



**STANDARD KEMAHIRAN PEKERJAAN KEBANGSAAN
(NATIONAL OCCUPATIONAL SKILLS STANDARD)**

F433-002-3:2017

IBS METAL DOOR & WINDOW FRAME INSTALLATION SUPERVISION

LEVEL 3



JPK

**JABATAN PEMBANGUNAN KEMAHIRAN
KEMENTERIAN SUMBER MANUSIA, MALAYSIA**

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INSTALLATION SUPERVISION

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**JABATAN PEMBANGUNAN KEMAHIRAN
KEMENTERIAN SUMBER MANUSIA
MALAYSIA**



**CONSTRUCTION INDUSTRY DEVELOPMENT
BOARD (CIDB)**



Department of Skills Development (DSD)

Ministry of Human Resources

62530 PUTRAJAYA, MALAYSIA

**STANDARD KEMAHIRAN PEKERJAAN KEBANGSAAN
(NATIONAL OCCUPATIONAL SKILLS STANDARD)**

FOR

**IBS METAL DOOR & WINDOW FRAME INSTALLATION SUPERVISION
LEVEL 3**

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ABBREVIATION

CIDB	Construction Industry Development Board
CP	Competency Profile
CPC	Competency Profile Chart
CU	Competency Unit
DKM	Diploma Kemahiran Malaysia
DLKM	Diploma Lanjutan Kemahiran Malaysia
DOSH	Department of Occupational Safety and Health
IBS	Industrialised Building System
NIOSH	National Institute Of Occupational Safety And Health
NOSS	National Occupational Skills Standard
OAS	Occupational Area Structure
OS	Occupational Structure
OSHA	Occupational Safety And Health Administration
PC	Penyata Pencapaian
SKM	Sijil Kemahiran Malaysia
STEC	Standard Technical Evaluation Committee

STANDARD PRACTICE

NATIONAL OCCUPATIONAL SKILLS STANDARD (NOSS) FOR;

IBS METAL DOOR & WINDOW FRAME INSTALLATION SUPERVISION

LEVEL 3

1. Introduction

Industrialised Building System (IBS) Metal door & window frame installation is defined under specialized construction activities under construction sector. IBS Metal door & window frame installation works describe the activities in fitting metal door & window frame onto a specific opening according to its specifications. This task normally being carried out after the completion of foundation preparation, formwork preparation, reinforcement work, concreting work and roofing system installation in a construction project.

The IBS term used in this standard is referring to a construction process that utilizes techniques, products, components, or building systems that involve prefabricated components and on-site installation.

This standard covers for the metal frame only, which include materials such as alloy, galvanised metal and aluminium. These are the materials that are currently widely being used in door & window frame fabrications due to its specifications and characteristics.

The Malaysian construction sector is set to continue expanding in 2016 as new projects; foreign investment and increased outlooks among construction firms stimulate the industry. The outlook for the construction sector in 2016 remains positive, thanks to continuous list of government jobs including the 118-storey skyscraper development Warisan Merdeka and the affordable housing project under the PR1MA initiative will drive construction activities despite the weakened ringgit and rising cost of construction¹. The value of construction work done grew by 11.7 per cent year-on-year basis to record RM30.4 billion in the second quarter 2016².

In the light of continuous economic development in the construction sector, the demand for skilled personnel has increased thus the development programs for skilled manpower is timely. By going through the mechanism provided by the Skills Training system in Malaysia, one of the important steps is to develop this NOSS.

Construction Industry Development Board (CIDB) required any person that to enter in construction work sites must hold valid CIDB Green Card. CIDB Green Card is an integrated program that involves the registration and accreditation of construction personnel to enhance safety levels at construction work sites. This program is to ensure that construction workers are aware of the importance a safe and healthy working place; to provide a basic knowledge on safety and health at the construction work site and to inform construction workers of the legal requirements in relation to

¹ 7th Malaysian Construction Summit 2016, CIDB Malaysia

² Quarterly Construction Statistics, Second Quarter 2016, Department of Statistics Malaysia

safety and health. Construction personnel will automatically covered by a special insurance scheme that insure the construction personnel against death and accidents.

Pre-requisites:

Based on the workshop findings, it is decided that the minimum requirements for those interested to enrol in this course are as follows:

- i) Able to calculate, read and write in Bahasa Malaysia and/or English;
- ii) Full interest in metal door & window frame installation; and
- iii) Medically and physically fit to meet the high demands of this particular job scope.

2. Occupational Structure (OS)

SECTOR	(F) CONSTRUCTION																		
SUB-SECTOR	(41) CONSTRUCTION OF BUILDINGS																	(43) SPECIALISED CONSTRUCTION ACTIVITIES	
Job Area	INDUSTRIALISED BUILDING SYSTEM (IBS)																		
	Metal Roof Trusses System				Steel Structure System					Reusable Formwork System	Precast Concrete System					Lightweight Panel (Non-Structural) System	Blockwork System	Metal Door & Window Frame	
	Steel	Aluminum	Zincalume	Galvanised Iron	Column	Beam	Load Bearing Wall Framing	Floor Joist	Roof Structure	N/A	Column	Beam	Slab	Wall Panel	Staircase	Slab/Wall		Metal Door Frame	Metal Window Frame
Level 5	IBS Construction Project Manager																		
Level 4	IBS Construction Site Manager																		
Level 3	Mild Steel Trusses Supervisor	Lightweight Trusses Supervisor		IBS Steel Structure Installation Supervisor					Building Construction Site Supervisor	Precast Concrete Installation Supervisor					Lightweight Panel (Non-Structural) System Supervisor	Blockwork System Supervisor	Metal Door and Window Frame Supervisor		
Level 2	Mild Steel Trusses Installer	Lightweight Trusses Installer		IBS Steel Structure Installer					Building Construction Site Leader	Precast Concrete Installer					Lightweight Panel (Non-Structural) System Installer	Blockwork System Installer	Metal Door and Window Frame Installer		
Level 1	Not applicable			Not applicable					Not applicable	Not applicable					Not applicable	General Worker	General Worker		

Figure 1.1: Occupational Structure for IBS Metal Door & Window Frame Installation Supervision Personnel

3. Occupational Area Structure (OAS)

SECTOR	(F) CONSTRUCTION																		
SUB-SECTOR	(41) CONSTRUCTION OF BUILDINGS																	(43) SPECIALISED CONSTRUCTION ACTIVITIES	
Job Area	INDUSTRIALISED BUILDING SYSTEM (IBS)																		
	Metal Roof Trusses System				Steel Structure System					Reusable Formwork System	Precast Concrete System					Lightweight Panel (Non-Structural) System	Blockwork System	Metal Framing (Door & Window System)	
	Steel (BC-IBS-0)	Aluminum	Zincalume	Galvanised Iron	Column	Beam	Load Bearing Wall Framing	Floor Joist	Roof Structure	N/A	Column	Beam	Slab	Wall Panel	Staircase	Slab/Wall		Metal Door Frame	Metal Window Frame
Level 5	IBS Construction Project Management																		
Level 4	IBS Construction Project Implementation																		
Level 3	IBS Metal Roof Trusses Installation Supervision (Mild Steel)	IBS Metal Roof Trusses Installation Supervision (Lightweight)			IBS Steel Structure Installation Supervision					IBS Reusable Formwork Installation Supervision	IBS Precast Concrete Installation Supervision					IBS Lightweight Panel Installation Supervision	IBS Blockwork Installation Supervision	IBS Metal Door and Window Frame Installation Supervision	
Level 2	IBS Metal Roof Trusses Installation Operation (Mild Steel)	IBS Metal Roof Trusses Installation Operation (Lightweight)			IBS Steel Structure Installation					IBS Reusable Formwork System Installation	IBS Precast Concrete Installation					IBS Lightweight Panel Installation	IBS Blockwork Installation	IBS Metal Door and Window Frame Installation	
Level 1	Not applicable				Not applicable					Not applicable	Embedded to Level 2					Embedded to Level 2	Embedded to Level 2	Embedded to Level 2	

Figure 1.2: Occupational Area Structure for IBS Metal Door & Window Frame Installation Supervision

IBS Metal door & window frame installation supervision works normally requires workers to perform broad range of varied work activities, carried out in a variety of contexts, most of which are complex and non-routine in fulfilling all the requirements from client, consultant, authority and contractor. There is considerable responsibility and autonomy and control or guidance of others is often required.

