

Apply insulation and finishes to complicated surfaces

Overview

This standard is about fitting or applying rigid, slab or flexible insulation materials and finishes to pipes and ducts with bends and joints, horizontal and vertical flat surfaces, vessels with ancillaries, flanges and fittings, removing original insulation materials, interpreting information, adopting safe and healthy working practices, selecting materials, components and equipment

This standard is for people working in the occupational area of Thermal Insulation and can be used by operatives, supervisors and managers

Performance criteria

- You must be able to:*
- P1 interpret the given information relating to the work and resources to confirm its relevance
 - P2 comply with the given, relevant legislation and official guidance to carry out your work and maintain safe and healthy work practices
 - P3 select the required quantity and quality of resources for the methods of work
 - P4 comply with organisational procedures to minimise the risk of damage to the work and surrounding area
 - P5 comply with the given contract information to carry out the work efficiently to the required specification
 - P6 complete the work within the allocated time, in accordance with the programme of work

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Knowledge and understanding

You need to know and understand: **Performance Criteria 1**

Interpretation of information

K1 the organisational procedures developed to report and rectify inappropriate **information** and unsuitable **resources**, and how they are implemented

K2 the types of **information**, their source and how they are interpreted

K3 the organisational procedures to solve **problems** with the **information** and why it is important they are followed

Performance Criteria 2

Safe work practices

K4 the level of understanding operatives must have of **information** for relevant, current **legislation and official guidance** and how it is applied

K5 how **emergencies** should be responded to and who should respond

K6 the organisational **security procedures** for tools, equipment and personal belongings

K7 what the accident reporting procedures are and who is responsible for making the report

K8 why, when and how **health and safety control equipment** should be used

Performance Criteria 3

Selection of resources

K9 the characteristics, quality, uses, sustainability, limitations and defects associated with the **resources** and how defects should be rectified

K10 how the **resources** should be used and how any **problems** associated with the **resources** are reported

K11 the organisational procedures to select **resources**, why they have been developed and how they are used

K12 the **hazards** associated with the **resources** and **methods of work** and how they are overcome

Performance Criteria 4

Minimise the risk of damage

K13 how to **protect work** from damage and the purpose of protection

K14 why **disposal of waste** should be carried out safely and how it is achieved

Performance Criteria 5

Meet the contract specification

K15 how **methods of work**, to meet the specification, are carried out and **problems** reported

K16 how **maintenance** of tools and equipment is carried out

Performance Criteria 6

Allocated time

K17 what the **programme** is for the work to be carried out in the estimated, allocated time and why deadlines should be kept

Scope/range**Performance Criteria 1**

1 interpretation of drawings, specifications, schedules, method statements, technical query, risk assessments and manufacturers' information related to the work to be carried out

Performance Criteria 2

2 avoidance of risk by complying with the given information relating to at least four of the following

- 2.1 methods of work
- 2.2 safe use of health and safety control equipment
- 2.3 safe use of access equipment
- 2.4 safe use and storage of materials, tools and equipment
- 2.5 specific risks to health

Performance Criteria 3

3 selection of resources associated with own work

- 3.1 materials, components and fixings
- 3.2 tools and equipment

Performance Criteria 4

4 protection of the work and its surrounding area from damage

- 5 minimise damage and maintain a clean work space
- 6 disposal of waste in accordance with current legislation

Performance Criteria 5

7 demonstration of work skills to measure, mark out, cut, trim, form, shape, fit, position, fix, apply, secure and finish

8 use and maintain hand tools, portable power tools and ancillary equipment

9 remove insulation materials and apply new insulation materials, with finishes, to given working instructions for at least six of the following

9.1 pipes with acute and obtuse/reflex angles and joints

9.2 ducts with acute and obtuse/reflex angles and joints

9.3 oblique unequal tee branches

9.4 vessels and ancillaries

9.5 trunnions

9.6 dome ends, vessel ends, cones

9.7 flanges

9.8 fittings and fixings

9.9 valves

Performance Criteria 6

10 completion of own work within the estimated, allocated time to meet the needs of other occupations and/or client

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**Scope/range related
to knowledge and
understanding**

Disposal of waste

1 environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance

Emergencies

2 operative's response to situations in accordance with organisational authorisation and personal skills when involved with

2.1 fires, spillages, injuries

2.2 emergencies relating to occupational activities

Hazards

3 those identified by risk assessment, method of work, manufacturers' technical information, statutory regulations and official guidance

Health and safety control equipment

4 identified by the principles of prevention for occupational use, types and purpose of each type, work situations and general work environment

4.1 collective protective measures

4.2 personal protective equipment (PPE)

4.3 respiratory protective equipment (RPE)

4.4 local exhaust ventilation (LEV)

Information

5 drawings, specifications, schedules, method statements, technical query, risk assessments, manufacturers' information and current regulations governing buildings associated with thermal insulation

Legislation and official guidance

6 this relates to the operative's responsibilities regarding potential accidents and health hazards whilst working in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting

Maintenance

7 operative care of hand tools and/or portable power tools and ancillary equipment

Methods of work

8 application of knowledge for safe and healthy work practices, procedures and skills relating to the method/area of work and materials used to

8.1 remove insulation

8.2 calculate surface area, apply trigonometry and geometry

8.3 confirm thermal specifications

8.4 prepare surface areas to receive insulation

8.5 confirm insulation design

8.6 prepare and apply rigid, slab, and flexible insulation materials to pipes and ducts with acute and obtuse/reflex angles and joints, oblique and unequal tee branches, vessels and ancillaries, trunnions, dome ends, vessel ends, cones, flanges, valves, fittings and fixings

8.7 identify the characteristics of insulation materials

8.8 identify the differences between insulation for cold, heat, acoustic and fire protection

8.9 develop and use templates and moulds

8.10 raise technical queries and apply information received

8.11 apply finishes and fixings

8.12 identify and fit identification banding

8.13 use hand tools, portable power tools and equipment

8.14 work at height

8.15 use access equipment

9 team work and communication

10 needs of other occupations associated with the application of insulation and finishes to complicated surfaces

Problems

11 those arising from information, resources and methods of work

11.1 own authority to rectify

11.2 organisational reporting procedures

Programme

12 types of progress charts, timetables and estimated times
13 organisational procedures for reporting circumstances which will affect the work programme

Protect work

14 protect work against damage from general workplace activities, other occupations and adverse weather conditions

Resources

15 materials, components and equipment relating to types, quantity, quality, sizes and the sustainability of standard and/or specialist
15.1 insulation materials
15.2 fixings and fastenings
15.3 joint materials
15.4 adhesives, sealants and cements
15.5 pre-insulated ducting
15.6 hand and/or portable powered tools and equipment
16 methods of calculating quantity, length, area and wastage associated with the method/procedure to apply insulation and finishes to complicated surfaces

Security procedures

17 site, workplace, company and operative

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