



HexMC[®]-i Moulding Compound

Carbon Epoxy HexMC[®]-i / C / 2000 / M77



Product Data Sheet

Description

HexMC[®]-i is a high performance carbon moulding compound, specifically designed for compression moulding. The epoxy matrix and high carbon fibre volume content enable components to be moulded for a wide range of applications.

Overall features

- Competitive alternative to lightweight metal alloys (Al, Mg, Ti).
- Designed for compression moulding.
- Rapid processing cycles.
- Complex shapes.
- Moulded-in inserts.
- No material waste.

Presentation

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Form : Roll	Areal weight : 2000 g/m ²
Roll width : 460mm	Fibre length : 50 mm
Shelf life at -18°C : 18 months	Fibre : HS Carbon
Shelf life at RT 23°C : 6 weeks	
Material density : 1.55 g/cm ³	Nominal fibre volume : 57%
Typical cure temperature : 150°C	Typical cure time: 3 minutes

Recommendations for use

- Remove HexMC[®]-i moulding compound from freezer. Allow it to warm up to room temperature for easier handling.
- Clean the mould with appropriate solvent to remove all impurities.
- Apply external release agent.
- Heat the mould to 150°C. HexMC[®]-i moulding compound curing time varies according to part thickness.
- Set press pressure to 80 bars. Modify pressure up or down according to the complexity of the part.
- Remove the protective film.
- Determine the part weight. Cut HexMC[®]-i moulding compound to size accordingly.
- Load the product into the mould. It is recommended that approximately 80% of the mould area is covered.
- Close the mould and apply pressure.
- Hold the pressure for the appropriate cure time.
- After curing, open the hot mould and release the part. A mould equipped with ejector pins is recommended to help demoulding.



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Note: HexMC[®]-i moulding compound flow is greatly improved with temperature advancement, typically by heating in an oven. Heat can be applied to HexMC[®]-i moulding compound as it comes off the roll, after patterns are cut, or as preforms are made. The material is highly formable right after staging but becomes very stiff after cooling. Recommended staging and the complementary cure cycle for a 4mm thick panel is as follows: Typical cure cycle: 3 minutes at 150°C (can be adapted accordingly to part design).

Mechanical properties

Data is the result of several tests on cured laminates. Some of the values achieved will have been higher and some lower than the figure quoted. These are nominal values

	Tensile	Flexural	ILSS	Compression
Strength (MPa)	300	500	70	290
Modulus (GPa)	38	30	NA	38
Standards	ASTM D3039*	ASTM D790	EN 2563	EN 6036*

* With specimen width of 32mm

Note: These are typical values obtained with samples cut from 4mm thick moulded plate, cured 3 min at 150°C. The glass transition temperature is 120°C (DMA onset, 5°C/min, 1Hz, 15µm) for 3 minutes at 150°C.

Alternative cure cycle can be used:

Temperature	Time
120°C	8 min
130°C	6 min
140°C	4 min
150°C	3 min

Storage and handling

Store the product in its original (or equivalent) sealed packaging at -18°C. Leave product to reach room temperature before unrolling, to prevent condensation. The usual precautions when handling uncured synthetic resins and fine fibrous materials should be observed, and a Safety Data Sheet is available for this product. The use of clean disposable inert gloves provides protection for the operator and avoids contamination of material and components.

For more information

Hexcel is a leading worldwide supplier of composite materials to aerospace and industrial markets. Our comprehensive range includes:

- HexTow[®] carbon fibers
- HexForce[®] reinforcements
- HiMax[™] multiaxial reinforcements
- HexPly[®] prepregs
- HexMC[®]-i moulding compounds
- HexFlow[®] RTM resins
- HexBond[™] adhesives
- HexTool[®] tooling materials
- HexWeb[®] honeycombs
- Acousti-Cap[®] sound attenuating honeycomb
- Engineered core
- Engineered products
- Polyspeed[®] laminates & pultruded profiles
- HexAM[™] additive manufacturing

For US quotes, orders and product information call toll-free 1-800-688-7734. For other worldwide sales office telephone numbers and a full address list, please go to:

<http://www.hexcel.com/contact>

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