

MC-CarbonFiber Sheet E

(formerly MC-DUR CF-Sheets E)

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
- Easy application, low weight, high efficiency
- Optimised utilisation of mechanical properties due to alternative types/qualities

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 ADVICE

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 according to the general building approval issued by the German Building Institute (DIBt) in Berlin.

Structural analysis: The structural analysis is carried out in accordance with the general building approval issued by the DIBt/Berlin or an approved structural verification by an authorised institute.

Performance of work: Application and monitoring is carried out according to the general building approval by the DIBt/Berlin. Application must only be carried out by qualified staff with an additional certificate for application of CF-Sheets issued by MC.

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 $\leq 6\%$) 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 $< 1.0\text{ mm}$) with the levelling mortar MC-CarboSolid 1000.

If the CF-Sheets are applied around exterior edges the edges must be rounded beforehand. The minimum radius is 2.5 cm.

Application MC-CarboSolid 1209 TX is applied at least 0.5 mm thick onto the substrate, using a trowel, a scraper or similar tool. Afterwards the CF-Sheets are pressed into the fresh adhesive, using a lamination roller or similar tool and then coated with MC-CarboSolid 1209, applied by roller. Care must be taken during application that the carbon fibres 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-CarboSolid 1209.

If used on surfaces exposed to weathering the CF-Sheets must be protected against direct sun by application of a 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 $10\text{ }^{\circ}\text{C}$ either halves or doubles the indicated pot life.

TECHNICAL VALUES & PRODUCT CHARACTERISTICS

Characteristic	Unit	Value	Comments
Type	-	300/300	Unidirectional carbon fibre matrix
Elongation at fracture	%	2.1%	
E-modulus (characteristic)	N/mm ²	≥ 240,000	
Tensile strength (characteristic)	N/mm ²	≥ 4,900	
Roll width	mm	500	Standard
Roll length	m	100	Standard
Specific weight	g/m ²	300	
Fibre cross-sectional area	mm ² /m	≥ 0.166	
Preparation	Remove protective film prior to use		
colour shade	black		
system products	MC-CarboSolid 1209 TX / Adhesive primer, MC-CarboSolid 1209 / Laminating resin		
UV protection	Surface protection systems		
General Building Authority Approval (DIBt, Berlin)	Z-36.12-82		

Note: The information contained in this data sheet is based on our experience and is correct to the best of our knowledge. It is, however, not binding. It will need to be adapted to the requirements of the individual structure, to the specific application and to non-standard local conditions. Application-specific conditions must be checked in advance by the planning engineer/specifier and, where different from the standard conditions indicated, will require individual approval. Technical advice provided by MC's specialist consultants does not replace the need for a planning review by the client or its agents in respect of the history of the building or structure. Subject to this prerequisite, we are liable for the correctness of this information within the framework of our terms and conditions of sale and delivery. Recommendations of our employees deviating from the information given in our data sheets are only binding for us if they are confirmed in writing. In all cases, the generally accepted rules and practices reflecting the current state of the art must be observed. The information given in this technical data sheet is valid for the product supplied by the country company listed in the footer. It should be noted that data in other countries may differ. The product data sheets valid for the relevant foreign country must be observed. The latest technical data sheet shall apply to the exclusion of previous, duly superseded versions; the date of issue in the footer must be observed. The latest version is available from us on request or may be downloaded from our website. [2100004134]