

MBrace[®] Fibre

Carbon, Glass and Aramid fibre sheets used for FRP structural strengthening.

Description

MBrace Fibre reinforcement materials are enveloped in MBrace saturant resin to yield a range of high performance features.

MBrace Fibre reinforcement System includes unidirectional carbon fibre sheets, unidirectional and bi-directional AR & E-glass sheets and Aramid fibre Sheets.

Uses

- Walls, beams and slabs
- Columns and chimneys
- Silos and tanks
- Pipes and tunnels

Advantages

MBrace Carbon Fibre

- Increased strength
- Flexural
- Shear
- Confinement
- Blast resistance
- Fatigue enhancement
- Lightweight
- Durable
- Control of crack propagation
- Strength to thickness ratio

MBrace Glass

Typical Properties

Colours:

- Carbon fibre- Black
- Glass fibre - White
- Aramid fibre - Yellow

- Retrofit of masonry structures vulnerable to earthquake damage
- Increased strength
- Shear
- Confinement

MBrace Aramid

- Blast proof
- Impact resistance

Packaging

MBrace G Sheet EU 900 & EU 750 Width 500mm and 1000mm

MBrace G Sheet E 50/50 & AR 50/ 50: Width 670mm, Length 50M

MBrace G Sheet E 90/10 A & AR 90/10 A : Width 670mm, Length 50M

MBrace A Sheet 120 Width 300mm, Length 150M

MBrace CF 240 system: Width 300mm, Length 150M

MBrace CF 640 system: Width 300mm, Length 50m

Special size rolls available on demand.

GLASS FIBRE

MBrace G Sheet EU 900 & EU 750 – Unidirectional Glass fibre sheet

Technical data of fibre	E-Glass, 900 gsm	E-Glass, 750 gsm
Modulus of elasticity	73 kN/mm ²	73 kN/mm ²
Tensile strength	3400 N/mm ²	3400 N/mm ²
Total weight of sheet	900 g/m ² in main directions	750 g/m ² in main directions
Density	2.6 g/cm ³	2.6 g/cm ³
ε Ultimate %	4.5	4.5
Thickness for static design weight / density	0.342 mm	0.285 mm
Safety factor for static design (manual lamination / woven product)	1.5 (recommended)	1.5 (recommended)

MBrace G Sheet E 50/50 & AR 50/50 – 50/50 Glass fibre sheet

Technical data of fibre (main and cross directional)	E-Glass, 350 gsm	AR-Glass, 350 gsm
Modulus of elasticity	73 kN/mm ²	65 kN/mm ²
Tensile strength	3400 N/mm ²	3000 N/mm ²
Sheet Weight (total 350g/m ²)	175 g/m ² in both directions	175 g/m ² in both directions
Density	2.6 g/cm ³	2.68 g/cm ³
ε Ultimate %	4.5	4.3
Thickness for static design weight / density	0.067 mm	0.065 mm
Safety factor for static design (manual lamination / woven product)	1.4 (recommended)	1.4 (recommended)

MBrace G Sheet E 90/10 A & AR 90/10 A – 90/10 Glass fibre sheet

Technical data of fibre	E-Glass, 440 gsm	AR-Glass, 440 gsm
Modulus of elasticity	73kN/mm ²	65kN/mm ²
Tensile strength	3400N/mm ²	3000N/mm ²
Sheet Weight (total 440g/m ²)	400g/m ² in main direction	400g/m ² in main direction
Density	2.6g/cm ³	2.68g/cm ³
ε Ultimate %	4.5	4.3
Thickness for static design weight / density	0.154mm	0.149mm
Safety factor for static design (manual lamination / woven product)	1.4 (recommended)	1.4 (recommended)
Cross direction	10% of the equal fibre is used in the weft (cross section)	

ARAMID FIBRE

MBrace A Sheet – Unidirectional Aramid fibre sheet

Technical data of fibre	320 gsm	450 gsm
Modulus of elasticity	120 kN/mm ²	120 kN/mm ²
Tensile strength	2900 N/mm ²	2900 N/mm ²
Weight of C fibre (main direction)	290 g/m ²	420 g/m ²
Total weight of sheet	320 g/m ²	450 g/m ²
Density	1.45 g/cm ³	1.45 g/cm ³
ε Ultimate %	2.5	2.5
Thickness for static design weight / density	0.2 mm	0.29 mm
Safety factor for static design (manual lamination / UD-product)	1.2 (recommended)	1.2 (recommended)

CARBON FIBRE

MBrace CF 240 - Unidirectional Carbon Fiber Reinforcement System High Tensile CF

Technical data of fibre	230 gsm	330 gsm	430 gsm
Modulus of elasticity	240 kN/mm ²	240 kN/mm ²	240 kN/mm ²
Tensile strength	3800 N/mm ²	3800 N/mm ²	3800 N/mm ²
Weight of C fibre (main direction)	200 g/m ²	300 g/m ²	400 g/m ²
Total weight of sheet	230 g/m ²	330 g/m ²	430 g/m ²
Density	1.7 g/cm ³	1.7 g/cm ³	1.7 g/cm ³
ε Ultimate %	1.55	1.55	1.55
Thickness for static design weight / density	0.117 mm	0.176 mm	0.234 mm
Safety factor for static design (manual lamination / UD-product)	1.2 (recommended)	1.2 (recommended)	1.2 (recommended)

MBrace CF 640 – Carbon Fiber reinforcent System High Modulus CF

Technical data of fibre (Uni- directional)	400 gsm
Modulus of elasticity	640 kN/mm ²
Tensile strength	2650 N/mm ²
Weight of C fibre (main direction)	400 g/m ²
Total weight of sheet	430 g/m ²
Density	2.1 g/cm ³
ε Ultimate %	0.4
Thickness for static design weight / density	0.19 mm
Safety factor for static design (manual lamination / UD-product)	1.2 (recommended)

Storage and Shelf life

MBrace Fibres must be stored where temperatures do not drop below +5°C. Store under cover, out of direct sunlight and protect from extremes of temperature.

Shelf life is 24 months when stored as above.

Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult your local BASF representative.

Safety precautions

As with all Fibre products, care should be taken during use and storage to avoid contact with eyes mouth, skin and foodstuffs. If accidentally ingested, seek immediate medical attention. Keep away from children and animals. For further information refer to the material safety data sheet. MSDS available on demand or on BASF construction chemicals web site.

Note

All BASF Technical Data Sheets are updated on regular basis; it is the user's responsibility, to obtain the most recent issue.

Field services where provided, does not constitute supervisory responsibility, for additional information contact your local BASF representative.

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competence of any labour involved in the application are beyond our control.

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BASF India Limited

Construction Chemicals Division

Plot No.37, Chandivali Farm Road, Chandivali ,Andheri(East)

Mumbai – 400072 India

Tel: +91 22 28580200, Fax: +91 22 28478381

e-mail: basfcc@vsnl.net www.basf-cc.co.in

