

---

## Overview

This standard is about fabricating joints in sheet metal insulation protection, interpreting information, adopting safe and healthy working practices, and 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

---

## 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, 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, form, shape, fix and finish

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

9 fabricate at least six joints in sheet metal to given working instructions for insulation protection

9.1 dome end

9.2 oblique unequal tee branch

9.3 eccentric reducer

9.4 bend trunnion

9.5 recess around obstacles

9.6 eccentric triangulation

9.7 flat back bend (space saver)

9.8 breach piece

9.9 two or more square to round

9.10 duct work transformation pieces

### **Performance Criteria 6**

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

**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, risk assessments, manufacturers' information and current regulations 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, 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 fabricate joints in sheet metal insulation protection, dome end, oblique unequal tee branch, eccentric reducer, bend trunnion, flat back bend (space saver), breach piece, two or more square to round, duct work transformation pieces

8.2 fabricate joints to recess around obstacles

8.3 apply eccentric triangulation

8.4 calculate surface area

8.5 apply trigonometry and geometry

8.6 develop templates by drawing development

8.7 identify allowances for bends, folds and forms

8.8 join sheet metals, including screws, folds, rivets and stud welding

8.9 incorporate joint methods that will reduce corrosion

8.10 identify the characteristics of sheet metals

8.11 use hand tools, portable power tools and equipment

8.12 work at height

8.13 use access equipment

9 team work and communication

10 needs of other occupations associated with the fabrication of joints in thermal insulation protection using sheet metal

## **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 sheet metals  
15.2 joining materials  
15.3 hand and/or portable powered tools and equipment  
16 methods of calculating quantity, length, area and wastage associated with the method/procedure for the fabrication of joints in thermal insulation protection using sheet metal

## **Security procedures**

17 site, workplace, company and operative

---

**Developed by** Construction Skills

---

**Version Number** 2

---

**Date Approved** May 2019

---

**Indicative Review Date** May 2022

---

**Validity** Current

---

**Status** Original

---

**Originating Organisation** ConstructionSkills

---

**Original URN** VR654

---

**Relevant Occupations** Construction and Building Trades nec

---

**Suite** Thermal Insulation (Construction)

---

**Keywords** Sheet metal; Fabricate; Joint, Thermal; Insulation; Dome end; Oblique unequal tee branch; Eccentric reducer; Bend trunnion; Eccentric triangulation; Flat back bend; Breach piece; Transformation pieces; Square to round

---