

MasterBrace[®] ADH 1406 (Formerly known as Concrecive[®] 1406)

Epoxy Based, Repair and Anchorage Mortar

DESCRIPTION OF PRODUCT

MasterBrace[®] ADH 1406 is epoxy based repair, anchorage and adhesive mortar with two parts.

Complies with EN 1504-4 and 1504-6


FIELDS OF APPLICATION

- Chemical anchoring in concrete and brick walls
- Repair and insulating of wide cracks
- Bonding of various types of construction materials such as steel, concrete, brick to each other
- Cap seal and entry ports installation in epoxy polyurethane injection works
- Fixing the guard bars and seismic isolators to the bridges and viaducts
- Anchoring the rods and deformed bars to the concrete, stone or brick

FEATURES AND BENEFITS

- Pasty consistency, easy to apply and non-sag properties in over-head applications
- Perfect adhesion to the concrete and steel
- Resists to chemicals
- Water and gas impermeable
- Perfect adhesion to the damp surfaces on concrete
- Solvent free

TECHNICAL DATA

Product Chemistry MasterBrace[®] ADH 1406 Part A MasterBrace[®] ADH 1406 Part B	Epoxy Resin Epoxy Hardener	
Color	Grey	FM
Mixed Density	1,70 ± 0,05 kg/liter	
Compressive Strength TS EN 196 (1 day) (7 days)	30 N/mm ² 60 N/mm ²	
Flexural Strength TS EN 196 (1 day) (7 days)	17 N/mm ² 25 N/mm ²	
Bonding Strength (7 days) To concrete To steel	>3,0 N/mm ² >3,5 N/mm ²	
Application Thickness	Min. 2 mm Max. 30 mm	
Application Temperature	+5°C + 30°C	
Pot Life	40 minutes	
Recoat After	18-24 hours	
Service Temperature	-15°C + 90°C	
Fully Cured at 20°C	7 days	

APPLICATION PROCEDURE

The concrete surfaces must be sound, clean and dry. It shouldn't be weakened by over-troweling and lack of curing. The concrete should be free of frost, curing membranes, waterproofing treatments, oil stains, laitance, friable material and dust. If there is a water leakage it must be drained or properly plugged. Steel surfaces should be cleaned from rust by sand blasting and if needed new reinforcement should be installed. The edges of the broken surfaces should be saw cut.

Mixing

MasterBrace[®] ADH 1406 has two parts in pails, produced according to right mixing ratio. Material temperature should be between 15 - 25°C before mixing. Part B should be added into the Part A without any remaining material in the pail. It should be mixed with using a proper mixer (~300rpm) for polymer mixing. Mix the parts at least 3 minutes to have a homogenous mixture.

Mixing Ratio

MasterBrace [®] ADH 1406	Part A	Part B
Quantity	3,75 kg	1,25 kg
Mixed Density	1,70 kg/liter	

Typical values are obtained from the test results of 4x4x16 mortar prism in 23°C and 50% relative humidity conditions. High temperatures shortens the curing and working time, lower temperatures extends the durations

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APPLICATION METHOD

MasterBrace® ADH 1406 should be applied to the prepared surface by using a steel spatula or steel trowel. Application thickness should be between 2-30 mm. For anchoring the anchor holes should be drilled 6 mm wide than anchor bar's diameter and in designed depth. The holes should be cleaned by using steel brush and air guns. Mixed material should be put in a mortar gun with a proper nozzle and start to fill the holes into half depth. Install the anchor bar into the hole slowly by screwing and do not drive the bars.

COVERAGE

1.7 kg/m² for obtaining 1 mm thick layer.

WATCH POINTS

- During the application the substrate and ambient temperature should be between 5- 30°C.
- Resinous materials' pot life and curing times vary depending on the relative humidity, substrate and ambient temperature. Reaction gets slow in low temperatures and it causes to extension on pot life and working time. On the other hand high temperatures speed up the reaction, which results to short pot life and working time. For full curing of material, both the substrate and ambient temperature shouldn't be under allowed application temperature.
- **MasterBrace® ADH 1406** is provided in ready to mix pails. Do not add any solvent etc. Into the mixture during the application.
- Mixing should be made with proper mixers and do not allow mixing by hand.

CLEANING OF TOOLS

After the application all tools should be cleaned with a proper detergent or solvent such as thinner. **MasterBrace® ADH 1406** can be cleaned with only mechanical abrasion after hardening.

PACKAGING

5 kg set
Part A: 3.75 kg pail
Part B: 1.25 kg pail

STORAGE

Store in original container in cool (+5°C - +25°C) and dry indoor conditions.