Based of discussion among the industry experts, the job scope and competency required for Level 1 and Level 2 are the same; hence competency for Level 1 can be embedded to Level 2. Competency for Level 3 is more to quality inspection and supervisory.

4. Definition of Competency Levels

The NOSS is developed for various occupational areas. Candidates for certification must be assessed and trained at certain levels to substantiate competencies. Below is a guideline of each NOSS Level as defined by the Department of Skills Development, Ministry of Human Resources, Malaysia.

- Level 1: Competent in performing a range of varied work activities, most of which are routine and predictable.
- Level 2: Competent in performing a significant range of varied work activities, performed in a variety of contexts. Some of the activities are non-routine and required individual responsibility and autonomy.
- Level 3: Competent in performing a broad range of varied work activities, performed in a variety of contexts, most of which are complex and non-routine. There is considerable responsibility and autonomy and control or guidance of others is often required.
- Level 4: Competent in performing a broad range of complex technical or professional work activities performed in a wide variety of contexts and with a substantial degree of personal responsibility and autonomy. Responsibility for the work of others and allocation of resources is often present.
- Level 5: Competent in applying a significant range of fundamental principles and complex techniques across a wide and often unpredictable variety of contexts. Very substantial personal autonomy and often significant responsibility for the work of others and for the allocation of substantial resources features strongly, as do personal accountabilities for analysis, diagnosis, planning, execution and evaluation.

5. Award of Certificate

The Director General shall award, to any person upon completing successfully the NOSS program following skills level qualifications as stipulated under the National Skills Development Act, 652:

- Malaysia Skills Certificate / Sijil Kemahiran Malaysia (SKM) Level 1, 2 or 3
- Malaysia Skills Diploma / Diploma Kemahiran Malaysia (DKM) Level 4
- Malaysia Skills Advanced Diploma / Diploma Lanjutan Kemahiran Malaysia (DLKM) Level 5
- Statement of Achievement / Penyata Pencapaian (PC)

6. Job Competencies

The IBS Metal Door & Window Frame Installation Supervision Level 3 personnel is competent in performing the following core competencies:-

- b. IBS Metal Door & Window Frame Delivery, Storage & Handling Coordination
- c. IBS Metal Door & Window Frame Installation Project Coordination
- d. IBS Metal Door & Window Frame Installation Supervisory Function

7. Work Conditions

Generally, an IBS Metal Door & Window Frame Installation Supervision (Level 3) personnel work in normal working hours from morning to evening depending on company's nature of business. They may require working extra hours to fulfil project requirements. They also may be needed to work in shift to accommodate work requirements. All personnel need to have valid CIDB Green Card and use / wear appropriate attire (Personal Protective Equipment) during the commencement of their jobs. They may work individually or group in a hazardous and hot environment. They must physical fit due to nature of job in construction field.

8. Employment Prospects

The employment prospects for IBS Metal Door & Window Frame Installation Supervision (Level 3) personnel are very huge due the industry grows in the positive trend. Currently, the industry has shortage of skilled personnel and heavily depending on foreign workers. This scenario should be different in the future once the competent workforces from this training enter the job market. They may be employed at any construction project or they can be an entrepreneur in small building renovation work projects.

9. Career Advancement

To become IBS Metal Door & Window Frame Installation Supervision (Level 3) personnel, the person must first gain knowledge and competency as a general worker and installer through on-the job training. Employers may require a high school certificate or skills certificate for general worker and installer position. After these personnel have gained experience and becomes highly skilled and knowledgeable, the person may be eligible for a promotion to become a supervisor in IBS Metal Door & Window Frame Installation area. The amount of time to be promoted depends on a number of variables, including the availability of a job opening and the competitive nature between workers for the leadership role. The person is likely to succeed if he or she understands general construction practices along with having a good technical ability.

10. Sources of Additional Information

The following organisations can be referred as sources of additional information which can assist in defining the document's contents:

a. Kementerian Kerja Raya

Tingkat 6, Blok B Kompleks Kerja Raya,
Jalan Sultan Salahuddin,
50580 Kuala Lumpur
Phone : 03 – 8000 8000
E-mail : pro@kk.gov.my

b. Construction Industry Development Board (CIDB)

Tingkat 10, Menara Dato Onn,
Pusat Dagangan Dunia Putra,
No 45, Jalan Tun Ismail, 50480 Kuala Lumpur
Phone : 03 – 4047 7000
E-mail : info@cidb.gov.my

c. Jabatan Bomba dan Penyelamat Malaysia

Lebu Wawasan, Presint 7,
62250 Putrajaya
Phone : 03 – 8892 7600
E-mail : korporat@bomba.gov.my

d. National Institute Of Occupational Safety And Health (NIOSH)

1, Jalan 15/K, Section 15,
43650 Bandar Baru Bangi,
Selangor, Malaysia
Phone : 03 – 8000 8000
E-mail : general@niosh.com.my

11. Acknowledgement

The Director General of DSD would like to extend his gratitude to the organisations and individuals who have been involved in developing this standard; especially members of Standard Technical Evaluation Committee (STEC) for validating this document.

STANDARD TECHNICAL EVALUATION COMMITTEE (STEC)		
1.	Prof Madya Sr. Dr. Mohammad Fadhil Mohammad	Centre of Study for Quantity Surveying Faculty of Architecture, Planning and Surveying University Technology Mara
2.	Dr Ir Ng Soon Ching	Universiti Tunku Abdul Rahman Sg Long Campus
3.	Mohd Idrus Din	CIDB, Pusat IBS
4.	Yuanti Mohamed	CIDB, Pusat IBS

12. NOSS Development Committee Members

IBS METAL DOOR & WINDOW FRAME INSTALLATION SUPERVISION

LEVEL 3

STANDARD DEVELOPMENT COMMITTEE (SDC)		
1.	Abid Zamrin bin Ariffin	Project Manager WZR Property Sdn. Bhd.
2.	Haruddin Jusoh	Construction Manager WZR Property Sdn. Bhd.
3.	Mohamad Hafiz Shamsudin	Site Supervisor Dasafbina Enterprise
4.	Mohamad Harith bin Abdul Fadil	Senior Site Safety Supervisor WZR Property Sdn. Bhd.
5.	Dr. Mohd Fadhlillah Mahmood	Managing Director Wira Kerjaya Sdn. Bhd.
6.	Mohd Mufaradzi Matsom	Trainer Pembinaan Reka Cipta Enterprise
7.	Mohd Sofian bin Abd Jalil	Ketua Unit Pembangunan Modul Furniture Industry Technology Centre (FITEC) MARA
8.	Rosimi bin Mahmood	Trainer Akademi Binaan Malaysia Wilayah Tengah
9.	Ruth Chai Mei Hui	QA Manager Thung Hing Metal Industry Sdn. Bhd.
10.	Wang Chee Leong	Site Manager Top Form Renovation & Construction Sdn. Bhd.
11.	Yusri Abdul Wahab	Managing Director Isas Smart Resources Sdn. Bhd.
FACILITATOR		
1.	Ahmad Ramdan bin M Yusof	Facilitator Jumantara Timur Sdn. Bhd.

