

INSTALL FIRE CONTROL SYSTEMS

UNIT CODE: CON/OS/PL/CR/07/5/A

UNIT DESCRIPTION

This unit specifies the competencies required to install fire control systems. It involves preparing working drawings, selecting tools and equipment for installation, quantify and cost materials and supplies, install sprinkler systems, install hose reel systems, install wet and dry risers and maintain and service fire suppression systems. It applies in the construction industry.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1 Prepare working drawing	These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range</i> 1.1 Drawings are identified and selected based on the job. 1.2 Scale of the drawing is determined based on the specifications. 1.3 Measurements are converted based on scale. 1.4 Symbols are identified based on best practices. 1.5 Fire control piping appliances are identified based on the drawings 1.6 Manufacturers drawing and specifications are interpreted. 1.7 working drawings are prepared based on specifications 1.8 Isometric working drawings are drawn based on best practices.
2 Select tools and equipment	2.1 <i>Personal Protective Equipment</i> is used in line with occupational safety and health requirements 2.2 <i>Fire control tools and equipment</i> are identified based on the requirements of the job. 2.3 Fire control tools and equipment are used based on manufacturer's manuals.

	<p>2.4 Fire control tools and equipment are cared for and maintained based on manufacturer’s manual and workplace place policy.</p> <p>2.5 Fire control tools and equipment are stored based on work place policies.</p>
3 Quantify and cost materials and supplies	<p>3.1 Materials and supplies for fire control systems are identified based on the drawings and specifications.</p> <p>3.2 Fittings for fire control systems are identified based on the standards.</p> <p>3.3 Fire control materials are quantified and costed based on best practice</p> <p>3.4 A schedule of fire control materials is developed based on the drawing and specifications.</p>
4 Install sprinkler systems	<p>4.1 Positions of fire control pipes are set out and marked based on working drawings.</p> <p>4.2 Pipes are jointed in accordance with specifications.</p> <p>4.3 Pipes are cut based on type of pipe, drawing specifications and job requirements</p> <p>4.4 Pipes are fitted based on drawing specifications and requirements of the job.</p> <p>4.5 Spools are calculated based on standards and job requirements</p> <p>4.6 Sprinkler heads are fitted according to specifications</p> <p>4.7 Sprinkler system is connected to water storage tank</p> <p>4.8 Housekeeping is conducted as per workplace procedures.</p> <p>4.9 Safety and health practices are observed based on OSHA.</p> <p>4.10 Tests are conducted based on specifications.</p> <p>4.11 Faults are corrected based on best practice.</p>
5 Install hose reel systems	<p>5.1 Positions of fire control pipes are set out and marked based on working drawings.</p> <p>5.2 Pipes are jointed in accordance with specifications.</p> <p>5.3 Pipes are cut based on type of pipe, drawing specifications and job requirements</p> <p>5.4 Pipes are fitted based on drawing specifications and requirements of the job.</p>

	<p>5.5 Spools are calculated based on standards and job requirements</p> <p>5.6 Hose reels are fitted according to specifications</p> <p>5.7 Hose reel system is connected to water storage tank</p> <p>5.8 Housekeeping is conducted as per workplace procedures.</p> <p>5.9 Safety and health practices are observed based on OSHA.</p> <p>5.10 Tests are conducted based on specifications.</p> <p>5.11 Faults are corrected based on best practice.</p>
6 Install wet and dry risers	<p>6.1 Positions of fire control pipes are set out and marked based on working drawings.</p> <p>6.2 Pipes are jointed in accordance with specifications.</p> <p>6.3 Pipes are cut based on type of pipe, drawing specifications and job requirements</p> <p>6.4 Pipes are fitted based on drawing specifications and requirements of the job.</p> <p>6.5 Spools are calculated based on standards and job requirements</p> <p>6.6 Fire Hydrants are fitted as per specifications</p> <p>6.7 Housekeeping is conducted as per workplace procedures.</p> <p>6.8 Safety and health practices are observed based on OSHA.</p> <p>6.9 Tests are conducted based on specifications.</p> <p>6.10 Faults are corrected based on best practice.</p>
7 Maintain and service fire suppression systems	<p>7.1 Types of maintenance are classified based on standards</p> <p>7.2 Regular checks are conducted based on best practice</p> <p>7.3 Regular servicing and cleaning are conducted in based on standards</p> <p>7.4 Faults are rectified based on best practice</p>

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variables	Range
1. Materials and supplies may include but not limited to:	<ul style="list-style-type: none">• Screws• Adhesives• Cement• Sand• Pipes• Traps• Electric cables• Caulking material• Fittings• Valves
2. Personal Protective Equipment may include but not limited to:	<ul style="list-style-type: none">• Helmet• Gloves• Dustcoat / overall• Dust mask• Safety shoes / boots
3. Fire control Tools and equipment may include	<ul style="list-style-type: none">• Pipe wrench• Pipe cutter• Hacksaw• Pipe Threading Equipment• Bench Vice

but not limited to:	<ul style="list-style-type: none"> • Taps • Punch • Files • Screwdrivers • Drill with various sizes of bits • Portable drill • Mallet • PPR machine • Ball pein hammer • Mason chisel • PPR machine / Heat Fusion equipment • Pipe bender • Trowel • De-clogging wire / de-clogging machine
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Required Skills

The individual needs to demonstrate the following skills:

- Analytical skills
- Drawing skills
- Problem-solving skills
- Critical thinking skills
- Organizing skills
- Measuring skills
- Numeracy skills
- Cutting skills
- Threading skills
- Bending skills

Required Knowledge

The individual needs to demonstrate knowledge of:

- Trouble shooting process
- Preventive maintenance of all systems
- Corrective maintenance of all systems
- Plumbing systems
- Types of fitting and appliances
- Maintenance of each type of fitting and appliance

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Prepared working drawings correctly 1.2 Read and used scale of the drawing accurately 1.3 Converted measurements accurately 1.4 Identified symbols correctly. 1.5 Prepared Simple working drawings correctly 1.6 Drew isometric working drawings correctly 1.7 Used personal protective equipment correctly 1.8 Identified fire control tools and equipment correctly 1.9 Used fire control tools and equipment appropriately 1.10 Maintained fire control tools and equipment correctly 1.11 Stored fire control tools and equipment correctly 1.12 Identified fire installing materials correctly 1.13 Identified Fire control installing fittings correctly
2. Resource Implications	The following resources must be provided: 2.4 A functional workshop with basic tools, equipment and sanitary appliances. 2.5 Reference and maintenance manuals 2.6 Personal protective equipment
3. Methods of Assessment	Competency may be assessed through: 3.6 Practical Tests 3.7 Written test 3.8 Third party report 3.9 Portfolio
4. Context of Assessment	4.1 On-the-job 4.2 Off-the-job 4.3 Work placement
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended