

MasterBrace® 1441

Epoxy bonding adhesive for segmental construction and old to old concrete bonding

DESCRIPTION

MasterBrace 1441 is an epoxy bonding system consisting of two parts that are distinctly coloured to facilitate proper mixing - a white coloured Part 'A' and a black coloured Part 'B',

RECOMMENDED USES

MasterBrace 1441 is recommended for bonding two rigid elements exposed to sustained loads especially at the bond line, such as:

- Bonding precast segments in bridges & viaducts.
- Bonding external steel reinforcing plates for strengthening beams, columns and slabs.
- Bonding external Carbon laminates for strengthening beams, columns and slabs.
- Anchoring bolts, dowels, steel bars in concrete.
- Bonding the ends of concrete or metal pipes used to transport water or sewage.

FEATURES AND BENEFITS

Structural adhesive - Effective transfer of stresses at bond interface.

No creep - even at high service temperatures and under constant load.

Seals - Provides watertight seal to the joint

Non sag- No loss of bond due to sagging of bond film.

High bond strengths - Good bond to damp surfaces

Long open time even as high temperatures - Sufficient open time for alignment and bonding of elements.

Excellent squeeze ability - for effective spread & contact

PROPERTIES

Supply form, (Part A & B both)	Viscous paste
Colour	Part A : White
	Part B : Black
	Mixed : Grey
Mixing Ratio, by weight (A:B)	62:38
Mixed Density,	1.75 kg/litre
Pot life at 20°C	> 1 hour
Pot life at 30°C	50 minute
Pot life at 40°C	30 minute
Pot life at 60°C	20 minute
Min. open time.	60 Mins @ 40°C
Min. application temperature	26°C
Surface temperature for application	25-40°C
Squeeze ability (FIP 5.4)	Exceeds requirement
Initial cure	1 day

Full Cure time	5 days
Compressive strength, 1 Day	>60 MPa
Compressive strength, 7 Days	> 75 MPa
Tensile bending strength (FIP 5.14)	Concrete Failure
Slant shear bond strength, 7 days	13 MPa

STANDARDS

MasterBrace 1441 meets the FIP specifications of epoxy adhesive for segmental bridge construction in all respects

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. For smoothening deep surface irregularities, use **MasterProtect 1890**. Ensure to check the segments to be bonded for good alignment. A mock-up is ideal before first actual application to fix the open time required.

Mixing

Mechanical mixing is necessary. A slow speed (300 -600 rpm) drill with a mixing stirrer is recommended.

Mix the entire contents of both Part A and Part B containers together to avoid batching errors. Ensure to scrape down the sides of the container. However, if part mixing is necessary, stir each component individually and then measure out precisely each component in the proper 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

MasterBrace® 1441

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

MasterBrace 1441 Material requirement is 1 litre/m² per mm thickness.

Each pack of 6 Kg / 9 Kg shall be able to cover 3.25 m² / 4.8 m² area at 1mm average thickness.

PACKAGING

MasterBrace 1441 is available in 6 kg / 9 Kg pack.

SHELF LIFE

MasterBrace 1441 Store under cover, out of direct sunlight and protect from extremes of temperature. In tropical climates the product must be stored in an air-conditioned environment.

Shelf life is 12 months when stored as above.

PRECAUTIONS

Please refer the Material Safety Data Sheet for handling and storage of this product.

TDS Ref. No.: MasterBrace1441/02/1016

® = registered trademark of a MBCC Group member in many countries of the world

STATEMENT OF RESPONSIBILITY (Disclaimer)

The technical information and application advice given in this Master Builders Solutions publication are 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 law. The user is responsible for checking the suitability of products for their intended use.

NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by Master Builders Solutions either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not Master Builders Solutions, are responsible for carrying out procedures appropriate to a specific application.