STANDARD CONTENT

NATIONAL OCCUPATIONAL SKILLS STANDARD (NOSS) FOR;

IBS METAL DOOR & WINDOW FRAME INSTALLATION SUPERVISION

LEVEL 3

13. Competency Profile Chart (CPC)

SECTOR	(F) CONSTRUCTION		
SUB SECTOR	(43) SPECIALIZED CONSTRUCTION ACTIVITIES		
JOB AREA	IBS METAL DOOR & WINDOW FRAME		
NOSS TITLE	IBS METAL DOOR & WINDOW FRAME INSTALLATION SUPERVISION		
JOB LEVEL	3 (THREE)	NOSS CODE	F433-002-3:2017

← COMPETENCY → ←————— COMPETENCY UNIT —————→



14. Competency Profile (CP)

SECTOR	(F) CONSTRUCTION		
SUB SECTOR	(43) SPECIALIZED CONSTRUCTION ACTIVITIES		
JOB AREA	IBS METAL DOOR & WINDOW FRAME		
NOSS TITLE	IBS METAL DOOR & WINDOW FRAME INSTALLATION SUPERVISION		
JOB LEVEL	3 (THREE)	NOSS CODE	F433-002-3:2017

CU Title	CU Code	CU Descriptor	Work Activities	Performance Criteria
1. IBS Metal Door & Window Frame Requisition, Storage & Handling Coordination	F433-002-3:2017-C01	<p>IBS Metal door & window frame requisition, storage & handling coordination describes the competency in organising metal door & window frame acquisition, storage and movement to the working area.</p> <p>A competent person in this CU shall be able to carry out metal door & window frame requisition, confirm metal door & window frame delivery details, carry out metal door & window frame and installation materials receiving and carry out</p>	1. Carry out metal door & window frame requisition	<p>1.1 Metal door & window frame quantity determined according to door & window installation schedule, construction drawing and Bill of Quantity (BQ)</p> <p>1.2 Metal door & window frame delivery schedule determined according to project schedule</p> <p>1.3 Requisition form for metal door & window frame approved and submitted to purchasing department</p>

CU Title	CU Code	CU Descriptor	Work Activities	Performance Criteria
		<p>metal door & window frame storage arrangement and labelling.</p> <p>The outcome of this competency is to store and handle metal door & window frame properly to ensure in sufficient quantity and free from damage in accordance with frame manufacturer specifications, drawings, storage system, PO and DO.</p>	<p>2. Confirm metal door & window frame delivery details</p>	<p>2.1 Date of delivery and supplier details obtained and checked to ensure smooth delivery</p> <p>2.2 Metal door & window frame quantity and specifications determined according to Purchase Order (PO)</p>
			<p>3. Carry out metal door & window frame and installation materials receiving</p>	<p>3.1 Delivery Order (DO) received from lorry driver checked and confirmed according to respective PO</p> <p>3.2 Metal door & window frame and installation materials checked visually according to DO and invoice</p>
			<p>4. Carry out metal door & window frame storage arrangement and labelling</p>	<p>4.1 Store location determined according to metal door & window frame installation schedule</p> <p>4.2 First In First Out (FIFO) storage system applied</p> <p>4.3 Storage conditions</p>

CU Title	CU Code	CU Descriptor	Work Activities	Performance Criteria
				<p>checked to avoid damage and lost</p> <p>4.4 Stored metal door & window frame specifications checked according to DO and window schedule</p> <p>4.5 Stored metal door & window frame checked to ensure free from defects</p> <p>4.6 Metal door & window frame handled according to procedure</p> <p>4.7 Metal door & window frame properly labelled</p>
2. IBS Metal Door & Window Frame Installation Coordination	F433-002-3:2017-C02	IBS Metal door & window frame installation coordination describes the competency in organising the metal door & window frame installation works, by establish the right method, materials, manpower, machinery and safety compliances.	1. Identify metal door & window frame installation coordination requirements	<p>1.1 Coordination works established with other respective related parties</p> <p>1.2 Project process flow and progress determined and checked to confirm work area readiness</p> <p>1.3 Work permission obtained from superior</p>

CU Title	CU Code	CU Descriptor	Work Activities	Performance Criteria
		<p>A competent person in this CU shall be able to identify metal door & window frame installation coordination requirements, coordinate metal door & window frame installation works, coordinate safety compliance, prepare work instructions and monitor metal door & window frame installation works.</p> <p>The outcome of this competency is to ensure smooth in metal door & window frame installation process and safe working condition in accordance with project requirements and safety compliances.</p>	<p>2. Coordinate metal door & window frame installation works</p> <p>3. Coordinate safety compliance</p>	<p>2.1 Metal door & window frame installation method determined according to specifications and drawings</p> <p>2.2 Installation tools, equipment and materials arranged and checked</p> <p>2.3 Manpower and machinery for installation works arranged according to installation requirements</p> <p>3.1 Safety briefing and proper Personal Protective Equipment (PPE) for metal door & window frame installer arranged according to Occupational Safety And Health Act (OSHA) requirements</p> <p>3.2 Arrangement of safety requirement at working area coordinated according to local authority guidelines</p>

CU Title	CU Code	CU Descriptor	Work Activities	Performance Criteria
				<p>and Occupational Safety And Health Act (OSHA)</p> <p>3.3 Safety compliance monitored according to local authority guidelines and Occupational Safety And Health Act (OSHA)</p> <p>3.4 Work area checked to ensure 5S (Sort, Set in Order, Shine, Standardize, Sustain) method applied accordingly</p> <p>3.5 Safety record updated and submitted according to submission deadline</p>
			4. Prepare work instructions	<p>4.1 Metal door & window frame installation work progress checked against project schedule</p> <p>4.2 Total number of metal door & window frame installer determined according to project requirements</p> <p>4.3 Types of defect and</p>

CU Title	CU Code	CU Descriptor	Work Activities	Performance Criteria
				<p>restoration works determined according to complaints</p> <p>4.4 Work instructions issued to metal door & window frame installer</p>
			<p>5. Monitor metal door & window frame installation works</p>	<p>5.1 Installed metal door & window frame location and conditions confirmed according to project schedule</p> <p>5.2 Metal door and window frame squareness, verticality, alignment, supports and fixes inspected and confirmed according to frame manufacturer specification</p> <p>5.3 Metal door & window panel opening direction checked to avoid installation fault</p> <p>5.4 Metal door & window frame installation progress photo taken according to project requirements</p> <p>5.5 Metal door & window frame installation daily</p>

