the material. Once all processing steps are complete, the material is cooled and extruded into pellets, which are then packaged for distribution or sale.

- **Plastics Blow Moulding**

  A processing method which forms the plastic in the mould by the application of pressure and heat which shapes and cures the parts. Blow moulding a shape is a common industrial process. The plastics normally used in this process are; polythene, PVC and polypropylene. The process is similar to injection moulding and extrusion.

- **Plastics Rotational Moulding**

  Rotational moulding is a process used for producing hollow plastic products. By using additional post-moulding operations, complex components can be produced enabling the process to compete effectively with other moulding and extrusion practices. Rotational moulding differs from other processing methods in that the heating, melting, shaping, and cooling stages all occur after the polymer is placed in the mould, therefore no external pressure is applied during forming. This provides the following advantages such as economically produced large products, minimum design constraints, stress-free products, no polymer weld lines and comparatively low mould costs.

- **Plastics Extrusion**

  Process of forming a continuous piece of plastics by forcing it through a shaping orifice with or without the presence of heat. The opening through which the resins are forced gives the product its form, resulting in consistent thickness and gauge control.

- **Plastics Compression Moulding**

  Compression Moulding is perhaps the next most common technique for moulding thermosets. Compound or blend is placed in mould and heated under pressure within the platens of a steam-heated press. When reaction is complete, product is cooled and ejected. Compression moulding is a batch, as opposed to continuous process. Heat and pressure are applied to react the mixture and convert it into the finished product. This technique is used for large mouldings and some sheet products.

- **Plastics Thermoforming**

  Process of forming a thermoplastics sheet into a three-dimensional shape by clamping the sheet in a frame, heating it to render it soft and flowable. Then applying differential pressure to make the sheet conform to the shape of a mould or die positioned below the frame.

- **Plastics Foam Moulding**

  Foam Moulding is a low-pressure injection moulding process that is capable of producing very large structural parts. The molten plastic material is injected into a mould after being mixed with a blowing agent or high-pressure gas. This produces bubbles in the plastic causing it to foam. The foam retains the properties of the plastic but weighs less because of reduced density.

- **Plastics Film Blowing**

  The process involves extrusion of a plastic through a circular die, followed by "bubble-like" expansion. Typical Products Produced are such as **i**ndustry packaging (e.g. shrink film, stretch film, bag film or container liners), Consumer packaging (e.g. packaging film for frozen products, shrink film for transport packaging, food wrap film, packaging bags, or form, fill and seal packaging film), Laminating film (e.g. laminating of aluminium or paper used for packaging for example milk or coffee), Barrier film, films for the packaging of medical

products, Agricultural film (e.g. greenhouse film, crop forcing film, silage film, silage stretch film).

- **Plastics Dipping**

  Dip moulding is a plastic manufacturing process whereby heated metal moulds are immersed or "dipped" in a tank of liquid plastic. The heat from the mould attracts the cool plastic and the part is formed around the mold. The moulds are extracted from the liquid and run through a baking process to cure the plastic. From there, the parts are cooled and stripped from the moulds in preparation for shipment or secondary operations.

iii) Production Operation

Personnel under this sub sector are also divided according to the various processes however the personnel deal more on the operation and manage the production process at the factory. The personnel start at Level 1 as Operators and may proceed until the highest level at Level 6 as Operation Manager. It is divided into the primary processes which deal with the direct production of plastics products whereas secondary process deals with the supporting process that will produce the final product such as spraying, assembling, lamination and others related. Personnel under Quality Management are responsible for maintaining the quality of plastics manufacturing according to Good Manufacturing Practices (GMP) and industrial standards.

4.3 PLASTICS INDUSTRY OCCUPATIONAL AREA ANALYSIS

The Occupational Area Analysis is done so that the current job titles in the industry are translated into the job areas required of the personnel. In doing so, candidates will have better employment prospects as there will be no mismatch of job titles to expected job competencies. This is because different organisations use different job titles. Certification will also be able to reflect the job competencies correctly and avoid confusion of job scope based on job titles.

The job scope for personnel under product engineering involve designing and product development of plastics manufacturing in terms of product design, mould design, product development and materials research and development where the personnel at Level 5 are responsible for validation and verification, those at Level 4 are responsible for designing and at Level 3 are responsible for the operation of each area as mentioned above.

The personnel under Process Engineering are responsible for operation and maintenance at Level 3, where the job scope at Level 2 is embedded at Level 3. Those at Level 4 and 5 are responsible for the operation and control and management of the process engineering.

Personnel under the production operation will deal with the operational management of the plastics manufacturing where most of the lower levels will be embedded at Level 3 as their job scope all involve operation.

Personnel under the Quality Management sub sector are responsible for Quality Inspection

Table 6.0 : Plastics Industry – Product Engineering Sub Sector Occupational Structure

Sector	**Plastics Industry**			
Sub Sector	**Product Engineering**			
Job Area				
Area/Level	**Plastics Mould Design**	**Plastics Product Design**	**Product Development**	**Plastics Material R&D**
8	*No Level*	*No Level*	*No Level*	*No Level*
7	Plastics Mould Design Specialist	Plastics Product Design Specialist		Plastics Material Specialist
6	Plastics Mould Design Manager	Plastics Product Design Manager		Plastics Material R&D Manager
5	Plastics Mould Design Engineer*	Plastics Product Designer	Product Development Engineer*	Plastics Material Researcher
4	Plastics Mould Design Assistant Engineer*	Plastics Product Assistant Designer	Product Development Assistant Engineer*	Plastics Material Assistant Researcher
3	*No Level*	*No Level*	*No Level*	*No Level*
2	*No Level*	*No Level*	*No Level*	*No Level*
1	*No Level*	*No Level*	*No Level*	*No Level*

Note:
* : Critical Job Titles

Table 7.0 : Plastics Industry –Process Engineering Sub Sector Occupational Structure

Sector	Plastics Industry									
Sub Sector	Process Engineering									
Job Area / Area/Level	Plastics Injection Moulding	Plastics Blow Moulding	Plastics Rotational Moulding	Plastics Extrusion	Plastics Compression Moulding	Plastics Thermo Forming	Plastics Foam Moulding	Plastics Film Blowing	Plastics Dipping	Production Maintenance
8	*No Level*									
7	Factory Manager									
6	Plastics Technical Manager									
5	Plastics Injection Moulding Engineer	Plastics Blow Moulding Engineer	Plastics Rotational Moulding Engineer*	Plastics Extrusion Engineer	Plastics Compression Moulding Engineer*	Plastics Thermo Forming Engineer	Plastics Foam Moulding Engineer	Plastics Film Blowing Engineer	Plastics Dipping Engineer*	Production Maintenance Engineer
4	Plastics Injection Moulding Assistant Engineer	Plastics Blow Moulding Assistant Engineer	Plastics Rotational Moulding Assistant Engineer*	Plastics Extrusion Assistant Engineer	Plastics Compression Moulding Assistant Engineer*	Plastics Thermo Forming Assistant Engineer	Plastics Foam Moulding Assistant Engineer	Plastics Film Blowing Assistant Engineer	Plastics Dipping Assistant Engineer*	Production Maintenance Assistant Engineer
3	Plastics Injection Moulding Senior Technician	Plastics Blow Moulding Senior Technician	Plastics Rotational Moulding Senior Technician*	Plastics Extrusion Senior Technician	Plastics Compression Moulding Senior Technician*	Plastics Thermo Forming Senior Technician	Plastics Foam Moulding Senior Technician	Plastics Film Blowing Senior Technician	Plastics Dipping Senior Technician*	Production Maintenance Senior Technician
2	Plastics Injection Moulding Technician	Plastics Blow Moulding Technician	Plastics Rotational Moulding Technician*	Plastics Extrusion Technician	Plastics Compression Moulding Technician*	Plastics Thermo Forming Technician	Plastics Foam Moulding Technician	Plastics Film Blowing Technician	Plastics Dipping Technician*	Production Maintenance Technician
1	*No Level*									

Note:
* Critical Job Titles

Table 8.0 : Plastics Industry Production Opeation Sub Sector (Secondary Process Area) Occupational Structure

Sector	**Plastics Industry**										
Sub Sector	**Production Operation**										
Job Area	**Primary Process**										
Area/ Level	**Plastics Compounding**	**Plastics Injection Moulding**	**Plastics Blow Moulding**	**Plastics Rotational Moulding**	**Plastics Extrusion**	**Plastics Compression Moulding**	**Plastics Thermo Forming**	**Plastics Foam Moulding**	**Plastics Film Blowing**	**Plastics Dipping**	**Production Maintenance**
8	No Level										
7	Factory Manager										
6	Compound Technical Manager	Production Operation Manager									
5	Compound Engineer	Plastics Injection Moulding Manager	Plastics Blow Moulding Manager	Plastics Rotational Moulding Manager*	Plastics Extrusion Manager	Plastics Compression Moulding Manager*	Plastics Thermo Forming Manager	Plastics Foam Moulding Manager	Plastics Film Blowing Manager	Plastics Dipping Manager*	Production Maintenance Engineer
4	Compound Assistant Engineer	Plastics Injection Moulding Executive	Plastics Blow Moulding Executive	Plastics Rotational Moulding Executive*	Plastics Extrusion Executive	Plastics Compression Moulding Executive*	Plastics Thermo Forming Executive	Plastics Foam Moulding Executive	Plastics Film Blowing Executive	Plastics Dipping Executive*	Production Maintenance Assistant Engineer
3	Compounder Supervisor	Plastics Injection Moulding Supervisor	Plastics Blow Moulding Supervisor	Plastics Rotational Moulding Supervisor*	Plastics Extrusion Supervisor	Plastics Compression Moulding Supervisor*	Plastics Thermo Forming Supervisor	Plastics Foam Moulding Supervisor	Plastics Film Blowing Supervisor	Plastics Dipping Supervisor *	Production Maintenance Supervisor
2	Compounder	Plastics Injection Moulding Line Leader	Plastics Blow Moulding Line Leader	Plastics Rotational Moulding Line Leader	Plastics Extrusion Line Leader	Plastics Compression Moulding Line Leader	Plastics Thermo Forming Line Leader	Plastics Foam Moulding Line Leader	Plastics Film Blowing Line Leader	Plastics Dipping Line Leader	Production Maintenance Technician*
1	*No Level*	Plastics Injection Moulding Operator	Plastics Blow Moulding Operator	Plastics Rotational Moulding Operator	Plastics Extrusion Operator	Plastics Compression Moulding Operator	Plastics Thermo Forming Operator	Plastics Foam Moulding Operator	Plastics Film Blowing Operator	Plastics Dipping Operator	Production Maintenance Operator

Note: * Critical Job Titles

Table 9.0 : Plastics Industry - Production Operation Sub Sector (Secondary Process Area) Occupational Structure

Sector	**Plastics Industry**									
Sub Sector	**Production Operation**									
Job Area	**Secondary Process**									
Area/Level	**Adhesive**	**Hotstamping**	**Printing**	**Plastics Welding**	**Lamination**	**Rivetting**	**Child Part Assembly**	**Chroming**	**Spraying**	**Coating**
8	*No Level*									
7	Factory manager									
6	Production Operation Manager									
5	Secondary Process Production Manager							Coating Engineer		
4	Secondary Process Production Executive							Coating Assistant Engineer		
3	Adhesive Supervisor	Hotstamping Supervisor	Printing Supervisor	Plastics Welding Supervisor	Lamination Supervisor	Rivetting Supervisor	Child Part Assembly Supervisor	Chroming Supervisor*	Spraying Supervisor	Coating Supervisor*
2	Adhesive Line Leader	Hotstamping Line Leader	Printing Line Leader	Plastics Welding Line Leader	Lamination Line Leader	Rivetting Line Leader	Child Part Assembly Technician	Chroming Line Leader	Spraying Line Leader	Coating Line Leader
1	Adhesive Operator	Hotstamping Operator	Printing Operator	Plastics Welding Operator	Lamination Operator	Rivetting Operator	Child Part Assembly Operator	Chroming Operator	Spraying Operator	Coating Operator

Note: * : Critical Job Titles

Table 10.0 : Plastics Industry – Production Operation Sub Sector (Quality Management Area) Occupational Structure

Sector	**Plastics Industry**	
Sub Sector	**Production Operation**	
Job Area	**Quality Management**	
Area/Level	**Quality Assurance**	**Quality Control**
8	*No Level*	
7	*No Level*	
6	Quality Manager	
5	Quality Assurance Manager	Quality Control Engineer
4	Quality Assurance Assistant Manager	Quality Control Assistant Engineer
3	Quality Control Supervisor	
2	Quality Control Inspector	
1	*No Level*	*No Level*

Table 11.0 : Plastics Industry – Product Engineering Sub Sector Occupational Area Structure

Sector	**Plastics Industry**			
Sub Sector	**Product Engineering**			
Job Area				
Area/Level	**Plastics Mould Design**	**Plastics Product Design**	**Product Development**	**Plastics Material R&D**
8	*No Level*	*No Level*	*No Level*	*No Level*
7	Plastics Mould Design	Plastics Product Design		Plastics Material
6	Plastics Mould Design Management	Plastics Product Design Management		Plastics Material R&D Management
5	Plastics Mould Design Verification & Validation	Plastics Product Design Verification & Validation	Product Development Verification & Validation	Plastics Material Research & Development Operation
4	Plastics Mould Designing	Plastics Product Designing	Product Development Coordination	Plastics Material Research & Development Operation
3	*No Level*	*No Level*	*No Level*	*No Level*
2	*No Level*	*No Level*	*No Level*	*No Level*
1	*No Level*	*No Level*	*No Level*	*No Level*

Table 12.0 : Plastics Industry – Process Engineering Sub Sector Occupational Area Structure

Sector	**Plastics Industry**									
Sub Sector	**Process Engineering**									
Job Area / **Area/Level**	**Plastics Injection Moulding**	**Plastics Blow Moulding**	**Plastics Rotational Moulding**	**Plastics Extrusion**	**Plastics Compression Moulding**	**Plastics Thermo Forming**	**Plastics Foam Moulding**	**Plastics Film Blowing**	**Plastics Dipping**	**Production Maintenance**
8	*No Level*									
7	Plastics Manufacturing Management									
6	Plastics Production Process Engineering Management									
5	Plastics Injection Moulding Process Engineering Management	Plastics Blow Moulding Process Engineering Management	Plastics Rotational Moulding Process Engineering Management	Plastics Extrusion Process Engineering Management	Plastics Compression Moulding Process Engineering Management	Plastics Thermo Forming Process Engineering Management	Plastics Foam Moulding Process Engineering Management	Plastics Film Blowing Process Engineering Management	Plastics Dipping Process Engineering Management	Production Maintenance Process Engineering Management
4	Plastics Injection Moulding Process Engineering Operation & Control	Plastics Blow Moulding Process Engineering Operation & Control	Plastics Rotational Moulding Process Engineering Operation & Control	Plastics Extrusion Process Engineering Operation & Control	Plastics Compression Moulding Process Engineering Operation & Control	Plastics Thermo Forming Process Engineering Operation & Control	Plastics Foam Moulding Process Engineering Operation & Control	Plastics Film Blowing Process Engineering Operation & Control	Plastics Dipping Process Engineering Operation & Control	Production Maintenance Process Engineering Operation & Control
3 / **2**	Plastics Injection Moulding Operation & Maintenance	Plastics Blow Moulding Operation & Maintenance	Plastics Rotational Moulding Operation & Maintenance	Plastics Extrusion Operation & Maintenance	Plastics Compression Moulding Operation & Maintenance	Plastics Thermo Forming Operation & Maintenance	Plastics Foam Moulding Operation & Maintenance	Plastics Film Blowing Operation & Maintenance	Plastics Dipping Operation & Maintenance	Production Maintenance Operation & Maintenance
1	*No Level*									

Table 13.0 : Plastics Industry – Production Operation (Primary Process Area) Sub Sector Occupational Area Structure

Sector	**Plastics Industry**									
Sub Sector	**Production Operation**									
Job Area	**Primary Process**									
Sub Area/ Level	**Plastics Compounding**	**Plastics Injection Moulding**	**Plastics Blow Moulding**	**Plastics Rotational Moulding**	**Plastics Extrusion**	**Plastics Compression Moulding**	**Plastics Thermo Forming**	**Plastics Foam Moulding**	**Plastics Film Blowing**	**Plastics Dipping**
8	*No Level*									
7	Plastics Manufacturing Management									
6	Plastics Production Operation Management									
5	Plastics Compounding Production Management	Plastics Injection Moulding Production Management	Plastics Blow Moulding Production Management	Plastics Rotational Moulding Production Management	Plastics Extrusion Production Management	Plastics Compression Moulding Production Management	Plastics Thermo Forming Production Management	Plastics Foam Moulding Production Management	Plastics Film Blowing Production Management	Plastics Dipping Production Management
4	Plastics Compounding Production Administration	Plastics Injection Moulding Production Administration	Plastics Blow Moulding Production Administration	Plastics Rotational Moulding Production Administration	Plastics Extrusion Production Administration	Plastics Compression Moulding Production Administration	Plastics Thermo Forming Production Administration	Plastics Foam Moulding Production Administration	Plastics Film Blowing Production Administration	Plastics Dipping Production Administration
3	Plastics Compounding Operation	Plastics Injection Moulding Production Operation	Plastics Blow Moulding Operation	Plastics Rotational Moulding Operation	Plastics Extrusion Operation	Plastics Compression Moulding Operation	Plastics Thermo Forming Operation	Plastics Foam Moulding Operation	Plastics Film Blowing Operation	Plastics Dipping Operation
2	*No Level*									
1	*No Level*									

Table 14.0 : Plastics Industry – Production Operation (Secondary Process Area) Sub Sector Occupational Area Structure

Sector	**Plastics Industry**									
Sub Sector	**Production Operation**									
Job Area	**Secondary Process**									
Area/Level	**Adhesive**	**Hotstamping**	**Printing**	**Plastics Welding**	**Rivetting**	**Lamination**	**Child Part Assembly**	**Chroming**	**Spraying**	**Coating**
8	*No Level*									
7	Plastics Manufacturing Management									
6	Plastics Production Operation Management									
5	Secondary Process Production Management							Plastics Product Coating Operation Management		
4	Secondary Process Production Administration							Plastics Product Coating Production Control		
3	Secondary Process Production Operation									
2										
1										

Table 15.0 : Plastics Industry – Production Operation Sub Sector (Quality Management Area) Occupational Structure

Plastics Industry		
Sector	**Production Operation**	
Sub Sector	**Quality Management**	
Area/Level	**Quality Assurance**	**Quality Control**
8	*No Level*	
7	*No Level*	
6	Plastics Product Quality Management	
5	Plastics Product Quality Assurance Management	Plastics Product Quality Control Management
4	Plastics Product Quality Assurance Analysis	Plastics Product Quality Control Analysis
3	Plastics Product Quality Control Supervision	
2	Plastics Product Quality Control Inspection	
1	*No Level*	*No Level*

4.4 LIST OF JOB TITLES AND CRITICAL JOB TITLES

This section will highlight the skilled personnel requirement in the Plastics industry which are in demand currently and in the near future. The highlighted occupations that are suitable to be adapted to the Skills and Vocational training system, in turn will require the relevant National Occupational Skills Standard (NOSS) to be developed. There were job titles identified during the brainstorming session with the panel members that they had categorised as critical.

Based on input from the expert panel members, the following table illustrates the summary of critical job titles. Job titles under this category reflect the immediate industry requirement for skilled workers. The identification of critical job titles is the essence of developing the Occupational Standard for the job so that formal training can be carried out and skilled workers can be produced and supplied to the industry.

The critical job titles under the product engineering area which include mould design and material research were selected due to the current situation of neighbouring countries that have a competitive edge in providing cheaper labour thus attracting countries to set up production in the respective countries. Therefore Malaysia must change from labour intensive to being technology intensive in order to be more competitive and innovative.

Under the Process Engineering areas, the Rotational Moulding, Compression and Plastics Dipping were considered critical because currently most personnel are qualified and trained in Injection Moulding, Blow Moulding and Extrusion processes. Due to the increase of manufacturers using the

Rotational Moulding, Compression and Dipping processes that are more cost effective, the need of skilled personnel runs parallel.

Finally, personnel under the Secondary Process area which are chroming and coating are considered critical because of the increasing demand of plastic products to be chromed and coated such as in automotive manufacturing.

Table 16.0: List of Critical Job Titles

Item	Critical Job Title	Short Term (1-3 years) (√)	Medium Term (4-5 years) (√)	Reference (Page No in OD)
1	Plastics Mould Design Assistant Engineer*		√	80
2	Plastics Mould Design Engineer*		√	81
3	Product Development Assistant Engineer*		√	86
4	Product Development Engineer *		√	87
5	Plastics Rotational Moulding Technician*	√		102
6	Plastics Rotational Moulding Senior Technician*	√		103
7	Plastics Rotational Moulding Assistant Engineer*	√		104
8	Plastics Rotational Moulding Engineer*	√		105
9	Plastics Compression Moulding Technician*	√		110
10	Plastics Compression Moulding Senior Technician*	√		111
11	Plastics Compression Moulding Assistant Engineer*	√		112
12	Plastics Compression Moulding Engineer*	√		113
13	Plastics Dipping Technician*	√		126
14	Plastics Dipping Senior Technician*	√		127
15	Plastics Dipping Assistant	√		128

Item	Critical Job Title	Short Term (1-3 years) (√)	Medium Term (4-5 years) (√)	Reference (Page No in OD)
	Engineer*			
16	Plastics Dipping Engineer*	√		129
17	Plastics Rotational Moulding Supervisor*	√		161-162
18	Plastics Rotational Moulding Executive*	√		163-164
19	Plastics Rotational Moulding Manager*	√		165-166
20	Plastics Compression Moulding Supervisor*	√		177-178
21	Plastics Compression Moulding Executive*	√		179-180
22	Plastics Compression Moulding Manager*	√		181-182
23	Plastics Dipping Supervisor*	√		209-210
24	Plastics Dipping Executive*	√		211-212
25	Plastics Dipping Manager*	√		213-214
26	Chroming Supervisor*	√		248
27	Coating Supervisor*	√		254

Note:
*Critical Job Titles

The job listed below do not reflect that they are not critical in the industry but only represent categories of job titles that have a sufficient supply of skilled workers in the near future and do not require immediate revision of the Occupational Standards documents or skills training. The list is as below:

Table 17.0: List of Job Titles (Excluding Critical Job Titles)

No.	Job Title	Page
1	Plastics Mould Design Assistant Engineer	80
2	Plastics Mould Design Engineer	81
3	Plastics Mould Design Manager	82
4	Plastics Mould Design Specialist	83
5	Plastics Product Assistant Designer	84
6	Plastics Product Designer	85
7	Product Development Assistant Engineer	86
8	Product Development Engineer	87
9	Plastics Product Design Manager	88
10	Plastics Mould Design Specialist	89
11	Plastics Material Assistant Researcher	90
12	Plastics Material Researcher	91
13	Plastics Material R&D Manager	92
14	Plastics Material Specialist	93
15	Plastics Injection Moulding Technician	94
16	Plastics Injection Moulding Senior Technician	95
17	Plastics Injection Moulding Assistant Engineer	96
18	Plastics Injection Moulding Engineer	97
19	Plastics Blow Moulding Technician	98
20	Plastics Blow Moulding Senior Technician	99
21	Plastics Blow Moulding Assistant Engineer	100
22	Plastics Blow Moulding Engineer	101
23	Plastics Rotational Moulding Technician	102
24	Plastics Rotational Moulding Senior Technician	103
25	Plastics Rotational Moulding Assistant Engineer	104
26	Plastics Rotational Moulding Engineer	105
27	Plastics Extrusion Moulding Technician	106
28	Plastics Extrusion Moulding Senior Technician	107
29	Plastics Extrusion Moulding Assistant Engineer	108
30	Plastics Extrusion Moulding Engineer	109
31	Plastics Compression Moulding Technician	110
32	Plastics Compression Moulding Senior Technician	111
33	Plastics Compression Moulding Assistant	112

119	Printing Supervisor	231
120	Plastics Welding Operator	232
121	Plastics Welding Line Leader	233
122	Plastics Welding Supervisor	234
123	Lamination Operator	235
124	Lamination Line Leader	236
125	Lamination Supervisor	237
126	Rivetting Operator	238
127	Rivetting Line Leader	239
128	Rivetting Supervisor	240
129	Child Part Assembly Operator	241
130	Child Part Assembly Technician	242
131	Child Part Assembly Supervisor	243
132	Secondary Process Production Executive	244
133	Secondary Process Production Manager	245
134	Chroming Operator	246
135	Chroming Line Leader	247
136	Chroming Supervisor	248
137	Spraying Operator	249
138	Spraying Line Leader	250
139	Spraying Supervisor	251
140	Coating Operator	252
141	Coating Line Leader	253
142	Coating Supervisor	254
143	Coating Assistant Engineer	255
144	Coating Engineer	256
145	Production Operation Manager	257
146	Factory Manager	258
147	Quality Control Inspector	259
148	Quality Control Supervisor	260
149	Quality Assurance Assistant Manager	261
150	Quality Assurance Manager	262-263
151	Quality Control Assistant Engineer	264
152	Quality Control Engineer	265-266
153	Quality Manager	267

Table 18.0: Summary of Critical Job Titles According to Sub-Sector

SECTOR	SUB-SECTOR	LEVEL								TOTAL
		L1	L2	L3	L4	L5	L6	L7	L8	
Plastics Industry	Product Engineering	-	-	-	2	2	-	-	-	4
	Process Engineering	-	3	3	3	3	-	-	-	12
	Production Operation – Primary Process	-	-	3	3	3	-	-	-	9
	Production Operation – Secondary Process	-	-	2	-	-	-	-	-	2
	Production Operation – Quality Management	-	-	-	-	-	-	-	-	0
TOTAL CRITICAL JOB TITTLES		**-**	**3**	**8**	**8**	**8**	**-**	**-**	**-**	**27**
TOTAL JOB TITLES IDENTIFIED		**20**	**32**	**32**	**29**	**29**	**7**	**4**	**-**	**153**

4.5 OCCUPATIONAL DESCRIPTION

The Occupational Description describes the occupations under the Occupational Structure in terms of competencies and duties that they are designated to carry out as competent personnel. These Occupational Descriptions can be used as reference for employees, employers, practitioners, trainers and academicians alike.

The Occupational Descriptions in this chapter are organised according to sector, area and hierarchy of levels. The details of each Occupational Description can be seen in Annex 4 of this report.

4.6 CHAPTER CONCLUSION

Based on this chapter, the sub sectors that have been identified reflect the main sectors in the Plastics Industry which are Product Engineering, Process Engineering and Production Operation. The visual representations of the Occupational Structures and Occupational Area Structures enable the industry to be interpreted in terms of levels of competency and available career paths.

5. RECOMMENDATION AND CONCLUSION

5.1 RECOMMENDATION

Based on the findings obtained throughout the Occupational Analysis on the Plastics Industry, there have been 32 job titles that have been identified as being critical job titles which are job titles that are in demand. With the competency requirements documented in NOSS format, the personnel in this area will obtain a more structured skills training and will also enable personnel who are experienced and skilled to be certified.

5.2 CONCLUSION

As a result of the Plastics Industry Occupational Analysis conducted together with expert panel members from various organizations, a total of **3 main Sub Sectors, 17 areas, 23 sub areas and 147 job titles** have been identified.

Referring to Malaysia's economical plans and vision for the coming years, a framework of the plastics industry workforce has been identified. It is hoped that the result of this Occupational Analysis will be able to be used as reference as how to fulfil the future plans of developing skilled personnel and certifying Malaysians in the Plastics Industry towards improving the quality of the local industry and at boosting Malaysia's global competitiveness.

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ANNEX 1: MALAYSIAN OCCUPATIONAL SKILLS QUALIFICATION FRAMEWORK (MOSQF) LEVEL DESCRIPTOR

MALAYSIAN OCCUPATIONAL SKILLS QUALIFICATION FRAMEWORK (MOSQF) LEVEL DESCRIPTOR

Level	Level Description
1	Achievement at this level reflects the ability to use relevant knowledge, skills and procedures to **complete routine and predictable tasks** that include responsibility for completing tasks and procedures subject to **direction or guidance**
2	Achievement at this level reflects the ability to select and use relevant knowledge, **ideas**, skills and procedures to **complete well-defined tasks and address straightforward problem**. It includes **taking responsibility** for completing tasks and procedures, **and exercising autonomy** and **judgment** subject to overall direction or guidance
3	Achievement at this level reflects the ability to **identify and use relevant understanding,** methods and skills to **complete task** and address problems that are well defined with a **measure of complexity.** It includes taking responsibility for initiating and completing tasks and procedures as well as exercising autonomy and judgments **within limited parameter.** It also reflects awareness of different perspectives or approaches within an area of study or work
4	Achievement at this level reflects the ability to identify and use relevant understanding, methods and skills to address problems that are well defined but **complex and non-routine**. It includes taking responsibility for overall courses of action as well as exercising autonomy and **judgment within fairly broad** parameters. It also reflects **under-standing of different** perspective or approaches within an area of study or work
5	Achievement at this level reflects the ability to identify and use relevant understanding, methods and skills to address **broadly-defined, complex problem**s. It includes taking responsibility for **planning and developing courses** of action as well as exercising autonomy and judgment within broad parameters. It also reflects **understanding of different perspectives, approaches or schools of thought and the reasoning behind them**
6	Achievement at this level reflects the ability to **refine** and use relevant understanding, methods and skills to address **complex problems that have limited definition**. It includes taking responsibility for planning and developing courses of action **that are able to underpin substantial change or development, as well as exercising broad autonomy and judgment.** It also reflects an understanding of different perspectives, **approaches of schools of thought and the theories that underpin them**

Level	Level Description
7	Achievement at this level reflects the ability to **reformulate** and use relevant understanding, methodologies and approaches to address **problematic situations** that involve many interacting factors. It includes taking responsibility for **planning and developing** courses of action that initiate or underpin substantial change or development, as well as exercising broad autonomy and judgment. It also reflects an understanding **of theoretical and relevant methodological perspectives, and how they affect their area of study or work**
8	Achievement at this level reflects the **ability to develop original understanding** and extend an area of knowledge or professional practice. It reflects the ability to address problematic situations that involve many complexes, interacting factors through initiating, designing and undertaking research, development or strategic activities. It involves the exercise of broad autonomy, judgement and leadership in sharing responsibility for the development of a field of work or knowledge, or for creating substantial professional or organisational change. It also reflects a critical understanding of relevant theoretical and methodological perspectives and how they affect the field of knowledge or work.

ANNEX 2 : LIST OF DEVELOPMENT PANEL AND FACILITATORS

LIST OF INDUSTRY PANEL MEMBERS FOR THE PLASTICS INDUSTRY OCCUPATIONAL ANALYSIS DEVELOPMENT

NO	NAME	EXPERTISE	POSITION	ORGANISATION
1	SUJATA PATRICIA A/P ALBERT GABRIEL	MANAGER	PLASTICS DESIGN	MALAYSIAN PLASTICS DESIGN CENTRE (MPDC)/MPMA
2	FONG YOONG YOONG	QUALITY SYSTEM MANAGER	QUALITY CONTROL	GUPPY PLASTICS INDUSTRY SDN BHD
3	AHMAD MAHMUD BIN YAHYA	MANAGER	GENERAL	PERAK ENTREPRENUER & HUMAN RESOURCES DEVELOPMENT AGENCY
4	MOHD NIZAM BIN HUSSAIN	ASSISTANT MANAGER	GENERAL	PERAK ENTREPRENUER & HUMAN RESOURCES DEVELOPMENT AGENCY
5	AMINUDDIN BIN OTHMAN	TRAINING MANAGER	PRODUCT DESIGN (POLYMER ENGINEERING)	POLYMER INDUSTRIAL SKILLS DEVELOPMENT CENTRE (PISDEC)
6	MOHAMAD YAAKUB BIN TUGIRON	PRODUCTION ENG	PRODUCTION ENGINEERING	TECK SEE PLASTICS SDN BHD
7	MOHAMED FAHLAVEI BIN ABDUL KARIM	INDUSTRIAL TRAINER	GENERAL	MF TWINTECH RESOURCES
8	NORJAMALULLAIL TAMRI	HEAD OF DIVISION	GENERAL	MALAYSIAN AUTOMOTIVE INSTITUTE
9	MOHD IZHAR BIN SHAARI	SENIOR ENGINEER	ENGINEERING	SIRIM BERHAD
10	MOHD NOOR BIN SALLEHUDDIN	QUALITY ASSURANCE MANAGER	QUALITY ASSURANCE	LAM SENG PLASTICS

LIST OF FACILITATORS FOR THE PLASTICS INDUSTRY OCCUPATIONAL ANALYSIS DEVELOPMENT

FACILITATORS

FAHISZAM BIN SAAD

HARRIS ISKANDAR BIN NORDIN

RESEARCHER

EVARINA BINTI AMIRON

NORFADILAH BINTI ITHNIN

PROOFREADER

MR. MANJIT SINGH

ANNEX 3: OCCUPATIONAL DESCRIPTIONS (OD) FOR PLASTICS INDUSTRY

SECTOR : PLASTICS INDUSTRY
SUB-SECTOR : PRODUCT ENGINEERING

Sector	PLASTICS INDUSTRY
Sub-sector	Product Engineering
Job Area	N/A
Sub Area	Plastics Mould Design
Job Title	Plastics Mould Design Assistant Engineer*
Level	Level 4

Job Definition :

A Plastics Mould Design Assistant Engineer is designated to assist in production tooling/soft-tooling mould design, assist in project costing, coordinate design schedule, administration duties and training activities.

Job Description :

1. Execute risk information gathering.
2. Assist in project costing.
3. Coordinate design schedule.
4. Assist in production of tooling/soft-tooling mould design.
5. Coordinate mould trial and validation and debugging activities.
6. Assist in administration duties.
7. Assist in training activities.
8. Adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Product Engineering
Job Area	N/A
Sub Area	Plastics Mould Design
Job Title	Plastics Mould Design Engineer*
Level	Level 5

Job Definition :

A Plastics Mould Design Engineer is designated to propose project costing, perform CAE analysis, prepare process sequence operation schedule, produce production tooling/soft-tooling mould design, identify troubleshooting or debugging mould and conduct training activities.

Job Description :

1. Propose project costing.
2. Perform cae analysis.
3. Prepare process sequence operation schedule.
4. Produce production tooling/soft-tooling mould design.
5. Identify troubleshooting or debugging mould.
6. Conduct training activities.
7. Maintain a safe working environment in lab.
8. Manage material and logistic flow.
9. Adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Product Engineering
Job Area	N/A
Sub Area	Plastics Mould Design
Job Title	Plastics Mould Design Manager
Level	Level 6

Job Definition :

A Plastics Mould Design Manager is designated to manage mould design concept, prepare Design For Manufacturing (DFM) as per customers requirements/specification, perform managerial duties, analyse and troubleshoot mould complex related problems and develop new processes.

Job Description :

1. Manage mould design concept.
2. Prepare DFM as per customers requirement/specification.
3. Perform managerial duties.
4. Analyse and troubleshoot mould complex related problems.
5. Develop new processes.
6. Verify project costing.
7. liaise with customer.
8. Facilitate in training by developing training modules and conduct training as and when required.
9. Perform marketing activities.

Sector	PLASTICS INDUSTRY
Sub-sector	Product Engineering
Job Area	N/A
Sub Area	Plastics Mould Design
Job Title	Plastics Mould Design Specialist
Level	Level 7

Job Definition :

A Plastics Mould Design Specialist is designated to manage mould design concept, prepare Design For Manufacturing (DFM) as per customers requirements/specification, perform managerial duties, analyse and troubleshoot mould complex related problems and develop new processes.

Job Description :

1. Develop, construct, implement and maintain mould for a plastic injection, and mould assembly.
2. Manage new mould and prototype builds.
3. Establish processing standards for product sample & prototype runs.
4. Analyse new product engineering and prototype sample.
5. Initiate frequent and continuous improvement plans.
6. Perform production engineering support.
7. Carry out product patenting.
8. Perform failure mode analysis.
9. Develop a procedural corrective action.
10. Perform process audits.

