



## Qualification Pack



# Construction Welder

Metal Inert Gas (MIG) Welding/ Tungsten Inert Gas (TIG) Welding/ Shielded Metal Arc Welding (SMAW)

QP Code: CON/Q1252

Version: 2.0

NSQF Level: 4

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## Qualification Pack

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### CON/Q1252: Construction Welder

#### Brief Job Description

A Construction Welder is responsible for joining, cutting, and repairing metal components at construction sites using various welding techniques. They work with steel structures, pipelines, and other metal frameworks, ensuring high-quality welds that meet industry standards and project specifications.

#### Personal Attributes

The Construction Welder is expected to be physically fit to work across various locations with varied environmental conditions. Moreover, they should preferably not be suffering from any respiratory disorder, vision defects and skin allergies due to exposure to light and heat. The person should be organized, diligent, methodical, safety-conscious, and a prompt decision-maker. In addition to being a team player, the individual should have good communication skills.

#### Applicable National Occupational Standards (NOS)

##### Compulsory NOS:

1. [CON/N1206: Carry out grinding activities on structural steel elements](#)
2. [CON/N9001: Work according to personal health, safety and environment protocols at construction site](#)
3. [CON/N8001: Work effectively in a team to deliver desired results at the workplace](#)
4. [DGT/VSQ/N0101: Employability Skills \(30 Hours\)](#)

##### Electives (mandatory to select at least one):

###### Elective 1: Metal Inert Gas (MIG) Welding

1. [CON/N1253: Carry out preparatory works for Metal Inert Gas \(MIG\) Welding operations](#)
2. [CON/N1254: Carry out Metal Inert Gas \(MIG\) Welding as per requirement in fabrication workshop or construction site](#)

###### Elective 2: Tungsten Inert Gas (TIG) Welding

1. [CON/N1255: Carry out preparatory works for Tungsten Inert Gas \(TIG\) Welding operations](#)
2. [CON/N1256: Carry out Tungsten Inert Gas \(TIG\) Welding as per requirement in fabrication workshop or construction site](#)



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### Elective 3: Shielded Metal Arc Welding (SMAW)

1. [CON/N1257: Carry out preparatory work for Shielded Metal Arc Welding \(SMAW\) operations](#)
2. [CON/N1258: Carry out Shielded Metal Arc Welding \(SMAW\) as per requirement in fabrication workshop or construction site](#)

### Qualification Pack (QP) Parameters

<b>Sector</b>	Construction
<b>Sub-Sector</b>	Real Estate and Infrastructure construction
<b>Occupation</b>	Fabrication
<b>Country</b>	India
<b>NSQF Level</b>	4
<b>Credits</b>	36
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/7212.0303
<b>Minimum Educational Qualification &amp; Experience</b>	<p>12th Class OR 10th Class + I.T.I (Welder) OR 11th grade pass with 1 Year of experience Relevant Industry OR 10th grade pass with 2 Years of experience Relevant Industry OR 8th grade pass with 4 Years of experience Relevant Industry OR Previous relevant Qualification of NSQF Level (3.5 as Construction Fitter) with 1.5 years of experience Relevant Industry OR Previous relevant Qualification of NSQF Level (3 as Assistant Construction Fitter) with 3 Years of experience Relevant Industry</p>
<b>Minimum Level of Education for Training in School</b>	Not Applicable



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<b>Pre-Requisite License or Training</b>	Not Applicable
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed On</b>	18/08/2021
<b>Next Review Date</b>	30/04/2028
<b>NSQC Approval Date</b>	08/05/2025
<b>Version</b>	2.0
<b>Reference code on NQR</b>	QG-04-CO-04206-2025-V1-CSDCI
<b>NQR Version</b>	2.0



## Qualification Pack

# CON/N1206: Carry out grinding activities on structural steel elements

## Description

This unit is about carrying out grinding activities on structural steel elements

## Scope

The scope covers the following :

- Carry out preparatory works for grinding structural steel sections, plates, tubes and pipes
- Grind the structural steel sections, plates, tubes and pipes to required dimensions as per instructions

## Elements and Performance Criteria

### *Carry out preparatory works for grinding structural steel sections, plates, tubes and pipes*

To be competent, the user/individual on the job must be able to:

- PC1.** ensure that the grinder is in proper working condition
- PC2.** check that guard is installed on the machine and is secure and effective
- PC3.** check and notify any inadequacy like incorrect type of grinder, incorrect consumable issued etc. in the grinding tool to appropriate authority
- PC4.** check the accessibility (in between joints, large distance from power source etc.) of the grinder for the work
- PC5.** identify the location of surface to be grinded
- PC6.** clean the metal surface to remove any foreign matter like dust, rust, paint, oil etc
- PC7.** clamp and fix the metal before grinding
- PC8.** select appropriate consumables as per work requirement
- PC9.** select and use appropriate grinding wheel as per work requirement

### *Grind the structural steel sections, plates, tubes and pipes to required dimensions as per instructions*

To be competent, the user/individual on the job must be able to:

- PC10.** gather and identify information from superiors regarding the dimensions of grinding, angle of grinding etc
- PC11.** select proper body position so that hand movements are comfortable and smooth
- PC12.** move the grinding tool in desired patterns as per work requirements
- PC13.** provide proper pressure at correct angle as per work requirement to minimize the waste age of consumables
- PC14.** grind off defective weld joints to required depth joints
- PC15.** grind off excessive root reinforcements in welded joint if required

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:



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- KU1.** the standard practices of construction fabrication
- KU2.**
  - safety rules and regulations for identifying structural steel material for measurement and
  - marking of fit-up positions
- KU3.** personal protection including use of safety gears and equipment
- KU4.** safe working methods and movements while performing relevant tasks
- KU5.** request procedure for tools & materials
- KU6.** housekeeping & other administrative rules
- KU7.** different types of grinding machines, their application and specifications
- KU8.** safety norms while using grinding equipment
- KU9.** different types of consumables and their specifications
- KU10.** importance and need of housekeeping
- KU11.** need for cleaning the surface prior to use
- KU12.** various operations of the grinding machine
- KU13.** specification of grinding wheels
- KU14.** how to optimize the use of consumable
- KU15.** importance of comfortable body position in grinding
- KU16.** various patterns of grinding
- KU17.** importance of angle of grinding
- KU18.** pressure implied during grinding and its relation to minimizing wastage
- KU19.** how to finish welded connections
- KU20.** different parts of the grinding machine
- KU21.** different hand and power tools available in market for fabrication activity
- KU22.** application of commonly used hand and power tools used in fabrication shop
- KU23.** selection and correct use of different tools and tackles as per the work requirement
- KU24.** how to carry out basic maintenance of different hand and power tools
- KU25.** know the tolerance limits and range of operation for all common hand and power tools
- KU26.** ergonomic principles to carry loads
- KU27.** tools and tackles to be used in basic rigging work
- KU28.** standard practices regarding heavy material lifting and shifting

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** read one or more language, preferably in the local language of the site
- GS3.**
  - read instructions, guidelines, sign boards, safety rules & safety tags instruction related to
  - exit routes during emergency at the workplace
- GS4.** speak in one or more language, preferably in one of the local language of the site
- GS5.**
  - listen and follow instructions / communication shared by superiors/ coworkers regarding
  - team requirements or interfaces during work processes



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- GS6.** • orally communicate with co-workers regarding support required to complete the respective work
- GS7.** decide the type of grinder to be used and the specifications of the consumables
- GS8.** decide the pattern of grinding
- GS9.** check the availability of grinder and plan work accordingly
- GS10.** perform work as per agreed time schedule and quality
- GS11.** • report to seniors or appropriate authority in case of any discrepancies in the issued equipment or grinders
- GS12.** check the adequacy of the clamps before grinding
- GS13.** confirm the depth and length of grinding
- GS14.** identify the weld areas with over reinforcement correctly
- GS15.** correctly identify the defect areas for grinding



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### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out preparatory works for grinding structural steel sections, plates, tubes and pipes</i>	<b>15</b>	<b>35</b>	-	-
<b>PC1.</b> ensure that the grinder is in proper working condition	-	-	-	-
<b>PC2.</b> check that guard is installed on the machine and is secure and effective	-	-	-	-
<b>PC3.</b> check and notify any inadequacy like incorrect type of grinder, incorrect consumable issued etc. in the grinding tool to appropriate authority	-	-	-	-
<b>PC4.</b> check the accessibility (in between joints, large distance from power source etc.) of the grinder for the work	-	-	-	-
<b>PC5.</b> identify the location of surface to be grinded	-	-	-	-
<b>PC6.</b> clean the metal surface to remove any foreign matter like dust, rust, paint, oil etc	-	-	-	-
<b>PC7.</b> clamp and fix the metal before grinding	-	-	-	-
<b>PC8.</b> select appropriate consumables as per work requirement	-	-	-	-
<b>PC9.</b> select and use appropriate grinding wheel as per work requirement	-	-	-	-
<i>Grind the structural steel sections, plates, tubes and pipes to required dimensions as per instructions</i>	<b>15</b>	<b>35</b>	-	-
<b>PC10.</b> gather and identify information from superiors regarding the dimensions of grinding, angle of grinding etc	-	-	-	-
<b>PC11.</b> select proper body position so that hand movements are comfortable and smooth	-	-	-	-
<b>PC12.</b> move the grinding tool in desired patterns as per work requirements	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC13.</b> provide proper pressure at correct angle as per work requirement to minimize the waste age of consumables	-	-	-	-
<b>PC14.</b> grind off defective weld joints to required depth joints	-	-	-	-
<b>PC15.</b> grind off excessive root reinforcements in welded joint if required	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