CU Title	CU Code	CU Descriptor	Work Activities	Performance Criteria
				report prepared and submitted to Assistant Construction Manager 5.6 Mitigation plan for any setback suggested to superior for approval
3. IBS Metal Door & Window Frame Installation Supervisory Function	F433-002-3:2017-C03	<p>IBS Metal door & window frame installation supervisory function describes the competency in the general process of organising project's resources, especially people, efficiently so as to direct the installation works toward project objectives.</p> <p>A competent person in this CU shall be able to participate in metal door & window frame installer recruitment, monitor metal door & window frame installer attendance, organise in house training and handle metal door & window frame installer grievances.</p>	1. Participate in metal door & window frame installer recruitment	<p>1.1 Metal door & window frame installer requirements and their scope of work determined according to installation schedule and submitted to superior according to organisation procedure</p> <p>1.2 Interview session for metal door & window frame installer participated according to organisation procedure</p>
			2. Monitor metal door & window frame installer attendance	<p>2.1 Metal door & window frame installation site diary updated with installation works information</p> <p>2.2 Metal door & window frame installation site diary verified by</p>

CU Title	CU Code	CU Descriptor	Work Activities	Performance Criteria
		<p>The outcome of this competency is to plan, organise and control the overall activities of metal door & window frame installation project in accordance with company's Standard Operating Procedures (SOP).</p>	<p>3. Organise in house training</p>	<p>Assistant Construction Manager</p> <p>2.3 Attendance card signed to verify metal door & window frame installer daily working hours</p> <p>2.4 Attendance card submitted to respective department for salary purposes</p> <p>3.1 In house training requirements and plan determined according to metal door & window frame installer competencies and project requirements</p> <p>3.2 Respective metal door & window frame installer assigned for in house training according to training plan</p> <p>3.3 Metal door & window frame installer work performance assessed after in house training to ensure effectiveness of training</p>

CU Title	CU Code	CU Descriptor	Work Activities	Performance Criteria
			4. Handle metal door & window frame installer grievances	4.1 Metal door & window frame installer grievances determine based on complaints report and feedback 4.2 Rectification for metal door & window frame installer grievances coordinated with relevant department 4.3 Unresolved issues escalated to superior according to organisation procedure

CURRICULUM

NATIONAL OCCUPATIONAL SKILLS STANDARD (NOSS) FOR;

IBS METAL DOOR & WINDOW FRAME INSTALLATION SUPERVISION

LEVEL 3

15. Curriculum of Competency Unit (CoCU)

SECTOR	(F) Construction						
SUB SECTOR	(43) Specialized Construction Activities						
JOB AREA	IBS Metal Door & Window Frame						
NOSS TITLE	IBS Metal Door & Window Frame Installation Supervision						
COMPETENCY UNIT TITLE	IBS Metal Door & Window Frame Requisition, Storage & Handling Coordination						
LEARNING OUTCOME	<p>The person who is competent in this CU shall be able to store and handle metal door & window frame properly to ensure in sufficient quantity and free from damage in accordance with frame manufacturer specifications, drawings, storage system, PO and DO. Upon completion of this competency units, trainees will be able to:-</p> <ol style="list-style-type: none"> 1. Carry out metal door & window frame requisition 2. Confirm metal door & window frame delivery details 3. Carry out metal door & window frame and installation materials receiving 4. Carry out metal door & window frame storage arrangement and labelling 						
PRE-REQUISITE (if applicable)							
COMPETENCY UNIT ID	F433-002-3:2017-C01	LEVEL	3	TRAINING DURATION	180	SKILL CREDIT	18

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/Environment	Training Hours	Delivery Mode	Assessment Criteria
1. Carry out metal door & window frame requisition	1.1 Requisition references, which include: <ul style="list-style-type: none"> • Construction drawing • Project schedule • Product catalogue • Shop drawing 1.2 Requisition	1.1 Interpret construction drawing 1.2 Determine metal door & window frame type, size and quantity 1.3 Determine delivery schedule 1.4 Submit metal	<u>Attitude</u> <ul style="list-style-type: none"> • Meticulous and precise in interpreting construction drawing • Resourceful in requesting metal door & window frame • Time and cost conscious in 	<u>Related Knowledge</u> 25 <u>Related Skill</u> 38	<u>Related Knowledge</u> Lecture, Group Discussion, E-Learning, Case Study, Problem Based Learning (PBL) or Seminar	1.1 Requisition references listed out and explained 1.2 Procedure of metal door & window frame requisition explained and demonstrated 1.3 Metal door & window frame

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/ Environment	Training Hours	Delivery Mode	Assessment Criteria
	form format and information 1.3 Requisition procedure 1.4 Organisation chart	door & window frame requisition form to superior for approval 1.5 Submit approved requisition form to purchasing department	completing task		<u>Related Skill</u> Demonstration, Simulation, Project, Scenario Based Training (SBT), Coaching, Observation or Mentoring	type, size and quantity confirmed and justified
2. Confirm metal door & window frame delivery details	2.1 Metal door & window frame supplier information 2.2 Purchase Order (PO) information 2.3 Bill of Quantity (BQ) information 2.4 Progress report format and information	2.1 Determine metal door & window frame supplier 2.2 Determine metal door & window frame type, size and quantity according to PO and BQ 2.3 Determine actual site progress 2.4 Ensure date of delivery	<u>Attitude</u> <ul style="list-style-type: none"> • Meticulous and precise in confirming metal door & window frame delivery details • Ability to collaborate and cooperate with other department • Diligent in following procedure 	<u>Related Knowledge</u> 7 <u>Related Skill</u> 11	<u>Related Knowledge</u> Lecture, Group Discussion, E-Learning, Case Study, Problem Based Learning (PBL) or Seminar <u>Related Skill</u> Demonstration, Simulation, Project, Scenario Based Training (SBT), Coaching,	2.1 Purchase Order (PO) information explained 2.2 Bill of Quantity (BQ) information explained 2.3 Progress report information explained 2.4 Metal door & window frame type, size and quantity confirmed according to PO and BQ

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/ Environment	Training Hours	Delivery Mode	Assessment Criteria
					Observation or Mentoring	
3. Carry out metal door & window frame and installation materials receiving	3.1 Delivery Order (DO) information 3.2 Elements of metal door & window frame and installation materials checking, which include: <ul style="list-style-type: none"> • Quantity • Size • Type of frame • Frame materials 3.3 Metal door & window frame rejection procedure 3.4 DO verification procedure	3.1 Receive DO from lorry driver 3.2 Confirm DO according to respective PO 3.3 Check metal door & window frame and installation materials visually 3.4 Check metal door & window frame to ensure free from defects 3.5 Verify DO	<u>Attitude</u> <ul style="list-style-type: none"> • Meticulous and honest in checking metal door & window frame and installation materials • Ability to collaborate and cooperate with other department • Diligent in following procedure <u>Safety</u> <ul style="list-style-type: none"> • Adhere to DOSH safety requirements • Alert to hazards and risks in workplace 	<u>Related Knowledge</u> 22 <u>Related Skill</u> 32	<u>Related Knowledge</u> Lecture, Group Discussion, E-Learning, Case Study, Problem Based Learning (PBL) or Seminar <u>Related Skill</u> Demonstration, Simulation, Project, Scenario Based Training (SBT), Coaching, Observation or Mentoring	3.1 Delivery Order (DO) information explained 3.2 Elements of metal door & window frame and installation materials checking listed out and explained 3.3 Method of checking metal door & window frame and installation materials demonstrated 3.4 Metal door & window frame free from defects confirmed and justified 3.5 Procedure to verify DO demonstrated

