

MasterBrace[®] 1441

Epoxy Bonding paste for pre-cast segments

DESCRIPTION

MasterBrace 1441 is an epoxy resin based bonding system available in two grades for use in two different ranges of concrete surface temperature.

MasterBrace 1441S for 25° C to 40° C.

MasterBrace 1441W for 4° C to 30° C.

RECOMMENDED USES

MasterBrace 1441 is designed to bond two rigid elements exposed to sustained loads especially at the bond line, such as;

- bonding precast bridge elements.
- bonding external steel reinforcing plates for strengthening beams, columns, slabs.
- anchoring bolts, dowels, steel bars in concrete, etc.
- bonding the ends of concrete or metal pipes used to transport water or sewage.

FEATURES AND BENEFITS

- **High elastic modulus** - Effective transfer of stresses at bond interface.
- **High HDT (heat deflection temp)** - Resistance to creep even at high service temperatures.
- **Thixotropic** - No loss of bond due to sagging of bond film.
- **High bond strengths** - Durable bond.
- **Good bond to damp surfaces**- Advantage in humid environments.
- **Long open time** - Sufficient time for alignment and bonding of elements.

PROPERTIES

(in N/mm ² after 7 days cure)	1441 W	1441 S
Tensile strength	10	10
Compressive strength	88	83
Elastic modulus In Compression	5500	4600
Slant shear strength	>35 (100% concrete failure)	>35 (100% concrete failure)

	1441 W	1441 S
Supply form Parts A & B	Viscous paste	Viscous paste
Colour Part A	White	White
Part B	Black	Black
mixed	Grey	Grey
Density (mixed)	1.37 kg/L	1.25 kg/L
Heat deflection temperature (ASTM D648)	67°C	63°C
Min. application temperature	4°C	26°C
Surface temperature for application	4-30°C	25-40°C
Non sag thickness	3 mm	3 mm
Min. pot life.(2L)	20 Mins @29°C	20 Mins @40°C
Min. open time.	60 Mins @29°C	60 Mins @40°C
Initial cure	24 hrs	24 hrs
Cure time	7 days	2 days

APPLICATION

Surface preparation

Correct substrate preparation is critical for optimum performance. Surfaces should be structurally sound, clean, and free from loose particles, oil, grease, or any other contaminants. Remove oil grease and wax contaminants by scrubbing with industrial grade detergent or degreasing compounds followed by mechanical cleaning.

Remove cement laitence, loose particles, mould release agent, curing membrane, and other contaminants from the surface by wet grit blasting, high pressure water jetting (approximately 150 bars) or such other effective methods.

If surface irregularities exist, apply MasterBrace 1438 epoxy paste as a fairing coat.

For smoothening deep surface irregularities, use **MasterBrace 1438** mixed with graded sand in the ratio 1:1 by weight.

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Mixing

Mechanical mixing is necessary. A slow speed (600 rpm) drill with a grout stirrer is recommended.

Mix the entire contents of both Part A and Part B containers together to avoid batching errors. However, if part mixing is necessary, stir each component individually and then measure out precisely each component in the proper volumetric ratio into a clean, dry pail for subsequent mixing. Ensure that the remaining contents of each container are not contaminated. Mix Part A and Part B together until the streaks of Black and White disappear to yield a homogenous Grey mix.

Prepare both the surfaces that are to be bonded on the above lines.

Placing

If the surface has been treated with fairing coat as described above, allow the fairing coat to set and within 24 hours apply **MasterBrace 1441** on one of the two surfaces being bonded.

Apply **MasterBrace 1441** within its pot life to a thickness of 1 mm to 3 mm using a trowel, so as to allow for a small quantity of the bonding material to extrude out of the bond line when pressure is applied to bond the two surfaces.

The prepared surfaces of the two rigid elements to be bonded should be brought together within the open time of the product and retained in position until **MasterBrace 1441** cures.

ESTIMATING DATA

Material requirement is 1 L/m² at 1 mm thickness

PACKAGING

Both **S** and **W** grades of **MasterBrace 1441** are available in the following packs;

Pack size	Part A	Part B
1L	0.67 L	0.33 L
20L	13.33 L	6.67 L

SHELF LIFE

MasterBrace 1441 has a shelf life of 12 months. Store out of direct sunlight, clear of the ground on pallets protected from rainfall

PRECAUTIONS

For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the Master Builders Solutions Material Safety Data Sheet (MSDS) from our office or our website.

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STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication is based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by commonwealth or State legislation. The owner, his representative or the contractor is responsible for checking the suitability of products for their intended use.

NOTE

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