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### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	CON/N1206
<b>NOS Name</b>	Carry out grinding activities on structural steel elements
<b>Sector</b>	Construction
<b>Sub-Sector</b>	Real Estate and Infrastructure construction
<b>Occupation</b>	Fabrication
<b>NSQF Level</b>	3
<b>Credits</b>	3
<b>Version</b>	4.0
<b>Last Reviewed Date</b>	08/05/2025
<b>Next Review Date</b>	30/04/2028
<b>NSQC Clearance Date</b>	08/05/2025



## Qualification Pack

# CON/N9001: Work according to personal health, safety and environment protocols at construction site

## Description

This NOS covers the skill and knowledge required for an individual to work according to personal health, safety and environmental protocols at construction site

## Scope

The scope covers the following :

- Follow safety norms as defined by organization
- Adopt healthy & safe work practices
- Implement good housekeeping and environment protection process and activities
- Follow infection control guidelines as per applicability

## Elements and Performance Criteria

### *Follow safety norms as defined by the organization*

To be competent, the user/individual on the job must be able to:

- PC1.** identify and report any hazards, risks or breaches in site safety to the appropriate authority
- PC2.** follow emergency and evacuation procedures in case of accidents, fires, natural calamities
- PC3.** follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable
- PC4.** follow all the protocols and safety techniques conveyed during safety awareness programs like Tool Box Talks, safety demonstrations and mock drills conducted at the site
- PC5.** select and operate different types of fire extinguishers corresponding to various types of fires as per EHS guideline
- PC6.** identify near miss, unsafe condition and unsafe act

### *Adopt healthy & safe work practices*

To be competent, the user/individual on the job must be able to:

- PC7.** use appropriate Personal Protective Equipment (PPE) as per work requirements for : Head Protection, Ear protection, Fall Protection ,Foot Protection, Face and Eye Protection, Hand and Body Protection , and Respiratory Protection (if required)
- PC8.** handle all required tools, tackles, materials and equipment safely
- PC9.** follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines
- PC10.** check and install all safety equipment as per standard guidelines
- PC11.** follow safety protocols and practices as laid down by site EHS department
- PC12.** obtain "height pass" clearance for working at heights

### *Implement good housekeeping practices*

To be competent, the user/individual on the job must be able to:

- PC13.** collect, segregate and deposit construction waste into appropriate containers based on their toxicity or hazardous nature



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**PC14.** apply ergonomic principles wherever required

*Follow infection control guidelines as per applicability*

To be competent, the user/individual on the job must be able to:

**PC15.** follow recommended personal hygiene, workplace hygiene and sanitization practices

**PC16.** clean and disinfect all materials, tools and supplies before and after use

**PC17.** report immediately to concerned authorities regarding signs and symptoms of illness of self and others

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** reporting procedures in cases of breaches or hazards for site safety, accidents, and emergency situations as per guidelines
- KU2.** types of safety hazards at construction sites
- KU3.** basic ergonomic principles as per applicability
- KU4.** the procedure for responding to accidents and other emergencies at site
- KU5.** use of appropriate personal protective equipment based on various working conditions
- KU6.** importance of handling tools, equipment, and materials as per applicable norms
- KU7.** effect of construction material on health and environments as per applicability
- KU8.** various environmental protection methods as per applicability
- KU9.** storage of waste including non-combustible scrap material and debris, combustible scrap material and debris, general construction waste and trash (non-toxic, non-hazardous), any other hazardous wastes and any other flammable wastes at the appropriate location
- KU10.** how to keep the workplace neat and tidy so as to be safe
- KU11.** how to use hazardous material in a safe and appropriate manner as per applicability
- KU12.** types of fire
- KU13.** procedure of operating different types of fire extinguishers
- KU14.** safety relevant to tools, tackles, and equipment as per applicability
- KU15.** housekeeping activities relevant to task
- KU16.** ways of transmission of infection
- KU17.** ways to manage infectious risks at the workplace
- KU18.** different methods of cleaning, disinfection, sterilization, and sanitization
- KU19.** symptoms of infection like fever, cough, redness, swelling, and inflammation

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** fill safety formats for near miss, unsafe conditions and safety suggestions
- GS3.** read in one or more language, preferably in the local language of the site



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- GS4.** speak in one or more language, preferably in one of the local language of the site
- GS5.** listen to instructions/communication shared by site EHS and superiors regarding site safety, and conducting the toolbox talk
- GS6.** identify potential safety risks and report to the appropriate authority
- GS7.** assess and analyze areas which may affect health, safety and environment protocol on the site



## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Follow safety norms as defined by the organization</i>	<b>5</b>	<b>15</b>	-	-
<b>PC1.</b> identify and report any hazards, risks or breaches in site safety to the appropriate authority	-	-	-	-
<b>PC2.</b> follow emergency and evacuation procedures in case of accidents, fires, natural calamities	-	-	-	-
<b>PC3.</b> follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable	-	-	-	-
<b>PC4.</b> follow all the protocols and safety techniques conveyed during safety awareness programs like Tool Box Talks, safety demonstrations and mock drills conducted at the site	-	-	-	-
<b>PC5.</b> select and operate different types of fire extinguishers corresponding to various types of fires as per EHS guideline	-	-	-	-
<b>PC6.</b> identify near miss, unsafe condition and unsafe act	-	-	-	-
<i>Adopt healthy &amp; safe work practices</i>	<b>15</b>	<b>35</b>	-	-
<b>PC7.</b> use appropriate Personal Protective Equipment (PPE) as per work requirements for : Head Protection, Ear protection, Fall Protection ,Foot Protection, Face and Eye Protection, Hand and Body Protection , and Respiratory Protection (if required)	-	-	-	-
<b>PC8.</b> handle all required tools, tackles, materials and equipment safely	-	-	-	-
<b>PC9.</b> follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines	-	-	-	-
<b>PC10.</b> check and install all safety equipment as per standard guidelines	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC11.</b> follow safety protocols and practices as laid down by site EHS department	-	-	-	-
<b>PC12.</b> obtain "height pass" clearance for working at heights	-	-	-	-
<i>Implement good housekeeping practices</i>	<b>5</b>	<b>15</b>	-	-
<b>PC13.</b> collect, segregate and deposit construction waste into appropriate containers based on their toxicity or hazardous nature	-	-	-	-
<b>PC14.</b> apply ergonomic principles wherever required	-	-	-	-
<i>Follow infection control guidelines as per applicability</i>	<b>5</b>	<b>5</b>	-	-
<b>PC15.</b> follow recommended personal hygiene, workplace hygiene and sanitization practices	-	-	-	-
<b>PC16.</b> clean and disinfect all materials, tools and supplies before and after use	-	-	-	-
<b>PC17.</b> report immediately to concerned authorities regarding signs and symptoms of illness of self and others	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	CON/N9001
<b>NOS Name</b>	Work according to personal health, safety and environment protocols at construction site
<b>Sector</b>	Construction
<b>Sub-Sector</b>	Real Estate and Infrastructure construction
<b>Occupation</b>	Generic Safety
<b>NSQF Level</b>	4
<b>Credits</b>	1
<b>Version</b>	3.0
<b>Last Reviewed Date</b>	08/05/2025
<b>Next Review Date</b>	30/04/2028
<b>NSQC Clearance Date</b>	08/05/2025



## Qualification Pack

# CON/N8001: Work effectively in a team to deliver desired results at the workplace

## Description

This unit describes the skills and knowledge required to work effectively within a team to achieve the desired results

## Scope

The scope covers the following :

- Interact and communicate in an effective manner
- Support co-workers to execute the project requirements
- Practice inclusion

## Elements and Performance Criteria

### *Interact and communicate in an effective manner*

To be competent, the user/individual on the job must be able to:

- PC1.** pass on work related information/ requirement clearly to the team members
- PC2.** inform co-workers and superiors about any kind of deviations from work
- PC3.** report any unresolved problem to the supervisor immediately
- PC4.** obtain instructions from superiors and respond on the same
- PC5.** communicate to team members/subordinates for appropriate work technique and method
- PC6.** seek clarification and advice as per the requirement

### *Support co-workers to execute the project requirements*

To be competent, the user/individual on the job must be able to:

- PC7.** hand over the required material, tools, tackles, equipment and work fronts timely to interfacing teams
- PC8.** work together with co-workers in a synchronized manner

### *Practice inclusion*

To be competent, the user/individual on the job must be able to:

- PC9.** maintain cultural inclusivity at work place
- PC10.** maintain disability friendly work practices
- PC11.** follow gender neutral practices at workplace
- PC12.** address discriminatory and offensive behaviour in a professional manner as per organizational policy

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** own roles and responsibilities



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- KU2.** importance of effective communication
- KU3.** the consequence of poor teamwork on project outcomes, timelines, safety at the construction site, etc.
- KU4.** different modes of communication used at workplace
- KU5.** importance of creating healthy and cooperative work environment among the gangs of workers
- KU6.** different activities within the work area where interaction with other workers is required
- KU7.** applicable techniques of work, properties of materials used, tools and tackles used, safety standards that co-workers might need as per the requirement
- KU8.** importance of proper and effective communication and the expected adverse effects in case of failure relating to quality, timeliness, safety, risks at the construction project site
- KU9.** importance and need of supporting co-workers facing problems for the smooth functioning of work
- KU10.** the fundamental concept of gender equality
- KU11.** how to recognise and be sensitive to issues of disability, culture and gender
- KU12.** legislation, policies, and procedures relating to gender sensitivity and cultural diversity including their impact on the area of operation

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** read the communication regarding work completion, materials used, tools and tackles used, the resource required, etc,
- GS3.** speak in one or more languages, preferably in one of the local language of the site
- GS4.** listen and follow instructions / communication shared by superiors/ co-workers regarding team requirements or interfaces during work processes
- GS5.** communicate orally and effectively with co-workers considering their educational and social background
- GS6.** decide on what information is to be shared with co-workers within the team or to the interfacing gang of workers
- GS7.** plan work and organize the required resources in coordination with team members
- GS8.** complete all assigned task in coordination with team members
- GS9.** take initiative in resolving issues among co-workers or report the same to superiors
- GS10.** ensure best ways of coordination among team members
- GS11.** evaluate the complexity of task and determine if any guidance is required from superiors



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### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Interact and communicate in an effective manner</i>	<b>20</b>	<b>40</b>	-	-
<b>PC1.</b> pass on work related information/ requirement clearly to the team members	-	-	-	-
<b>PC2.</b> inform co-workers and superiors about any kind of deviations from work	-	-	-	-
<b>PC3.</b> report any unresolved problem to the supervisor immediately	-	-	-	-
<b>PC4.</b> obtain instructions from superiors and respond on the same	-	-	-	-
<b>PC5.</b> communicate to team members/subordinates for appropriate work technique and method	-	-	-	-
<b>PC6.</b> seek clarification and advice as per the requirement	-	-	-	-
<i>Support co-workers to execute the project requirements</i>	<b>5</b>	<b>15</b>	-	-
<b>PC7.</b> hand over the required material, tools, tackles, equipment and work fronts timely to interfacing teams	-	-	-	-
<b>PC8.</b> work together with co-workers in a synchronized manner	-	-	-	-
<i>Practice inclusion</i>	<b>5</b>	<b>15</b>	-	-
<b>PC9.</b> maintain cultural inclusivity at work place	-	-	-	-
<b>PC10.</b> maintain disability friendly work practices	-	-	-	-
<b>PC11.</b> follow gender neutral practices at workplace	-	-	-	-
<b>PC12.</b> address discriminatory and offensive behaviour in a professional manner as per organizational policy	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



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### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	CON/N8001
<b>NOS Name</b>	Work effectively in a team to deliver desired results at the workplace
<b>Sector</b>	Construction
<b>Sub-Sector</b>	Real Estate and Infrastructure construction
<b>Occupation</b>	Generic 2
<b>NSQF Level</b>	4
<b>Credits</b>	1
<b>Version</b>	3.0
<b>Last Reviewed Date</b>	08/05/2025
<b>Next Review Date</b>	30/04/2028
<b>NSQC Clearance Date</b>	08/05/2025



## Qualification Pack

### DGT/VSQ/N0101: Employability Skills (30 Hours)

#### Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

#### Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

#### Elements and Performance Criteria

##### *Introduction to Employability Skills*

To be competent, the user/individual on the job must be able to:

**PC1.** understand the significance of employability skills in meeting the job requirements

##### *Constitutional values - Citizenship*

To be competent, the user/individual on the job must be able to:

**PC2.** identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices

##### *Becoming a Professional in the 21st Century*

To be competent, the user/individual on the job must be able to:

**PC3.** explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.

##### *Basic English Skills*

To be competent, the user/individual on the job must be able to:

**PC4.** speak with others using some basic English phrases or sentences

##### *Communication Skills*

To be competent, the user/individual on the job must be able to:

**PC5.** follow good manners while communicating with others

**PC6.** work with others in a team



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### *Diversity & Inclusion*

To be competent, the user/individual on the job must be able to:

**PC7.** communicate and behave appropriately with all genders and PwD

**PC8.** report any issues related to sexual harassment

### *Financial and Legal Literacy*

To be competent, the user/individual on the job must be able to:

**PC9.** use various financial products and services safely and securely

**PC10.** calculate income, expenses, savings etc.

**PC11.** approach the concerned authorities for any exploitation as per legal rights and laws

### *Essential Digital Skills*

To be competent, the user/individual on the job must be able to:

**PC12.** operate digital devices and use its features and applications securely and safely

**PC13.** use internet and social media platforms securely and safely

### *Entrepreneurship*

To be competent, the user/individual on the job must be able to:

**PC14.** identify and assess opportunities for potential business

**PC15.** identify sources for arranging money and associated financial and legal challenges

### *Customer Service*

To be competent, the user/individual on the job must be able to:

**PC16.** identify different types of customers

**PC17.** identify customer needs and address them appropriately

**PC18.** follow appropriate hygiene and grooming standards

### *Getting ready for apprenticeship & Jobs*

To be competent, the user/individual on the job must be able to:

**PC19.** create a basic biodata

**PC20.** search for suitable jobs and apply

**PC21.** identify and register apprenticeship opportunities as per requirement

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

**KU1.** need for employability skills

**KU2.** various constitutional and personal values

**KU3.** different environmentally sustainable practices and their importance

**KU4.** Twenty first (21st) century skills and their importance

**KU5.** how to use basic spoken English language

**KU6.** Do and dont of effective communication

**KU7.** inclusivity and its importance

**KU8.** different types of disabilities and appropriate communication and behaviour towards PwD

**KU9.** different types of financial products and services



## Qualification Pack

- KU10.** how to compute income and expenses
- KU11.** importance of maintaining safety and security in financial transactions
- KU12.** different legal rights and laws
- KU13.** how to operate digital devices and applications safely and securely
- KU14.** ways to identify business opportunities
- KU15.** types of customers and their needs
- KU16.** how to apply for a job and prepare for an interview
- KU17.** apprenticeship scheme and the process of registering on apprenticeship portal

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** communicate effectively using appropriate language
- GS2.** behave politely and appropriately with all
- GS3.** perform basic calculations
- GS4.** solve problems effectively
- GS5.** be careful and attentive at work
- GS6.** use time effectively
- GS7.** maintain hygiene and sanitisation to avoid infection



## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	<b>1</b>	<b>1</b>	-	-
<b>PC1.</b> understand the significance of employability skills in meeting the job requirements	-	-	-	-
<i>Constitutional values - Citizenship</i>	<b>1</b>	<b>1</b>	-	-
<b>PC2.</b> identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	<b>1</b>	<b>3</b>	-	-
<b>PC3.</b> explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
<i>Basic English Skills</i>	<b>2</b>	<b>3</b>	-	-
<b>PC4.</b> speak with others using some basic English phrases or sentences	-	-	-	-
<i>Communication Skills</i>	<b>1</b>	<b>1</b>	-	-
<b>PC5.</b> follow good manners while communicating with others	-	-	-	-
<b>PC6.</b> work with others in a team	-	-	-	-
<i>Diversity &amp; Inclusion</i>	<b>1</b>	<b>1</b>	-	-
<b>PC7.</b> communicate and behave appropriately with all genders and PwD	-	-	-	-
<b>PC8.</b> report any issues related to sexual harassment	-	-	-	-
<i>Financial and Legal Literacy</i>	<b>3</b>	<b>4</b>	-	-
<b>PC9.</b> use various financial products and services safely and securely	-	-	-	-



## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC10.</b> calculate income, expenses, savings etc.	-	-	-	-
<b>PC11.</b> approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
<i>Essential Digital Skills</i>	<b>4</b>	<b>6</b>	-	-
<b>PC12.</b> operate digital devices and use its features and applications securely and safely	-	-	-	-
<b>PC13.</b> use internet and social media platforms securely and safely	-	-	-	-
<i>Entrepreneurship</i>	<b>3</b>	<b>5</b>	-	-
<b>PC14.</b> identify and assess opportunities for potential business	-	-	-	-
<b>PC15.</b> identify sources for arranging money and associated financial and legal challenges	-	-	-	-
<i>Customer Service</i>	<b>2</b>	<b>2</b>	-	-
<b>PC16.</b> identify different types of customers	-	-	-	-
<b>PC17.</b> identify customer needs and address them appropriately	-	-	-	-
<b>PC18.</b> follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship &amp; Jobs</i>	<b>1</b>	<b>3</b>	-	-
<b>PC19.</b> create a basic biodata	-	-	-	-
<b>PC20.</b> search for suitable jobs and apply	-	-	-	-
<b>PC21.</b> identify and register apprenticeship opportunities as per requirement	-	-	-	-
<b>NOS Total</b>	<b>20</b>	<b>30</b>	-	-



## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	DGT/VSQ/N0101
<b>NOS Name</b>	Employability Skills (30 Hours)
<b>Sector</b>	Cross Sectoral
<b>Sub-Sector</b>	Professional Skills
<b>Occupation</b>	Employability
<b>NSQF Level</b>	2
<b>Credits</b>	1
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	12/03/2026
<b>Next Review Date</b>	12/03/2029
<b>NSQC Clearance Date</b>	12/03/2026



## Qualification Pack

# CON/N1253: Carry out preparatory works for Metal Inert Gas (MIG) Welding operations

## Description

This unit describes the skills and knowledge required to carry out preparatory works prior to MIG welding operations

## Scope

The scope covers the following :

- Preparatory works for MIG welding operations
- Prepare base metal of thickness 1 mm and above

## Elements and Performance Criteria

### *Preparatory works for MIG welding operations*

To be competent, the user/individual on the job must be able to:

- PC1.** use appropriate PPEs catering to welding works
- PC2.** inspect and clear the work area of any flammable objects like boxes, plastic etc.
- PC3.** inspect electric connections for adequate tightness and secure them prior to commencing the work
- PC4.** ensure that work clamps are adequately secured and are in correct polarity (negative on welding bed and positive on electrode)
- PC5.** ensure that contact tip, tip holder, diffuser, and nozzle are in order
- PC6.** make initial adjustments of electrode consumption rate and voltage as per requirement
- PC7.** ensure that proper lighting and ventilation arrangement is available at workplace
- PC8.** ensure that the gas cylinders are in upright positions
- PC9.** inspect and adjust the gas valves ensuring there is no leakage
- PC10.** ensure that electrodes are compatible with base metal and weld requirements

### *Prepare base metal of thickness 1 mm and above*

To be competent, the user/individual on the job must be able to:

- PC11.** clean the surface to be welded and ensure it is free from irregularities, oxides, dust/foreign particles, paints, etc. and is not galvanized
- PC12.** check that adequate root gap is available
- PC13.** check the bevel angle visually
- PC14.** ensure that the element is properly anchored to restrict distortion

## Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard procedures for MIG welding



## Qualification Pack

- KU2.** safety rules and regulations for handling and storing relevant tools, equipment, and materials required for relevant works in accordance with organizational norms
- KU3.** importance of personal protection including the use of related safety gears & equipment in accordance with organizational norms
- KU4.** precautions required in the lifting and movement of heavy components and materials
- KU5.** service request procedures for tools, materials and equipment as per organizational norms
- KU6.** statutory compliance requirements related to working at height
- KU7.** how to read and interpret fabrication drawings and symbols
- KU8.** correct handling and storage of gas cylinders for welding purposes
- KU9.** selection of welding mask, welding filter shade gcvet and their use as PPEs
- KU10.** the effects of polarity of setup
- KU11.** power ratings of welding equipment
- KU12.** relationship between wire feed, speed control, and voltage
- KU13.** the gas regulation, rate of flow of shielding gas and its effects
- KU14.** components of welding gun, equipment, and their functions
- KU15.** effects of welding fumes
- KU16.** consumable (electrodes, gas, wires etc.) used in welding works, their specification, types and uses
- KU17.** properties of different types of shield gases and their application,
- KU18.** effects of unclean surface on welds
- KU19.** importance of proper lighting and ventilation for proper welding space
- KU20.** how to detect gas leakage
- KU21.** process of preparing a weld joint

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in at least two language, preferably in the local language of the site and basic English
- GS2.** read sketches, instructions provided for the work, and various signboards, safety rules, safety tags, exit route information in one or more languages, preferably in the local language of the site
- GS3.** speak in one or more language, preferably one of the local language at the site
- GS4.** communicate orally and effectively with team members
- GS5.** analyze the safety aspect of the workplace
- GS6.** plan work and organize required resource effectively
- GS7.** complete work as per agreed time schedule and quality parameters
- GS8.** resolve any conflict within the teammates
- GS9.** evaluate the complexity of the tasks
- GS10.** identify any violation of safety norms during the work



## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Preparatory works for MIG welding operations</i>	<b>15</b>	<b>35</b>	-	-
<b>PC1.</b> use appropriate PPEs catering to welding works	-	-	-	-
<b>PC2.</b> inspect and clear the work area of any flammable objects like boxes, plastic etc.	-	-	-	-
<b>PC3.</b> inspect electric connections for adequate tightness and secure them prior to commencing the work	-	-	-	-
<b>PC4.</b> ensure that work clamps are adequately secured and are in correct polarity (negative on welding bed and positive on electrode)	-	-	-	-
<b>PC5.</b> ensure that contact tip, tip holder, diffuser, and nozzle are in order	-	-	-	-
<b>PC6.</b> make initial adjustments of electrode consumption rate and voltage as per requirement	-	-	-	-
<b>PC7.</b> ensure that proper lighting and ventilation arrangement is available at workplace	-	-	-	-
<b>PC8.</b> ensure that the gas cylinders are in upright positions	-	-	-	-
<b>PC9.</b> inspect and adjust the gas valves ensuring there is no leakage	-	-	-	-
<b>PC10.</b> ensure that electrodes are compatible with base metal and weld requirements	-	-	-	-
<i>Prepare base metal of thickness 1 mm and above</i>	<b>15</b>	<b>35</b>	-	-
<b>PC11.</b> clean the surface to be welded and ensure it is free from irregularities, oxides, dust/foreign particles, paints, etc. and is not galvanized	-	-	-	-
<b>PC12.</b> check that adequate root gap is available	-	-	-	-
<b>PC13.</b> check the bevel angle visually	-	-	-	-



## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. ensure that the element is properly anchored to restrict distortion	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	CON/N1253
<b>NOS Name</b>	Carry out preparatory works for Metal Inert Gas (MIG) Welding operations
<b>Sector</b>	Construction
<b>Sub-Sector</b>	Real Estate and Infrastructure construction
<b>Occupation</b>	Fabrication
<b>NSQF Level</b>	4
<b>Credits</b>	3
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	08/05/2025
<b>Next Review Date</b>	30/04/2028
<b>NSQC Clearance Date</b>	08/05/2025



## Qualification Pack

# CON/N1254: Carry out Metal Inert Gas (MIG) Welding as per requirement in fabrication workshop or construction site

## Description

This unit describes the skills and knowledge required to carry out MIG welding on structural elements (rolled section, tubular section, plate section and other casting) of materials (carbon steel, stainless steel, alloy steel, aluminium and other metals) of thickness ranging from (3.15mm to 100mm) as per requirement in fabrication workshop or construction site for structures of height up to 100 meters and also in confined spaces

## Scope

The scope covers the following :

- Carry out welding operation in 1G, 1F, 2G, 2F, 3G, 3F positions for structural elements of thickness 1 mm and above
- Carry out visual inspection during and post welding

## Elements and Performance Criteria

*Carry out welding operation in 1G, 1F, 2G, 2F, 3G, 3F positions for structural elements of thickness 1 mm and above*

To be competent, the user/individual on the job must be able to:

- PC1.** interpret weld requirements like position of weld, type of joint, number of passes required, etc., from fabrication drawings/specification
- PC2.** estimate the number or length of filler material required to complete the weld
- PC3.** pre heat the base material before welding if required
- PC4.** maintain correct body posture as per requirement of weld
- PC5.** adjust the wire stick out and regulate the gas flow rate accordingly
- PC6.** use appropriate patterns of welding as per position and type of joints
- PC7.** hold the welding gun at proper angle as per requirement
- PC8.** make required number of steady passes of weld to ensure proper heat generation and penetration
- PC9.** make adjustments in welding machine if required
- PC10.** disconnect the equipment correctly and store the same as per manufacture guidelines and site safety parameters
- PC11.** clean the welded joint

*Carry out visual inspection during and post welding*

To be competent, the user/individual on the job must be able to:

- PC12.** ensure proper penetration of weld
- PC13.** ensure that the weld is properly shielded by shielding gas
- PC14.** ensure proper heat input through arc
- PC15.** ensure the spatter spray is reduced during the welding



## Qualification Pack

- PC16.** check the root pass for cracks
- PC17.** check visually for spatters, craters, undercuts
- PC18.** check the welded joint visually for cracks