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/ Environment	Training Hours	Delivery Mode	Assessment Criteria
4. Carry out metal door & window frame storage arrangement and labelling	<p>4.1 Storage information, which include:</p> <ul style="list-style-type: none"> • Designated storage area • Storage capacity <p>4.2 Storage arrangement, which include:</p> <ul style="list-style-type: none"> • First In First Out (FIFO) storage system • Storage condition (protection from humidity, weather, theft, damage) <p>4.3 Metal door & window frame unloading and transfer works requirements, which include:</p> <ul style="list-style-type: none"> • Machinery (crane, 	<p>4.1 Interpret metal door & window schedule to determine store location</p> <p>4.2 Coordinate storage arrangement</p> <p>4.3 Coordinate metal door & window frame unloading and transfer works</p> <p>4.4 Ensure metal door & window frame conditions free from defects</p> <p>4.5 Determine metal door & window frame handling method and procedure</p> <p>4.6 Determine metal door & window frame distribution</p> <p>4.7 Ensure metal door & window frame properly</p>	<p><u>Attitude</u></p> <ul style="list-style-type: none"> • Meticulous and precise in arranging and labelling metal door & window frame • Resourceful in identifying proper storage location • Time and cost conscious in completing task <p><u>Safety</u></p> <ul style="list-style-type: none"> • Adhere to DOSH safety requirements • Alert to hazards and risks in workplace 	<p><u>Related Knowledge</u> 18</p> <p><u>Related Skill</u> 27</p>	<p><u>Related Knowledge</u> Lecture, Group Discussion, E-Learning, Case Study, Problem Based Learning (PBL) or Seminar</p> <p><u>Related Skill</u> Demonstration, Simulation, Project, Scenario Based Training (SBT), Coaching, Observation or Mentoring</p>	<p>4.1 Storage information details explained</p> <p>4.2 Storage arrangement explained</p> <p>4.3 Metal door & window frame unloading and transfer works requirements listed out and explained</p> <p>4.4 Metal door & window frame label information explained</p> <p>4.5 Method of handling metal door & window frame demonstrated</p> <p>4.6 Procedure of handling metal door & window frame demonstrated</p> <p>4.7 Metal door & window frame</p>

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/ Environment	Training Hours	Delivery Mode	Assessment Criteria
	forklift, pallet jack) <ul style="list-style-type: none"> • Manpower 4.4 Metal door & window frame handling method 4.5 Metal door & window frame handling procedure 4.6 Metal door & window frame label information	labelled and stored				distribution determined and confirmed

Employability Skills

CORE ABILITIES	SOCIAL SKILLS
<p>01.07 Utilize database applications to locate a process information.</p> <p>01.08 Utilize spreadsheets applications to locate and process information.</p> <p>01.09 Utilize business graphic application to process information.</p> <p>01.10 Apply a variety of mathematical techniques.</p> <p>01.11 Apply thinking skills and creativity.</p> <p>02.09 Prepare flowcharts.</p> <p>02.10 Prepare reports and instructions.</p> <p>02.11 Convey information and ideas to people.</p> <p>03.09 Manage and improve performance of individuals.</p> <p>03.10 Provide consultations and counseling.</p> <p>03.11 Monitor and evaluate performance of human resources.</p> <p>03.12 Provide coaching/on-the-job training.</p> <p>03.13 Develop and maintain team harmony and resolve conflicts.</p> <p>03.14 Facilitate and coordinate teams and ideas.</p> <p>03.15 Liaise to achieve identified outcomes.</p> <p>03.16 Identify and assess client/customer needs.</p> <p>03.17 Identify staff training needs and facilitate access to training.</p> <p>04.06 Allocate work.</p> <p>04.07 Negotiate acceptance and support for objectives and strategies.</p> <p>05.01 Implement project/work plans.</p> <p>05.02 Inspect and monitor work done and/or in progress.</p> <p>06.07 Develop and maintain networks.</p>	<p>1 Communication skills</p> <p>2 Conceptual skills</p> <p>3 Interpersonal skills</p> <p>4 Learning skills</p> <p>5 Leadership skills</p> <p>6 Multitasking and prioritising</p> <p>7 Self-discipline</p> <p>8 Teamwork</p>

Tools, Equipment and Materials (TEM)

ITEMS	RATIO (TEM : Trainees)
1 Construction drawing	1:1
2 Project schedule	1:1
3 Product catalogue	1:1
4 Shop drawing	1:1
5 Requisition Form	1:1
6 Measuring and testing tools <ul style="list-style-type: none"><li data-bbox="243 578 512 618">• Measuring tape<li data-bbox="243 618 443 659">• Plumb bob<li data-bbox="243 659 443 699">• Spirit level<li data-bbox="243 699 453 740">• Water level	1:1 1:1 1:1 1:1
7 Purchase Order (PO)	1:1
8 Delivery Order (DO)	1:1
9 Bill of Quantity (BQ)	1:1

References for Learning Material Development

- 1 Griffith, Alan and Watson, Paul. 2004. Construction Management: Principles and Practice. New York : Palgrave Macmillan, 2004. ISBN 0-333-96878-6.
- 2 Misnan, Mohd Saidin and Mohamed, Abdul Hakim and Abdullah, Mat Naim. 2013. Pengurusan Keselamatan Projek Pembinaan. Johor Bahru : Universiti Teknologi Malaysia, 2013. ISBN 978-983-52-0917-8.
- 3 Osman, Omar. 2006. Pengurusan Pembinaan: Konsep, Strategi, dan Aplikasi. Pulau Pinang : Universiti Sains Malaysia, 2006. ISBN 983-861-311-8.
- 4 Rapp, Randy R. and Benhart, Bradley L. 2015. Construction Site Planning and Logistical Operations: Site-Focus Management for Builders. Indiana : Purdue University Press, 2015. ISBN 978-1-55753-646-4.
- 5 Rounds, Jerald L. and Segner, Robert O. 2011. Construction Supervision. New Jersey : John Wiley & Sons Inc., 2011. ISBN 978-0-470-61496-9.

16. Curriculum of Competency Unit (CoCU)

SECTOR	(F) Construction						
SUB SECTOR	(43) Specialized Construction Activities						
JOB AREA	IBS Metal Door & Window Frame						
NOSS TITLE	IBS Metal Door & Window Frame Installation Supervision						
COMPETENCY UNIT TITLE	IBS Metal Door & Window Frame Installation Coordination						
LEARNING OUTCOME	<p>The person who is competent in this CU shall be able to ensure smooth in metal door & window frame installation process and safe working condition in accordance with project requirements and safety compliances. Upon completion of this competency units, trainees will be able to:-</p> <ol style="list-style-type: none"> 1. Identify metal door & window frame installation coordination requirements 2. Coordinate metal door & window frame installation works 3. Coordinate safety compliance 4. Prepare work instructions 5. Monitor metal door & window frame installation works 						
PRE-REQUISITE (if applicable)							
COMPETENCY UNIT ID	F433-002-3:2017-C02	LEVEL	3	TRAINING DURATION	270	SKILL CREDIT	27

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/Environment	Training Hours	Delivery Mode	Assessment Criteria
1. Identify metal door & window frame installation coordination requirements	1.1 Project information, which include: <ul style="list-style-type: none"> • Project schedule • Project process flow • Organisation Chart 1.2 Work area inspection	1.1 Interpret project schedule 1.2 Determine project process flow 1.3 Establish communication and coordination with other respective	<u>Attitude</u> <ul style="list-style-type: none"> • Meticulous and precise in identifying metal door & window frame installation coordination requirements • Ability to collaborate 	<u>Related Knowledge</u> 16 <u>Related Skill</u> 24	<u>Related Knowledge</u> Lecture, Group Discussion, E-Learning, Case Study, Problem Based Learning (PBL) or Seminar <u>Related</u>	1.1 Related project information listed out explained 1.2 Good communication skills demonstrated 1.3 Work area readiness criteria

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/Environment	Training Hours	Delivery Mode	Assessment Criteria
	1.3 Communication skills	related parties 1.4 Confirm work area readiness 1.5 Acquire work permission from superior	and cooperate with other department • Time and cost conscious in completing task		<u>Skill</u> Demonstration, Simulation, Project, Scenario Based Training (SBT), Coaching, Observation or Mentoring	determined
2. Coordinate metal door & window frame installation works	2.1 Metal door & window frame installation procedure 2.2 Installation tools, equipment and materials usage and functions 2.3 Metal door & window frame installer work description 2.4 Type of installation machinery, which include: • Crane • Fork lift • Pallet jack	2.1 Determine metal door & window frame installation procedure 2.2 Arrange installation tools, equipment and materials 2.3 Arrange metal door & window frame installer work activity 2.4 Arrange metal door & window frame installation machinery 2.5 Carry out metal door & window	<u>Attitude</u> • Meticulous and resourceful in coordinating door & window frame installation works • Time and cost conscious in completing task <u>Safety</u> • Adhere to DOSH safety requirements • Alert to hazards and	<u>Related Knowledge</u> 32 <u>Related Skill</u> 49	<u>Related Knowledge</u> Lecture, Group Discussion, E-Learning, Case Study, Problem Based Learning (PBL) or Seminar <u>Related Skill</u> Demonstration, Simulation, Project, Scenario Based Training (SBT), Coaching, Observation or	2.1 Installation tools, equipment and materials usage and functions explained 2.2 Metal door & window frame installer work description listed out and explained 2.3 Type of installation machinery listed out and explained 2.4 Installation machinery

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/Environment	Training Hours	Delivery Mode	Assessment Criteria
	2.5 Installation machinery functions and suitability	frame installation briefing	risks in workplace <u>Environment</u> <ul style="list-style-type: none"> • Adhere to Department Of Environment requirements • Adhere to 3R's (Reduce, Reuse and Recycle) practices 		Mentoring	functions and suitability explained 2.5 Metal door & window frame installation procedure confirmed and justified 2.6 Arrangement of installation tools, equipment and materials demonstrated 2.7 Arrangement of metal door & window frame installer work activity demonstrated 2.8 Arrangement of metal door & window frame installation machinery 2.9 Metal door & window frame installation briefing

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/Environment	Training Hours	Delivery Mode	Assessment Criteria
						conducted
3. Coordinate safety compliance	<p>3.1 Type of Personal Protective Equipment (PPE), which include:</p> <ul style="list-style-type: none"> • Safety helmet • Safety boots • Safety vest • Hand glove • Goggle <p>3.2 PPE usage and functions</p> <p>3.3 Act 514 Occupational Safety and Health Act 1994 information</p> <p>3.4 CIDB Act 520 information</p>	<p>3.1 Arrange safety induction</p> <p>3.2 Arrange proper Personal Protective Equipment (PPE) for door & window frame installer</p> <p>3.3 Ensure safety procedure compliances</p>	<p><u>Attitude</u></p> <ul style="list-style-type: none"> • Meticulous, resourceful and firm in coordinating door & window frame installation works • Time and cost conscious in completing task • Demonstrates good interpersonal relation <p><u>Safety</u></p> <ul style="list-style-type: none"> • Adhere to DOSH safety requirements 	<p><u>Related Knowledge</u> 12</p> <p><u>Related Skill</u> 16</p>	<p><u>Related Knowledge</u> Lecture, Group Discussion, E-Learning, Case Study, Problem Based Learning (PBL) or Seminar</p> <p><u>Related Skill</u> Demonstration, Simulation, Project, Scenario Based Training (SBT), Coaching, Observation or Mentoring</p>	<p>3.1 Type of Personal Protective Equipment (PPE) listed out</p> <p>3.2 PPE usage and functions explained</p> <p>3.3 Related Act 514 Occupational Safety and Health Act 1994 information explained</p> <p>3.4 Related CIDB Act 520 information explained</p> <p>3.5 Arrangement</p>

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/ Environment	Training Hours	Delivery Mode	Assessment Criteria
			<ul style="list-style-type: none"> Alert to hazards and risks in workplace 			of safety induction demonstrated 3.6 Arrangement of PPE for door & window frame installer demonstrated 3.7 safety procedure compliances confirmed and justified
4. Prepare work instructions	4.1 Labour constant calculation 4.2 Metal door & window frame rectification procedure 4.3 Work instruction format 4.4 Work instruction issuance method	4.1 Interpret project schedule 4.2 Determine number of metal door & window frame installer 4.3 Interpret complaint on metal door & window frame defects 4.4 Determine metal door & window frame installation and rectification works	<u>Attitude</u> <ul style="list-style-type: none"> Meticulous and resourceful in preparing work instructions Knowledgeable in determining resources requirement 	<u>Related Knowledge</u> 16 <u>Related Skill</u> 24	<u>Related Knowledge</u> Lecture, Group Discussion, E-Learning, Case Study, Problem Based Learning (PBL) or Seminar <u>Related Skill</u> Demonstration, Simulation, Project, Scenario Based Training	4.1 Work instruction format explained 4.2 Labour constant calculation demonstrated 4.3 Procedure of metal door & window frame rectification demonstrated 4.4 Complaint on metal door & window frame defects

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/ Environment	Training Hours	Delivery Mode	Assessment Criteria
		4.5 Issue work instruction to metal door & window frame installer			(SBT), Coaching, Observation or Mentoring	interpreted 4.5 Work instruction prepared and issued
5. Monitor metal door & window frame installation works	5.1 Metal door and window frame inspection method 5.2 Inspection form format 5.3 Installation progress photo requirements 5.4 Daily report format 5.5 Mitigation plan proposal	5.1 Interpret project schedule 5.2 Ensure metal door and window frame installer wearing suitable PPE 5.3 Confirm installed metal door & window frame location according to construction drawing 5.4 Ensure metal door and window frame squareness, verticality, alignment, supports and fixes 5.5 Ensure metal door & window panel opening	<u>Attitude</u> <ul style="list-style-type: none"> • Meticulous and resourceful in monitoring metal door & window frame installation works • Demonstrates good interpersonal relation • Ability to motivate, guide and supportive to others • Time and cost conscious in completing task <u>Safety</u> <ul style="list-style-type: none"> • Adhere to 	<u>Related Knowledge</u> 32 <u>Related Skill</u> 49	<u>Related Knowledge</u> Lecture, Group Discussion, E-Learning, Case Study, Problem Based Learning (PBL) or Seminar <u>Related Skill</u> Demonstration, Simulation, Project, Scenario Based Training (SBT), Coaching, Observation or Mentoring	5.1 Inspection form format explained 5.2 Installation progress photo requirements explained 5.3 Daily report format explained 5.4 Ensuring metal door and window frame installer wearing suitable PPE demonstrated 5.5 Installed metal door & window frame location confirmed and justified 5.6 Method of checking metal door and

