BASF

The Chemical Company

PRODUCT DATA

3 03 01 00 **Maintenance of Concrete**

MBRACE® AK 60

Unidirectional aramid fiber fabric for the MBrace® Composite Strengthening System

Description

MBrace® AK 60 is a dry fiber fabric constructed of aramid fibers. These fabrics are applied onto the surface of existing structural members in buildings, bridges, and other structures using the MBrace® family of performance polymers. The result is an externally bonded FRP (fiber reinforced polymer) reinforcement system that is engineered to increase the structural performance of these members. Once installed, the MBrace® System delivers externally bonded reinforcement with outstanding long-term physical and mechanical properties.

Yield

375 ft² per role

Packaging

Available in rolls 20 in (610 mm) wide by 225 ft (69 m) long, 375 ft² (356 m²) per roll. Other sizes available contact BASF Construction Chemicals for details.

ROLL	WIDTH	LENGTH
375 ft² (356 m²)	20 in (508 mm)	225 ft (69 m)

Features

Features	Benefits
• High strength to weight ratio	Can add significant strength to a structure without adding significant dead load
• High toughness	Can resist high impact and short duration load conditions
• Non-corrosive	Will not contribute to galvanic corrosion
• Non-conductive	Will not impact areas with sensitive electrical equipment
• Easy installation	Can be installed quickly, even in areas of limited access;
• Low aesthetic impact	Easy to conceal, will not significantly change existing member dimensions, will form around complex surfaces

Color

Yellow

Shelf Life

3 years when stored in unopened containers

Storage

Store in a cool, dry area (50 to 90° F [10 to 32 °C]) away from direct sunlight, flame, or other hazards.

Where to Use

APPLICATION

- Improve the strength of concrete and masonry elements subjected to blast loading
- Improve the resistance of concrete and masonry elements against damage due to impact and excessive wear.
- For all strengthening applications in sensitive electrical environments where carbon fiber cannot be used due to its conductivity.

LOCATION

- Vertical
- Horizontal
- Exterior
- Interior

SUBSTRATE

- Concrete
- Masonry
- Timber
- Steel

How to Apply

Surface Preparation

1. MBrace® AK 60 is applied to surfaces treated with MBrace® Primer, MBrace® Putty and MBrace® Saturant. Consult the data sheets for these materials for additional details.

Protection and Repair

Technical Data

Composition

MBrace® AK 60 is composed of a dense network of aramid fibers held in a unidirectional alignment with a light thermoplastic glass fiber cross weave yarn.

Physical Properties

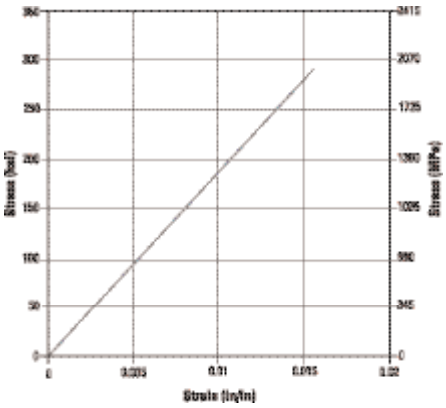
PROPERTY	REQUIREMENT
Fiber Material	DuPont KEVLAR® Brand Fiber
Areal Weight	0.124 lb/ft^2 [600 g/m2]
Fabric Width	20 in 500 mm
Nominal Thickness, T_f [1]	0.0110 in/ply [0.280 mm/ply]

0˚ Tensile Properties[2,3]

PROPERTY	REQUIREMENT
Ultimate Tensile Strength, f^*_{fu}	290 ksi [2000 MPa]
Tensile Modulus, E_f	17400 ksi [120 GPa]
Ultimate Tensile Strength per Unit Width, $f^*_{fu}\,t_f$	3.19 kips/in/ply [0.559 kN/mm/ply]
Ultimate Rupture Strain, ε^*_{fu}	1.55 %

90˚ Tensile Properties[2,4]

PROPERTY	REQUIREMENT
Ultimate Tensile Strength	0
Tensile Modulus	0
Ultimate Rupture Strain	n/a



NOTES:

1. The nominal fabric thickness is based on the total area of fibers (only) in a unit width. From experience, the actual cured thickness of a single ply laminate (fibers plus saturating resins) is 0.040 to 0.060 in (1.0 to 1.5 mm).
2. The tensile properties given are those to be used for design. These values are derived by testing cured laminates (per ASTM D3039) and dividing the resulting strength and modulus per unit width by the nominal fabric thickness.
3. The 0˚ direction denotes the direction along the length of the fabric.
4. The 90˚ direction denotes the direction along the width of the fabric.

Application

MBrace® AK 60 is only applied as a component of the MBrace® System.

1. The MBrace® AK 60 material should be cut to the proper dimensions (dimensions will vary based on project requirements) using shears specially designed to cut aramid or KEVLAR fabric.

2. Cut sections of MBrace® AK 60 can be temporarily stored by carefully rolling fabric into a 12 inch (600 mm) (approximate) roll. Do not fold or crease the fabric. Fabric should be kept free of dust, oils, moisture and other contaminants at all times. Fabric should not be exposed to direct sunlight for extended periods of time.

3. Apply MBrace® AK 60 fabric directly into uncured MBrace® Saturant applied on the substrate. There is no need to "pre-wet" the MBrace® AK 60 fabric with MBrace® Saturant prior to applying the fabric against the substrate.

4. Using a rib roller or squeegee, press the fabric against the substrate until visual signs of MBrace® Saturant are observed bleeding through the fabric. The rib roller or squeegee should only be run along the direction of the primary fibers in the fabric.

5. Apply a layer of MBrace® Saturant over the top of the MBrace® AK 60 fabric to completely encapsulate the fabric. Consult with the MBrace® Saturant data sheet on details for applying MBrace® Saturant.

Maintenance

Periodically inspect the applied material and repair localized areas as needed. Consult a BASF representative for additional information. Visit us on the web for the most current product information and news: www.BuildingSystems.BASF.com.

For Best Performance

- Make certain the most current versions of product data sheet and MSDS are being used; call Customer Service (1-800-433-9517) to verify the most current version.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and are not for supervising or providing quality control on the jobsite.

Health and Safety

MBRACE® AK 60

Warning

MBrace® Fiber Reinforcements contain carbon, glass, and/or aramid fibers. MBrace® AK 60 contains aramid and glass fibers. While handling MBrace® Fiber Reinforcements AK 60, wear appropriate work clothing to minimize contact. Product Material Safety Data Sheets (MSDS) are available and should be consulted and on hand whenever handling these products. These products are for professional and industrial use only and are only installed by trained and qualified applicators. Trained applicators must follow installation instructions.

BASF Construction Chemicals, LLC – Building Systems

889 Valley Park Drive
Shakopee, MN, 55379

www.BuildingSystems.BASF.com

Customer Service 800-433-9517
Technical Service 800-243-6739

Form No. 1031114 7/07
Printed on recycled paper including 10% post-consumer fiber.