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard procedures for MIG welding
- KU2.** safety rules and regulations for handling and storing relevant tools and equipment and materials required for MIG welding works
- KU3.** importance of personal protection including the use of related safety gears & equipment in accordance with organizational norms
- KU4.** precautions required in the lifting and movement of heavy components and materials
- KU5.** service request procedures for tools, materials and equipmentst
- KU6.** statutory compliance requirements related to working at height
- KU7.** how to read and interpret fabrication drawings and symbols
- KU8.** the gas regulation, rate of flow of shielding gas and its effects
- KU9.** components of welding gun, equipment and their functions
- KU10.** effects of welding fumes
- KU11.** various consumables, their specification, types and uses
- KU12.** different types of shielding gases and their uses in different conditions
- KU13.** effects of unclean surface on welds
- KU14.** types of welded joints
- KU15.** positions of welding
- KU16.** patterns of welding and their application
- KU17.** defects in welding
- KU18.** preparation of weld joints

### Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in at least two language, preferably in the local language of the site and basic English
- GS2.** read sketches, instructions provided for the work, and various signboards, safety rules, safety tags, exit route information in one or more languages, preferably in the local language of the site
- GS3.** speak in one or more language, preferably one of the local language at the site
- GS4.** communicate orally and effectively with team members
- GS5.** analyze the safety aspect of the workplace
- GS6.** plan work and organize required resource effectively
- GS7.** complete work as per agreed time schedule and quality parameters



## Qualification Pack

- GS8.** resolve any conflict within the teammates
- GS9.** evaluate the complexity of the tasks
- GS10.** identify any violation of safety norms during the work



## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out welding operation in 1G, 1F, 2G, 2F, 3G, 3F positions for structural elements of thickness 1 mm and above</i>	<b>15</b>	<b>35</b>	-	-
<b>PC1.</b> interpret weld requirements like position of weld, type of joint, number of passes required, etc., from fabrication drawings/specification	-	-	-	-
<b>PC2.</b> estimate the number or length of filler material required to complete the weld	-	-	-	-
<b>PC3.</b> pre heat the base material before welding if required	-	-	-	-
<b>PC4.</b> maintain correct body posture as per requirement of weld	-	-	-	-
<b>PC5.</b> adjust the wire stick out and regulate the gas flow rate accordingly	-	-	-	-
<b>PC6.</b> use appropriate patterns of welding as per position and type of joints	-	-	-	-
<b>PC7.</b> hold the welding gun at proper angle as per requirement	-	-	-	-
<b>PC8.</b> make required number of steady passes of weld to ensure proper heat generation and penetration	-	-	-	-
<b>PC9.</b> make adjustments in welding machine if required	-	-	-	-
<b>PC10.</b> disconnect the equipment correctly and store the same as per manufacture guidelines and site safety parameters	-	-	-	-
<b>PC11.</b> clean the welded joint	-	-	-	-
<i>Carry out visual inspection during and post welding</i>	<b>15</b>	<b>35</b>	-	-
<b>PC12.</b> ensure proper penetration of weld	-	-	-	-
<b>PC13.</b> ensure that the weld is properly shielded by shielding gas	-	-	-	-



## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC14.</b> ensure proper heat input through arc	-	-	-	-
<b>PC15.</b> ensure the spatter spray is reduced during the welding	-	-	-	-
<b>PC16.</b> check the root pass for cracks	-	-	-	-
<b>PC17.</b> check visually for spatters, craters, undercuts	-	-	-	-
<b>PC18.</b> check the welded joint visually for cracks	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	CON/N1254
<b>NOS Name</b>	Carry out Metal Inert Gas (MIG) Welding as per requirement in fabrication workshop or construction site
<b>Sector</b>	Construction
<b>Sub-Sector</b>	Real Estate and Infrastructure construction
<b>Occupation</b>	Fabrication
<b>NSQF Level</b>	4
<b>Credits</b>	7
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	08/05/2025
<b>Next Review Date</b>	30/04/2028
<b>NSQC Clearance Date</b>	08/05/2025



## Qualification Pack

# CON/N1255: Carry out preparatory works for Tungsten Inert Gas (TIG) Welding operations

## Description

This unit describes the skills and knowledge required to carry out preparatory works prior to TIG welding operations

## Scope

The scope covers the following :

- Carry out preparatory works for TIG welding
- Prepare base metal of thickness 1 mm and above

## Elements and Performance Criteria

### *Carry out preparatory works for TIG welding*

To be competent, the user/individual on the job must be able to:

- PC1.** identify the joints to be welded, their location and position of welding
- PC2.** interpret the weld specifications like the type of joint, throat for fillet, number of passes required, specifications of filler rod, required heat input, preheat temperature etc. form relevant charts and drawings
- PC3.** use appropriate PPEs catering to welding works
- PC4.** inspect and clear the work area of any flammable objects like boxes, plastic, etc.
- PC5.** ensure that proper lighting and ventilation arrangement is available at the workplace
- PC6.** keep the shielding gas cylinders in an upright position only
- PC7.** inspect and adjust the gas valves ensuring there is no leakage
- PC8.** ensure that shielding gas is purely inert e. g Argon
- PC9.** check the pipes, valves/ regulator, and flow meter is securely connected
- PC10.** taper the tungsten rod and sharpen the point of the electrode for better arc stability
- PC11.** adjust the tungsten stick out as per requirement based upon type of joint, base metal properties etc
- PC12.** estimate the number or length of filler material/electrodes required and stack them per instructions
- PC13.** clean the filler rod to remove any foreign particles in order to avoid weld contamination
- PC14.** ensure that filler material is compatible with base metal and as per weld specifications
- PC15.** ensure that work clamps are adequately secured and in correct polarity (positive on welding bed and negative on electrode)
- PC16.** ensure that electrical connections are tight, secure, and compatible with the equipment

### *Prepare base metal of thickness 1 mm and above*

To be competent, the user/individual on the job must be able to:

- PC17.** clean the surface to be welded and ensure it is free from irregularities, oxides, dust/foreign particles, paints etc. and is not galvanized



## Qualification Pack

- PC18.** check that adequate root gap is available
- PC19.** check the bevel angle visually
- PC20.** ensure that the joint is properly secured against any movement

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard procedures for TIG welding
- KU2.** safety rules and regulations for handling and storing relevant tools and equipment and materials for TIG welding works
- KU3.** importance of personal protection including the use of the related safety gears and equipment
- KU4.** precautions required in the lifting and movement of heavy components and materials
- KU5.** service request procedures for tools, materials and equipmentst
- KU6.** statutory compliance requirements related to working at height
- KU7.** how to read and interpret fabrication drawings and symbols
- KU8.** correct handling and storage of gas cylinders for welding purposes
- KU9.** the effects of polarity of setup
- KU10.** power ratings of welding equipment
- KU11.** relationship between wire feed, speed control and voltage
- KU12.** the gas regulation, rate of flow of shielding gas and its effects
- KU13.** components of welding gun, equipment and their functions
- KU14.** effects of welding fumes
- KU15.** fire protection and prevention methods, equipment and their use
- KU16.** use of welding mask
- KU17.** various consumables, their specification, types and uses
- KU18.** selection of consumables for different purposes
- KU19.** different types of shielding gases and their uses in different conditions
- KU20.** effects of unclean surface on welds
- KU21.** preparation of weld joints
- KU22.** positions of welding
- KU23.** pattern of welding and their application
- KU24.** different types of personnel protective equipment and their application
- KU25.** importance of proper lighting and ventilation
- KU26.** how to check the electrical connections
- KU27.** how to detect gas leakage

### Generic Skills (GS)

User/individual on the job needs to know how to:



## Qualification Pack

- GS1.** write in at least two language, preferably in the local language of the site and basic English
- GS2.** read sketches, instructions provided for the work, and various signboards, safety rules, safety tags, exit route information in one or more languages, preferably in the local language of the site
- GS3.** speak in one or more language, preferably one of the local language at the site
- GS4.** communicate orally and effectively with team members
- GS5.** analyze the safety aspect of the workplace
- GS6.** plan work and organize required resource effectively
- GS7.** complete work as per agreed time schedule and quality parameters
- GS8.** resolve any conflict within the teammates
- GS9.** evaluate the complexity of the tasks
- GS10.** identify any violation of safety norms during the work



## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out preparatory works for TIG welding</i>	15	35	-	-
<b>PC1.</b> identify the joints to be welded, their location and position of welding	-	-	-	-
<b>PC2.</b> interpret the weld specifications like the type of joint, throat for fillet, number of passes required, specifications of filler rod, required heat input, preheat temperature etc. form relevant charts and drawings	-	-	-	-
<b>PC3.</b> use appropriate PPEs catering to welding works	-	-	-	-
<b>PC4.</b> inspect and clear the work area of any flammable objects like boxes, plastic, etc.	-	-	-	-
<b>PC5.</b> ensure that proper lighting and ventilation arrangement is available at the workplace	-	-	-	-
<b>PC6.</b> keep the shielding gas cylinders in an upright position only	-	-	-	-
<b>PC7.</b> inspect and adjust the gas valves ensuring there is no leakage	-	-	-	-
<b>PC8.</b> ensure that shielding gas is purely inert e. g Argon	-	-	-	-
<b>PC9.</b> check the pipes, valves/ regulator, and flow meter is securely connected	-	-	-	-
<b>PC10.</b> taper the tungsten rod and sharpen the point of the electrode for better arc stability	-	-	-	-
<b>PC11.</b> adjust the tungsten stick out as per requirement based upon type of joint, base metal properties etc	-	-	-	-
<b>PC12.</b> estimate the number or length of filler material/electrodes required and stack them per instructions	-	-	-	-
<b>PC13.</b> clean the filler rod to remove any foreign particles in order to avoid weld contamination	-	-	-	-



## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC14.</b> ensure that filler material is compatible with base metal and as per weld specifications	-	-	-	-
<b>PC15.</b> ensure that work clamps are adequately secured and in correct polarity (positive on welding bed and negative on electrode)	-	-	-	-
<b>PC16.</b> ensure that electrical connections are tight, secure, and compatible with the equipment	-	-	-	-
<i>Prepare base metal of thickness 1 mm and above</i>	<b>15</b>	<b>35</b>	-	-
<b>PC17.</b> clean the surface to be welded and ensure it is free from irregularities, oxides, dust/foreign particles, paints etc. and is not galvanized	-	-	-	-
<b>PC18.</b> check that adequate root gap is available	-	-	-	-
<b>PC19.</b> check the bevel angle visually	-	-	-	-
<b>PC20.</b> ensure that the joint is properly secured against any movement	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	CON/N1255
<b>NOS Name</b>	Carry out preparatory works for Tungsten Inert Gas (TIG) Welding operations
<b>Sector</b>	Construction
<b>Sub-Sector</b>	Real Estate and Infrastructure construction
<b>Occupation</b>	Fabrication
<b>NSQF Level</b>	4
<b>Credits</b>	3
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	08/05/2025
<b>Next Review Date</b>	30/04/2028
<b>NSQC Clearance Date</b>	08/05/2025



## Qualification Pack

# CON/N1256: Carry out Tungsten Inert Gas (TIG) Welding as per requirement in fabrication workshop or construction site

## Description

This unit describes the skills and knowledge required to carry out tungsten Inert gas welding on structural elements (rolled section, tubular section, plate section and other casting) on ferrous materials (Mild steel, stainless steel, alloy steel) of thickness 1 mm and above as per requirement in fabrication workshop or construction site for structures of height up to 100 meter and above and also in confined spaces

## Scope

The scope covers the following :

- Carry out welding operation in 1G, 1F, 2G, 2F, 3G,3F positions for structural elements of thickness 1 mm and above
- Carry out visual inspection during and post welding

## Elements and Performance Criteria

*Carry out welding operation in 1G, 1F, 2G, 2F, 3G,3F positions for structural elements of thickness 1 mm and above*

To be competent, the user/individual on the job must be able to:

- PC1.** ignite the arc by superimposing the high frequency over high voltage
- PC2.** ensure that the tungsten rod doesn't touch the base metal
- PC3.** ensure that the filler rod is always inside the shielding gas cover to avoid contamination during welding operation
- PC4.** follow ergonomic principles for smooth welding works
- PC5.** position head such that weld is clearly visible
- PC6.** ensure that weld location is properly illuminated and ventilated
- PC7.** use appropriate patterns of welding as per position and type of joints
- PC8.** hold the welding gun at proper angle as per requirement(70-80 from base plate)
- PC9.** ensure that the arc length is not too large and is as per heat requirement
- PC10.** adjust the travel speed of weld to ensure proper penetration
- PC11.** make required number of steady passes of weld to ensure proper heat generation and penetration
- PC12.** make required adjustments in welding machine
- PC13.** disconnect the equipment correctly and store the same as per manufacture guidelines and site safety parameters
- PC14.** clean the welded joint

*Carry out visual inspection during and post welding*

To be competent, the user/individual on the job must be able to:

- PC15.** ensure proper penetration of weld
- PC16.** ensure that the weld is properly shielded by shielding gas



## Qualification Pack

- PC17.** ensure proper heat input through arc
- PC18.** ensure that the spatter spray is reduced during the welding
- PC19.** check the root pass for cracks
- PC20.** check visually for spatters, craters, undercuts
- PC21.** check the welded joint visually for cracks

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard procedures for TIG welding
- KU2.** safety rules and regulations for handling and storing relevant tools and equipment and materials for welding works
- KU3.** importance of personal protection including the use of the related safety gears and equipment
- KU4.** precautions required in the lifting and movement of heavy components and materials
- KU5.** service request procedures for tools, materials and equipment
- KU6.** statutory compliance requirements related to working at height
- KU7.** how to read and interpret fabrication drawings
- KU8.** how to read and interpret fabrication symbols
- KU9.** the gas regulation, rate of flow of shielding gas and its effects
- KU10.** components of welding gun, equipment and their functions
- KU11.** effects of welding fumes
- KU12.** fire protection and prevention methods, equipment and their use
- KU13.** hazards of welding
- KU14.** use of welding mask
- KU15.** consumable specification, types and use
- KU16.** different types of shielding gases and their uses in different conditions
- KU17.** effects of unclean surface on welds
- KU18.** types of welded joints
- KU19.** positions of welding
- KU20.** patterns of welding and their application
- KU21.** defects in welding
- KU22.** preparation of weld joints
- KU23.** process of welding
- KU24.** physical and chemical changes occurring during welding
- KU25.** behavior of metal upon heating, plasticity curve etc.
- KU26.** NDT and other tests relevant to welding

### Generic Skills (GS)

User/individual on the job needs to know how to:



## Qualification Pack

- GS1.** write in at least two language, preferably in the local language of the site and basic English
- GS2.** read sketches, instructions provided for the work, and various signboards, safety rules, safety tags, exit route information in one or more languages, preferably in the local language of the site
- GS3.** speak in one or more language, preferably one of the local language at the site
- GS4.** communicate orally and effectively with team members
- GS5.** analyze the safety aspect of the workplace
- GS6.** plan work and organize required resource effectively
- GS7.** complete work as per agreed time schedule and quality parameters
- GS8.** resolve any conflict within the teammates
- GS9.** evaluate the complexity of the tasks
- GS10.** identify any violation of safety norms during the work



## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out welding operation in 1G, 1F, 2G, 2F, 3G,3F positions for structural elements of thickness 1 mm and above</i>	15	35	-	-
<b>PC1.</b> ignite the arc by superimposing the high frequency over high voltage	-	-	-	-
<b>PC2.</b> ensure that the tungsten rod doesn't touch the base metal	-	-	-	-
<b>PC3.</b> ensure that the filler rod is always inside the sheilding gas cover to avoid contamination during welding operation	-	-	-	-
<b>PC4.</b> follow ergonomic principles for smooth welding works	-	-	-	-
<b>PC5.</b> position head such that weld is clearly visible	-	-	-	-
<b>PC6.</b> ensure that weld location is properly illuminated and ventilated	-	-	-	-
<b>PC7.</b> use appropriate patterns of welding as per position and type of joints	-	-	-	-
<b>PC8.</b> hold the welding gun at proper angle as per requirement(70-80 from base plate)	-	-	-	-
<b>PC9.</b> ensure that the arc length is not too large and is as per heat requirement	-	-	-	-
<b>PC10.</b> adjust the travel speed of weld to ensure proper penetration	-	-	-	-
<b>PC11.</b> make required number of steady passes of weld to ensure proper heat generation and penetration	-	-	-	-
<b>PC12.</b> make required adjustments in welding machine	-	-	-	-
<b>PC13.</b> disconnect the equipment correctly and store the same as per manufacture guidelines and site safety parameters	-	-	-	-



## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. clean the welded joint	-	-	-	-
<i>Carry out visual inspection during and post welding</i>	<b>15</b>	<b>35</b>	-	-
PC15. ensure proper penetration of weld	-	-	-	-
PC16. ensure that the weld is properly shielded by shielding gas	-	-	-	-
PC17. ensure proper heat input through arc	-	-	-	-
PC18. ensure that the spatter spray is reduced during the welding	-	-	-	-
PC19. check the root pass for cracks	-	-	-	-
PC20. check visually for spatters, craters, undercuts	-	-	-	-
PC21. check the welded joint visually for cracks	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	CON/N1256
<b>NOS Name</b>	Carry out Tungsten Inert Gas (TIG) Welding as per requirement in fabrication workshop or construction site
<b>Sector</b>	Construction
<b>Sub-Sector</b>	Real Estate and Infrastructure construction
<b>Occupation</b>	Fabrication
<b>NSQF Level</b>	4
<b>Credits</b>	7
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	08/05/2025
<b>Next Review Date</b>	30/04/2028
<b>NSQC Clearance Date</b>	08/05/2025