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/Environment	Training Hours	Delivery Mode	Assessment Criteria
		direction 5.6 Take metal door & window frame installation progress photo 5.7 Prepare metal door & window frame installation daily report 5.8 Submit metal door & window frame installation daily report to superior 5.9 Propose mitigation plan for any setback	DOSH safety requirements <ul style="list-style-type: none"> • Alert to hazards and risks in workplace <u>Environment</u> <ul style="list-style-type: none"> • Adhere to Department Of Environment requirements • Adhere to 3R's (Reduce, Reuse and Recycle) practices 			window frame demonstrated 5.7 Requirements on installation progress photo met 5.8 Format of metal door & window frame installation daily report followed 5.9 Suggestion on mitigation plan for any setback conveyed

Employability Skills

CORE ABILITIES	SOCIAL SKILLS
<p>01.07 Utilize database applications to locate a process information.</p> <p>01.08 Utilize spreadsheets applications to locate and process information.</p> <p>01.09 Utilize business graphic application to process information.</p> <p>01.10 Apply a variety of mathematical techniques.</p> <p>01.11 Apply thinking skills and creativity.</p> <p>02.09 Prepare flowcharts.</p> <p>02.10 Prepare reports and instructions.</p> <p>02.11 Convey information and ideas to people.</p> <p>03.09 Manage and improve performance of individuals.</p> <p>03.10 Provide consultations and counseling.</p> <p>03.11 Monitor and evaluate performance of human resources.</p> <p>03.12 Provide coaching/on-the-job training.</p> <p>03.13 Develop and maintain team harmony and resolve conflicts.</p> <p>03.14 Facilitate and coordinate teams and ideas.</p> <p>03.15 Liaise to achieve identified outcomes.</p> <p>03.16 Identify and assess client/customer needs.</p> <p>03.17 Identify staff training needs and facilitate access to training.</p> <p>04.06 Allocate work.</p> <p>04.07 Negotiate acceptance and support for objectives and</p>	<p>1 Communication skills</p> <p>2 Conceptual skills</p> <p>3 Interpersonal skills</p> <p>4 Learning skills</p> <p>5 Leadership skills</p> <p>6 Multitasking and prioritising</p> <p>7 Self-discipline</p> <p>8 Teamwork</p>

strategies. 05.01 Implement project/work plans. 05.02 Inspect and monitor work done and/or in progress. 06.07 Develop and maintain networks.	
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Tools, Equipment and Materials (TEM)

ITEMS	RATIO (TEM : Trainees)
1 Construction drawing	1:1
2 Project schedule	1:1
3 Measuring and testing tools	
• Measuring tape	1:1
• Plumb bob	1:1
• Spirit level	1:1
• Water level	1:1
4 Project process flow	1:1
5 Organisation chart	1:1
6 Work instruction	1:1
7 Inspection form	1:1
8 Sample of daily report	1:1

References for Learning Material Development

- 1 Griffith, Alan and Watson, Paul. 2004. Construction Management: Principles and Practice. New York : Palgrave Macmillan, 2004. ISBN 0-333-96878-6.
- 2 Misnan, Mohd Saidin and Mohamed, Abdul Hakim and Abdullah, Mat Naim. 2013. Pengurusan Keselamatan Projek Pembinaan. Johor Bahru : Universiti Teknologi Malaysia, 2013. ISBN 978-983-52-0917-8.
- 3 Osman, Omar. 2006. Pengurusan Pembinaan: Konsep, Strategi, dan Aplikasi. Pulau Pinang : Universiti Sains Malaysia, 2006. ISBN 983-861-311-8.
- 4 Rapp, Randy R. and Benhart, Bradley L. 2015. Construction Site Planning and Logistical Operations: Site-Focus Management for Builders. Indiana : Purdue University Press, 2015. ISBN 978-1-55753-646-4.
- 5 Rounds, Jerald L. and Segner, Robert O. 2011. Construction Supervision. New Jersey : John Wiley & Sons Inc., 2011. ISBN 978-0-470-61496-9.

17. Curriculum of Competency Unit (CoCU)

SECTOR	(F) Construction						
SUB SECTOR	(43) Specialized Construction Activities						
JOB AREA	IBS Metal Door & Window Frame						
NOSS TITLE	IBS Metal Door & Window Frame Installation Supervision						
COMPETENCY UNIT TITLE	IBS Metal Door & Window Frame Installation Supervisory Function						
LEARNING OUTCOME	<p>The person who is competent in this CU shall be able to plan, organise and control the overall activities of metal door & window frame installation project in accordance with company's Standard Operating Procedures (SOP). Upon completion of this competency units, trainees will be able to:-</p> <ol style="list-style-type: none"> 1. Participate in metal door & window frame installer recruitment 2. Monitor metal door & window frame installer attendance 3. Organise in house training 4. Handle metal door & window frame installer grievances 						
PRE-REQUISITE (if applicable)							
COMPETENCY UNIT ID	F433-002-3:2017-C03	LEVEL	3	TRAINING DURATION	150	SKILL CREDIT	15

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/Environment	Training Hours	Delivery Mode	Assessment Criteria
1. Participate in metal door & window frame installer recruitment	1.1 Project schedule information 1.2 Metal door & window frame installer scope	1.1 Interpret installation schedule 1.2 Determine manpower requirement	<u>Attitude</u> <ul style="list-style-type: none"> • Meticulous in interpreting installation schedule • Resourceful in 	<u>Related Knowledge</u> 17 <u>Related</u>	<u>Related Knowledge</u> Lecture, Group Discussion, E-Learning, Case Study, Problem	1.1 Installation schedule information explained 1.2 Metal door & window frame

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/Environment	Training Hours	Delivery Mode	Assessment Criteria
	of work 1.3 Interview procedure	1.3 Determine metal door & window frame installer scope of work 1.4 Submit manpower requisition to superior 1.5 Take part in interview session	determining metal door & window frame installer scope of work <ul style="list-style-type: none"> Adhere to interview procedure Time and cost conscious in completing task 	<u>Skill</u> 25	Based Learning (PBL) or Seminar <u>Related Skill</u> Demonstration, Simulation, Project, Scenario Based Training (SBT), Coaching, Observation or Mentoring	installer scope of work listed out and explained 1.3 Involvement in metal door & window frame installer interview session demonstrated
2. Monitor metal door & window frame installer attendance	2.1 Attendance card information 2.2 Attendance card submission procedure 2.3 Communication skills 2.4 Metal door & window frame installer attendance record preparation	2.1 Determine number of metal door & window frame installer 2.2 Sign metal door & window frame installer attendance card 2.3 Verify metal door & window frame installers reason of absence 2.4 Submit	<u>Attitude</u> <ul style="list-style-type: none"> Honest and precise in monitoring metal door & window frame installer attendance Ability to collaborate and cooperate with other department 	<u>Related Knowledge</u> 14 <u>Related Skill</u> 22	<u>Related Knowledge</u> Lecture, Group Discussion, E-Learning, Case Study, Problem Based Learning (PBL) or Seminar <u>Related Skill</u> Demonstration, Simulation,	2.1 Attendance card information explained 2.2 Verification of metal door & window frame installer attendance card demonstrated 2.3 Procedure of attendance record

