MasterBrace ADH® 1418

High strength polyester resin bonding and repair compound

DESCRIPTION OF PRODUCT

MasterBrace ADH 1418 is a two-component polyester resin compound consisting of a liquid resin and a powdered, hardener filler system in one container. It is a repair, bonding and grouting material

PRIMARY USES

- Repair of pre-cast concrete units
- Repair of worn or damaged concrete
- Bedding and sealing concrete units, steelwork, etc.
- Fixing tiles, slabs, pre-cast facings, etc.
- Grouting in dowel pins, rag bolts, holding down bolts and starter bars

ADVANTAGES

- Easy to use – economical and fast Simple to batch and mix
- Versatile – has many applications
- Mix consistency can be varied according to requirements
- Excellent adhesion to most building materials (ceramics, wood, metal, stone, concrete, quarry tiles, asphalt, mortar, etc.)
- Excellent chemical resistance
- High early and ultimate strengths
- Due to the nature of the resin system, the mechanical and chemical resistance of **MasterBrace ADH 1418** is constant irrespective of the volume of filler added, provided adequate compaction can be achieved
- **MasterBrace ADH 1418** has low shrinkage properties and does not shrink at the bonded surface; no shrinkage occurs once hardening has taken place
- Will cure underwater and at temperatures below 0°C
- Extra sand can be added for bulk filling

PACKAGING

MasterBrace ADH 1418 is supplied in 15kg containers. Each container contains resin and adequate powder for normal use.

TYPICAL PROPERTIES

Density:		1920kg/m³
Setting times:	15°C	2 hours
	20°C	1 hour
	25°C	30 minutes
	35°C	17 minutes

Results are based on normal 3.2 to 1 mix by volume:

Strength property:	Temp. °C	Strengths in N/mm² 3 hours	24 hours	Ultimate
Compressiv:	20	50	89	98
Tensile:	20	7.3	11.7	14
Flexural:	20	1.6	31	37

Adhesion to sound concrete:	In excess of the tensile strength of concrete
Adhesion to shot-blasted or heavily scored steel:	9N/mm²
Chemical resistance:	Resists attack by sugar, salt, sewage, dairy produce, oil, petrol, lactic acid, etc.

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WORKING LOAD IN CONCRETE

C35/45 – STEEL ROD

Steel Rod 8.8	M8	M10	M12	M14	M16	M20
Ø of insert (mm)	8.0	10.0	12.0	14.0	16.0	20.0
Ø hole D (mm)	10.0	12.0	14.0	16.0	20.0	25.0
Embedment depth (mm	80.0	100.0	120.0	140.0	160.0	200.0

POST INSTALLED REBARS

The test results per NF Norms P 18-831 & NF P 18-836 have confirmed that bonding between resin & the concrete is equal to the bonding a steel bar of HA quality (high adherence) in the concrete i.e if the concrete is poured directly around the rebar, it is not more effective than using resin.

REBAR HA FE E 500

CONCRETE C35/45

Re= 500 N/mm² (yield point**)**

Rm= 550 N/mm² (tensile strength)

Rebar Diameter (mm)	8.0	10.0	12.0	14.0	16.0	20.0
Drill bit diameter (mm)	10.0	14.0	16.0	18.0	20.0	25.0
Section (mm²)	50.3	78.5	113.0	154.0	201.0	314.0
Ultimate Tensile Load (kN) maximum embedment depth	27.0	43	62.0	84.0	110.0	172.0
Ultimate Shear Load (kN) maximum embedment depth	12.6	16.5	27.3	35.9	41.6	66.7

WORKING LOAD IN CONCRETE

Resin MasterBrace ADH 1418- rebar HA Fe E500

Ø of. rebar (mm)	Ø of hole (mm)	Concrete C25/30 Length of embedment (mm) L Min	L Max	Tensile working load (kN) F Min	F Max	Concrete C35/45 Length of embedment (mm) L Min	L Max	Tensile working load (kN) F Min	F Max
8	10	80	285	4	16	80	222	5	16
10	14	100	357	7	25	100	277	9	25
12	16	120	428	10	36	120.	333	12	36
14	18	140	510	13	50	140	396	17	50
16	20	160	580	17	65	160	451	23	65
20	25	200	728	28	102	200	566	36	102

For different concrete strengths, multiply the working loads by a factory which is μ = working load x {1+ Actual concrete strength-40)/50}

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APPLICATION PROCEDURE SURFACE PREPARATION:

Ensure surfaces are free from oil, grease, paint, curing compounds, etc. Remove dust, laitance and friable materials by wire brushing, bush hammering or acid etching. It is preferable to abrade and roughen smooth surfaces prior to application of **MasterBrace ADH 1418.**

MIXING

Mixes normally used vary from 2:1 powder to resin up to 4:1 powder to resin by volume. The resin rich mixes are flowable, and the leaner mixes are trowellable. Mixes as lean as 5:1 can be used as space fillers; but these will not necessarily develop the full properties.

Pour required quantity of resin into a clean plastic bucket and add powder filler, stirring continuously until desired consistency is reached and the mixture is smooth, lump-free and uniform in colour. Do not mix more material than can be used within 15 minutes.

APPLICATION

MasterBrace ADH 1418 should not be applied in coats thicker than 20mm. Where repairs are above 20mm, it is preferable to apply **MasterBrace ADH 1418** in layers each with a maximum thickness of 20mm. Apply successive coats after the previous coats have hardened.

When using material of flowable consistency, ensure material is given time to settle and self-level before proceeding. When using material of trowellable consistency, work it well into the prepared surface. Build up repair, ensuring good contact and adhesion between layers. Finishing is best effected by applying a little CLEANING SOLVENT No. 2 to the trowel. Use clean smooth tools. Layer thickness depends on location and substrate; a general guide is up to 20mm on horizontal applications, 12mm on vertical applications and 4-6mm/coat on soffits.

COVERAGE

The following coverage rates are indicative for a 15kg pack of **MasterBrace ADH 1418**:

Mix by volume	Yield ltr (approx.)
4:1	7.5
3:1	7.0
2:1	5.5
Sufficient filler is supplied for mixes up to 5:1	

EQUIPMENT CARE

Clean all equipment with Cleaning Solvent No. 2 before it sets.

SPECIFICATION CLAUSE

MasterBrace ADH 1418, as manufactured by Master Builders Solutions, or similar approved, complying with the following specifications, shall be used where indicated:

Composition:	A two-component, polyester resin and accelerator filler system Density with 3.2 to 1 mix filler to resin ratio:1920kg/m³

The material should be applied as directed by the manufacturer.

STORAGE

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 for this product is 6 months from date of manufacture, when stored as above.

SHELF LIFE

Up to 6 months if stored according to manufacturer's instructions in unopened containers.

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SAFETY PRECAUTIONS

As with all chemical products, care should be taken, during use and storage, to avoid contact with eyes, mouth, skin and foodstuffs. Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Reseal containers after use. Use in well-ventilated areas and avoid inhalation.

NOTE

Field service, where provided, does not constitute Supervisory responsibility. For additional information, contact your local Master Builders Solutions representative.
Master Builders Solutions reserves the right to have the true cause of Any difficulty determined by accepted test methods.

QUALITY STATEMENT

All products manufactured by Master Builders Solutions Egypt, or imported from Master Builders Solutions affiliate companies world-wide, are manufactured to procedures certified to conform to the quality, environment, health & safety management systems described in the ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 standards.

* Properties listed are based on laboratory controlled tests.

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