



MARKING SCHEME

SUMMER 2018

LEVEL 1 AND LEVEL 2

**CONSTRUCTING THE BUILT ENVIRONMENT
9811/01**

INTRODUCTION

This marking scheme was used by WJEC for the 2018 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

JJ International Building Developers (JJI) was established 25 years ago.

Company director Noa Evageline Cory is concerned that all construction sites are fully coherent with health and safety regulations. Noa has employed a senior project manager to implement an induction programme which will be adhered to on JJI Building sites.



1. The worker in the photograph is carrying a 50kg bag of cement.
 - (a) What is the maximum load a construction worker is usually allowed to carry [1]
25kg
 - (b) What could the worker do, in order to reduce the risk of injury? [1]
Use a wheelbarrow or sack truck (1)
Share the load with another worker (1)
Specified PPE (correct goggles - boots)
 - (c) Name one piece of legislation which covers this situation? [1]
Manual Handling Regulations (1)
HASAWA (1)
The Management of Health and Safety at work regulations (1)



2. The photograph above is taken at our site in Tiverton. This office is fully operational during working hours. The Health and Safety Officer is very concerned about left over materials and office furniture causing problems and has informed staff to rectify the situation immediately.

In the event of a fire, describe **two** problems which could arise if the room is not cleared. [4]

1. Cannot reach the fire alarm - the inability to set the alarm off and thereby alert staff could be highly dangerous and even lead to loss of life (2)

Or

2. Cannot reach the fire extinguishers - the inability to access and thereby use the extinguishers could create additional dangers through the spread of the fire (2)

Or

3. There is potential trip hazard - this could cause injury and hinder their escape (2)

Or

4. Combustible material is a potential hazard - this could contribute to the spread of the fire. (2)

Or

5. Any response deemed appropriate.

3. JJI have an issue with a partly handed over section in phase one of a recently refurbished office block. The site foreman has noticed that the painters have been storing their paint and tools in the electrical store cupboard shown in the photograph above.



Identify **two** risks associated with using this cupboard for storage. [2]

Unable to gain proper access in an emergency to shut down electrical supply (1)

Heat source next to flammable paint (1)

Fumes from stored paint (1)

Trip hazard (1)

Materials falling (1)

Liquid and electricity (1)

OR

Correct storage - Appropriate storage

Move to another area (somewhere else)

Suggest **three** control measures that could prevent this from happening. [3]

Lock the cupboard door (1)

Warning signage (1)

Inform staff not to use for storage as part of induction (1)

Daily inspections (1)

Formal to warning employees is contravened (1)

“Hi Noa - its Harry Jones here, site manager from the south division. I have to carry out an audit on one of my sites next week about site accidents. Please can you give me some information on RIDDOR, I am specifically interested in what is meant by a reportable accident, what regulations such accidents are covered by and how are they reported. Many thanks - Harry. ”

4. (a) If a member of staff is off work for 7 days or more as a direct result of a site accident, this would be deemed 'reportable'. Name **two** other types of 'reportable accidents'. [2]

When a death occurs (1)

Accept any given response as listed under RIDDOR, including (not exhaustive):

- Fractures (1)
- Specialised injuries (1)
- Occupational diseases(1)
- Dated illness (1)

- (b) Name two regulations which cover 'reportable accidents'. [2]

HASAWA (1)
RIDDOR (1)

- (c) 'Reportable accidents' need to be reported by law. Legally, who do they need to be reported to? [1]

HSE (1)
Site manager
Safety officer
Supervisor - Boss

5. Please see the table below which contains site situations and asks you to suggest a suitable safety sign which should be displayed with a reason for your choices. [16]

Site situation	One suggested sign, its type (shape and colour) and reasons for its choice.
Bricklayers cutting paving slabs on paths to new houses.	<p>Mandatory sign showing a dust mask - on a blue circle (2)</p> <p>The dust generated by cutting the slabs is a danger to employees if inhaled - in order to minimise this, dust masks should be worn in this area - hence the mandatory sign for the wearing of dust masks should be displayed. (2)</p> <p>Any other response deemed appropriate.</p>
Site vehicles being operated on site.	<p>Warning sign showing a vehicle - on a yellow triangle (2).</p> <p>The movement of site vehicles provides dangers to employees - they need to be aware of their presence so as to help avoid accidents. (2)</p> <p>Any other response deemed appropriate.</p>
A site office is about to be completed and will house up to fifty employees. Staff will be told at induction that, in the event of a fire they will have to evacuate the building and meet in the car park (the 'muster point'). The corridors have just been painted and are awaiting new safety signs.	<p>Fire sign showing an arrow on a green square. (2)</p> <p>Staff need to be directed via signage as to the appropriate exit in the event of a fire.</p> <p>Any other response deemed appropriate.</p>
For the provision of site power, noisy generators are in use.	<p>Mandatory sign showing ear defenders on a blue circle (2)</p> <p>The generators can be very noisy and may operate for long periods. The level of noise can provide potential dangers for employees - especially damage to hearing - these dangers can be minimised through the use of ear defenders. The mandatory sign will remind employees they need to wear defenders when near the generators. (2)</p>

