

# Envirobed® HA104 High Performance Bedding Mortar



## Applications

Envirobed® HA104 is specifically formulated for the bedding of ironwork conforming to the Highways Agency Design Manual for Roads and Bridges and is particularly suitable for use in wet weather conditions. With superior compressive, tensile and flexural strengths reached after just 3 hours, Envirobed® HA104 provides all the performance but none of the environmental hazards of traditional resinous materials, such as hazardous waste disposal.

## Technical

Envirobed® HA104 is supplied as a two-component system which contains a blend of special cements, polymer graded aggregates and recycled glass. The combined components provide a high performance mortar, which can accommodate depths of 10mm-50mm in one pass. If necessary, greater depths can be achieved by using the layer-upon-layer method.

## Preparation

All surfaces should be free from oil, grease, dust or any other visible contaminants. Remove all loose particles and work on a sound substrate. Pre-soak the area with clean water prior to application to aid bond. Remove ponded water before applying the product.

## Mixing

Envirobed® HA104 can be mixed by a forced action mixer or by drill and paddle.

**Mixing by drill and paddle:** When mixing with a drill and paddle, we recommend that a mortar mixing paddle is used with a slow speed drill (around 300-400rpm), using a wide based mixing vessel such as a 'Gorilla' tub to give optimum performance, which will allow for the product to be worked on rapidly for at least 3 minutes. Note: Insufficient mixing will seriously reduce the performance of the product.

**Mechanical Mixing:** Pour contents of liquid bottle into mixing tub, leaving a small amount in bottle as indicated. Mix for 2 minutes, check consistency and add remainder of liquid if needed. This allows a change in consistency without affecting performance.

## Placing

Apply the high performance bedding material over a pre-soaked area. Once mixed, Envirobed® HA104 should be applied to the supporting structure within 4 minutes. Firm well into position using a float and allowing a 5mm excess thickness. Place the frame onto the bedding mortar ensuring it is fully supported. Check that the frame does not overhang the mortar at any point (use suitable lifting equipment when positioning the frame). Care must be taken to prevent voids in the bedding material under the frame, especially in the cover seating area. The frame should then be tamped into place ensuring the correct level is obtained. Any holes within the frame should be in-filled and the flanges of the frame enveloped by a minimum thickness of 10mm of the bedding material. Exposed surfaces of the bedding material should be float finished, ensuring voids are filled. Remove loose materials and point the inside surface to a smooth finish. Once the bedding material has reached its initial set, the backfill material QC10/F concrete can be placed.

## Cleaning

Envirobed® HA104 should be removed from tools and equipment with clean water immediately after use. Cured material can also be removed mechanically.

## Storage

**Powder bag:** Store in closed original bags at temperatures between 5°C/41°F and 30°C/86°F. Avoid frost and sunlight. This product must be stored in unopened bags, clear of the ground in cool dry conditions and protected from excessive drafts. If stored correctly and used within 8 months of the date shown on the bag, the activity of the reducing agent will be maintained and this product will contain, when mixed with water, no more than 0.0002% (2 ppm) soluble Chromium (VI) of the total dry weight of the cement.

**Liquid additive:** Extreme temperatures can damage this product in its liquid form. Store containers at temperatures between 5°C/41°F and 30°C/86°F. Liquid should not be exposed to excess heat, cold or frost during storage or when being transported between sites.

## Contact Us

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## Shelf life

8 months in above conditions. Please note: The use of this product after the end of the declared storage period may increase the risk of an allergic reaction. High temperatures and high humidity will lead to a reduced shelf life

## Health, Safety and Environmental

Please ensure that appropriate PPE is used when preparing, mixing and applying products. Always wash your hands before consuming food and make sure that materials are kept safely out of reach of children and animals. Please dispose of packaging and waste responsibly and in accordance with local authority requirements. A full material datasheet relating to this product is available from Da-Lee.

## Quality assurance

All products are manufactured in a plant whose quality management system is certified / registered as being in conformity with BS EN ISO 9001. Our products are guaranteed against defective materials and manufacture, and will be replaced or money refunded if the goods do not comply with our promotional literature. We cannot however accept any liability arising from the application or use of our products because we have no direct or continuous control over where and how our products are used. All products are sold subject to our conditions of sale, copies of which may be obtained on request.

## Technical data

Compressive strength (MPa)	
1 hour	30.00
3 hours	53.00
24 hours	64.00
7 days	73.00
28 days	78.00
Tensile strength (MPa)	
1 hour	3.30
3 hours	6.10
Flexural strength (MPa)	
3 hours	12.0
Bond strength (MPa)	
	3.50
Workability*	
	15 minutes
Set time*	
	30 minutes
Density	
	2298kg/m <sup>3</sup>
Coverage	
	Approx 1 x 400mm x 400mm standard ironwork cover and frame @ 20mm, dependant on bed depth, brickwork and substrate
Yield	
	Bag and bottle: 8.87 litres, 113 units/m <sup>3</sup> for the two component pack Plastic container: 8 litres for the entire unit
Colour	
	light grey <i>As with all raw materials, colour variation may occur. This does not affect the consistency or characteristics of the product.</i>
Unit/packaging	
	18kg paper bag & 2.5 litre bottle (48 units per pallet) 18kg bucket inc. 2 x 8kg bags and 2 x 1 litre bottles (40 units per pallet)

\*Depending on temperatures – tests carried out at 20°C/68°F. Cool temperatures retard, warm temperatures accelerate product performance.

## Design Manual for Roads & Bridges – Volume 4, Section 2

Complies with Highways Agency Document HA104/09 Part 6.1 Chamber Tops & Gully Tops for Road Drainage and Services.

Which States:

The material should be non-shrink.

The materials should have a minimum workable life of 15 minutes.

The compressive strength should exceed 30N/mm<sup>2</sup> in 3 hours.

The tensile strength should exceed 5MPa in 3 hours.

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