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/Environment	Training Hours	Delivery Mode	Assessment Criteria
		attendance record to respective department			Project, Scenario Based Training (SBT), Coaching, Observation or Mentoring	submission demonstrated 2.4 Good communication skills demonstrated
3. Organise in house training	3.1 In house training plan 3.2 Door & window frame installer performance assessment method	3.1 Determine in house training requirements 3.2 Coordinate in house training 3.3 Assess door & window frame installer performance after in house training	<u>Attitude</u> <ul style="list-style-type: none"> Resourceful in determining subordinate performance improvement requirement Ability to motivate, guide and supportive to others 	<u>Related Knowledge</u> 14 <u>Related Skill</u> 22	<u>Related Knowledge</u> Lecture, Group Discussion, E-Learning, Case Study, Problem Based Learning (PBL) or Seminar <u>Related Skill</u> Demonstration, Simulation, Project, Scenario Based Training (SBT), Coaching, Observation or Mentoring	3.1 In house training plan explained 3.2 Coordination of in house training for door & window frame installer demonstrated 3.3 Method of door & window frame installer performance assessment demonstrated

Work Activities	Related Knowledge	Related Skill	Attitude/Safety/Environment	Training Hours	Delivery Mode	Assessment Criteria
4. Handle metal door & window frame installer grievances	4.1 Procedure to handle metal door & window installer grievances 4.2 Complaints report information	4.1 Determine organisation SOP on metal door & window installer grievances 4.2 Obtain metal door & window installer complaints report 4.3 Determine metal door & window installer grievances 4.4 Arrange rectification for metal door & window installer grievances 4.5 Escalate unresolved issues to superior	<u>Attitude</u> <ul style="list-style-type: none"> Patience and fair in handling door & window installer grievances Confidentiality in handling metal door & window installer issues 	<u>Related Knowledge</u> 14 <u>Related Skill</u> 22	<u>Related Knowledge</u> Lecture, Group Discussion, E-Learning, Case Study, Problem Based Learning (PBL) or Seminar <u>Related Skill</u> Demonstration, Simulation, Project, Scenario Based Training (SBT), Coaching, Observation or Mentoring	4.1 Procedure to handle metal door & window installer grievances explained 4.2 Complaints report information explained 4.3 Rectification arrangement for metal door & window installer grievances demonstrated

Employability Skills

CORE ABILITIES	SOCIAL SKILLS
<p>01.07 Utilize database applications to locate a process information.</p> <p>01.08 Utilize spreadsheets applications to locate and process information.</p> <p>01.09 Utilize business graphic application to process information.</p> <p>01.10 Apply a variety of mathematical techniques.</p> <p>01.11 Apply thinking skills and creativity.</p> <p>02.09 Prepare flowcharts.</p> <p>02.10 Prepare reports and instructions.</p> <p>02.11 Convey information and ideas to people.</p> <p>03.09 Manage and improve performance of individuals.</p> <p>03.10 Provide consultations and counseling.</p> <p>03.11 Monitor and evaluate performance of human resources.</p> <p>03.12 Provide coaching/on-the-job training.</p> <p>03.13 Develop and maintain team harmony and resolve conflicts.</p> <p>03.14 Facilitate and coordinate teams and ideas.</p> <p>03.15 Liaise to achieve identified outcomes.</p> <p>03.16 Identify and assess client/customer needs.</p> <p>03.17 Identify staff training needs and facilitate access to training.</p> <p>04.06 Allocate work.</p> <p>04.07 Negotiate acceptance and support for objectives and strategies.</p> <p>05.01 Implement project/work plans.</p>	<ol style="list-style-type: none"> 1 Communication skills 2 Conceptual skills 3 Interpersonal skills 4 Learning skills 5 Leadership skills 6 Multitasking and prioritising 7 Self-discipline 8 Teamwork

05.02 Inspect and monitor work done and/or in progress. 06.07 Develop and maintain networks.	
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Tools, Equipment and Materials (TEM)

ITEMS	RATIO (TEM : Trainees)
1 Attendance card	1:1
2 Attendance record	1:1
3 Site diary	1:1
4 Sample of project progress report	1:1
5 Construction drawing	1:1
6 Project schedule	1:1
7 Purchase Order (PO)	1:1
8 Delivery Order (DO)	1:1
9 Bill of Quantity (BQ)	1:1

References for Learning Material Development

<ol style="list-style-type: none"> 1 Griffith, Alan and Watson, Paul. 2004. Construction Management: Principles and Practice. New York : Palgrave Macmillan, 2004. ISBN 0-333-96878-6. 2 Misnan, Mohd Saidin and Mohamed, Abdul Hakim and Abdullah, Mat Naim. 2013. Pengurusan Keselamatan Projek Pembinaan. Johor Bahru : Universiti Teknologi Malaysia, 2013. ISBN 978-983-52-0917-8. 3 Osman, Omar. 2006. Pengurusan Pembinaan: Konsep, Strategi, dan Aplikasi. Pulau Pinang : Universiti Sains Malaysia, 2006. ISBN 983-861-311-8. 4 Rapp, Randy R. and Benhart, Bradley L. 2015. Construction Site Planning and Logistical Operations: Site-Focus Management for Builders. Indiana : Purdue University Press, 2015. ISBN 978-1-55753-646-4. 5 Rounds, Jerald L. and Segner, Robert O. 2011. Construction Supervision. New Jersey : John Wiley & Sons Inc., 2011. ISBN

18. Training Hour Summary

CU CODE	COMPETENCY UNIT TITLE	WORK ACTIVITIES	RELATED KNOWLEDGE (A)	RELATED SKILL (B)	HOURS (C) = (A)+(B)	TOTAL (HOURS) $\Sigma(C)$
C01	IBS METAL DOOR & WINDOW FRAME REQUISITION, STORAGE & HANDLING COORDINATION	Carry out metal door & window frame requisition	25	38	63	180
		Confirm metal door & window frame delivery details	7	11	18	
		Carry out metal door & window frame and installation materials receiving	22	32	54	
		Carry out metal door & window frame storage arrangement and labelling	18	27	45	
C02	IBS METAL DOOR & WINDOW FRAME INSTALLATION COORDINATION	Identify metal door & window frame installation coordination requirements	16	24	40	270
		Coordinate metal door & window frame installation works	32	49	81	
		Coordinate safety compliance	12	16	28	
		Prepare work instructions	16	24	40	

CU CODE	COMPETENCY UNIT TITLE	WORK ACTIVITIES	RELATED KNOWLEDGE (A)	RELATED SKILL (B)	HOURS (C) = (A)+(B)	TOTAL (HOURS) $\Sigma(C)$
		Monitor metal door & window frame installation works	32	49	81	
C03	IBS METAL DOOR & WINDOW FRAME INSTALLATION SUPERVISORY FUNCTION	Participate in metal door & window frame installer recruitment	17	25	42	150
		Monitor metal door & window frame installer attendance	14	22	36	
		Organise in house training	14	22	36	
		Handle metal door & window frame installer grievances	14	22	36	
TOTAL HOURS (CORE COMPETENCY)			239	361	600	600