Sector	PLASTICS INDUSTRY
Sub-sector	Product Engineering
Job Area	N/A
Sub Area	Plastics Product Design
Job Title	Plastics Product Assistant Designer
Level	Level 4

Job Definition :

A Plastics Product Assistant Designer is designated to assist in project costing, coordinate design schedule, assist in production of tooling/soft-tooling product design and coordinate product trial and validation and debugging activities.

Job Description :

1. Assist in project costing.
2. Coordinate design schedule.
3. Assist in production of tooling/soft-tooling product design.
4. Coordinate product trial and validation and debugging activities.
5. Assist in administration duties.
6. Assist in training activities.
7. Adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Product Engineering
Job Area	N/A
Sub Area	Plastics Product Design
Job Title	Plastics Product Designer
Level	Level 5

Job Definition :

A Plastics Product Designer is designated to perform project costing, CAE analysis, prepare process sequence operation schedule, produce production tooling/soft-tooling product design, identify trouble shooting or debugging product and conduct training activities

Job Description :

1. Propose project costing.
2. Perform cae analysis.
3. Prepare process sequence operation schedule.
4. Produce production tooling/soft-tooling product design.
5. Identify troubleshooting or debugging product.
6. Conduct training activities.
7. Maintain a safe working environment.
8. Manage material and logistic flow.
9. Adhere to safety, health and environment rules and regulations.

Sector PLASTICS INDUSTRY

Sub-sector Product Engineering

Job Area N/A

Sub Area Product Development

Job Title Plastics Development Assistant Engineer*

Level Level 4

Job Definition :

A Plastics Development Assistant Engineer is designated to coordinate and provide market feasibility information/evaluate market needs, assist in product design and coordinate testing for adherence to product specifications.

Job Description :

1. coordinate and provide market feasibility information/evaluate market needs.
2. assist in product design.
3. coordinate testing for adherence to product specifications.
4. coordinate fabrication models for testing.
5. assist in administrative duties.
6. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Product Engineering
Job Area	N/A
Sub Area	Product Development
Job Title	Plastics Development Engineer*
Level	Level 5

Job Definition :

A Plastics Development Engineer is designated to generate new product ideas or suggest improvements to existing products, verify market feasibility info, analyse data product design and verify prototype model.

Job Description :

1. generate new product ideas or suggest improvements to existing products.
2. verify market feasibility info.
3. analyse data product design.
4. verify prototype model.
5. deliver specifications and procedures to manufacturers.
6. perform managerial duties.
7. conduct training activities.
8. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Product Engineering
Job Area	N/A
Sub Area	Plastics Product Design & Product Development
Job Title	Plastics Product Design Manager
Level	Level 6

Job Definition :

A Plastics Products Design Manager is designated to manage product design concept, prepare Design For Manufacturing (DFM) as per customers requirement/specification, perform managerial duties and marketing activities and analyse and troubleshoot product complex related problems.

Job Description :

1. Manage product design concept.
2. Prepare dfm as per customers requirement/specification.
3. Perform managerial duties.
4. Analyse and troubleshoot product complex related problems.
5. Develop new processes.
6. Verify project costing.
7. Liaise with customer.
8. Facilitate in training by developing training modules and conduct training as and when required.
9. Perform marketing activities.

Sector	PLASTICS INDUSTRY
Sub-sector	Product Engineering
Job Area	N/A
Sub Area	Plastics Product Design & Product Development
Job Title	Plastics Product Design Specialist
Level	Level 7

Job Definition :

A Plastics Products Design Specialist is designated to develop, construct, implement and maintain product for a plastic injection, and mould assembly, manage new product and prototype builds and establish processing standards for product sample and prototype runs.

Job Description :

1. Develop, construct, implement and maintain product for a plastic injection, and mould assembly.
2. Manage new product and prototype builds.
3. Establish processing standards for product sample and prototype runs.
4. Analyse new product engineering and prototype sample.
5. Initiate frequent and continuous improvement plans.
6. Perform production engineering support.
7. Carry out product patenting.
8. Perform failure mode analysis.
9. Develop a procedural corrective action.
10. Perform process audits.

Sector	PLASTICS INDUSTRY
Sub-sector	Product Engineering
Job Area	N/A
Sub Area	Plastics Material Research & Development (R&D)
Job Title	Plastics Material Assistant Researcher
Level	Level 4

Job Definition :

A Plastics Material Assistant Researcher is designated to collect data collection on R&D activity, assist in testing and new material, collect and analyse feedback of new material products and carry out product testing based on new material developed.

Job Description :

1. Collect data collection on R&D activity.
2. Assist in testing and new material.
3. Collect and analyse feedback of new material products.
4. Carry out product testing based on new material developed.
5. Compile and document research materials.
6. Carry out data mining on plastic material.
7. Ensure lab equipment functionality.

Sector	PLASTICS INDUSTRY
Sub-sector	Product Engineering
Job Area	N/A
Sub Area	Plastics Material Research & Development (R&D)
Job Title	Plastics Material Researcher
Level	Level 5

Job Definition :

A Plastics Material Researcher is designated to carry out research and development of formulations, processing method and raw material, Initiate and conduct test and evaluation on the existing product and samples and Evaluate competitors' product.

Job Description :

1. Carry out research and development of formulations and processing method of new material.
2. Initiate and conduct test and evaluation on the existing product and samples.
3. Evaluate competitors' product.
4. Assist in planning and executing improvement projects.
5. Carry out cost reduction and/or quality improvement.
6. Update and control all formulation and circulate them to the department concern.
7. Ensure all mixing procedures practiced.
8. Ensure dosage of material used during formulation adheres to formulation.
9. Issue product specifications and material safety data sheet to customer.
10. Investigate cause of non-conforming products and coordinate corrective/preventive action with quality and production department.
11. Contribute in implementing the company's QMS and EMS

Sector	PLASTICS INDUSTRY
Sub-sector	Product Engineering
Job Area	N/A
Sub Area	Plastics Material Research & Development (R&D)
Job Title	Plastics Material R&D Manager
Level	Level 6

Job Definition :

A Plastics Material R&D Manager is designated to direct development of R&D strategies, policing and plan, lead plastic material research, conduct research work with relevant parties and plan R&D costing and project timeline.

Job Description :

1. Direct development of R&D strategies, policing and plan.
2. Lead plastic material research.
3. Conduct research work with relevant parties.
4. Plan R&D costing and project timeline.
5. Provide advice on R&D option available to organisations.
6. Monitor development in R&D activities.
7. Carry out training and presentation of new plastics product.
8. Carry out managerial duties.

Sector	PLASTICS INDUSTRY
Sub-sector	Product Engineering
Job Area	N/A
Sub Area	Plastics Material Research & Development (R&D)
Job Title	Plastics Material Specialist
Level	Level 7

Job Definition :

A Plastics Material Specialist is designated to implement designated formulation through carrying and series of experiment, analyse and follow up formulated trials and application, repeats and summarize results of experiments trials and participate in scale up transfer validation protocol to production department.

Job Description :

1. Implement designated formulation through carrying and series of experiment.
2. Analyse and follow up formulated trials and application.
3. Repeats and summarize results of experiments trials.
4. Participate in scale up transfer validation protocol to production department.
5. Share in trials for redevelopment products.
6. Carry out new material patterning.
7. Verify R&D project planning, budgeting and scheduling.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Injection Moulding
Sub Area	N/A
Job Title	Plastics Injection Moulding Technician
Level	Level 2

Job Definition :

A Plastics Injection Moulding Technician is designated to prepare plastic machine line clearance/condition, check mould condition/clean mould, setup plastic mould/die/tool, plastics operation parameter, perform first buy off, mould unloading process, plastic machine shutdown, maintain machine condition and mould condition.

Job Description :

1. Prepare plastic machine line clearance.
2. Check mould condition.
3. Set-up plastic injection mould.
4. Set-up plastic operation parameter.
5. Operate plastic injection machine.
6. Perform buy off first product against master sample.
7. Perform mould unloading process.
8. Perform plastic machine shutdown.
9. Maintain machine condition.
10. Maintain mould condition.
11. Complete injection parameter checklist.
12. Adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Injection Moulding
Sub Area	N/A
Job Title	Plastics Injection Moulding Senior Technician
Level	Level 3

Job Definition :

A Plastics Injection Moulding Senior Technician is designated to verify production initial start-up, plastics injection machine setup, maintenance and machine shutdown activities, coordinate measuring equipment calibration, mechanical & electrical equipment/stock and improve production process.

Job Description :

1. Verify production initial start-up.
2. Verify plastic injection machine set-up.
3. Verify plastic injection machine maintenance.
4. Verify plastic injection machine shutdown activities.
5. Coordinate measuring equipment calibration.
6. Coordinate mechanical & electrical equipment inventory.
7. Coordinate preventive maintenance.
8. Coordinate production planning schedule.
9. Troubleshoot production process.
10. Verify injection moulding production related check sheet.
11. Adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Injection Moulding
Sub Area	N/A
Job Title	Plastics Injection Moulding Assistant Engineer
Level	Level 4

Job Definition :

A Plastics Injection Moulding Assistant Engineer is designated to evaluate production equipment, carry out equipment commissioning, improve production efficiency, implement departmental SOP, coordinate preventive maintenance need analysis and schedule, assist in preparing training material, carry out feasibility study and prepare material requisition.

Job Description :

1. Evaluate production equipment.
2. Carry out equipment commissioning.
3. Improve production efficiency.
4. Implement departmental standard operation procedures (sop).
5. Carry out preventive maintenance need analysis.
6. Coordinate preventive maintenance schedule.
7. Coordinate machine maintenance standard checklist.
8. Assist in preparing technical training schedule.
9. Assist in preparing training material.
10. Carry out feasibility study.
11. Prepare material requisition. and
12. Adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Injection Moulding
Sub Area	N/A
Job Title	Plastics Injection Moulding Engineer
Level	Level 5

Job Definition :

A Plastics Injection Moulding Engineer is designated to evaluate production performance, analyse production performance data and information, carry out quality improvement, monitor inventory stock level, coordinate training activities, prepare production planning and staff's performance appraisal.

Job Description :

1. Evaluate production performance.
2. Analyse production performance data and information.
3. Carry out quality improvement.
4. Monitor standard operation procedures (sop) implementation.
5. Coordinate quality audit.
6. Monitor inventory stock level.
7. Coordinate training activities.
8. Prepare production planning.
9. Propose product/process improvement and innovation.
10. Prepare staff's performance appraisal. and
11. Adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Blow Moulding
Sub Area	N/A
Job Title	Plastics Blow Moulding Technician
Level	Level 2

Job Definition :

A Plastics Blow Moulding Technician is designated to prepare plastic machine line clearance/condition, check mould condition/clean mould, setup plastic mould/die/tool, plastics operation parameter, perform first buy off, mould unloading process, plastic machine shutdown, maintain machine condition and mould condition.

Job Description :

1. Prepare plastic machine line clearance.
2. Check mould condition.
3. Set-up plastic blow mould.
4. Set-up plastic operation parameter.
5. Operate plastic blow machine.
6. Perform buy off first product against master sample.
7. Perform mould unloading process.
8. Perform plastic machine shutdown.
9. Maintain machine condition.
10. Maintain mould condition.
11. Complete blow parameter checklist.
12. Adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Blow Moulding
Sub Area	N/A
Job Title	Plastics Blow Moulding Senior Technician
Level	Level 3

Job Definition :

A Plastics Blow Moulding Senior Technician is designated to verify production initial start-up, plastics blow machine setup, maintenance and machine shutdown activities, coordinate measuring equipment calibration, mechanical & electrical equipment/stock and improve production process.

Job Description :

1. verify production initial start-up.
2. verify plastic blow machine set-up.
3. verify plastic blow machine maintenance.
4. verify plastic blow machine shutdown activities.
5. coordinate measuring equipment calibration.
6. coordinate mechanical & electrical equipment inventory.
7. coordinate preventive maintenance.
8. coordinate production planning schedule.
9. troubleshoot production process.
10. verify blow moulding production related check sheet.
11. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Blow Moulding
Sub Area	N/A
Job Title	Plastics Blow Moulding Assistant Engineer
Level	Level 4

Job Definition :

A Plastics Blow Moulding Assistant Engineer is designated to evaluate production equipment, carry out equipment commissioning, improve production efficiency, implement departmental SOP, coordinate preventive maintenance need analysis and schedule, assist in preparing training material, carry out feasibility study and prepare material requisition.

Job Description :

1. evaluate production equipment.
2. carry out equipment commissioning.
3. improve production efficiency.
4. implement departmental Standard Operation Procedures (SOP).
5. carry out preventive maintenance need analysis.
6. coordinate preventive maintenance schedule.
7. coordinate machine maintenance standard checklist.
8. assist in preparing technical training schedule.
9. assist in preparing training material.
10. carry out feasibility study.
11. prepare material requisition.
12. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Blow Moulding
Sub Area	N/A
Job Title	Plastics Blow Moulding Engineer
Level	Level 5

Job Definition :

A Plastics Blow Moulding Engineer is designated to evaluate production performance, analyse production performance data and information, carry out quality improvement, monitor inventory stock level, coordinate training activities, prepare production planning and staff's performance appraisal.

Job Description :

1. evaluate production performance.
2. analyse production performance data and information.
3. carry out quality improvement.
4. monitor Standard Operation Procedures (SOP) implementation.
5. coordinate quality audit.
6. monitor inventory stock level.
7. coordinate training activities.
8. prepare production planning.
9. propose product/process improvement and innovation.
10. prepare staff's performance appraisal.
11. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Rotational Moulding
Sub Area	N/A
Job Title	Plastics Rotational Moulding Technician*
Level	Level 2

Job Definition :

A Plastics Rotational Moulding Technician is designated to prepare plastic machine line clearance/condition, check mould condition/clean mould, setup plastic mould/die/tool, plastics operation parameter, perform first buy off, mould unloading process, plastic machine shutdown, maintain machine condition and mould condition.

Job Description :

1. prepare plastic machine line clearance.
2. check mould condition.
3. set-up plastic rotational mould.
4. set-up plastic operation parameter.
5. operate plastic rotational machine.
6. perform buy off first product against master sample.
7. perform mould unloading process.
8. perform plastic machine shutdown.
9. maintain machine condition.
10. maintain mould condition.
11. complete rotational parameter checklist.
12. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Rotational Moulding
Sub Area	N/A
Job Title	Plastics Rotational Moulding Senior Technician*
Level	Level 3

Job Definition :

A Plastics Rotational Moulding Senior Technician is designated to verify production initial start-up, plastics rotational machine setup, maintenance and machine shutdown activities, coordinate measuring equipment calibration, mechanical & electrical equipment/stock and improve production process.

Job Description :

1. verify production initial start-up.
2. verify plastic rotational machine set-up.
3. verify plastic rotational machine maintenance.
4. verify plastic rotational machine shutdown activities.
5. coordinate measuring equipment calibration.
6. coordinate mechanical & electrical equipment inventory.
7. coordinate preventive maintenance.
8. coordinate production planning schedule.
9. troubleshoot production process.
10. verify rotational moulding production related check sheet.
11. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Rotational Moulding
Sub Area	N/A
Job Title	Plastics Rotational Moulding Assistant Engineer*
Level	Level 4

Job Definition :

A Plastics Rotational Moulding Assistant Engineer is designated to evaluate production equipment, carry out equipment commissioning, improve production efficiency, implement departmental SOP, coordinate preventive maintenance need analysis and schedule, assist in preparing training material, carry out feasibility study and prepare material requisition.

Job Description :

1. evaluate production equipment.
2. carry out equipment commissioning.
3. improve production efficiency.
4. implement departmental Standard Operation Procedures (SOP).
5. carry out preventive maintenance need analysis.
6. coordinate preventive maintenance schedule.
7. coordinate machine maintenance standard checklist.
8. assist in preparing technical training schedule.
9. assist in preparing training material.
10. carry out feasibility study.
11. prepare material requisition.
12. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Rotational Moulding
Sub Area	N/A
Job Title	Plastics Rotational Moulding Engineer*
Level	Level 5

Job Definition :

A Plastics Rotational Moulding Engineer is designated to evaluate production performance, analyse production performance data and information, carry out quality improvement, monitor inventory stock level, coordinate training activities, prepare production planning and staff's performance appraisal.

Job Description :

1. evaluate production performance.
2. analyse production performance data and information.
3. carry out quality improvement.
4. monitor Standard Operation Procedures (SOP) implementation.
5. coordinate quality audit.
6. monitor inventory stock level.
7. coordinate training activities.
8. prepare production planning.
9. propose product/process improvement and innovation.
10. prepare staff's performance appraisal.
11. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Extrusion
Sub Area	N/A
Job Title	Plastics Extrusion Technician
Level	Level 2

Job Definition :

A Plastics Extrusion Technician is designated to prepare plastic machine line clearance/condition, check mould condition/clean mould, setup plastic mould/die/tool, plastics operation parameter, perform first buy off, mould unloading process, plastic machine shutdown, maintain machine condition and mould condition.

Job Description :

1. prepare plastic machine line clearance.
2. check mould condition.
3. set-up plastic extrusion mould.
4. set-up plastic operation parameter.
5. operate plastic extrusion machine.
6. perform buy off first product against master sample.
7. perform mould unloading process.
8. perform plastic machine shutdown.
9. maintain machine condition.
10. maintain mould condition.
11. complete extrusion parameter checklist.
12. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Extrusion
Sub Area	N/A
Job Title	Plastics Extrusion Senior Technician
Level	Level 3

Job Definition :

A Plastics Extrusion Senior Technician is designated to verify production initial start-up, plastics extrusion machine setup, maintenance and machine shutdown activities, coordinate measuring equipment calibration, mechanical & electrical equipment/stock and improve production process.

Job Description :

1. verify production initial start-up.
2. verify plastic extrusion machine set-up.
3. verify plastic extrusion machine maintenance.
4. verify plastic extrusion machine shutdown activities.
5. coordinate measuring equipment calibration.
6. coordinate mechanical & electrical equipment inventory.
7. coordinate preventive maintenance.
8. coordinate production planning schedule.
9. troubleshoot production process.
10. verify extrusion moulding production related check sheet.
11. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Extrusion
Sub Area	N/A
Job Title	Plastics Extrusion Assistant Engineer
Level	Level 4

Job Definition :

A Plastics Extrusion Assistant Engineer is designated to evaluate production equipment, carry out equipment commissioning, improve production efficiency, implement departmental SOP, coordinate preventive maintenance need analysis and schedule, assist in preparing training material, carry out feasibility study and prepare material requisition.

