MC-DUR CF Sheets

Surface-bonded, standard modulus carbon-fibre sheets for structural reinforcement

Product Properties

- Unidirectional carbon fibre sheets
- High Tensile strength, small cross-section and low structural height.
- Flexible enough to apply in any shape.
- High efficiency, low weight, Easy application.
- Optimized utilization of mechanical properties.
- Economical, time saving and labor saving.

Areas of Application

- Subsequent reinforcement of structural components made of reinforced concrete, pre-stressed concrete, masonry and wood.
- Subsequent restriction of crack widths
- Sheathing of pillars and beams

Application

Preliminary Inspection

Prior to application the actual state of the structure to be reinforced must be determined and the application requirements for the process must be verified by the structural engineer in charge with proper structural auditing of the structure. The structural analysis is carried out in accordance with Standard Guidelines.

Performance of work

Application and monitoring is carried out by qualified staff with an additional certificate for application of CF Sheets issued by MC-Bauchemie.

Substrate Preparation

All substrates to be reinforced must be prepared by suitable manner, e.g. granulate blasting. The surface must be sound, dry (residual moisture ≤ 6%) and free from any dust and grease. Before application of the CF-Sheets the evenness of the concrete surface is to be verified. The surface can be levelled (roughness < 1.0 mm) with the levelling mortar. If the CF-Sheets are applied around exterior edges, the edges must be rounded beforehand. The minimum radius is 2.5cm.

All the Surface should be repaired by MC Range Micro concrete, if structural Jacketing system is required before application of CF-Sheets. For Patch repair MC-Dur range epoxy system or Nafufill Range Repair Mortar system should be recommended before application of FRP system. All the Pin holes, bug holes should be Filled and levelled by using MC-Dur Range putty.

Application

For CF-Sheets with more than 400gsm fiber, the application should be in wet application method. For wet application system MC-Dur 1209 should be applied on the substrate as a primer and entire CF-Sheet should be impregnated manually with MC-DUR 1209 TX. Afterwards the CF-Sheets are pressed to achieve 100% bonding with the substrate using a lamination roller or similar tool and then coated with MC-Dur 1209 TX, applied by roller.

Care must be taken during application that the Carbon fibers are completely embedded in the adhesive. If applied in several layers, the subsequent layer of CF-Sheets is pressed into the fresh adhesive and afterwards coated again with MC-DUR 1209 TX.

If used on surfaces exposed to weathering the CF-sheets must be protected against direct sun by application of UV resistance surface protection system.

General information

Higher temperatures shorten while lower temperatures extend all indicated times, As a general rule of thumb a temperature change of 10^0 C either halves or doubles the indicated pot life.

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Technical Data For MC-DUR CF Sheets

Characteristic	Unit	200/500 Value	250/500 Value	450/500 Value	600/500 Value	Comment
Weight	g/m2	215	250	450	600	As per ASTM D3801
Tensile Strength	N/mm2	≥ 5400	≥ 5400	≥ 5400	≥ 5400	
E-Modulus	kN/mm2	≥ 240	≥ 240	≥ 240	≥ 240	
Elongation at Break	%	≥ 2,0	≥ 2,0	≥ 2,0	≥ 2,8	
Fiber Density	g/cm3	≥ 1,8	≥ 1,8	≥ 1,8	≥ 1,8	
Fiber Thickness	mm	0,12	0,14	0,25	0,33	As per ASTM D1777
Fabric Width	mm	500	500	500	500	As per ASTM D3774
Length of Roll	m	50	50	50	50	

Product Characteristics for MC-DUR CF Sheets

Type of product	Unidirectional Glass Fibers
Durability	Unlimited, provided proper storage
Colour	Black
UV Protection	MC Surface protection system
System products	MC-DUR 1209 TX Thixotropic Adhesives MC-DUR 1209 Normal Adhesive
Storage	Can be stored in dry conditions and protect from Direct Sunlight
Comments	Special width and length available on request.

Safety Advice

Please Take notice of the safety information and advice given on the packaging labels, safety information sheets and General Application Advice.

Edition: - MC/IND/190320, 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.

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