Learner Workbook

STUDENT COPY

RIICBS203E –
Safely handle bituminous materials

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This resource was developed by:

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Knowledge Questions

Element 1 – Prepare to conduct asphalt paver operations

Question 1 **What is the difference between asphalt and bitumen?**	PC 1.1

Question 2 **What are the four different types of bitumen?**	PC 1.1
1…… 2…… 3…… 4……	

Question 3 **How do you get, understand and confirm work requirements when working with bituminous materials?**	PC 1.1

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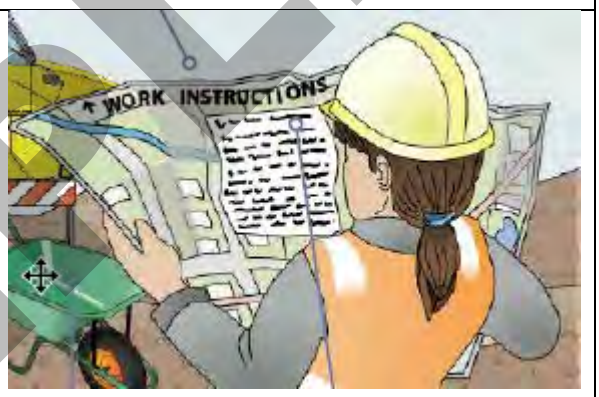
Question 4 **How can you confirm work requirements for the job you will be doing?**	PC 1.2

Question 5 **What do the job's work instructions explain?**	PC 1.2
	

Question 6 **What is an example of material calculations when working with bitumen?**	PC 1.1, 1.2
Give an example of the following two items in a job: • Bitumen quantity calculation. • Aggregate quantities.	

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Question 7 **What are quality requirements?**	PC 1.2

Question 8 **You are working with bitumen. How can you check the the quality of the work?**	PC 1.2

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Question 9 **What is a safety data sheet (SDS) used for?**	PC 1.1

Question 10 **What kinds of information do you need before starting work?**	PC 1.1, 1.2

Question 11 **When planning your job, why do you need to know what other people are doing on site?**	PC 1.1

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Question 12 **What are environmental issues when working with bitumen?**	PC 1.3

Question 13 **What are potential hazards when working with bitumen?**	PC 1.3

Question 14 **What is a Job safety and environment analysis (JSEA) and a Safe work method statement (SWMS)?**	PC 1.3
	Job Safety Analysis Worksheet Company name: Date: JSA No: Site name: Permit to work requirement: Yes No Contractor: Approved by: Activity: **Activity** List the tasks needed to do the job in the order they are done. **Hazards** Next to each task list the hazards that could cause injury when the task is done. **Risk control measures** List the control measures needed to remove or minimise the risk of injury from the hazard you have identified. **Who is responsible?** Write the name of the person responsible (supervisor or above) for putting the control measures in place.

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Question 15 **What PPE should you use when working with an bitumen?**	PC 1.4

Question 16 **When do you wear respiration gear such as a mask?**	PC 1.4

Question 17 **When do you wear hearing protection?**	PC 1.4

Question 18 **What traffic management signage might you need when working with bitumen?**	PC 1.5

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Question 19 **What is the aim of a traffic control plan?**	PC 1.5

Question 20 **What does the traffic management plan (TMP) tell you?**	PC 1.5

Question 21 **Where do you put up warning signs?**	PC 1.5

Question 22 **What signs may be used in a traffic control plan?**	PC 1.5

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Question 34 **What hazards and risks do you need to check for?**	PC 2.3

Element 3 – Demonstrate First Aid for bitumen burns

Question 35 **What first aid should be done if someone gets a bitumen burn?**	PC 3.1

Question 36 **What is a 'Bitumen Burn Tag'?**	PC 3.2

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Element 4 – Clean up

Question 37 **You have been working with bitumen. What do you need to do to clear the work area and recycle materials?**	PC 4.1

Question 38 **What maintenance do you need to do when you have finished working with bitumen?**	PC 4.1

Question 39 **How should you store bitumen tools and equipment?**	PC 4.1

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Question 40 **You have finished working with bitumen. What housekeeping do you need to do?**	PC 4.1

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Practical assessment tasks – Check List

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit; including evidence of the ability to:

- safely handle bituminous materials on ***at least two occasions with at least two different asphalt or surface types.***

NOTE: You will do each task once when completing the workbook and once when doing the final summative assessment.

Practical Assessment Task 1 – Prepare to handle bituminous materials

SCENARIO [Your trainer will give you the following job or something similar.]

Your job is to prepare to handle bituminous materials. You will be doing routine jobs under direct supervision.

Demonstrate the following steps:

Task - **Road Construction Worker**	**Satisfactory**
Site Preparation: Assisting with the preparation of the construction site by clearing debris, marking boundaries, and setting up safety barriers. This is typically done under the guidance and direct supervision of experienced construction workers.	
Material Handling: Carrying and distributing bituminous materials like asphalt mixtures, gravel, or other materials used in road construction. They work closely with equipment operators and follow their instructions.	
Equipment Operation Support: Assisting equipment operators (such as asphalt paver operators or roller operators) by guiding them and ensuring the proper distribution and compaction of bituminous materials. Laborers may use hand tools to shape and spread materials.	
Traffic Control: Setting up and managing traffic control devices and signs to redirect and ensure the safety of drivers and pedestrians around the construction site. This is typically done under the supervision of flaggers or traffic control personnel.	
Material and Tool Maintenance: Assisting in the maintenance and cleaning of construction equipment, hand tools, and materials. This includes tasks like cleaning and storing tools and equipment properly.	

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Safety Compliance: Following strict safety guidelines and procedures when working with bituminous materials and heavy machinery. They must also report safety concerns to supervisors.	
Documentation and Reporting: Assisting in keeping records of work activities and reporting progress to supervisors or more experienced workers.	

The applicants' performance in Practical Assessment 1 – Prepare to conduct asphalt paver operations:

☐ Satisfactory	☐ Not yet satisfactory
Applicant signature:	**Date:**
Trainer/trainer signature:	**Date:**

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Practical Assessment Task 2 – Work safely with bituminous materials

SCENARIO [Your trainer will give you the following job or something similar.]

Your job is to repair potholes. You will be doing routine jobs under direct supervision.

Demonstrate the following steps:

Task - **Road Construction Worker**	**Satisfactory**
Step 1: Safety Precautions Before starting any work, the pothole repair worker, working under direct supervision, ensures they are equipped with the necessary personal protective equipment (PPE), such as gloves, safety glasses, and a high-visibility vest.	
Step 2: Site Inspection The worker, guided by the supervisor, inspects the pothole site to assess its size, depth, and condition.	
Step 3: Traffic Control If the pothole repair is on a road, the worker and the supervisor set up appropriate traffic control measures. This includes placing cones, signs, and barricades to protect the work area and ensure the safety of passing vehicles.	
Step 4: Preparation of Bituminous Material The worker assists the supervisor in preparing the bituminous material, which may be hot asphalt mix or a cold patch material. They ensure that the material is at the correct temperature and consistency for proper application. [Note: Bitumen could be: 1. asphalt 2. bituminous roofing materials 3. bituminous paints and coatings 4. bituminous membranes	
Step 5: Pothole Cleaning The worker, under direct supervision, uses a shovel, broom, or compressed air to clean the pothole of loose debris, water, and loose asphalt fragments. The objective is to create a clean, dry surface for the new material to adhere to.	

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