Job Description :

1. evaluate production equipment.
2. carry out equipment commissioning.
3. improve production efficiency.
4. implement departmental Standard Operation Procedures (SOP).
5. carry out preventive maintenance need analysis.
6. coordinate preventive maintenance schedule.
7. coordinate machine maintenance standard checklist.
8. assist in preparing technical training schedule.
9. assist in preparing training material.
10. carry out feasibility study.
11. prepare material requisition.
12. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Extrusion
Sub Area	N/A
Job Title	Plastics Extrusion Engineer
Level	Level 5

Job Definition :

A Plastics Extrusion Engineer is designated to evaluate production performance, analyse production performance data and information, carry out quality improvement, monitor inventory stock level, coordinate training activities, prepare production planning and staff's performance appraisal.

Job Description :

1. evaluate production performance.
2. analyse production performance data and information.
3. carry out quality improvement.
4. monitor Standard Operation Procedures (SOP) implementation.
5. coordinate quality audit.
6. monitor inventory stock level.
7. coordinate training activities.
8. prepare production planning.
9. propose product/process improvement and innovation.
10. prepare staff's performance appraisal.
11. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Compression Moulding
Sub Area	N/A
Job Title	Plastics Compression Moulding Technician*
Level	Level 2

Job Definition :

A Plastics Compression Moulding Technician is designated to prepare plastic machine line clearance/condition, check mould condition/clean mould, setup plastic mould/die/tool, plastics operation parameter, perform first buy off, mould unloading process, plastic machine shutdown, maintain machine condition and mould condition.

Job Description :

1. prepare plastic machine line clearance.
2. check mould condition.
3. set-up plastic compression mould.
4. set-up plastic operation parameter.
5. operate plastic compression machine.
6. perform buy off first product against master sample.
7. perform mould unloading process.
8. perform plastic machine shutdown.
9. maintain machine condition.
10. maintain mould condition.
11. complete compression parameter checklist.
12. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector PLASTICS INDUSTRY

Sub-sector Process Engineering

Job Area Plastics Compression Moulding

Sub Area N/A

Job Title Plastics Compression Moulding Senior Technician*

Level Level 3

Job Definition :

A Plastics Compression Moulding Senior Technician is designated to verify production initial start-up, plastics compression machine setup, maintenance and machine shutdown activities, coordinate measuring equipment calibration, mechanical & electrical equipment/stock and improve production process.

Job Description :

1. verify production initial start-up.
2. verify plastic compression machine set-up.
3. verify plastic compression machine maintenance.
4. verify plastic compression machine shutdown activities.
5. coordinate measuring equipment calibration.
6. coordinate mechanical & electrical equipment inventory.
7. coordinate preventive maintenance.
8. coordinate production planning schedule.
9. troubleshoot production process.
10. verify compression moulding production related check sheet.
11. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Compression Moulding
Sub Area	N/A
Job Title	Plastics Compression Moulding Assistant Engineer*
Level	Level 4

Job Definition :

A Plastics Compression Moulding Assistant Engineer is designated to evaluate production equipment, carry out equipment commissioning, improve production efficiency, implement departmental SOP, coordinate preventive maintenance need analysis and schedule, assist in preparing training material, carry out feasibility study and prepare material requisition.

Job Description :

1. evaluate production equipment.
2. carry out equipment commissioning.
3. improve production efficiency.
4. implement departmental Standard Operation Procedures (SOP).
5. carry out preventive maintenance need analysis.
6. coordinate preventive maintenance schedule.
7. coordinate machine maintenance standard checklist.
8. assist in preparing technical training schedule.
9. assist in preparing training material.
10. carry out feasibility study.
11. prepare material requisition.
12. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Compression Moulding
Sub Area	N/A
Job Title	Plastics Compression Moulding Engineer*
Level	Level 5

Job Definition :

A Plastics Compression Moulding Engineer is designated to evaluate production performance, analyse production performance data and information, carry out quality improvement, monitor inventory stock level, coordinate training activities, prepare production planning and staff's performance appraisal.

Job Description :

1. evaluate production performance.
2. analyse production performance data and information.
3. carry out quality improvement.
4. monitor Standard Operation Procedures (SOP) implementation.
5. coordinate quality audit.
6. monitor inventory stock level.
7. coordinate training activities.
8. prepare production planning.
9. propose product/process improvement and innovation.
10. prepare staff's performance appraisal.
11. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Thermo Forming
Sub Area	N/A
Job Title	Plastics Thermo Forming Technician
Level	Level 2

Job Definition :

A Plastics Thermo Forming Technician is designated to prepare plastic machine line clearance/condition, check mould condition/clean mould, setup plastic mould/die/tool, plastics operation parameter, perform first buy off, mould unloading process, plastic machine shutdown, maintain machine condition and mould condition.

Job Description :

1. prepare plastic machine line clearance.
2. check mould condition.
3. set-up plastic thermo forming mould.
4. set-up plastic operation parameter.
5. operate plastic thermo forming machine.
6. perform buy off first product against master sample.
7. perform mould unloading process.
8. perform plastic machine shutdown.
9. maintain machine condition.
10. maintain mould condition.
11. complete thermo forming parameter checklist.
12. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Thermo Forming
Sub Area	N/A
Job Title	Plastics Thermo Forming Senior Technician
Level	Level 3

Job Definition :

A Plastics Thermo Forming Senior Technician is designated to verify production initial start-up, plastics thermo forming machine setup, maintenance and machine shutdown activities, coordinate measuring equipment calibration, mechanical & electrical equipment/stock and improve production process.

Job Description :

1. verify production initial start-up.
2. verify plastic thermo forming machine set-up.
3. verify plastic thermo forming machine maintenance.
4. verify plastic thermo forming machine shutdown activities.
5. coordinate measuring equipment calibration.
6. coordinate mechanical & electrical equipment inventory.
7. coordinate preventive maintenance.
8. coordinate production planning schedule.
9. troubleshoot production process.
10. verify thermo forming moulding production related check sheet.
11. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Thermo Forming
Sub Area	N/A
Job Title	Plastics Thermo Forming Assistant Engineer
Level	Level 4

Job Definition :

A Plastics Thermo Forming Assistant Engineer is designated to evaluate production equipment, carry out equipment commissioning, improve production efficiency, implement departmental SOP, coordinate preventive maintenance need analysis and schedule, assist in preparing training material, carry out feasibility study and prepare material requisition.

Job Description :

1. evaluate production equipment.
2. carry out equipment commissioning.
3. improve production efficiency.
4. implement departmental Standard Operation Procedures (SOP).
5. carry out preventive maintenance need analysis.
6. coordinate preventive maintenance schedule.
7. coordinate machine maintenance standard checklist.
8. assist in preparing technical training schedule.
9. assist in preparing training material.
10. carry out feasibility study.
11. prepare material requisition.
12. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Thermo Forming
Sub Area	N/A
Job Title	Plastics Thermo Forming Engineer
Level	Level 5

Job Definition :

A Plastics Thermo Forming Engineer is designated to evaluate production performance, analyse production performance data and information, carry out quality improvement, monitor inventory stock level, coordinate training activities, prepare production planning and staff's performance appraisal.

Job Description :

1. evaluate production performance.
2. analyse production performance data and information.
3. carry out quality improvement.
4. monitor Standard Operation Procedures (SOP) implementation.
5. coordinate quality audit.
6. monitor inventory stock level.
7. coordinate training activities.
8. prepare production planning.
9. propose product/process improvement and innovation.
10. prepare staff's performance appraisal.
11. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Foam Moulding
Sub Area	N/A
Job Title	Plastics Foam Moulding Technician
Level	Level 2

Job Definition :

A Plastics Foam Moulding Technician is designated to prepare plastic machine line clearance/condition, check mould condition/clean mould, setup plastic mould/die/tool, plastics operation parameter, perform first buy off, mould unloading process, plastic machine shutdown, maintain machine condition and mould condition.

Job Description :

12. prepare plastic machine line clearance.
13. check mould condition.
14. set-up plastic foam mould.
15. set-up plastic operation parameter.
16. operate plastic foam machine.
17. perform buy off first product against master sample.
18. perform mould unloading process.
19. perform plastic machine shutdown.
20. maintain machine condition.
21. maintain mould condition.
22. complete foam parameter checklist.
23. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Foam Moulding
Sub Area	N/A
Job Title	Plastics Foam Moulding Senior Technician
Level	Level 3

Job Definition :

A Plastics Foam Moulding Senior Technician is designated to verify production initial start-up, plastics foam machine setup, maintenance and machine shutdown activities, coordinate measuring equipment calibration, mechanical & electrical equipment/stock and improve production process.

Job Description :

1. verify production initial start-up.
2. verify plastic foam machine set-up.
3. verify plastic foam machine maintenance.
4. verify plastic foam machine shutdown activities.
5. coordinate measuring equipment calibration.
6. coordinate mechanical & electrical equipment inventory.
7. coordinate preventive maintenance.
8. coordinate production planning schedule.
9. troubleshoot production process.
10. verify foam moulding production related check sheet.
11. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Foam Moulding
Sub Area	N/A
Job Title	Plastics Foam Moulding Assistant Engineer
Level	Level 4

Job Definition :

A Plastics Foam Moulding Assistant Engineer is designated to evaluate production equipment, carry out equipment commissioning, improve production efficiency, implement departmental SOP, coordinate preventive maintenance need analysis and schedule, assist in preparing training material, carry out feasibility study and prepare material requisition.

Job Description :

1. evaluate production equipment.
2. carry out equipment commissioning.
3. improve production efficiency.
4. implement departmental Standard Operation Procedures (SOP).
5. carry out preventive maintenance need analysis.
6. coordinate preventive maintenance schedule.
7. coordinate machine maintenance standard checklist.
8. assist in preparing technical training schedule.
9. assist in preparing training material.
10. carry out feasibility study.
11. prepare material requisition.
12. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Foam Moulding
Sub Area	N/A
Job Title	Plastics Foam Moulding Engineer
Level	Level 5

Job Definition :

A Plastics Foam Moulding Engineer is designated to evaluate production performance, analyse production performance data and information, carry out quality improvement, monitor inventory stock level, coordinate training activities, prepare production planning and staff's performance appraisal.

Job Description :

1. evaluate production performance.
2. analyse production performance data and information.
3. carry out quality improvement.
4. monitor Standard Operation Procedures (SOP) implementation.
5. coordinate quality audit.
6. monitor inventory stock level.
7. coordinate training activities.
8. prepare production planning.
9. propose product/process improvement and innovation.
10. prepare staff's performance appraisal.
11. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Film Blowing
Sub Area	N/A
Job Title	Plastics Film Blowing Technician
Level	Level 2

Job Definition :

A Plastics Film Blowing Technician is designated to prepare plastic machine line clearance/condition, check mould condition/clean mould, setup plastic mould/die/tool, plastics operation parameter, perform first buy off, mould unloading process, plastic machine shutdown, maintain machine condition and mould condition.

Job Description :

1. prepare plastic machine line clearance.
2. check mould condition.
3. set-up plastic film blowing mould.
4. set-up plastic operation parameter.
5. operate plastic film blowing machine.
6. perform buy off first product against master sample.
7. perform mould unloading process.
8. perform plastic machine shutdown.
9. maintain machine condition.
10. maintain mould condition.
11. complete film blowing parameter checklist.
12. adhere to safety, health and environment rules and regulations.

Sector PLASTICS INDUSTRY

Sub-sector Process Engineering

Job Area Plastics Film Blowing

Sub Area N/A

Job Title Plastics Film Blowing Senior Technician

Level Level 3

Job Definition :

A Plastics Film Blowing Senior Technician is designated to verify production initial start-up, plastics film blowing machine setup, maintenance and machine shutdown activities, coordinate measuring equipment calibration, mechanical & electrical equipment/stock and improve production process.

Job Description :

1. verify production initial start-up.
2. verify plastic film blowing machine set-up.
3. verify plastic film blowing machine maintenance.
4. verify plastic film blowing machine shutdown activities.
5. coordinate measuring equipment calibration.
6. coordinate mechanical & electrical equipment inventory.
7. coordinate preventive maintenance.
8. coordinate production planning schedule.
9. troubleshoot production process.
10. verify film blowing moulding production related check sheet.
11. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Film Blowing
Sub Area	N/A
Job Title	Plastics Film Blowing Assistant Engineer
Level	Level 4

Job Definition :

A Plastics Film Blowing Assistant Engineer is designated to evaluate production equipment, carry out equipment commissioning, improve production efficiency, implement departmental SOP, coordinate preventive maintenance need analysis and schedule, assist in preparing training material, carry out feasibility study and prepare material requisition.

Job Description :

1. evaluate production equipment.
2. carry out equipment commissioning.
3. improve production efficiency.
4. implement departmental Standard Operation Procedures (SOP).
5. carry out preventive maintenance need analysis.
6. coordinate preventive maintenance schedule.
7. coordinate machine maintenance standard checklist.
8. assist in preparing technical training schedule.
9. assist in preparing training material.
10. carry out feasibility study.
11. prepare material requisition.
12. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Film Blowing
Sub Area	N/A
Job Title	Plastics Film Blowing Engineer
Level	Level 5

Job Definition :

A Plastics Film Blowing Engineer is designated to evaluate production performance, analyse production performance data and information, carry out quality improvement, monitor inventory stock level, coordinate training activities, prepare production planning and staff's performance appraisal.

Job Description :

1. evaluate production performance.
2. analyse production performance data and information.
3. carry out quality improvement.
4. monitor Standard Operation Procedures (SOP) implementation.
5. coordinate quality audit.
6. monitor inventory stock level.
7. coordinate training activities.
8. prepare production planning.
9. propose product/process improvement and innovation.
10. prepare staff's performance appraisal.
11. adhere to safety, health and environment rules and regulations.

Sector PLASTICS INDUSTRY

Sub-sector Process Engineering

Job Area Plastics Dipping

Sub Area N/A

Job Title Plastics Dipping Technician*

Level Level 2

Job Definition :

A Plastics Dipping Technician is designated to prepare plastic machine line clearance/condition, check mould condition/clean mould, setup plastic mould/die/tool, plastics operation parameter, perform first buy off, mould unloading process, plastic machine shutdown, maintain machine condition and mould condition.

Job Description :

1. prepare plastic machine line clearance.
2. check mould condition.
3. set-up plastic dipping mould.
4. set-up plastic operation parameter.
5. operate plastic dipping machine.
6. perform buy off first product against master sample.
7. perform mould unloading process.
8. perform plastic machine shutdown.
9. maintain machine condition.
10. maintain mould condition.
11. complete dipping parameter checklist.
12. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector PLASTICS INDUSTRY

Sub-sector Process Engineering

Job Area Plastics Dipping

Sub Area N/A

Job Title Plastics Dipping Senior Technician*

Level Level 3

Job Definition :

A Plastics Dipping Senior Technician is designated to verify production initial start-up, plastics dipping machine setup, maintenance and machine shutdown activities, coordinate measuring equipment calibration, mechanical & electrical equipment/stock and improve production process.

Job Description :

1. verify production initial start-up.
2. verify plastic dipping machine set-up.
3. verify plastic dipping machine maintenance.
4. verify plastic dipping machine shutdown activities.
5. coordinate measuring equipment calibration.
6. coordinate mechanical & electrical equipment inventory.
7. coordinate preventive maintenance.
8. coordinate production planning schedule.
9. troubleshoot production process.
10. verify dipping moulding production related check sheet.
11. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector PLASTICS INDUSTRY

Sub-sector Process Engineering

Job Area Plastics Dipping

Sub Area N/A

Job Title Plastics Dipping Assistant Engineer*

Level Level 4

Job Definition :

A Plastics Dipping Assistant Engineer is designated to evaluate production equipment, carry out equipment commissioning, improve production efficiency, implement departmental SOP, coordinate preventive maintenance need analysis and schedule, assist in preparing training material, carry out feasibility study and prepare material requisition.

Job Description :

1. evaluate production equipment.
2. carry out equipment commissioning.
3. improve production efficiency.
4. implement departmental Standard Operation Procedures (SOP).
5. carry out preventive maintenance need analysis.
6. coordinate preventive maintenance schedule.
7. coordinate machine maintenance standard checklist.
8. assist in preparing technical training schedule.
9. assist in preparing training material.
10. carry out feasibility study.
11. prepare material requisition.
12. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Plastics Dipping
Sub Area	N/A
Job Title	Plastics Dipping Engineer*
Level	Level 5

Job Definition :

A Plastics Dipping Engineer is designated to evaluate production performance, analyse production performance data and information, carry out quality improvement, monitor inventory stock level, coordinate training activities, prepare production planning and staff's performance appraisal.

Job Description :

1. evaluate production performance.
2. analyse production performance data and information.
3. carry out quality improvement.
4. monitor Standard Operation Procedures (SOP) implementation.
5. coordinate quality audit.
6. monitor inventory stock level.
7. coordinate training activities.
8. prepare production planning.
9. propose product/process improvement and innovation.
10. prepare staff's performance appraisal.
11. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Production Maintenance
Sub Area	N/A
Job Title	Production Maintenance Technician
Level	Level 2

Job Definition :

A Production Maintenance Technician is designated to prepare plastic machine line clearance/condition, check mould condition/clean mould, setup plastic mould/die/tool, plastics operation parameter, perform first buy off, mould unloading process, plastic machine shutdown, maintain machine condition and mould condition.

Job Description :

1. prepare plastic machine line clearance/condition.
2. check mould condition/clean mould.
3. set-up plastic mould/die/tool.
4. set-up plastic operation parameter.
5. start/run the plastic machine.
6. perform first buy off.
7. perform mould unloading process.
8. perform plastic machine shutdown.
9. maintain machine condition.
10. maintain mould condition.
11. prepare machine report.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Production Maintenance
Sub Area	N/A
Job Title	Production Maintenance Senior Technician
Level	Level 3

Job Definition :

A Production Maintenance Senior Technician is designated to verify production initial start-up, plastics injection machine setup, maintenance and machine shutdown activities, coordinate measuring equipment calibration, mechanical & electrical equipment/stock and improve production process.

