



MC-DUR 1280

Duromer adhesive for CFRP-strips and flat-bar steel for structural strengthening in civil engineering

Product Properties

- Two-component adhesive based on epoxy resin
- High mechanical strength
- Rapid strength development even at low temperature ($\geq + 8 \text{ }^\circ\text{C}$)
- Tested for strengthening of component using CFRP-strips and flat-bar steel
- Official test certificate No. Z-36.12-79 and Z-36.12-85

Areas of Application

- Adhesive for high-tensile strengthening elements with CFRP-strips and flat-bar steel for shear strengthening of components made of reinforced concrete, brickwork, steel and wood
- Industrial-, traffic-, structural- and housing construction
- REACh-assessed exposure scenarios: periodical water-contact, periodical inhalation, application

Application

Substrate Preparation

Before application of MC-DUR 1280, concrete substrates must be verified for load bearing capacity. They must be prepared by means of a suitable surface blasting process. The substrates must be dry (residual moisture $\leq 6 \%$, CM-method), free of grout, dust, oil and any other contaminants, and must have a pull-off strength of at least 1.5 N/mm^2 . The bonding surfaces of substrates must be protected against increasing backwards moisture.

The iron and steel must be cleaned in accordance with standard purity grade Sa 3 according to DIN EN ISO 12944-4 : 1998-07. It must be dry and free from any rust film and other contaminants. Quartz-free grit blasting is a suitable method for preparation and cleaning.

Before application of MC-DUR CFRP-strips the evenness of the concrete surface must be checked according to Z-36.12-85. Levelling mortar MC-DUR 1000 Parat 09 can be used according to technical data sheet, see application specifications.

Mixing

MC-DUR 1280 consists of two components, sup-

plied in prepacked quantities. First, the base component is carefully mixed and then the hardener is added. Both components are then mixed together thoroughly and homogeneously for 3 minutes. Suitable mixers are slowly rotating mixers with paddle (max. 300 RPM). Care should be taken to keep entrainment of air to a minimum while mixing. After mixing, the product must be refilled into to a clean container and mixed again.

MC-DUR 1280 is applied onto the substrate, using a trowel, a scraper or similar tool.

By means of standard spray guns, as used for joint sealants, MC-DUR 1280 can be applied into slots. Application in accordance with manufacturer's instructions and general building approvals.

General Information

High temperatures shorten while low temperatures extend all indicated times and intervals. As a rule of thumb a change in temperature of $10 \text{ }^\circ\text{C}$ either halves or doubles the indicated times.

Safety Advice

Please take notice of the safety information and advice given on the packaging labels and safety data sheets.



Technical Data for MC-DUR 1280

| Characteristic | Unit | Value* | Comments |
|--|--------------------|-------------------------|---|
| Density (mixed) | kg/dm ³ | approx. 1.65 | |
| Mixing Ratio | p. b. w. | 4 : 1 | base : hardener |
| Viscosity | mPa·s | - | structure viscous |
| Coverage | kg/m ² | approx. 1.7 | per mm layer thickness |
| Layer thickness/strength | mm | approx. 5 | |
| Pot life | minutes | approx. 60 | at + 10 °C |
| | minutes | approx. 40 | at + 20 °C |
| | minutes | approx. 25 | at + 30 °C |
| Minimum application conditions | °C | ≥ + 8, ≤ + 30 | air, material and substrate temperature |
| | % | ≤ 85 | relative humidity |
| | K | 3 | above dew point |
| Expansion coefficient α_T | K ⁻¹ | 3.9 x 10 ⁻⁵ | |
| Free shrinkage | mm/m | 0.45 | |
| Compressive strength/ Flexural strength | MPa | 70/50 75/53 82/56 | 1 day 2 days 7 days |
| E-Modulus | MPa | approx. 8,600 | |
| Adhesive tensile strength | MPa | > 20.0 > 2.9** | after 1 day steel/steel (die Ø 20 mm) after 1 day concrete (die Ø 50 mm) |

Product Characteristics for MC-DUR 1280

| | |
|-----------------|--|
| Standard Colour | grey |
| Cleaning agent | MC-Reinigungsmittel U |
| Delivery | 5 kg and 12 kg (special sizes on request) |
| Storage | Can be stored in cool (below + 20 °C) and dry conditions for at least one year in original unopened packs. Do not store at too cold temperatures (Recommended: > 15 °C - < 20 °C). Protect from frost! |
| Disposal | Packs must be emptied completely. |

* All technical data relate to 20 °C and 50 % relative humidity.

** Concrete break

Note: The information on this data sheet is based on our experiences and correct to the best of our knowledge. It is, however, not binding. It has to be adjusted to the individual structure, application purpose and especially to local conditions. Our data refers to the accepted engineering rules, which have to be observed during application. This provided we are liable for the correctness of this data within the scope of our terms and conditions of sale-delivery-and-service. Recommendations of our employees which differ from the data contained in our information sheets are only binding if given in written form. The accepted engineering rules must be observed at all times.

Edition 12/15. Some technical changes have been made to this print medium. Older editions are invalid and may not be used anymore. If a technically revised new edition is issued, this edition becomes invalid.