Please note:

- Any suitable sign is acceptable
- Reasons given must link to suggested sign
- PPE needs to be specific

6. Yesterday, an accident happened at one of our north division sites. Fortunately it happened outside normal site hours and no one was injured. The car shown in the photograph has damaged the site boundary wall and has now been removed by the police. This area of the site is where the site compound is located. The compound is where tools, materials and equipment are stored.



Discuss the potential effects of not rebuilding the wall immediately and how these could be minimised.

[7]

Indicative content

Effects:

Potential theft of tools, materials and equipment.

Potential vandalism of the site.

Potential danger to children entering the site to play.

Minimising impact:

On-site security.

CCTV cameras

Motion sensor alarms

Temporary fencing

Securing wall (make safe)

1-3 marks	A limited consideration is given of the effects, and the way such effects can be minimised has been mentioned. It is likely there will be some omissions. There will be limited use of technical language and errors present in spelling and punctuation.
4-5 marks	Most of the potential effects will be considered and there is a logical linkage to the way impacts can be minimised. There will be some use of technical terminology and reasonably accurate spelling and grammar which assists communication.
6-7 marks	A comprehensive discussion of the potential effects of the accident and a clear indication of how the impacts can be minimised. Technical terminology will be fluently incorporated into the discussion and spelling and grammar will be, in the main, error free.

7. The photographs below were taken at various JJI construction sites.

Image 1

This is a photograph of the garden of one of our virtually completed houses. The buyers are looking to move into the property immediately.



Image 2

This is a photograph of the interior of our partially built houses.



Image 3

This is a photograph of one of our employees in the workshop cutting steel reinforcements for the floor slabs.



Image 4

This is a photograph of one of our construction sites in the east division.



- (a) The photographs show scenes from various construction sites. You are required to complete the risk assessment form below. Some of the form has been completed already (shaded in blue). [3+3]

Hazard 1 (Photo 1)
Inappropriately stored material.
Risks (Image 1)
The materials are poorly stored and could easily cause someone to trip – the site should not be dangerous like this. Workers are used to clear areas and such a mess is not expected. Debris could also be blown in the wind as items such as boards are prone to this. Some of the sheet material could be slippery especially when raining.
Control Measures (Image 1)
Rubbish should be removed from site when possible and disposed of correctly. A properly used skip (which is on site) would help greatly. Materials which are to be used should be held safely and securely in appropriate storage.

Hazard 2 (Image 2)
Missing scaffold board
Risks
Falls and possible trips. Danger of falling tools and materials. (3)
Control Measures
Complete scaffold board to perimeter of wall. Employ competent scaffolders. (3)

Hazard 3 (Image 3)
The employee is cutting the steel reinforcements with no PPE being worn
Risks
Possible damage to: Eyes as a result of sparks Hands and face as a result of sparks Feet as a result if manual handling Ears as a result of noise Respiratory system (3) Debris falling in people eyes
Control Measures
Warning signs, training and checks to ensure: Goggles are worn Boots are worn Gloves and overalls are worn Ear defenders are worn Face masks are worn (3)

Please note:

Where PPE is provided as part of the response it must be specific to the hazard and not a generic statement.

- (b) Identify **one other** Hazard from photos 1-4 not already noted on this risk assessment form. [1+3+4]

Hazard identified (1)
<p>No safety signage.</p> <p>No clear walkways and significant levels of debris.</p> <p>Temporary ramp, at height with no safety rails.</p>
Risks (3)
<p>Many fold - e.g. lack of hard hat signs - some employees wearing others not. (Whilst there may potentially be signs at the site entrance there is a distinct lack of signage in the image - out of line with typical site practice.</p> <p>Trip and collision risk of injury - especially where machinery or loads may be involved. The existence of discarded wood, scaffolding poles and other items are a major health risk.</p> <p>Falls from the ramp and the dropping of materials, especially heavy loads such as those in wheelbarrows. Employees under the ramp may be danger of falling items. Ramp is not secured and uses various pieces of wood providing an uneven surface. The lack if safety rails increases the potential risks noted.</p>
Control Measures (4)
<p>Provide correct signage - these may cover all sign types.</p> <p>Site should be cleared and materials discarded or stored properly.</p> <p>Barriers should be erected where employees are working and need to be separated from other employees.</p> <p>Properly built ramp with flat surface and barriers. Signage in place and a no-go zone or appropriately system in place to protect workers under the ramp.</p>