Job Description :

1. verify production initial start-up.
2. verify plastic injection machine set-up.
3. verify plastic injection machine maintenance.
4. verify plastic injection machine shutdown activities.
5. coordinate measuring equipment calibration.
6. coordinate mechanical & electrical equipment/stock.
7. carry out preventive maintenance.
8. adhere to safety, health and environment rules and regulations.
9. improve production process.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Production Maintenance
Sub Area	N/A
Job Title	Production Maintenance Assistant Engineer
Level	Level 4

Job Definition :

A Production Maintenance Assistant Engineer is designated to evaluate production equipment, carry out equipment commissioning, improve production efficiency, prepare departmental SOP and work instructional manual.

Job Description :

1. evaluate production equipment.
2. carry out equipment commissioning.
3. improve production efficiency.
4. prepare departmental Standard Operation Procedures (SOP).
5. prepare work instruction manual.
6. carry out preventive maintenance need analysis.
7. prepare preventive maintenance schedule.
8. prepare machine maintenance standard checklist.
9. prepare technical training schedule.
10. prepare training material.
11. evaluate product and services quotations.
12. assess supplier performance.
13. coordinate preventive maintenance work.
14. troubleshoot machine breakdown.
15. record machine operating data.
16. carry out corrective maintenance.
17. monitor machine operation performance.

18. prepare machine maintenance schedule checklist.
19. prepare machine breakdown report.
20. adhere to safety, health and environment rules and regulations.
21. handle staff matters.

Sector	PLASTICS INDUSTRY
Sub-sector	Process Engineering
Job Area	Production Maintenance
Sub Area	N/A
Job Title	Production Maintenance Engineer
Level	Level 5

Job Definition :

A Production Maintenance Engineer is designated to evaluate machine performance, analyse performance data and information, approve work instruction manual, coordinate quality audit and diagnose machine breakdown.

Job Description :

1. evaluate machine performance.
2. analyse performance data and information.
3. approve work instruction manual.
4. coordinate quality audit.
5. diagnose machine breakdown.
6. monitor spare part inventory level.
7. monitor project performance.
8. review product/process innovation.
9. prepare staff's performance appraisal.
10. organising routine service schedule.
11. prepare departmental manpower requirement.
12. coordinate equipment functionality.
13. carry out maintenance work quickly inspection.
14. diagnose machine breakdown.
15. evaluate machine performance.
16. appraise staff performance.
17. adhere to safety, health and environment rules and regulations.

18. Prepare maintenance department budget.

Sector	Plastics Industry
Sub-sector	Process Engineering
Job Area	Plastics Injection Moulding, Plastics Blow Moulding, Plastics Rotational Moulding, Plastics Extrcusion, Plastics Compression Moulding, Plastics Thermo Forming, Plastics Foam Moulding, Plastics Film Blowing, Plastics Dipping & Production Maintenance
Sub Area	N/A
Job Title	Plastics Technical Manager
Level	6

Job Definition :

A Plastics Technical Manager is designated to verify the approved procedures are adopted and the necessary procedure updated as required, ensure the staff adequately qualified and experienced in their discipline and perform their position in a satisfactory manner, ensure staff are familiar with company procedures and have ready access to them and stopping the finished goods delivery if quality problems are detected.

Job Description :

1. carry out quality matters;
2. verify the approved procedures are adopted and the necessary procedure updated as required;
3. ensure the staff adequately qualified and experienced in their discipline and perform their position in a satisfactory manner;
4. ensure staff are familiar with company procedures and have ready access to them;
5. follow up and ensuring effectiveness of countermeasure taken; and
6. stopping the finished goods delivery if quality problems are detected.

SECTOR : PLASTICS INDUSTRY
SUB-SECTOR : PRODUCTION OPERATION

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Primary Process
Sub Area	Plastic Compounding
Job Title	Compounder
Level	Level 2

Job Definition :

A Compounder is designated to measure/weigh raw materials, operate mixing machinery, check mixing consistency, carry out compound sampling and adhere to safety, health and environment rules and regulations.

Job Description :

1. measure/weigh raw materials.
2. operate mixing machinery.
3. check mixing consistency.
4. carry out compound sampling.
5. record mixing activities.
6. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Primary Process
Sub Area	Plastic Compounding
Job Title	Compound Supervisor
Level	Level 3

Job Definition :

A Compounder is designated to supervise compounding machinery and compound sampling activities, assess raw materials measurement, verify compound mixing consistency and adhere to safety, health and environment rules and regulations.

Job Description :

1. supervise compounding machinery.
2. assess raw materials measurement.
3. verify compound mixing consistency.
4. supervise compound sampling activities.
5. verify compounding activities record.
6. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Primary Process
Sub Area	Plastic Compounding
Job Title	Compound Assistant Engineer
Level	Level 4

Job Definition :

A Compound Assistant Engineer is designated to implement departmental Standard Operation Procedures (SOP), monitor mixing processes, participates in resin formulation reviews and assists in identifying and solving issues or problems with equipment.

Job Description :

1. implement departmental SOP.
2. monitor mixing processes.
3. participates in resin formulation reviews.
4. assist in identifying and solving issues or problems with equipment.
5. troubleshoots system failure.
6. coordinates maintenance activities.
7. assist in preparing technical training schedules.
8. assist in preparing training materials.
9. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Primary Process
Sub Area	Plastic Compounding
Job Title	Compound Engineer
Level	Level 5

Job Definition :

A Compound Engineer is designated to monitor Standard Operation Procedures (SOP) implementation, evaluate mixing process and in resin formulation reviews, provide solution on mixing process and carry out quality improvement.

Job Description :

1. monitor SOP implementation.
2. evaluate mixing process.
3. evaluate in resin formulation reviews.
4. provide solution on mixing process.
5. carry out quality improvement.
6. coordinate quality audit.
7. monitor inventory stock levels.
8. coordinate training activities.
9. prepare production planning.
10. propose mixing process improvement.
11. adhere to safety, health and environment rules and regulations.

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Primary Process

Sub Area Plastic Compounding

Job Title Compound Technical Manager

Level Level 6

Job Definition :

A Compound Technical Manager is designated to manage compounds research and development, analyse production performance, oversee operation of the materials lab and ensure appropriate raw material specifications.

Job Description :

1. manage compounds research and development.
2. analyse production performance.
3. oversee operation of the materials lab.
4. ensure appropriate raw material specifications.
5. ensure appropriate compound material specifications.
6. consult external parties related to technical and material matters.
7. monitor market trend requirements.
8. ensure that materials meet appropriate requirements.
9. oversee material related corrective action requests.
10. liaison with other departments on material related projects.
11. provide all required annual reports.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Primary Process
Sub Area	Plastics Injection Moulding
Job Title	Plastics Injection Moulding Operator
Level	Level 1

Job Definition :

A Plastics Injection Moulding Operator is designated to prepare hand tools, carry out cleanliness, maintain housekeeping, separate product from gating system/trimming, carry-out secondary process, carry out product waste crushing, prepare material loading and perform packaging activity.

Job Description :

1. prepare hand tools ready.
2. carry out plastics injection moulding machine cleanliness.
3. maintain housekeeping.
4. shut-off water supply/utility.
5. separate product from gating system/trimming.
6. carry-out secondary process.
7. carry out product waste crushing.
8. prepare for material loading.
9. perform packaging activity.
10. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Primary Process
Sub Area	Plastics Injection Moulding
Job Title	Plastics Injection Moulding Line Leader
Level	Level 2

Job Definition :

A Plastics Injection Moulding Line Leader is designated to prepare and loading materials, carry out flow activity, perform production process, perform periodic injection mould machine parameter and inspect work in-progress (WIP) product.

Job Description :

1. prepare and loading material.
2. perform production flow activity.
3. perform production process.
4. perform periodic injection mould machine parameter.
5. inspect Work In Progress (WIP) product quality.
6. prepare production report.
7. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Primary Process
Sub Area	Plastics Injection Moulding
Job Title	Plastics Injection Moulding Supervisor
Level	Level 3

Job Definition :

A Plastics Injection Moulding Supervisor is designated to prepare report, customer data, production statistical, material requirements, verify inspection and testing activities, improve production process, conduct in house training, conduct departmental meeting, verify plastics injection mould activities and perform maintenance.

Job Description :

1. prepare production report/maintenance report.
2. produce customer submission data.
3. close stock inventory/stock for mechanical & electrical.
4. prepare production Statistical Process Control (SPC) chart.
5. prepare production Material Requirement Planning (MRP) report.
6. carry out manpower allocation.
7. verify inspection and testing activities
8. monitor product costing/maintenance costing.
9. control product rejection.
10. organise subordinate performance (attendance, etc).
11. conduct in-house training.
12. conduct motivational activities.
13. handle workplace grievances.
14. prepare staff annual appraisal.
15. synchronize intersectional activities.
16. prepare material issuance.

17. prepare machine allocation.

18. verify plastics production activities.

19. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Primary Process
Sub Area	Plastics Injection Moulding
Job Title	Plastics Injection Moulding Executive
Level	Level 4

Job Definition :

A Plastics Injection Moulding Executive is designated to design production system, monitor production operation, carry out data collection, manage production waste, plan operational budget, plan manpower requirements and handle staff matters.

Job Description :

1. design production workflow system.
2. prepare work schedule.
3. purchase production materials and tools.
4. monitor production operation.
5. improve production efficiency.
6. carry out data collection.
7. prepare departmental Standard Operation Procedures (SOP).
8. prepare work instruction manual.
9. manage production waste.
10. prepare technical training schedule.
11. prepare training material.
12. organize feasibility study.
13. plan operational budget.
14. execute operational budget.
15. monitor operational budget performance.
16. conduct sectional budget adjustment.
17. prepare purchase requirement.

18. assess supplier performance.
19. generate purchase order.
20. prepare strategic forecasting.
21. plan manpower requirements.
22. plan manpower developments.
23. monitor manpower utilization.
24. handle staff matters.
25. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Primary Process
Sub Area	Plastics Injection Moulding
Job Title	Plastics Injection Moulding Manager
Level	Level 5

Job Definition :

A Plastics Injection Moulding Manager is designated to evaluate production performance, approve work instruction manual, coordinate quality audit, prepare project resource plan, manage manpower utilisation and manage staff matters.

Job Description :

1. acquire local authority approval.
2. evaluate production performance.
3. analyse performance data and information.
4. carry out quality improvement.
5. approve departmental Standard Operation Procedures (SOP).
6. approve work instruction manual.
7. attend customer feedback.
8. coordinate quality audit.
9. coordinate manufacturing training.
10. prepare milestone chart.
11. prepare project resources plan.
12. monitor project performance.
13. present project report.
14. review product/process innovation.
15. review company budget.
16. prepare staff's performance appraisal.
17. approve company manpower plan.

18. manage manpower utilization.

19. resolve staff matters.

20. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Primary Process
Sub Area	Plastics Blow Moulding
Job Title	Plastics Blow Moulding Operator
Level	Level 1

Job Definition :

A Plastics Blow Moulding Operator is designated to prepare hand tools, carry out cleanliness, maintain housekeeping, separate product from gating system/trimming, carry-out secondary process, carry out product waste crushing, prepare material loading and perform packaging activity.

Job Description :

1. prepare hand tools ready.
2. carry out plastics injection moulding machine cleanliness.
3. maintain housekeeping.
4. shut-off water supply/utility.
5. separate product from gating system/trimming.
6. carry-out secondary process.
7. carry out product waste crushing.
8. prepare for material loading.
9. perform packaging activity.
10. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Primary Process
Sub Area	Plastics Blow Moulding
Job Title	Plastics Blow Moulding Line Leader
Level	Level 2

Job Definition :

A Plastics Blow Moulding Line Leader is designated to prepare and loading materials, carry out flow activity, perform production process, perform periodic injection mould machine parameter and inspect Work In Progress (WIP) product.

Job Description :

1. prepare and loading material.
2. perform production flow activity.
3. perform production process.
4. perform periodic injection mould machine parameter.
5. inspect work in-progress (WIP) product quality.
6. prepare production report.
7. adhere to safety, health and environment rules and regulations.

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Primary Process

Sub Area Plastics Blow Moulding

Job Title Plastics Blow Moulding Supervisor

Level Level 3

Job Definition :

A Plastics Blow Moulding Supervisor is designated to prepare report, customer data, production statistical, material requirements, verify inspection and testing activities, improve production process, conduct in house training, conduct departmental meeting, verify plastics injection mould activities and perform maintenance.

Job Description :

1. prepare production report/maintenance report.
2. produce customer submission data.
3. close stock inventory/stock for mechanical & electrical.
4. prepare production Statistical Process Control (SPC) chart.
5. prepare production Material Requirement Planning (MRP) report.
6. carry out manpower allocation.
7. verify inspection and testing activities monitor product costing/maintenance costing.
8. improve production process.
9. control product rejection.
10. improve process cost.
11. organise subordinate performance (attendance, etc).
12. conduct in-house training.
13. conduct motivational activities.
14. handle workplace grievances.
15. prepare staff annual appraisal.
16. synchronize intersectional activities.

17. conduct departmental meeting.
18. prepare material issuance.
19. prepare machine allocation.
20. verify plastics production activities.
21. perform maintenance activities.
22. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Primary Process
Sub Area	Plastics Blow Moulding
Job Title	Plastics Blow Moulding Executive
Level	Level 4

Job Definition :

A Plastics Blow Moulding Executive is designated to design production system, monitor production operation, carry out data collection, manage production waste, plan operational budget, plan manpower requirements and handle staff matters.

Job Description :

1. design production workflow system.
2. prepare work schedule.
3. purchase production materials and tools.
4. monitor production operation.
5. improve production efficiency.
6. carry out data collection.
7. prepare departmental Standard Operation Procedures (SOPs).
8. prepare work instruction manual.
9. manage production waste.
10. prepare technical training schedule.
11. prepare training material.
12. organize feasibility study.
13. plan operational budget.
14. execute operational budget.
15. monitor operational budget performance.
16. conduct sectional budget adjustment.
17. prepare purchase requirement.

18. assess supplier performance.
19. generate purchase order.
20. prepare strategic forecasting.
21. plan manpower requirements.
22. plan manpower developments.
23. monitor manpower utilization.
24. handle staff matters.
25. adhere to safety, health and environment rules and regulations.

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Primary Process

Sub Area Plastics Blow Moulding

Job Title Plastics Blow Moulding Manager

Level Level 5

Job Definition :

A Plastics Blow Moulding Manager is designated to evaluate production performance, approve work instruction manual, coordinate quality audit, prepare project resource plan, manage manpower utilisation and manage staff matters.

Job Description :

1. acquire local authority approval.
2. evaluate production performance.
3. analyse performance data and information.
4. carry out quality improvement.
5. approve departmental Standard Operation Procedures (SOP).
6. approve work instruction manual.
7. attend customer feedback.
8. coordinate quality audit.
9. coordinate manufacturing training.
10. prepare milestone chart.
11. prepare project resources plan.
12. monitor project performance.
13. present project report.
14. review product/process innovation.
15. review company budget.
16. prepare staff's performance appraisal.
17. approve company manpower plan.

18. manage manpower utilization.

19. resolve staff matters.

20. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Rotational Moulding
Sub Area	Primary Process
Job Title	Plastics Rotational Moulding Operator
Level	Level 1

Job Definition :

A Plastics Rotational Moulding Operator is designated to prepare hand tools, carry out cleanliness, maintain housekeeping, separate product from gating system/trimming, carry-out secondary process, carry out product waste crushing, prepare material loading and perform packaging activity.

Job Description :

1. prepare hand tools ready.
2. carry out plastics injection moulding machine cleanliness.
3. maintain housekeeping.
4. shut-off water supply/utility.
5. separate product from gating system/trimming.
6. carry-out secondary process.
7. carry out product waste crushing.
8. prepare for material loading.
9. perform packaging activity.
10. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Rotational Moulding
Sub Area	Primary Process
Job Title	Plastics Rotational Moulding Line Leader
Level	Level 2

Job Definition :

A Plastics Rotational Moulding Line Leader is designated to prepare and loading materials, carry out flow activity, perform production process, perform periodic injection mould machine parameter and inspect work in-progress (WIP) product.

Job Description :

1. prepare and loading material.
2. perform production flow activity.
3. perform production process.
4. perform periodic injection mould machine parameter.
5. inspect work in-progress (WIP) product quality.
6. prepare production report.
7. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Rotational Moulding
Sub Area	-
Job Title	Plastics Rotational Moulding Supervisor*
Level	Level 3

Job Definition :

A Plastics Rotational Moulding Supervisor is designated to prepare report, customer data, production statistical, material requirements, verify inspection and testing activities, improve production process, conduct in house training, conduct departmental meeting, verify plastics injection mould activities and perform maintenance.

Job Description :

1. prepare production report/maintenance report.
2. produce customer submission data.
3. close stock inventory/stock for mechanical & electrical.
4. prepare production Statistical Process Control (SPC) chart.
5. prepare production Material Requirement Planning (MRP) report.
6. carry out manpower allocation.
7. verify inspection and testing activities monitor product costing/maintenance costing.
8. improve production process.
9. control product rejection.
10. improve process cost.
11. organise subordinate performance (attendance, etc).
12. conduct in-house training.
13. conduct motivational activities.
14. handle workplace grievances.
15. prepare staff annual appraisal.
16. synchronize intersectional activities.

17. conduct departmental meeting.

18. prepare material issuance.

19. prepare machine allocation.

20. verify plastics production activities.

21. perform maintenance activities. and

22. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Rotational Moulding
Sub Area	-
Job Title	Plastics Rotational Moulding Executive*
Level	Level 4

Job Definition :

A Plastics Rotational Moulding Executive is designated to design production system, monitor production operation, carry out data collection, manage production waste, plan operational budget, plan manpower requirements and handle staff matters.

Job Description :

1. design production workflow system.
2. prepare work schedule.
3. purchase production materials and tools.
4. monitor production operation.
5. improve production efficiency.
6. carry out data collection.
7. prepare departmental Standard Operation Procedures (SOPs).
8. prepare work instruction manual.
9. manage production waste.
10. prepare technical training schedule.
11. prepare training material.
12. organize feasibility study.
13. plan operational budget.
14. execute operational budget.
15. monitor operational budget performance.
16. conduct sectional budget adjustment.
17. prepare purchase requirement.