## Qualification Pack

# CON/N1257: Carry out preparatory work for Shielded Metal Arc Welding (SMAW) operations

## Description

This unit describes the skills and knowledge required to carry out preparatory work for performing shielded metal arc welding operations

## Scope

The scope covers the following :

- Conduct preparatory works for setting up the welding kit and prepare the base metal of thickness 1mm and above

## Elements and Performance Criteria

*Conduct preparatory works for setting up the welding kit and prepare the base metal of thickness 1 mm and above*

To be competent, the user/individual on the job must be able to:

- PC1.** use appropriate PPEs catering to welding works
- PC2.** inspect and clear the work area of any flammable objects like boxes, plastic, etc.
- PC3.** ensure that proper lighting and ventilation arrangement is available at the workplace
- PC4.** inspect electric connections to be adequately tight and secure prior to commencing the work
- PC5.** ensure that electrodes are compatible with base metal and weld requirements
- PC6.** ensure that work clamps are adequately secured and are in correct polarity (negative on welding bed and positive on electrode)
- PC7.** clean the surface to be welded(base metal) and ensure it is free from irregularities, oxides, dust/foreign particles, paints etc. and is not galvanized
- PC8.** check that adequate root gap is available
- PC9.** check the bevel angle visually
- PC10.** attach the work clamps to the base metal
- PC11.** extract the weld specifications like type of joint, throat for fillet, number of passes required, specifications of filler rod, required heat input, preheat temperature, type of welding process, type of weld , required consumables, required welding process parameters, base metal, joint design, type of edge preparation welding position, backing, preheat temp, post weld heat treatment, welding techniques etc. form relevant charts and drawings
- PC12.** estimate the quantity of filler material required to complete the weld
- PC13.** identify the joints to be welded, their location and position of welding
- PC14.** ensure that the joint is properly secured against any movement
- PC15.** ensure that the temperature at joint is as per specifications

## Knowledge and Understanding (KU)



## Qualification Pack

The individual on the job needs to know and understand:

- KU1.** standard procedures for welding works
- KU2.** safety rules and regulations for handling and storing relevant tools ,equipment and materials for welding works
- KU3.** personal protection including the use of the related safety gears and equipment
- KU4.** precautions required in the lifting and movement of heavy components and materials
- KU5.** service request procedures for tools, materials and equipment
- KU6.** statutory compliance requirements related to working at height
- KU7.** welding terminologies like arc, flux, slag, etc.
- KU8.** different types of sections, plates, etc.
- KU9.** different materials used in fabrication
- KU10.** different welding parameters
- KU11.** correct calibration of welding kit and various adjustments in the same
- KU12.** importance of cleaning the surface of the material prior to welding
- KU13.** importance of proper joint finishing
- KU14.** fabrication shop drawings, welding symbol, weld nomenclature, weld joint, and welding position
- KU15.** welding procedure specification ( WPS)
- KU16.** various welding specifications from charts and tables
- KU17.** selection and handling of electrodes
- KU18.** basics of SMAW process
- KU19.** effect of polarity on welding

## Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in one or more languages, preferably in the local language of the site and basic English
- GS2.** read sketches, instructions provided for the work, and various signboards, safety rules, safety tags, exit route information in one or more languages, preferably in the local language of the site
- GS3.** speak in one or more language, preferably one of the local language at the site
- GS4.** communicate orally and effectively with team members
- GS5.** analyze the safety aspect of the workplace
- GS6.** plan work and organize required resource effectively
- GS7.** complete work as per agreed time schedule and quality parameters
- GS8.** resolve any conflict within the teammates
- GS9.** evaluate the complexity of the tasks
- GS10.** identify any violation of safety norms during the work



## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Conduct preparatory works for setting up the welding kit and prepare the base metal of thickness 1 mm and above</i>	30	70	-	-
<b>PC1.</b> use appropriate PPEs catering to welding works	-	-	-	-
<b>PC2.</b> inspect and clear the work area of any flammable objects like boxes, plastic, etc.	-	-	-	-
<b>PC3.</b> ensure that proper lighting and ventilation arrangement is available at the workplace	-	-	-	-
<b>PC4.</b> inspect electric connections to be adequately tight and secure prior to commencing the work	-	-	-	-
<b>PC5.</b> ensure that electrodes are compatible with base metal and weld requirements	-	-	-	-
<b>PC6.</b> ensure that work clamps are adequately secured and are in correct polarity (negative on welding bed and positive on electrode)	-	-	-	-
<b>PC7.</b> clean the surface to be welded(base metal) and ensure it is free from irregularities, oxides, dust/foreign particles, paints etc. and is not galvanized	-	-	-	-
<b>PC8.</b> check that adequate root gap is available	-	-	-	-
<b>PC9.</b> check the bevel angle visually	-	-	-	-
<b>PC10.</b> attach the work clamps to the base metal	-	-	-	-
<b>PC11.</b> extract the weld specifications like type of joint, throat for fillet, number of passes required, specifications of filler rod, required heat input, preheat temperature, type of welding process, type of weld , required consumables, required welding process parameters, base metal, joint design, type of edge preparation welding position, backing, preheat temp, post weld heat treatment, welding techniques etc. form relevant charts and drawings	-	-	-	-



## Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<b>PC12.</b> estimate the quantity of filler material required to complete the weld	-	-	-	-
<b>PC13.</b> identify the joints to be welded, their location and position of welding	-	-	-	-
<b>PC14.</b> ensure that the joint is properly secured against any movement	-	-	-	-
<b>PC15.</b> ensure that the temperature at joint is as per specifications	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	CON/N1257
<b>NOS Name</b>	Carry out preparatory work for Shielded Metal Arc Welding (SMAW) operations
<b>Sector</b>	Construction
<b>Sub-Sector</b>	Real Estate and Infrastructure construction
<b>Occupation</b>	Fabrication
<b>NSQF Level</b>	4
<b>Credits</b>	3
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	08/05/2025
<b>Next Review Date</b>	30/04/2028
<b>NSQC Clearance Date</b>	08/05/2025



## Qualification Pack

# CON/N1258: Carry out Shielded Metal Arc Welding (SMAW) as per requirement in fabrication workshop or construction site

## Description

This unit describes the skills and knowledge required to carry out shielded metal arc welding on structural elements (rolled section, tubular section, plate section and other casting) on ferrous materials (Mild Steel, stainless steel, alloy steel) of thickness ranging from 1 mm upwards as per requirement in fabrication workshop or construction site for structures of height up to 100 meters and above and also in confined spaces

## Scope

The scope covers the following :

- Carry out shielded metal arc welding operation in 1G, 1F, 2G, 2F, 3G, 3F positions for structural elements of thickness 1 mm and above
- Carry out visual inspection during and post welding

## Elements and Performance Criteria

*Carry out shielded metal arc welding operation in 1G, 1F, 2G, 2F, 3G, 3F positions for structural elements of thickness 1mm and above*

To be competent, the user/individual on the job must be able to:

- PC1.** ignite the arc by striking the electrode on the base metal like a match
- PC2.** maintain correct body posture as per requirement of weld
- PC3.** position head such that weld is clearly visible
- PC4.** ensure that weld location is properly illuminated and ventilated
- PC5.** use appropriate patterns of welding as per position and type of joints
- PC6.** push or drag the arc as per requirement
- PC7.** ensure that the arc length is not too large and is as per heat requirement
- PC8.** adjust the travel speed of weld to ensure proper penetration
- PC9.** make required number of steady passes of weld to ensure proper heat generation and penetration
- PC10.** clean the weld after each pass to scrap out the slag formed on the surface of weld
- PC11.** make required adjustments in welding machine
- PC12.** disconnect the equipment correctly and store the same as per manufacturer's guidelines and site safety parameters
- PC13.** dispose of the stubs of electrode left after completing the welding appropriately
- PC14.** clean the welded joint by removing slag formed during the welding process

*Carry out visual inspection during and post welding*

To be competent, the user/individual on the job must be able to:

- PC15.** ensure proper penetration of weld
- PC16.** ensure that the weld is properly shielded throughout the operation



## Qualification Pack

- PC17.** ensure proper heat input through arc
- PC18.** ensure that the spatter spray is reduced during the welding
- PC19.** check the root pass for cracks, porosity, slag inclusion, incomplete penetration, root concavity, incomplete fusion, undercut etc.
- PC20.** check visually for spatters, craters, undercuts
- PC21.** check the welded joint visually for cracks

### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard procedures for welding works
- KU2.** safety rules and regulations for handling and storing relevant tools and equipment and materials for welding works
- KU3.** personal protection including the use of the related safety gears and equipment
- KU4.** precautions required in the lifting and movement of heavy components and materials
- KU5.** service request procedures for tools, materials and equipment
- KU6.** statutory compliance requirements related to working at height
- KU7.** how to read and interpret fabrication shop drawings
- KU8.** how to read and interpret various welding specifications from charts and tables
- KU9.** different welding parameters
- KU10.** correct calibration of welding kit and various adjustments in the same
- KU11.** importance of cleaning the surface of the material prior to welding
- KU12.** importance of proper joint finishing
- KU13.** basics of SMAW process to be carried out
- KU14.** effect of polarity on welding
- KU15.** importance of preheating and post heating
- KU16.** selection of electrodes as per requirements
- KU17.** importance of light, ventilation and proper body posture
- KU18.** different patterns of welding
- KU19.** the process of assembling and disconnecting the welding kit
- KU20.** how and why the slag should be removed
- KU21.** parameters for checking the correctness of weld
- KU22.** welding terminologies like arc, flux, slag, etc.
- KU23.** relation of arc length with heat transfer
- KU24.** effect of atmospheric agents on welding
- KU25.** NDT and other tests relevant to welding

### Generic Skills (GS)

User/individual on the job needs to know how to:



## Qualification Pack

- GS1.** write in one or more languages, preferably in the local language of the site and basic English
- GS2.** read sketches, instructions provided for the work, and various signboards, safety rules, safety tags, exit route information in one or more languages, preferably in the local language of the site
- GS3.** speak in one or more language, preferably one of the local language at the site
- GS4.** communicate orally and effectively with team members
- GS5.** analyze the safety aspect of the workplace
- GS6.** plan work and organize required resource effectively
- GS7.** complete work as per agreed time schedule and quality parameters
- GS8.** resolve any conflict within the teammates
- GS9.** evaluate the complexity of the tasks
- GS10.** identify any violation of safety norms during the work



## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out shielded metal arc welding operation in 1G, 1F, 2G, 2F, 3G, 3F positions for structural elements of thickness 1mm and above</i>	15	35	-	-
<b>PC1.</b> ignite the arc by striking the electrode on the base metal like a match	-	-	-	-
<b>PC2.</b> maintain correct body posture as per requirement of weld	-	-	-	-
<b>PC3.</b> position head such that weld is clearly visible	-	-	-	-
<b>PC4.</b> ensure that weld location is properly illuminated and ventilated	-	-	-	-
<b>PC5.</b> use appropriate patterns of welding as per position and type of joints	-	-	-	-
<b>PC6.</b> push or drag the arc as per requirement	-	-	-	-
<b>PC7.</b> ensure that the arc length is not too large and is as per heat requirement	-	-	-	-
<b>PC8.</b> adjust the travel speed of weld to ensure proper penetration	-	-	-	-
<b>PC9.</b> make required number of steady passes of weld to ensure proper heat generation and penetration	-	-	-	-
<b>PC10.</b> clean the weld after each pass to scrap out the slag formed on the surface of weld	-	-	-	-
<b>PC11.</b> make required adjustments in welding machine	-	-	-	-
<b>PC12.</b> disconnect the equipment correctly and store the same as per manufacturer's guidelines and site safety parameters	-	-	-	-
<b>PC13.</b> dispose of the stubs of electrode left after completing the welding appropriately	-	-	-	-
<b>PC14.</b> clean the welded joint by removing slag formed during the welding process	-	-	-	-



### Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out visual inspection during and post welding</i>	<b>15</b>	<b>35</b>	-	-
<b>PC15.</b> ensure proper penetration of weld	-	-	-	-
<b>PC16.</b> ensure that the weld is properly shielded throughout the operation	-	-	-	-
<b>PC17.</b> ensure proper heat input through arc	-	-	-	-
<b>PC18.</b> ensure that the spatter spray is reduced during the welding	-	-	-	-
<b>PC19.</b> check the root pass for cracks, porosity, slag inclusion, incomplete penetration, root concavity, incomplete fusion, undercut etc.	-	-	-	-
<b>PC20.</b> check visually for spatters, craters, undercuts	-	-	-	-
<b>PC21.</b> check the welded joint visually for cracks	-	-	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-



## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	CON/N1258
<b>NOS Name</b>	Carry out Shielded Metal Arc Welding (SMAW) as per requirement in fabrication workshop or construction site
<b>Sector</b>	Construction
<b>Sub-Sector</b>	Real Estate and Infrastructure construction
<b>Occupation</b>	Fabrication
<b>NSQF Level</b>	4
<b>Credits</b>	7
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	08/05/2025
<b>Next Review Date</b>	30/04/2028
<b>NSQC Clearance Date</b>	08/05/2025

### Assessment Guidelines and Assessment Weightage

#### Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by CSDCI. Each Performance Criteria (PC)/ Elements will be assigned marks proportional to its importance in NOS.
2. CSDCI will also lay down proportion of marks for Theory and Skills Practical for each PC/ Elements. The assessment for the knowledge part will be based on knowledge bank of questions created by Assessment Bodies subject to approval by CSDCI.
3. Individual assessment agencies will create unique question papers for knowledge/theory part for assessment of candidates as per assessment criteria given below:
  - a) Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on assessment criteria.
  - b) The passing percentage for the QP will be 70%. To pass the Qualification Pack.
  - c) The Assessor shall check the final outcome of the practices while evaluating the steps performed to achieve the final outcome



## Qualification Pack

- d) The trainee shall be provided with a chance to repeat the test to correct his procedures in case of improper performance, with a deduction of marks for each iteration.
- e) After the certain number of iteration as decided by SSC the trainee is marked as fail, scoring zero marks for the procedure for the practical activity.
- f) In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack within the specified time frame set by CSDCI.
- g) The candidates shall undergo On job training (OJT), and will learn at actual workplace for a fixed period of time and a certain weightage of assessment is allocated out of total skill weightage of Qualification Pack for undergoing OJT as stipulated by CSDCI. This OJT score and assessors' end point score are combined to arrive at final Marking/grading of trainees' skill test. The OJT score is determined by Supervisor of company under which candidates undergo on job training.

### Minimum Aggregate Passing % at QP Level : 70

(Please note: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

## Assessment Weightage

### Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N1206.Carry out grinding activities on structural steel elements	30	70	-	-	100	10
CON/N9001.Work according to personal health, safety and environment protocols at construction site	30	70	-	-	100	5
CON/N8001.Work effectively in a team to deliver desired results at the workplace	30	70	-	-	100	5
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	5
<b>Total</b>	<b>110</b>	<b>240</b>	<b>-</b>	<b>-</b>	<b>350</b>	<b>25</b>

Elective: 1 Metal Inert Gas (MIG) Welding



### Qualification Pack

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N1253.Carry out preparatory works for Metal Inert Gas (MIG) Welding operations	30	70	-	-	100	25
CON/N1254.Carry out Metal Inert Gas (MIG) Welding as per requirement in fabrication workshop or construction site	30	70	-	-	100	50
<b>Total</b>	<b>60</b>	<b>140</b>	<b>-</b>	<b>-</b>	<b>200</b>	<b>75</b>

#### Elective: 2 Tungsten Inert Gas (TIG) Welding

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N1255.Carry out preparatory works for Tungsten Inert Gas (TIG) Welding operations	30	70	-	-	100	25
CON/N1256.Carry out Tungsten Inert Gas (TIG) Welding as per requirement in fabrication workshop or construction site	30	70	-	-	100	50
<b>Total</b>	<b>60</b>	<b>140</b>	<b>-</b>	<b>-</b>	<b>200</b>	<b>75</b>

#### Elective: 3 Shielded Metal Arc Welding (SMAW)



### Qualification Pack

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N1257.Carry out preparatory work for Shielded Metal Arc Welding (SMAW) operations	30	70	-	-	100	25
CON/N1258.Carry out Shielded Metal Arc Welding (SMAW) as per requirement in fabrication workshop or construction site	30	70	-	-	100	50
<b>Total</b>	<b>60</b>	<b>140</b>	<b>-</b>	<b>-</b>	<b>200</b>	<b>75</b>



## Qualification Pack

### Acronyms

<b>NOS</b>	National Occupational Standard(s)
<b>NSQF</b>	National Skills Qualifications Framework
<b>QP</b>	Qualifications Pack
<b>TVET</b>	Technical and Vocational Education and Training



## Qualification Pack

### Glossary

<b>Sector</b>	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
<b>Job role</b>	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
<b>Occupational Standards (OS)</b>	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
<b>Performance Criteria (PC)</b>	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
<b>National Occupational Standards (NOS)</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
<b>Unit Code</b>	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
<b>Unit Title</b>	Unit title gives a clear overall statement about what the incumbent should be able to do.
<b>Description</b>	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
<b>Scope</b>	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.



## Qualification Pack

<b>Knowledge and Understanding (KU)</b>	<p>Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.</p>
<b>Organisational Context</b>	<p>Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.</p>
<b>Technical Knowledge</b>	<p>Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.</p>
<b>Core Skills/ Generic Skills (GS)</b>	<p>Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.</p>
<b>Electives</b>	<p>Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.</p>
<b>Options</b>	<p>Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.</p>