

RHEOMIX™ 141

SBR polymer based cement modifier for site-batched waterproof slurry, bonding slurry & render/screed

Description

RHEOMIX 141 is a milky-white, Styrene-Butadiene co-polymer latex liquid, produced from styrene and butadiene by high pressure emulsion polymerisation. The latex consists of microscopic particles of synthetic rubber dispersed in an aqueous solution.

RHEOMIX 141 is a specifically designed for use with cement compositions. It is used in mortar and concretes as a polymer modifier to increase resistance to water penetration, improve abrasion resistance and durability. It is used with cement as a reliable water-resistant bonding agent.

Uses

Typical applications include:

- **Concrete repair:** Spalled concrete, repairing floors, beams and pre-cast slabs.
- **Floor screeds and toppings:** Abrasion resistant and non-dusting floors.
- **External rendering:** Waterproof, weatherproof and frost resistant render.
- **Waterproofing and tanking:** Basements, lift pits, inspection pits, water towers, liquid tanks, effluent tanks and swimming pools.
- **Other typical applications:** Bedding tiles, fixing or re-fixing slip bricks.

Advantages

- Improved flexibility.
- Prevents bleeding.
- Lower water-cement ratio.
- High resistance to water penetration.
- Good abrasion resistance.
- Excellent adhesion to a variety of building materials.
- Similar thermal expansion and modulus properties to concrete.
- Non-toxic. Can be used with potable water.

Typical Properties

Aspect	: A milky, white styrene butadiene copolymer latex, specifically made for use with Portland cement.
pH	: 8 ± 1
Relative density	: 1.01 ± 0.01 at 25°C
Solid content	: 40±1%

Standards

- WRC (Water Research Council) approved for use in contact with potable water

Properties of Polymer modified mortar

Mortar proportioning:

Cement	: 50 Kg
Quartz Sand (Zone II)	: 150 Kg
RHEOMIX 141	: 10 Kg
Water	: 10 Litre

Mortar Properties:

Fresh wet density	: 2000 ~ 2200 Kg/m ³
Compressive strength*	: up to 30 N/mm ²
Flexural strength*	: up to 13 N/mm ²
Tensile strength*	: up to 6.5 N/mm ²
Freeze thaw resistance	: Excellent.
Adhesion	: Excellent to concrete, steel, brick, glass, etc.
Resistance to water under pressure (30m head)	: Excellent - no water through a 15mm thick test piece.

*Properties are of typical mix, and may vary depending upon mix constituents. BASF strongly advises to carry out site mix design and site trials.

Specification Clause

The polymer modifier shall be RHEOMIX 141, Styrene-Butadiene co-polymer latex liquid, produced from styrene and butadiene by high pressure emulsion polymerisation. The product shall have minimum butadiene content of 40% by weight. The polymer shall be capable of being used as bonding agent and shall have pull-off bond strength not less than 1 MPa.

Directions for use

Surface preparation

All application surfaces should be clean, sound and free of deleterious substances.

Remove all laitance, oil, grease, mould oil or curing compound from concrete surfaces using wire brush, scabblers or other equipment as appropriate. Ensure that reinforcing steel is clean and free from grease or oil; remove scale and rust. When repairing spalled or damaged concrete, ensure that the concrete has been cut back to sound material.

Bonding slurry

Wet down absorbent surfaces, such as concrete, brick, stone, etc., ensuring that they are saturated but free of surface water. Prepare a bonding slurry of 1½ to 2 parts cement to 1 part RHEOMIX 141 by volume, mixed to a lump-free creamy consistency. Using a stiff brush, work the bonding slurry well into the damp surface, ensuring that no pinholes are visible.

(Approximately 20kg of RHEOMIX 141 mixed with 50kg of OPC cement will give creamy slurry which will cover 20 square metres of substrate dependent on surface texture and thickness applied.)

Mixing of mortar

Always use fresh, cool cement and sharp, clean, well graded aggregate, free of excessive fines.

Mixing should preferably be carried out in an efficient concrete mixer - where available a pan type mixer, such as a Crete angle, is recommended. Hand mixing is only permissible when the total weight of the mix is less than 25kg.

Charge the mixer with the required quantity of sand and cement and premix for approx. 1 minute. Add the RHEOMIX 141 and mix for 2 minutes only, to avoid excessive air entrapment.

Finally, without delay, add the water slowly until the required consistency is achieved. Owing to the strong plasticising properties of RHEOMIX 141, rapid thinning can occur - avoid adding excessive water!

Until the user becomes familiar with its workability the appearance of a RHEOMIX 141 modified mix is deceptive; when of correct consistency it may appear to be too dry. However, it will be found that it can be compacted and trowelled satisfactorily. Avoid using excessive water.

Rendering to vertical surfaces: Apply the bonding slurry to the prepared surface and then apply the RHEOMIX 141 render into the wet bonding slurry.

Apply RHEOMIX 141 modified mortars in coats at a maximum thickness of 6mm per coat. Greater thickness can lead to slumping. Several coats can be applied in fairly rapid succession, usually within 15 to 30 minutes of the previous coat. Close the surface using a wooden float or steel trowel.

Another method is to let the first coat of render dry overnight and apply another slurry coat before applying the second coat of render.

Screeds and toppings, applied to horizontal surfaces: Screeds, patches, etc., based on RHEOMIX 141 modified cements, can be laid to any thickness from 60mm down to 6mm minimum. After mixing, the RHEOMIX 141 modified mix should be placed over the still wet bonding slurry, well compacted and struck off to level. It may then be trowelled to the required finish using a wooden float or steel trowel.

As waterproofing & tanking: Wet down surfaces, ensuring that they are saturated but free of surface water. Prepare a waterproof slurry of 1½ to 2 parts cement with ½ to 1 part fine quartz sand to 1 part RHEOMIX 141 by volume, mixed to a lump-free creamy, consistency. Using a stiff brush, work the slurry well into the damp surface, ensuring that no pinholes are visible. Apply second coat at right angle to first, and after first coat have turned totally dry. (Approximately 20 kg of RHEOMIX 141 mixed with 50

kg of cement & 25 Kg of fine quartz sand, will give slurry which will cover 30 m² of substrate dependent on surface texture and thickness applied.)

Curing

Correct curing of RHEOMIX 141 modified mixes is important. Moisture cure for 24 hours and then allow to dry out slowly. (Note that initial curing is necessary to provide good curing conditions for the hydration of the Portland cement, then the latex mortar must be allowed to dry out to permit the latex particles to join together to form the continuous films and strands.)

Packaging

RHEOMIX 141 is supplied in 5kg, 20kg & 210 kg.

Storage and Shelf life

Store under cover, out of direct sunlight and protect from extremes of temperature. In tropical climates the product must be stored in an air-conditioned environment.

Shelf life is 12 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 please consult BASF's Technical Services Department.

Safety precautions

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs (which can also be tainted with vapour until product fully cured or dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention. Keep away from children and animals. Reseal containers after use. Do not reuse containers for storage of consumable item. 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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