18. assess supplier performance.
19. generate purchase order.
20. prepare strategic forecasting.
21. plan manpower requirements.
22. plan manpower developments.
23. monitor manpower utilization.
24. handle staff matters.
25. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Rotational Moulding
Sub Area	-
Job Title	Plastics Rotational Moulding Manager*
Level	Level 5

Job Definition :

A Plastics Rotational Moulding Manager is designated to evaluate production performance, approve work instruction manual, coordinate quality audit, prepare project resource plan, manage manpower utilisation and manage staff matters.

Job Description :

1. acquire local authority approval.
2. evaluate production performance.
3. analyse performance data and information.
4. carry out quality improvement.
5. approve departmental Standard Operation Procedures (SOP).
6. approve work instruction manual.
7. attend customer feedback.
8. coordinate quality audit.
9. coordinate manufacturing training.
10. prepare milestone chart.
11. prepare project resources plan.
12. monitor project performance.
13. present project report.
14. review product/process innovation.
15. review company budget.
16. prepare staff's performance appraisal.
17. approve company manpower plan.

18. manage manpower utilization.

19. resolve staff matters.

20. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Extrusion
Sub Area	Primary Process
Job Title	Plastics Extrusion Operator
Level	Level 1

Job Definition :

A Plastics Extrusion Operator is designated to prepare hand tools, carry out cleanliness, maintain housekeeping, separate product from gating system/trimming, carry-out secondary process, carry out product waste crushing, prepare material loading and perform packaging activity.

Job Description :

1. prepare hand tools ready.
2. carry out plastics injection die machine cleanliness.
3. maintain housekeeping.
4. shut-off water supply/utility.
5. separate product from gating system/trimming.
6. carry-out secondary process.
7. carry out product waste crushing.
8. prepare for material loading.
9. perform packaging activity.
10. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Extrusion
Sub Area	Primary Process
Job Title	Plastics Extrusion Line Leader
Level	Level 2

Job Definition :

A Plastics Extrusion Line Leader is designated to prepare and loading materials, carry out flow activity, perform production process, perform periodic injection die machine parameter and inspect Work In Progress (WIP) product.

Job Description :

1. prepare and loading material.
2. perform production flow activity.
3. perform production process.
4. perform periodic injection die machine parameter.
5. inspect Work In Progress (WIP) product quality.
6. prepare production report.
7. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Extrusion
Sub Area	Primary Process
Job Title	Plastics Extrusion Supervisor
Level	Level 3

Job Definition :

A Plastics Extrusion Supervisor is designated to prepare report, customer data, production statistical, material requirements, verify inspection and testing activities, improve production process, conduct in house training, conduct departmental meeting, verify plastics injection die activities and perform maintenance.

Job Description :

1. prepare production report/maintenance report.
2. produce customer submission data.
3. close stock inventory/stock for mechanical & electrical.
4. prepare production Statistical Process Control (SPC) chart.
5. prepare production Material Requirement Planning (MRP) report.
6. carry out manpower allocation.
7. verify inspection and testing activities monitor product costing/maintenance costing.
8. improve production process.
9. control product rejection.
10. improve process cost.
11. organise subordinate performance (attendance, etc).
12. conduct in-house training.
13. conduct motivational activities.
14. handle workplace grievances.
15. prepare staff annual appraisal.
16. synchronize intersectional activities.

17. conduct departmental meeting.
18. prepare material issuance.
19. prepare machine allocation.
20. verify plastics production activities.
21. perform maintenance activities.
22. adhere to safety, health and environment rules and regulations.

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Plastics Extrusion

Sub Area Primary Process

Job Title Plastics Extrusion Executive

Level Level 4

Job Definition :

A Plastics Extrusion Executive is designated to design production system, monitor production operation, carry out data collection, manage production waste, plan operational budget, plan manpower requirements and handle staff matters.

Job Description :

1. design production workflow system.
2. prepare work schedule.
3. purchase production materials and tools.
4. monitor production operation.
5. improve production efficiency.
6. carry out data collection.
7. prepare departmental Standard Operation Procedures (SOPs).
8. prepare work instruction manual.
9. manage production waste.
10. prepare technical training schedule.
11. prepare training material.
12. organize feasibility study.
13. plan operational budget.
14. execute operational budget.
15. monitor operational budget performance.
16. conduct sectional budget adjustment.
17. prepare purchase requirement.

18. assess supplier performance.
19. generate purchase order.
20. prepare strategic forecasting.
21. plan manpower requirements.
22. plan manpower developments.
23. monitor manpower utilization.
24. handle staff matters.
25. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Extrusion
Sub Area	Primary Process
Job Title	Plastics Extrusion Manager
Level	Level 5

Job Definition :

A Plastics Extrusion Manager is designated to evaluate production performance, approve work instruction manual, coordinate quality audit, prepare project resource plan, manage manpower utilisation and manage staff matters.

Job Description :

1. acquire local authority approval.
2. evaluate production performance.
3. analyse performance data and information.
4. carry out quality improvement.
5. approve departmental Standard Operation Procedures (SOP).
6. approve work instruction manual.
7. attend customer feedback.
8. coordinate quality audit.
9. coordinate manufacturing training.
10. prepare milestone chart.
11. prepare project resources plan.
12. monitor project performance.
13. present project report.
14. review product/process innovation.
15. review company budget.
16. prepare staff's performance appraisal.
17. approve company manpower plan.

18. manage manpower utilization.

19. resolve staff matters.

20. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Compression Moulding
Sub Area	Primary Process
Job Title	Plastics Compression Moulding Operator
Level	Level 1

Job Definition :

A Plastics Compression Moulding Operator is designated to prepare hand tools, carry out cleanliness, maintain housekeeping, separate product from gating system/trimming, carry-out secondary process, carry out product waste crushing, prepare material loading and perform packaging activity.

Job Description :

1. prepare hand tools ready.
2. carry out plastics injection moulding machine cleanliness.
3. maintain housekeeping.
4. shut-off water supply/utility.
5. separate product from gating system/trimming.
6. carry-out secondary process.
7. carry out product waste crushing.
8. prepare for material loading.
9. perform packaging activity.
10. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Compression Moulding
Sub Area	Primary Process
Job Title	Plastics Compression Moulding Line Leader
Level	Level 2

Job Definition :

A Plastics Compression Moulding Line Leader is designated to prepare and loading materials, carry out flow activity, perform production process, perform periodic injection mould machine parameter and inspect Work In Progress (WIP) product.

Job Description :

1. prepare and loading material.
2. perform production flow activity.
3. perform production process.
4. perform periodic injection mould machine parameter.
5. inspect work In Progress (WIP) product quality.
6. prepare production report.
7. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Compression Moulding
Sub Area	-
Job Title	Plastics Compression Moulding Supervisor*
Level	Level 3

Job Definition :

A Plastics Compression Moulding Supervisor is designated to prepare report, customer data, production statistical, material requirements, verify inspection and testing activities, improve production process, conduct in house training, conduct departmental meeting, verify plastics injection mould activities and perform maintenance.

Job Description :

1. prepare production report/maintenance report.
2. produce customer submission data.
3. close stock inventory/stock for mechanical & electrical.
4. prepare production Statistical Process Control (SPC) chart.
5. prepare production Material Requirement Planning (MRP) report.
6. carry out manpower allocation.
7. verify inspection and testing activities monitor product costing/maintenance costing.
8. improve production process.
9. control product rejection.
10. improve process cost.
11. organise subordinate performance (attendance, etc).
12. conduct in-house training.
13. conduct motivational activities.
14. handle workplace grievances.
15. prepare staff annual appraisal.
16. synchronize intersectional activities.

17. conduct departmental meeting.

18. prepare material issuance.

19. prepare machine allocation.

20. verify plastics production activities.

21. perform maintenance activities.

22. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Compression Moulding
Sub Area	Primary Process
Job Title	Plastics Compression Moulding Executive*
Level	Level 4

Job Definition :

A Plastics Compression Moulding Executive is designated to design production system, monitor production operation, carry out data collection, manage production waste, plan operational budget, plan manpower requirements and handle staff matters.

Job Description :

1. Design production workflow system.
2. Prepare work schedule.
3. Purchase production materials and tools.
4. Monitor production operation.
5. Improve production efficiency.
6. Carry out data collection.
7. Prepare departmental Standard Operation Procedures (SOPs).
8. prepare work instruction manual.
9. manage production waste.
10. prepare technical training schedule.
11. prepare training material.
12. organize feasibility study.
13. plan operational budget.
14. execute operational budget.
15. monitor operational budget performance.
16. conduct sectional budget adjustment.
17. prepare purchase requirement.

18. assess supplier performance.
19. generate purchase order.
20. prepare strategic forecasting.
21. plan manpower requirements.
22. plan manpower developments.
23. monitor manpower utilization.
24. handle staff matters.
25. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Compression Moulding
Sub Area	Primary Process
Job Title	Plastics Compression Moulding Manager*
Level	Level 5

Job Definition :

A Plastics Compression Moulding Manager is designated to evaluate production performance, approve work instruction manual, coordinate quality audit, prepare project resource plan, manage manpower utilisation and manage staff matters.

Job Description :

1. acquire local authority approval.
2. evaluate production performance.
3. analyse performance data and information.
4. carry out quality improvement.
5. approve departmental Standard Operation Procedures (SOP).
6. approve work instruction manual.
7. attend customer feedback.
8. coordinate quality audit.
9. coordinate manufacturing training.
10. prepare milestone chart.
11. prepare project resources plan.
12. monitor project performance.
13. present project report.
14. review product/process innovation.
15. review company budget.
16. prepare staff's performance appraisal.
17. approve company manpower plan.

18. manage manpower utilization.

19. resolve staff matters.

20. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Thermo Forming
Sub Area	Primary Process
Job Title	Plastics Thermo Forming Operator
Level	Level 1

Job Definition :

A Plastics Thermo Forming Operator is designated to prepare hand tools, carry out cleanliness, maintain housekeeping, separate product from gating system/trimming, carry-out secondary process, carry out product waste crushing, prepare material loading and perform packaging activity.

Job Description :

1. prepare hand tools ready.
2. carry out plastics injection moulding machine cleanliness.
3. maintain housekeeping.
4. shut-off water supply/utility.
5. separate product from gating system/trimming.
6. carry-out secondary process.
7. carry out product waste crushing.
8. prepare for material loading.
9. perform packaging activity.
10. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Thermo Forming
Sub Area	Primary Process
Job Title	Plastics Thermo Forming Line Leader
Level	Level 2

Job Definition :

A Plastics Thermo Forming Line Leader is designated to prepare and loading materials, carry out flow activity, perform production process, perform periodic injection mould machine parameter and inspect Work In Progress (WIP) product.

Job Description :

1. prepare and loading material.
2. perform production flow activity.
3. perform production process.
4. perform periodic injection mould machine parameter.
5. inspect Work In Progress (WIP) product quality.
6. prepare production report.
7. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Thermo Forming
Sub Area	Primary Process
Job Title	Plastics Thermo Forming Senior Supervisor
Level	Level 3

Job Definition :

A Plastics Thermo Forming Supervisor is designated to prepare report, customer data, production statistical, material requirements, verify inspection and testing activities, improve production process, conduct in house training, conduct departmental meeting, verify plastics injection mould activities and perform maintenance.

Job Description :

1. prepare production report/maintenance report.
2. produce customer submission data.
3. close stock inventory/stock for mechanical & electrical.
4. prepare production Statistical Process Control (SPC) chart.
5. prepare production material requirement planning (mrp) report.
6. carry out manpower allocation.
7. verify inspection and testing activities monitor product costing/maintenance costing.
8. improve production process.
9. control product rejection.
10. improve process cost.
11. organise subordinate performance (attendance, etc).
12. conduct in-house training.
13. conduct motivational activities.
14. handle workplace grievances.
15. prepare staff annual appraisal.
16. synchronize intersectional activities.

17. conduct departmental meeting.
18. prepare material issuance.
19. prepare machine allocation.
20. verify plastics production activities.
21. perform maintenance activities.
22. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Thermo Forming
Sub Area	Primary Process
Job Title	Plastics Thermo Forming Executive
Level	Level 4

Job Definition :

A Plastics Thermo Forming Executive is designated to design production system, monitor production operation, carry out data collection, manage production waste, plan operational budget, plan manpower requirements and handle staff matters.

Job Description :

1. design production workflow system.
2. prepare work schedule.
3. purchase production materials and tools.
4. monitor production operation.
5. improve production efficiency.
6. carry out data collection.
7. prepare departmental Standard Operation Procedures (SOPs).
8. prepare work instruction manual.
9. manage production waste.
10. prepare technical training schedule.
11. prepare training material.
12. organize feasibility study.
13. plan operational budget.
14. execute operational budget.
15. monitor operational budget performance.
16. conduct sectional budget adjustment.
17. prepare purchase requirement.

18. assess supplier performance.
19. generate purchase order.
20. prepare strategic forecasting.
21. plan manpower requirements.
22. plan manpower developments.
23. monitor manpower utilization.
24. handle staff matters.
25. adhere to safety, health and environment rules and regulations.

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Plastics Thermo Forming

Sub Area Primary Process

Job Title Plastics Thermo Forming Manager

Level Level 5

Job Definition :

A Plastics Thermo Forming Manager is designated to evaluate production performance, approve work instruction manual, coordinate quality audit, prepare project resource plan, manage manpower utilisation and manage staff matters.

Job Description :

1. acquire local authority approval.
2. evaluate production performance.
3. analyse performance data and information.
4. carry out quality improvement.
5. approve departmental Standard Operation Procedures (SOP).
6. approve work instruction manual.
7. attend customer feedback.
8. coordinate quality audit.
9. coordinate manufacturing training.
10. prepare milestone chart.
11. prepare project resources plan.
12. monitor project performance.
13. present project report.
14. review product/process innovation.
15. review company budget.
16. prepare staff's performance appraisal.
17. approve company manpower plan.

18. manage manpower utilization.

19. resolve staff matters.

20. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Foam Moulding
Sub Area	Primary Process
Job Title	Plastics Foam Moulding Operator
Level	Level 1

Job Definition :

A Plastics Foam Moulding Operator is designated to prepare hand tools, carry out cleanliness, maintain housekeeping, separate product from gating system/trimming, carry-out secondary process, carry out product waste crushing, prepare material loading and perform packaging activity.

Job Description :

1. prepare hand tools ready.
2. carry out plastics injection moulding machine cleanliness.
3. maintain housekeeping.
4. shut-off water supply/utility.
5. separate product from gating system/trimming.
6. carry-out secondary process.
7. carry out product waste crushing.
8. prepare for material loading.
9. perform packaging activity.
10. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Foam Moulding
Sub Area	Primary Process
Job Title	Plastics Foam Moulding Line Leader
Level	Level 2

Job Definition :

A Plastics Foam Moulding Line Leader is designated to prepare and loading materials, carry out flow activity, perform production process, perform periodic injection mould machine parameter and inspect Work In Progress (WIP) product.

Job Description :

1. prepare and loading material.
2. perform production flow activity.
3. perform production process.
4. perform periodic injection mould machine parameter.
5. inspect Work In Progress (WIP) product quality.
6. prepare production report.
7. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Foam Moulding
Sub Area	Primary Process
Job Title	Plastics Foam Moulding Supervisor
Level	Level 3

Job Definition :

A Plastics Foam Moulding Senior Line Leader is designated to prepare report, customer data, production statistical, material requirements, verify inspection and testing activities, improve production process, conduct in house training, conduct departmental meeting, verify plastics injection mould activities and perform maintenance.

Job Description :

1. prepare production report/maintenance report.
2. produce customer submission data.
3. close stock inventory/stock for mechanical & electrical.
4. prepare production Statistical Process Control (SPC) chart.
5. prepare production material requirement planning (mrp) report.
6. carry out manpower allocation.
7. verify inspection and testing activities monitor product costing/maintenance costing.
8. improve production process.
9. control product rejection.
10. improve process cost.
11. organise subordinate performance (attendance, etc).
12. conduct in-house training.
13. conduct motivational activities.
14. handle workplace grievances.
15. prepare staff annual appraisal.
16. synchronize intersectional activities.

17. conduct departmental meeting.
18. prepare material issuance.
19. prepare machine allocation.
20. verify plastics production activities.
21. perform maintenance activities.
22. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Foam Moulding
Sub Area	Primary Process
Job Title	Plastics Foam Moulding Executive
Level	Level 4

Job Definition :

A Plastics Foam Moulding Executive is designated to design production system, monitor production operation, carry out data collection, manage production waste, plan operational budget, plan manpower requirements and handle staff matters.

Job Description :

1. design production workflow system.
2. prepare work schedule.
3. purchase production materials and tools.
4. monitor production operation.
5. improve production efficiency.
6. carry out data collection.
7. prepare departmental Standard Operation Procedures (SOPs).
8. prepare work instruction manual.
9. manage production waste.
10. prepare technical training schedule.
11. prepare training material.
12. organize feasibility study.
13. plan operational budget.
14. execute operational budget.
15. monitor operational budget performance.
16. conduct sectional budget adjustment.
17. prepare purchase requirement.

18. assess supplier performance.
19. generate purchase order.
20. prepare strategic forecasting.
21. plan manpower requirements.
22. plan manpower developments.
23. monitor manpower utilization.
24. handle staff matters.
25. adhere to safety, health and environment rules and regulations.

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Plastics Foam Moulding

Sub Area Primary Process

Job Title Plastics Foam Moulding Manager

Level Level 5

Job Definition :

A Plastics Foam Moulding Manager is designated to evaluate production performance, approve work instruction manual, coordinate quality audit, prepare project resource plan, manage manpower utilisation and manage staff matters.

Job Description :

1. acquire local authority approval.
2. evaluate production performance.
3. analyse performance data and information.
4. carry out quality improvement.
5. approve departmental Standard Operation Procedures (SOP).
6. approve work instruction manual.
7. attend customer feedback.
8. coordinate quality audit.
9. coordinate manufacturing training.
10. prepare milestone chart.
11. prepare project resources plan.
12. monitor project performance.
13. present project report.
14. review product/process innovation.
15. review company budget.
16. prepare staff's performance appraisal.
17. approve company manpower plan.

18. manage manpower utilization.

19. resolve staff matters.

20. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Film Blowing
Sub Area	Primary Process
Job Title	Plastics Film Blowing Operator
Level	Level 1

Job Definition :

A Plastics Film Blowing Operator is designated to prepare hand tools, carry out cleanliness, maintain housekeeping, separate product from gating system/trimming, carry-out secondary process, carry out product waste crushing, prepare material loading and perform packaging activity.

