Pipe Fitter (CGD)

QP Code: HYC/Q 6102

Full Curriculum

Module 1: Health Safety And Security Related Guidelines

64 hrs

This OS unit is about knowledge and practices relating to health, safety and security that need to use. It covers responsibilities towards self, others, assets and the environment. It includes Knowledge of Hazardous Materials Rules, understanding of risks and hazards in the workplace, deal with accidents, emergencies, etc. It covers knowledge of fire safety, common first aid applications, safe practices and emergency procedures.

Topics:

- Protective clothing/equipment for specific tasks and work conditions
- Hazards
- Possible causes of risk and accident
- Safe working practices
- Methods of accident prevention
- General health and safety equipment
- Good housekeeping practices(5S)
- Fire safety
- Safety systems
- Emergencies, rescue and first-aid procedures

Module 2: Different Types Of Tools Used In Pipe Fitting

40 hrs

This Module Identifies the tools and tackles that are required to carry out the assigned job

Topics:

- Measuring Tools-Steel rule
- Hammer- Claw hammer, Ball peen hammer, Soft mallet hammer
- Spanner-Ratchet spanner, Double open-ended spanner, Ring spanner, Tubular box spanner
- Plier- Pipe pliers, Combination plier, Regular plier, Water pump plier
- Cutter-Pipe cutter, Steel rule, Ratchet copper cutter, Plastic pipe cutter
- Pipe chamfering kit
- Chisels with hand grip
- Drain cleaning spiral
- Combination plier, Regular plier, Water pump plier
- Different types of blades (HCS,HSS and Bi metal)
- Saws, Drills
- Portable drilling machine, Impact drill
- Portable tri-stand vice, Bench yoke vice, Thread cutting dies
- Copper pipe deburring tools
- Pipe wrench, Adjustable wrench
- Hammer type screwdriver, Flat tip screwdriver, C clamp

Module 3: Revision Of Basics Mathematics

40 hrs

In this module the trainees will be taught the basic mathematics that will be required for workshop related calculations:

Topics:

- Units of Metric, ISO and FPS
- Addition Subtraction Multiplication and Division
- Basic Calculation of area and volume
- Skills to solve problems in Fractions, Decimals, Percentage and ratio
- Basics of Algebra and understand Simple algebraic equations
- Techniques of solving simple Trigonometric problems

Module 4: Measuring And Marking Tools

40 hrs

This module covers the knowledge about the basic measuring tools and marking tools used in the workshop as per job role.

Topics:

- Steel rule
- Tape
- Callipers, Vernier Calliper
- Vernier Height Gauge
- Micrometre, Bevel Protractor
- Gauges for checking welds

- Scribing profiles
- Surface plate
- Marking stand
- Divider
- V block
- Angle plate

Module 5: Basic Manual Metal Working Skills

64 hrs

This module covers the knowledge about the following topics

Topics:

- Threading
- Grinding
- Welding
- Cutting
- Rigging
- Brazing
- Soldering
- Bending

Module 6: ARC Welding

80 hrs

This module includes Performing manual metal arc welding (MMAW) also known as shielded metal arc welding (SMAW) for producing a fillet and groove joints on carbon and low alloy steels in a range of welding positions as per detailed instructions received Metal Arc Welding / Shielded Metal Arc Welding.

Topics:

- Familiarisation of machine and controls
- Selection of machine and current setting
- Care and Maintenance of machine
- Preparation of work piece
- Selection of electrode
- Striking arc, maintaining and laying short beads
- Straight line beads- Flat position
- Weaved beads- Flat position
- Fillet joint - 1F and 2F
- Pipe to plate 1F
- Pipe to Pipe - 2G, 5G and 6G

Module 7: Brazing

3000 hrs

Brazing is a joining process traditionally applied to metals in which molten filler metal (the braze alloy) flows into the joint.

Topics:

- Gas setting
- Flame adjusting
- Brazing

Module 8: Oxy-Fuel Gas Cutting

64 hrs

Oxy-fuel cutting use a combination of fuel gases and oxygen to cut metals. A variety of different fuels may be utilized, although the most common is acetylene.

Topics:

- Setting the gas welding plant
- Gas setting
- Flame adjusting
- Brazing

Module 9: Electrofusion Welding

64 hrs

This unit covers the pipe Electrofusion Welding fabrication, Procedures & Techniques for PE Pipeline Installations. The trainee will be able to join HDPE and other plastic pipes using special fittings that have built-in electric heating elements which are used to weld the joint together by Electrofusion. It is one of two main techniques used for the joining of polyethylene gas and water pipes.

Topics:

- Pipe preparation equipment
- Pipe Cutting Tools
- Pipe Scraping Tools
- Pipe Cleaning Material

- Pipe re-rounding tools (on larger pipe sizes)
- Pipe restraint equipment
- Fusion equipment