SHELF LIFE

18 months under proper storage conditions after production date.

HEALTH AND SAFETY PRECAUTIONS

It is dangerous to approach the application sites. During the application, a protective apparel, protective gloves, goggles and masks which comply with the Occupational Health and Safety Rules should be used. Due to the irritation effect of the uncured materials, the mixtures should not come into contact with skin and eyes; in case of contact, the affected area should be washed with plenty of water and soap; in case of swallowing, a physician should be consulted immediately. No food or beverages should be brought to the application area. The product should be stored and kept out of reach of children. For detailed information please consult the Material Safety Data Sheet.

DISCLAIMER

The technical information given in this publication is based on the present state of our best scientific and practical knowledge. **Master Builders Solutions Yapı Kimyasalları Sanayi ve Ticaret Ltd. Şti.** is only responsible for the quality of the product **Master Builders Solutions Yapı Kimyasalları Sanayi ve Ticaret Ltd. Şti.** is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of use. This technical form is valid only till a new version is implemented and nullifies the old ones.

CONTACT INFORMATION

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MasterBrace® ADH 1406 Technical Data Sheet -Revision
Date: 12/2020

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Master Builders Solutions Yapı Kimyasalları Sanayi ve Ticaret Ltd. Şti.	
Adres: Barbaros Mah. Begonya Sok. Nidakule Kuzey Ataşehir, C Kapısı No:3 E/5, 34746 Ataşehir İstanbul	
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1020 - CPR - 040 065838 DOP NO: 02.1504.4.002	
EN 1504-4:2004	
MasterBrace ADH 1406	
Beton Yapıların Korunması Ve Tamiri İçin Mamuller Ve Sistemler - Tarifler, Gereklere, Kalite Kontrol Ve Uygunluk Değerlendirmesi – Bölüm 4: Yapısal Bağ	
(Products and Systems For The Protection and Repair of concrete structures - Definitions, Requirements, Quality Control and evaluation of conformity	
Part 4: Structural Bonding	
Tamir prensibi 4: Yapısal takviye (Principal of repair 4: Structural strengthening)	
Tamir yöntemi 4.4: Bağlanmış harç veya beton (Repair method 4.4: Bonded mortar or concrete)	
Elastisite Modülü (Elastic Modulus)	≥ 2000 N/mm ²
Basınç Dayanımı (Compressive Strength)	≥ 30 N/mm ²
Kesme Dayanımı (Shear Strength)	≥ 6,0 N/mm ²
İşlenebilirlik Süresi (Workable life)	40 min (23°C)
Büzülme / Genleşme (Linear Shrinkage)	≤ % 0,1
Isıl genleşme katsayısı (Coefficient of thermal expansion)	≤ 100 x 10 ⁻⁶ / °C
Camsiya geçiş sıcaklığı (Glass transition temperatures)	≥40°C
Adezyon : Sertleşmiş beton ile sertleşmiş beton arasında (Adhesion concrete to concrete : Hardened concrete to hardened concrete)	Beton kopar (Deformation should be from concrete)
Adezyon : Taze beton ile sertleşmiş beton arasında (Adhesion concrete to concrete : Wet concrete to hardened concrete)	Beton kopar (Deformation should be from concrete)
Dayanıklılık (Durability)	Uygun (Pass)
Yangına tepki (Reaction to fire)	C-s1; d0
Tehlikeli maddeler (Dangerous substances)	Madde 5.3'e uygun (Comply with clause 5.3)

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1020 - CPR-040 065838 DOP NO: 02.1504.6.006	
EN 1504-6:2006	
MasterBrace ADH 1406 Çelik Donatı Çubuğunun Ankranjlanması (Anchoring of reinforcing steel bar)	
Çekip Çıkma Dayanımı : 75kN yük etkisiyle yerdeğiştirme (Pull out strength displacement: at load of 75kN)	≤0,6mm
Klorür İçeriği (Chloride ion Content)	≤%0,05
Camsiya geçiş sıcaklığı (Glass transition temperatures)	≥45°C
Çekme yükü etkisiyle sünme : 50kN yükün sürekli şekilde 3 ay uygulanmasından sonra yer değiştirme (Creep under tensile load displacement: after continuous loading of 50kN for 3 months)	≤0,6mm
Yangına tepki (Reaction to fire)	C-s1; d0
Tehlikeli maddeler (Dangerous substances)	Madde 5.3'e uygun (Comply with clause 5.3)