Job Description :

1. prepare hand tools ready.
2. carry out plastics injection die machine cleanliness.
3. maintain housekeeping.
4. shut-off water supply/utility.
5. separate product from gating system/trimming.
6. carry-out secondary process.
7. carry out product waste crushing.
8. prepare for material loading.
9. perform packaging activity.
10. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Film Blowing
Sub Area	Primary Process
Job Title	Plastics Film Blowing Line Leader
Level	Level 2

Job Definition :

A Plastics Film Blowing Line Leader is designated to prepare and loading materials, carry out flow activity, perform production process, perform periodic injection die machine parameter and inspect Work In Progress (WIP) product.

Job Description :

1. prepare and loading material.
2. perform production flow activity.
3. perform production process.
4. perform periodic injection die machine parameter.
5. inspect Work In Progress (WIP) product quality.
6. prepare production report.
7. adhere to safety, health and environment rules and regulations.

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Plastics Film Blowing

Sub Area Primary Process

Job Title Plastics Film Blowing Supervisor

Level Level 3

Job Definition :

A Plastics Film Blowing Supervisor is designated to prepare report, customer data, production statistical, material requirements, verify inspection and testing activities, improve production process, conduct in house training, conduct departmental meeting, verify plastics injection die activities and perform maintenance.

Job Description :

1. prepare production report/maintenance report.
2. produce customer submission data.
3. close stock inventory/stock for mechanical & electrical.
4. prepare production Statistical Process Control (SPC) chart.
5. prepare production Material Requirement Planning (MRP) report.
6. carry out manpower allocation.
7. verify inspection and testing activities monitor product costing/maintenance costing.
8. improve production process.
9. control product rejection.
10. improve process cost.
11. organise subordinate performance (attendance, etc).
12. conduct in-house training.
13. conduct motivational activities.
14. handle workplace grievances.
15. prepare staff annual appraisal.
16. synchronize intersectional activities.

17. conduct departmental meeting.
18. prepare material issuance.
19. prepare machine allocation.
20. verify plastics production activities.
21. perform maintenance activities.
22. adhere to safety, health and environment rules and regulations.

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Plastics Film Blowing

Sub Area Primary Process

Job Title Plastics Film Blowing Executive

Level Level 4

Job Definition :

A Plastics Film Blowing Executive is designated to design production system, monitor production operation, carry out data collection, manage production waste, plan operational budget, plan manpower requirements and handle staff matters.

Job Description :

1. design production workflow system.
2. prepare work schedule.
3. purchase production materials and tools.
4. monitor production operation.
5. improve production efficiency.
6. carry out data collection.
7. prepare departmental Standard Operation Procedures (SOP).
8. prepare work instruction manual.
9. manage production waste.
10. prepare technical training schedule.
11. prepare training material.
12. organize feasibility study.
13. plan operational budget.
14. execute operational budget.
15. monitor operational budget performance.
16. conduct sectional budget adjustment.
17. prepare purchase requirement.

18. assess supplier performance.
19. generate purchase order.
20. prepare strategic forecasting.
21. plan manpower requirements.
22. plan manpower developments.
23. monitor manpower utilization.
24. handle staff matters.
25. adhere to safety, health and environment rules and regulations.

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Plastics Film Blowing

Sub Area Primary Process

Job Title Plastics Film Blowing Manager

Level Level 5

Job Definition :

A Plastics Film Blowing Manager is designated to evaluate production performance, approve work instruction manual, coordinate quality audit, prepare project resource plan, manage manpower utilisation and manage staff matters.

Job Description :

1. acquire local authority approval.
2. evaluate production performance.
3. analyse performance data and information.
4. carry out quality improvement.
5. approve departmental Standard Operation Procedures (SOP).
6. approve work instruction manual.
7. attend customer feedback.
8. coordinate quality audit.
9. coordinate manufacturing training.
10. prepare milestone chart.
11. prepare project resources plan.
12. monitor project performance.
13. present project report.
14. review product/process innovation.
15. review company budget.
16. prepare staff's performance appraisal.
17. approve company manpower plan.

18. manage manpower utilization.

19. resolve staff matters.

20. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Dipping
Sub Area	Primary Process
Job Title	Plastics Dipping Operator
Level	Level 1

Job Definition :

A Plastics Dipping Operator is designated to prepare hand tools, carry out cleanliness, maintain housekeeping, separate product from gating system/trimming, carry-out secondary process, carry out product waste crushing, prepare material loading and perform packaging activity.

Job Description :

1. prepare hand tools ready.
2. carry out plastics injection former machine cleanliness.
3. maintain housekeeping.
4. shut-off water supply/utility.
5. separate product from gating system/trimming.
6. carry-out secondary process.
7. carry out product waste crushing.
8. prepare for material loading.
9. perform packaging activity.
10. adhere to safety, health and environment rules and regulations.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Plastics Dipping
Sub Area	Primary Process
Job Title	Plastics Dipping Line Leader
Level	Level 2

Job Definition :

A Plastics Dipping Line Leader is designated to prepare and loading materials, carry out flow activity, perform production process, perform periodic injection former machine parameter and inspect Work In Progress (WIP) product.

Job Description :

1. prepare and loading material.
2. perform production flow activity.
3. perform production process.
4. perform periodic injection former machine parameter.
5. inspect Work In Progress (WIP) product quality.
6. prepare production report.
7. adhere to safety, health and environment rules and regulations.

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Plastics Dipping

Sub Area Primary Process

Job Title Plastics Dipping Supervisor*

Level Level 3

Job Definition :

A Plastics Dipping Supervisor is designated to prepare report, customer data, production statistical, material requirements, verify inspection and testing activities, improve production process, conduct in house training, conduct departmental meeting, verify plastics injection former activities and perform maintenance.

Job Description :

1. prepare production report/maintenance report.
2. produce customer submission data.
3. close stock inventory/stock for mechanical & electrical.
4. prepare production Statistical Process Control (SPC) chart.
5. prepare production material requirement planning (mrp) report.
6. carry out manpower allocation.
7. verify inspection and testing activities monitor product costing/maintenance costing.
8. improve production process.
9. control product rejection.
10. improve process cost.
11. organise subordinate performance (attendance, etc).
12. conduct in-house training.
13. conduct motivational activities.
14. handle workplace grievances.
15. prepare staff annual appraisal.
16. synchronize intersectional activities.

17. conduct departmental meeting.

18. prepare material issuance.

19. prepare machine allocation.

20. verify plastics production activities.

21. perform maintenance activities.

22. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Plastics Dipping

Sub Area Primary Process

Job Title Plastics Dipping Executive*

Level Level 4

Job Definition :

A Plastics Dipping Executive is designated to design production system, monitor production operation, carry out data collection, manage production waste, plan operational budget, plan manpower requirements and handle staff matters.

Job Description :

1. design production workflow system.
2. prepare work schedule.
3. purchase production materials and tools.
4. monitor production operation.
5. improve production efficiency.
6. carry out data collection.
7. prepare departmental Standard Operation Procedures (SOPs).
8. prepare work instruction manual.
9. manage production waste.
10. prepare technical training schedule.
11. prepare training material.
12. organize feasibility study.
13. plan operational budget.
14. execute operational budget.
15. monitor operational budget performance.
16. conduct sectional budget adjustment.
17. prepare purchase requirement.

18. assess supplier performance.

19. generate purchase order.

20. prepare strategic forecasting.

21. plan manpower requirements.

22. plan manpower developments.

23. monitor manpower utilization.

24. handle staff matters.

25. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Plastics Dipping

Sub Area Primary Process

Job Title Plastics Dipping Manager*

Level Level 5

Job Definition :

A Plastics Dipping Manager is designated to evaluate production performance, approve work instruction manual, coordinate quality audit, prepare project resource plan, manage manpower utilisation and manage staff matters.

Job Description :

1. acquire local authority approval.
2. evaluate production performance.
3. analyse performance data and information.
4. carry out quality improvement.
5. approve departmental Standard Operation Procedures (SOP).
6. approve work instruction manual.
7. attend customer feedback.
8. coordinate quality audit.
9. coordinate manufacturing training.
10. prepare milestone chart.
11. prepare project resources plan.
12. monitor project performance.
13. present project report.
14. review product/process innovation.
15. review company budget.
16. prepare staff's performance appraisal.
17. approve company manpower plan.

18. manage manpower utilization.

19. resolve staff matters.

20. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Plastics Dipping

Sub Area Primary Process

Job Title Production Maintenance Operator

Level Level 1

Job Definition :

A Production Maintenance Operator is designated to prepare hand tools, carry out cleanliness, maintain housekeeping, adhere to safety, health and environment rules and regulation, assist in preparing plastics machine line clearance/condition, set-up plastics mold/die tool and performing mould unloading process.

Job Description :

1. prepare hand tools ready.
2. carry out plasticss injection former machine cleanliness.
3. maintain housekeeping.
4. adhere to safety, health and environment rules and regulations.
5. Assist in preparing plastics machine line clearance/condition.
6. Assist in checking mould condition/clean mould.
7. Assist in set-up plastics mould/die/tool.
8. Assist in set-up plastics operation parameter.
9. Assist in start/run the plastics machine.
10. Assist in performing mould unloading process.
11. Assist in perform plastics machine shutdown.
12. maintain machine condition.
13. maintain mould condition.

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Primary Process

Sub Area Production Maintenance

Job Title Production Maintenance Technician

Level Level 2

Job Definition :

A Production Maintenance Technician is designated to prepare plastic machine line clearance/condition, check mould condition/clean mould, setup plastic mould/die/tool, plastics operation parameter, perform first buy off, mould unloading process, plastic machine shutdown, maintain machine condition and mould condition.

Job Description :

1. prepare plastic machine line clearance/condition.
2. check mould condition/clean mould.
3. set-up plastic mould/die/tool.
4. set-up plastic operation parameter.
5. start/run the plastic machine.
6. perform first buy off.
7. perform mould unloading process.
8. perform plastic machine shutdown.
9. maintain machine condition.
10. maintain mould condition.
11. prepare machine report.

Sector	PLASTICS INDUSTRY
Sub-sector	Production Operation
Job Area	Primary Process
Sub Area	Production Maintenance
Job Title	Production Maintenance Senior Technician
Level	Level 3

Job Definition :

A Production Maintenance Senior Technician is designated to verify production initial start-up, plastics injection machine setup, maintenance and machine shutdown activities, coordinate measuring equipment calibration, mechanical & electrical equipment/stock and improve production process.

Job Description :

1. verify production initial start-up.
2. verify plastic injection machine set-up.
3. verify plastic injection machine maintenance.
4. verify plastic injection machine shutdown activities.
5. coordinate measuring equipment calibration.
6. coordinate mechanical & electrical equipment/stock.
7. carry out preventive maintenance.
8. adhere to safety, health and environment rules and regulations.
9. improve production process.

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Primary Process

Sub Area Production Maintenance

Job Title Production Maintenance Assistant Engineer

Level Level 4

Job Definition :

A Production Maintenance Assistant Engineer is designated to evaluate production equipment, carry out equipment commissioning, improve production efficiency, prepare departmental SOP and work instructional manual.

Job Description :

1. evaluate production equipment.
2. carry out equipment commissioning.
3. improve production efficiency.
4. prepare departmental Standard Operation Procedures (SOP).
5. prepare work instruction manual.
6. carry out preventive maintenance need analysis.
7. prepare preventive maintenance schedule.
8. prepare machine maintenance standard checklist.
9. prepare technical training schedule.
10. prepare training material.
11. evaluate product and services quotations.
12. assess supplier performance.
13. coordinate preventive maintenance work.
14. troubleshoot machine breakdown.
15. record machine operating data.
16. carry out corrective maintenance.
17. monitor machine operation performance.

18. prepare machine maintenance schedule checklist.
19. prepare machine breakdown report.
20. adhere to safety, health and environment rules and regulations.
21. handle staff matters.

Sector PLASTICS INDUSTRY

Sub-sector Production Operation

Job Area Primary Process

Sub Area Production Maintenance

Job Title Production Maintenance Engineer

Level Level 5

Job Definition :

A Production Maintenance Engineer is designated to evaluate machine performance, analyse performance data and information, approve work instruction manual, coordinate quality audit and diagnose machine breakdown.

Job Description :

1. evaluate machine performance.
2. analyse performance data and information.
3. approve work instruction manual.
4. coordinate quality audit.
5. diagnose machine breakdown.
6. monitor spare part inventory level.
7. monitor project performance.
8. review product/process innovation.
9. prepare staff's performance appraisal.
10. organising routine service schedule.
11. prepare departmental manpower requirement.
12. coordinate equipment functionality.
13. carry out maintenance work quickly inspection.
14. diagnose machine breakdown.
15. evaluate machine performance.
16. appraise staff performance.
17. adhere to safety, health and environment rules and regulations.

18. Prepare maintenance department budget.

SECTOR : PLASTICS INDUSTRY
SUB-SECTOR : PRODUCT OPERATION

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Adhesive
Job Title	Adhesive Operator
Level	Level 1

Job Definition :

An Adhesive Operator is designated to follow SOP part quality, refer to superior if any defection, and check finished product quality.

Job Description :

1. follow SOP part quality;
2. carry out adhesive requirement on plastic product;
3. refer to superior if any defection;
4. check finished product quality; and
5. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Adhesive
Job Title	Adhesive Line Leader
Level	2

Job Definition :

An Adhesive Line Leader is designated to supervise product output performance, report machine malfunction, arrange operator work schedule and conduct on job training.

Job Description :

1. supervise product output performance;
2. report machine malfunction;
3. arrange operator work schedule;
4. conduct on job training;
5. prepare production checklist; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Adhesive
Job Title	Adhesive Supervisor
Level	3

Job Definition :

An Adhesive Supervisor is designated to supervise overall line output performance, coordinate machine maintenance requirement, plan production schedule and monitor on job training.

Job Description :

1. supervise overall line output performance;
2. coordinate machine maintenance requirement;
3. plan production schedule;
4. monitor on job training;
5. prepare production performance report; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Hotstamping
Job Title	Hotstamping Operator
Level	1

Job Definition :

A Hotstamping Operator is designated to follow SOP part quality, refer to superior if any defection, and check finished product quality.

Job Description :

1. follow SOP part quality;
2. carry out hotstamping requirement on plastic product;
3. refer to superior if any defection;
4. check finished product quality; and
5. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Hotstamping
Job Title	Hotstamping Line Leader
Level	2

Job Definition :

A Hotstamping Line Leader is designated to supervise product output performance, report machine malfunction, arrange operator work schedule and conduct on job training.

Job Description :

1. supervise product output performance;
2. report machine malfunction;
3. arrange operator work schedule;
4. conduct on job training;
5. prepare production checklist; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Hotstamping
Job Title	Hotstamping Supervisor
Level	3

Job Definition :

A Hotstamping Supervisor is designated to supervise overall line output performance, coordinate machine maintenance requirement, plan production schedule and monitor on job training.

Job Description :

1. supervise overall line output performance;
2. coordinate machine maintenance requirement;
3. plan production schedule;
4. monitor on job training;
5. prepare production performance report; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Printing
Job Title	Printing Operator
Level	1

Job Definition :

A Printing Operator is designated to follow SOP part quality, refer to superior if any defection, and check finished product quality.

Job Description :

1. follow SOP part quality;
2. carry out printing requirement on plastic product;
3. refer to superior if any defection;
4. check finished product quality; and
5. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Printing
Job Title	Printing Line Leader
Level	2

Job Definition :

A Printing Line Leader is designated to supervise product output performance, report machine malfunction, arrange operator work schedule and conduct on job training.

Job Description :

1. supervise product output performance;
2. report machine malfunction;
3. arrange operator work schedule;
4. conduct on job training;
5. prepare production checklist; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Printing
Job Title	Printing Supervisor
Level	3

Job Definition :

A Printing Supervisor is designated to supervise overall line output performance, coordinate machine maintenance requirement, plan production schedule and monitor on job training.

Job Description :

1. supervise overall line output performance;
2. coordinate machine maintenance requirement;
3. plan production schedule;
4. monitor on job training;
5. prepare production performance report; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Plastics Welding
Job Title	Plastic Welding Operator
Level	1

Job Definition :

A Plastics Welding Operator is designated to follow SOP part quality, refer to superior if any defection, and check finished product quality.

Job Description :

1. follow SOP part quality;
2. carry out welding requirement on plastic product;
3. refer to superior if any defection;
4. check finished product quality; and
5. adhere to safety, health and environment rules and regulations

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Plastics Welding
Job Title	Plastic Welding Line Leader
Level	2

Job Definition :

A Plastics Welding Line Leader is designated to supervise product output performance, report machine malfunction, arrange operator work schedule and conduct on job training.

Job Description :

1. supervise product output performance;
2. report machine malfunction;
3. arrange operator work schedule;
4. conduct on job training;
5. prepare production checklist; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Plastics Welding
Job Title	Plastic Welding Supervisor
Level	3

Job Definition :

A Plastics Welding Supervisor is designated to supervise overall line output performance, coordinate machine maintenance requirement, plan production schedule and monitor on job training.

Job Description :

1. supervise overall line output performance;
2. coordinate machine maintenance requirement;
3. plan production schedule;
4. monitor on job training;
5. prepare production performance report; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Lamination
Job Title	Lamination Operator
Level	1

Job Definition :

A Lamination Operator is designated to to follow SOP part quality, refer to superior if any defection, and check finished product quality.

Job Description :

1. follow SOP part quality;
2. carry out lamination requirement on plastic product;
3. refer to superior if any defection;
4. check finished product quality; and
5. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Lamination
Job Title	Lamination Line Leader
Level	2

Job Definition :

A Lamination Line Leader is designated to supervise product output performance, report machine malfunction, arrange operator work schedule and conduct on job training.

Job Description :

1. supervise product output performance;
2. report machine malfunction;
3. arrange operator work schedule;
4. conduct on job training;
5. prepare production checklist; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Lamination
Job Title	Lamination Supervisor
Level	3

Job Definition :

A Lamination Supervisor is designated to supervise overall line output performance, coordinate machine maintenance requirement, plan production schedule and monitor on job training.

