

# MasterBrace<sup>®</sup> ADH 1441

## Epoxy adhesive for segmental construction

### DESCRIPTION

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

**MasterBrace ADH 1441W** for 5-30°C  
**MasterBrace ADH 1441S** for 25-50°C

Both the grades are two-part systems. The two parts are distinctly coloured to facilitate proper mixing - a white coloured Base and a black coloured Reactor, which on correct mixing in the ratio, yields a uniformly grey coloured bonding paste.

### TYPICAL APPLICATIONS

**MasterBrace ADH 1441** is recommended for bonding 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.

### ADVANTAGES

<i>High HDT (heat deflection temp)</i>	Resistance to creep even at high service temperatures
<i>Thixotropic</i>	No loss of bond due to sagging of bond film
<i>High bond strengths</i>	Durable bond
<i>Good bond to damp surfaces</i>	Advantage in humid environments
<i>Long open time</i>	Sufficient time for alignment and bonding of elements

### PACKAGING

Both grades of **MasterBrace ADH 1441S** and **MasterBrace ADH 1441W** are available in 12.5 kg packs.

### STANDARDS

FIP/9/2 March 1978

### TYPICAL PROPERTIES\*

	<b>1441W</b>	<b>1441S</b>
Supply form Parts A & B	Viscous paste	Viscous paste
Colour Base	White	White
Reactor	Black	Black
Mixed	Grey	Grey
Density (mixed)	1.75 kg/L	1.73 kg/L
Min. application temperature	10°C	35°C
Surface temperature for application	5-30°C	25-50°C
Non sag thickness	3 mm	3 mm
Min. pot life (2 L)	20 min @ 32°C	20 min @ 50°C
Min. open time	60 min @ 32°C	60 min @ 50°C
Cure time	7 days	7 days

### TYPICAL PERFORMANCE DATA

(in N/mm<sup>2</sup> after 7 days cure)

	<b>1441W</b>	<b>1441S</b>
Compressive strength	75	75
Slant shear strength (Nmm <sup>2</sup> )	>12	>12

### APPLICATION GUIDELINES

#### 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.

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Remove cement laitance, 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 **MasterBrace ADH 1441** mixed with graded sand in the ratio 1:1 by weight.

## MIXING

Mechanical mixing is necessary. A slow speed (300RPM) drill with a grout stirrer is recommended.

Mix the entire contents of both base (PTA) and reactor (PTB) 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 correct ratio into a clean, dry pail for subsequent mixing. Ensure that the remaining contents of each container are not contaminated.

Mix base (PTA) and reactor (PTB) together until the streaks of black and white disappear to yield a homogenous grey mix.

Prepare both the surfaces that are to be bonded in the accordance with the above.

## PLACING / APPLICATION

If the surface has been treated with a fairing coat as described above, allow the fairing coat to set and within 24 hours apply

**MasterBrace ADH 1441** on one of the two surfaces being bonded. Apply

**MasterBrace ADH 1441** within its pot life to a thickness of 2 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 ADH 1441** cures.

## CLEANING

Clean the tools and equipment with a suitable thinner (Xylene / MEK / Acetone) before the bonding agent hardens.

## COVERAGE / YIELD

Material requirement is 1 L / m<sup>2</sup> at 1 mm thickness.

## STORAGE AND SHELF LIFE

**MasterBrace ADH 1441** can be stored in tightly sealed original packing and stored at a temperature below 30°C. Shelf life is 12 months when stored as above.

## HEALTH AND SAFETY

Health: **MasterBrace ADH 1441** contains certain chemicals which can cause skin irritation if exposed and respiratory reaction if inhaled. Wear gloves, masks and use barrier creams such as Kerodex No 71 while handling the product. Wash thoroughly after handling.

Should skin contact occur, wash immediately with soap and water, or an effective hand cleaner.

In case of accidental eye contact wash with copious quantities of water and seek medical help immediately.

If ingested, do not induce vomiting. Consult doctor immediately.

The vapours of solvents used for cleaning can be irritating. It is therefore recommended that cleaning is done in well ventilated areas.

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## FIRE

**MasterBrace ADH 1441** is combustible. Avoid exposure to naked flame. Do not smoke while handling the product.

## QUALITY AND CARE

All products originating from Master Builders Solutions Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001 and ISO 14001.

\* Properties listed are based on laboratory controlled tests.

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MBS\_CC-UAE/Br\_1441\_05\_06/v3/05\_16/v4/09\_19/v5/04\_22

## STATEMENT OF RESPONSIBILITY

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