Job Description :

1. supervise overall line output performance;
2. coordinate machine maintenance requirement;
3. plan production schedule;
4. monitor on job training;
5. prepare production performance report; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Rivetting
Job Title	Rivetting Operator
Level	1

Job Definition :

A Riveting Operator is designated to follow SOP part quality, refer to superior if any defection, and check finished product quality.

Job Description :

1. follow SOP part quality;
2. carry out riveting requirement on plastic product;
3. refer to superior if any defection;
4. check finished product quality; and
5. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Rivetting
Job Title	Rivetting Line Leader
Level	2

Job Definition :

A Riveting Line Leader is designated to supervise product output performance, report machine malfunction, arrange operator work schedule and conduct on job training.

Job Description :

1. supervise product output performance;
2. report machine malfunction;
3. arrange operator work schedule;
4. conduct on job training;
5. prepare production checklist; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Rivetting
Job Title	Rivetting Supervisor
Level	3

Job Definition :

A Riveting Supervisor is designated to supervise overall line output performance, coordinate machine maintenance requirement, plan production schedule and monitor on job training.

Job Description :

1. supervise overall line output performance;
2. coordinate machine maintenance requirement;
3. plan production schedule;
4. monitor on job training;
5. prepare production performance report; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Child Part Assembly
Job Title	Child Part Assembly Operator
Level	1

Job Definition :

A Child Part Assembly Operator is designated to follow SOP part quality, refer to superior if any defection, and check finished product quality.

Job Description :

1. follow SOP part quality;
2. carry out child play assembly requirement on plastic product;
3. refer to superior if any defection;
4. check finished product quality;
5. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Child Part Assembly
Job Title	Child Part Assembly Technician
Level	2

Job Definition :

A Child Part Assembly Line Leader is designated to supervise product output performance, report machine malfunction, arrange operator work schedule and conduct on job training.

Job Description :

1. supervise product output performance;
2. report machine malfunction;
3. arrange operator work schedule;
4. conduct on job training;
5. prepare production checklist; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Child Part Assembly
Job Title	Child Part Assembly Supervisor
Level	3

Job Definition :

A Child Play Assembly Supervisor is designated to supervise overall line output performance, coordinate machine maintenance requirement, plan production schedule and monitor on job training.

Job Description :

1. supervise overall line output performance;
2. coordinate machine maintenance requirement;
3. plan production schedule;
4. monitor on job training;
5. prepare production performance report; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Adhesive, Hot stamping, Printing, Plastic Welding, Lamination, Rivetting & Child Part Assembly
Job Title	Secondary Process Production Executive
Level	4

Job Definition :

A Secondary Process Production Executive is designated to coordinate production meeting, conduct quality analysis, conduct machine maintenance and conduct new model testing.

Job Description :

1. coordinate production meeting;
2. prepare SOP Process Flow Control Chart (PFCC);
3. verify line balancing;
4. conduct quality analysis;
5. prepare report & verify;
6. conduct machine maintenance;
7. conduct new model testing;
8. verify process/parts; and
9. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Adhesive, Hotstamping, Printing, Plastic Welding, Lamination, Rivetting & Child Part Assembly
Job Title	Secondary Process Production Manager
Level	5

Job Definition :

A Secondary Process Production Manager is designated to manage line process layout improvement approved process schedule/daily weekly/monthly, monitor preventive maintenance, verify report daily, weekly, monthly and propose ISO organisation to top management.

Job Description :

1. manage line process layout improvement (KAIZEN);
2. approve SOP/comments;
3. approved process schedule/daily weekly/monthly;
4. conduct customer quality;
5. monitor preventive maintenance;
6. verify report daily, weekly, monthly;
7. report to top management;
8. propose ISO organisation to top management; and
9. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Chroming
Job Title	Chroming Operator
Level	1

Job Definition :

A Chroming Operator is designated to follow SOP part quality, refer to superior if any defection, and check finished product quality.

Job Description :

1. follow SOP part quality;
2. carry out chroming requirement on plastic product;
3. refer to superior if any defection;
4. check finished product quality; and
5. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Chroming
Job Title	Chroming Line Leader
Level	2

Job Definition :

A Chroming Line Leader is designated to supervise product output performance, report machine malfunction, arrange operator work schedule and conduct on job training.

Job Description :

1. supervise product output performance;
2. report machine malfunction;
3. arrange operator work schedule;
4. conduct on job training;
5. prepare production checklist; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Chroming
Job Title	Chroming Supervisor*
Level	3

Job Definition :

A Chroming Supervisor is designated to supervise overall line output performance, coordinate machine maintenance requirement, plan production schedule and monitor on job training.

Job Description :

1. supervise overall line output performance;
2. coordinate machine maintenance requirement;
3. plan production schedule;
4. monitor on job training;
5. prepare production performance report; and
6. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Spraying
Job Title	Spraying Operator
Level	1

Job Definition :

A Spraying Operator is designated to follow SOP part quality, refer to superior if any defection, and check finished product quality.

Job Description :

1. follow SOP part quality;
2. carry out spraying requirement on plastic product;
3. refer to superior if any defection;
4. check finished product quality; and
5. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Spraying
Job Title	Spraying Line Leader
Level	2

Job Definition :

A Spraying Line Leader is designated to supervise product output performance, report machine malfunction, arrange operator work schedule and conduct on job training.

Job Description :

1. supervise product output performance;
2. report machine malfunction;
3. arrange operator work schedule;
4. conduct on job training;
5. prepare production checklist; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Spraying
Job Title	Spraying Supervisor
Level	3

Job Definition :

A Spraying Supervisor is designated to supervise overall line output performance, coordinate machine maintenance requirement, plan production schedule and monitor on job training.

Job Description :

1. supervise overall line output performance;
2. coordinate machine maintenance requirement;
3. plan production schedule;
4. monitor on job training;
5. prepare production performance report; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Coating
Job Title	Coating Operator
Level	1

Job Definition :

A Coating Operator is designated to follow SOP part quality, refer to superior if any defection, and check finished product quality.

Job Description :

1. follow SOP part quality;
2. carry out coating requirement on plastic product;
3. refer to superior if any defection;
4. check finished product quality; and
5. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Coating
Job Title	Coating Line Leader
Level	2

Job Definition :

A Coating Line Leader is designated to supervise product output performance, report machine malfunction, arrange operator work schedule and conduct on job training.

Job Description :

1. supervise product output performance;
2. report machine malfunction;
3. arrange operator work schedule;
4. conduct on job training;
5. prepare production checklist; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Coating
Job Title	Coating Supervisor *
Level	3

Job Definition :

A Coating Supervisor is designated to supervise overall line output performance, coordinate machine maintenance requirement, plan production schedule and monitor on job training.

Job Description :

1. supervise overall line output performance;
2. coordinate machine maintenance requirement;
3. plan production schedule;
4. monitor on job training;
5. prepare production performance report; and
6. adhere to safety, health and environment rules and regulations.

Notes:

* Critical Job Title

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Chroming, Spraying & Coating
Job Title	Coating Assistant Engineer
Level	4

Job Definition :

A Coating Assistant Engineer is designated to verify /prepare material/paint, prepare production schedule, verify production result and propose model pre-production

Job Description :

1. verify /prepare material/paint;
2. prepare production schedule;
3. verify production result;
4. prepare report ;
5. propose model pre-production; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Chroming, Spraying & Coating
Job Title	Coating Engineer
Level	5

Job Definition :

A Coating Engineer is designated to manage line process layout improvement approved process schedule/daily weekly/monthly, monitor preventive maintenance, verify report daily, weekly, monthly and propose ISO organisation to top management.

Job Description :

1. manage line process layout improvement (KAIZEN);
2. approve SOP/comments;
3. approved process schedule/daily weekly/monthly;
4. conduct customer quality;
5. monitor preventive maintenance;
6. verify report daily, weekly, monthly;
7. report to top management;
8. propose iso organisation to top management; and
9. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Adhesive, Hotstamping, Printing, Plastic Welding, Lamination, Rivetting, Child Part Assembly, Chroming, Spraying & Coating
Job Title	Production Operation Manager
Level	6

Job Definition :

A Production Operation Manager is designated to verify the approved procedures are adopted and the necessary procedure updated as required, ensure the staff adequately qualified and experienced in their discipline and perform their position in a satisfactory manner, ensure staff are familiar with company procedures and have ready access to them and stopping the finished goods delivery if quality problems are detected.

Job Description :

7. carry out quality matters;
8. verify the approved procedures are adopted and the necessary procedure updated as required;
9. ensure the staff adequately qualified and experienced in their discipline and perform their position in a satisfactory manner;
10. ensure staff are familiar with company procedures and have ready access to them;
11. follow up and ensuring effectiveness of countermeasure taken; and
12. stopping the finished goods delivery if quality problems are detected.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Secondary Process
Sub Area	Adhesive, Hotstamping, Printing, Plastic Welding, Lamination, Rivetting, Child Part Assembly, Chroming, Spraying & Coating
Job Title	Factory Manager
Level	7

Job Definition :

A Factory Manager is designated to manage entire company's production operations, motivate a team of executives, supervisors and operators, monitor production flow systems as well as to trouble-shoot problem areas and implement cost reduction program and set efficiency targets.

Job Description :

1. manage entire company's production operations;
2. lead, supervise and enforce good and efficient work practices;
3. motivate a team of executives, supervisors and operators;
4. monitor production flow systems as well as to trouble-shoot problem areas;
5. implement cost reduction program and set efficiency targets;
6. monitor and control on purchasing and production planning as well as inventory control;
7. plan production/delivery schedules;
8. ensure production targets are met, production capacity fully utilized at all times;
9. coordinate resources i.e. R & D, Engineering, Design and Tooling of moulds, manufacturing, quality control, planning & sourcing;
10. established continuous personnel development; and
11. ensure proactive succession planning for key positions.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Quality Management
Sub Area	Quality Assurance & Quality Control
Job Title	Quality Control Inspector
Level	2

Job Definition :

A Quality Control Inspector is designated to follow the direction from the line leader to do daily working, till up necessary checking record and report to the line leader, inform the line leader immediately for any problem happen, ensure working area tidy every day, conduct inspection, provide input data/data collection; and confirm quality judgement.

Job Description :

1. follow the direction from the line leader to do daily working;
2. till up necessary checking record and report to the line leader;
3. inform the line leader immediately for any problem happen;
4. ensure working area tidy every day;
5. conduct inspection;
6. provide input data/data collection;
7. confirm quality judgement; and
8. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Quality Management
Sub Area	Quality Assurance & Quality Control
Job Title	Quality Control Supervisor
Level	3

Job Definition :

A Quality Control Supervisor is designated to inform production supervisor inspect the production quality every working day, provide the weekly rejected report to supervisor for being defective counter measure analysis, train your member and observe their job, improve the weakness through the production meeting; and ensure tidy and maintain a good environment in the QC area.

Job Description :

1. inform production supervisor inspect the production quality every working day;
2. provide the weekly rejected report to supervisor for being defective counter measure analysis;
3. train your member and observe their job;
4. improve the weakness through the production meeting;
5. ensure tidy and maintain a good environment in the qc area; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Quality Management
Sub Area	Quality Assurance
Job Title	Quality Assurance Assistant Manager
Level	4

Job Definition :

A Quality Assurance Assistant Manager is designated to ensure daily execution of quality control activities, such as inspection and audit, are performed correctly and timely, by inspectors team. ensure no escaped defect in daily production, ensure inspection and audit reports are validated and updated promptly, ensure all forms and standards for quality control are always updated, and all tools and equipment are calibrated, ensure good grasp of knowledge in product and production processes and able to build strong rapport with inspectors team, and across functions, such as production team, process team and equipment team.

Job Description :

1. ensure daily execution of quality control activities, such as inspection and audit, are performed correctly and timely, by inspectors team. ensure no escaped defect in daily production;
2. ensure inspection and audit reports are validated and updated promptly;
3. ensure all forms and standards for quality control are always updated, and all tools and equipment are calibrated;
4. ensure good grasp of knowledge in product and production processes;
5. able to build strong rapport with inspectors team, and across functions, such as production team, process team and equipment team; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Quality Management
Sub Area	Quality Assurance
Job Title	Quality Assurance Manager
Level	5

Job Definition :

A Quality Assurance Manager is designated to implementation of quality control procedures, plans for providing the more efficient onsite construction work, develops and maintains quality standards that apply to onsite construction work, ensuring proper implementation, reviews and approves inspections, test plans and quality control plans from contractors, identifies, analyzes and resolves problems and issues with quality assurance and control for onshore site construction, plans and coordinates QA/QC activities, making certain of quality control of the work in accordance to contract requirements, supervise the activities of the quality service providers and inspectors to ensure diligent performance; and reviews and approves the contractors' quality documentation, and implements contractor audits as well.

Job Description :

1. implementation of quality control procedures;
2. plans for providing the more efficient onsite construction work;
3. develops and maintains quality standards that apply to onsite construction work, ensuring proper implementation;
4. reviews and approves inspections, test plans and quality control plans from contractors;
5. identifies, analyzes and resolves problems and issues with quality assurance and control for onshore site construction;
6. plans and coordinates qa/qc activities, making certain of quality control of the work in accordance to contract requirements;
7. supervise the activities of the quality service providers and inspectors to ensure diligent

performance;

8. reviews and approves the contractors' quality documentation, and implements contractor audits as well; and
9. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Quality Management
Sub Area	Quality Control
Job Title	Quality Control Assistant Engineer
Level	4

Job Definition :

A Quality Control Assistant Engineer is designated to ensure daily execution of quality control activities, such as inspection and audit, are performed correctly and timely, by inspectors team. ensure no escaped defect in daily production, ensure inspection and audit reports are validated and updated promptly, ensure all forms and standards for quality control are always updated, and all tools and equipment are calibrated, ensure good grasp of knowledge in product and production processes and able to build strong rapport with inspectors team, and across functions, such as production team, process team and equipment team.

Job Description :

1. ensure daily execution of quality control activities, such as inspection and audit, are performed correctly and timely, by inspectors team. ensure no escaped defect in daily production;
2. ensure inspection and audit reports are validated and updated promptly;
3. ensure all forms and standards for quality control are always updated, and all tools and equipment are calibrated;
4. ensure good grasp of knowledge in product and production processes;
5. able to build strong rapport with inspectors team, and across functions, such as production team, process team and equipment team; and
6. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Quality Management
Sub Area	Quality Control
Job Title	Quality Control Engineer
Level	5

Job Definition :

A Quality Control Engineer is designated to implementation of quality control procedures, plans for providing the more efficient onsite construction work, develops and maintains quality standards that apply to onsite construction work, ensuring proper implementation, reviews and approves inspections, test plans and quality control plans from contractors, identifies, analyzes and resolves problems and issues with quality assurance and control for onshore site construction, plans and coordinates QA/QC activities, making certain of quality control of the work in accordance to contract requirements, supervise the activities of the quality service providers and inspectors to ensure diligent performance; and reviews and approves the contractors' quality documentation, and implements contractor audits as well.

Job Description :

1. implementation of quality control procedures;
2. plans for providing the more efficient onsite construction work;
3. develops and maintains quality standards that apply to onsite construction work, ensuring proper implementation;
4. reviews and approves inspections, test plans and quality control plans from contractors;
5. identifies, analyzes and resolves problems and issues with quality assurance and control for onshore site construction;
6. plans and coordinates QA/QC activities, making certain of quality control of the work in accordance to contract requirements;
7. supervise the activities of the quality service providers and inspectors to ensure diligent

performance;

8. reviews and approves the contractors' quality documentation, and implements contractor audits as well; and
9. adhere to safety, health and environment rules and regulations.

Sector	Plastics Industry
Sub-sector	Product Operation
Job Area	Quality Management
Sub Area	Quality Assurance & Quality Control
Job Title	Quality Manager
Level	6

Job Definition :

A Quality Manager is designated to devise and establish a company's quality procedures, standards and specifications, review customer requirements and identify that they are met, working with purchasing staff to establish quality requirements from external suppliers, Set standards for quality as well as health and safety, identify that manufacturing or production processes meet international and national standards, define quality procedures in conjunction with operating staff, set up and maintaining controls and documentation procedures monitoring performance by gathering relevant data and produce statistical reports; and preparing clear explanatory documents such as customers' charters.

Job Description :

1. devise and establishing a company's quality procedures, standards and specifications;
2. review customer requirements and ensuring that they are met;
3. work with purchasing staff to establish quality requirements from external suppliers;
4. set standards for quality as well as health and safety;
5. identify manufacturing or production processes meet international and national standards;
6. define quality procedures in conjunction with operating staff;
7. set up and maintaining controls and documentation procedures;
8. monitor performance by gathering relevant data and producing statistical reports; and
9. prepare clear explanatory documents such as customers' charters.

ANNEX 4 : SAMPLE OF OCCUPATIONAL ANALYSIS SURVEY

PLASTICS INDUSTRY OCCUPATIONAL ANALYSIS SURVEY

Greetings & Salam 1 Malaysia.

In collaboration with the Department of Skills Development (DSD) of the Ministry of Human Resources, we are currently conducting an occupational analysis on the Plastics Industry. From this analysis, the industry framework, occupational structure , occupational job titles, and job description will be summarised for the use of the Government, private sector, investors , employers, employees, educators or any personnel involved either directly or indirectly with this industry.

We would like to extend our heartfelt gratitude upon your cooperation in answering this survey. This survey will be used as field data in order to conduct a comprehensive occupational analysis on the industry.

Please fill in where necessary in the form provided. Any inconvenience caused is deeply regretted. Thank you.

Survey Respondent Details

Name : _____

IC Number :_____

Position :_____

Organisation :_____

Date :_____

Please answer the questions below in the space provided, additional pages may be added if necessary. There are 8 questions in this 3 page survey.

1. Please provide a brief job description of your position. Please state your job title.

2. What is the widely accepted definition of the Plastics industry?

3. What are the main areas under the Plastics industry? Please elaborate which area you are familiar with.

4. Which job title or position in the Plastics industry is currently in demand and most likely to be in demand 5 years down the road?

5. Please list down the main regulatory bodies in your profession.

6. Please list down the related acts in your profession.

7. Which job titles in your line of work do you feel are suitable to be developed as a **National Occupational Skills Standard - (NOSS)**. The NOSS is a national document that outlines skills and competencies required for a specific occupation in Malaysia.

8. Please list any useful source of information throughout the process of this Occupational Analysis survey.

End of Questionnaire.
Thank you for your cooperation.