

FUERZA SBR

OLD-TO-NEW BONDING AGENT & WATERPOOFING ADMIXTURE

FUERZA SBR is a styrene-butadiene copolymer latex formulated for incorporation into cement-based systems. It is added to mortar and concrete mixes to enhance durability, improve resistance to water penetration and abrasion, and increase overall performance. When combined with cement, it acts as an effective bonding agent, providing dependable adhesion and water-resistant properties.

TECHNICAL INFORMATION

The following are the typical characteristics of a cement-sand mix modified with **FUERZA SBR**. Unless specified otherwise, these values are based on a mix proportion of **3 parts sand to 1 part cement by weight**, incorporating **10 liters of FUERZA SBR per 50 kg of Ordinary Portland Cement (OPC)**.

Appearance:	Milky-white liquid
Composition:	styrene-butadiene copolymer latex
Compressive strength:	45 to 50N/mm ²
Tensile strength:	Up to 6.5N/mm ²
Flexural strength:	Up to 13N/mm ²
Freeze thaw resistance:	Excellent
Water vapor permeability:	Less than 4g/m ² /24 hour through an 11 mm thick test piece
Adhesion:	Excellent to brick, concrete, steel, glass etc.
Chemical resistance:	mild acids, alkalis, sulphates, chlorides, urine, dung, lactic acid, sugar etc.
Shrinkage during cure:	0.01% to 0.02%
Resistance to water pressure:	No water penetration through a 15mm thick test piece

Coefficient of thermal expansion

-20° C to +20°C
-20°C to +60°C
12.8 X 10.6
12.9 X 10.6

END USES

- Bonding agent
- Concrete repair
- Floor screeds and toppings
- External rendering
- Waterproofing
- Fixing brick slips and tiles
- Anti-corrosion protection for steel
- Silage pit lining & protection

FEATURES

- Greatly increased flexural strength
- Tensile strength increased
- Increased Bond Strength
- Greatly reduced shrinkage (with appropriate aggregate)
- Prevents bleeding
- Lower water-cement ratio
- Increased durability and toughness, improved abrasion resistance. Good frost, abrasion resistance and resistance to water-borne salt penetration.
- Resistant to many chemicals and to mineral oils
- Excellent adhesion to steel and concrete. Sticks well to brick, glass, asphalt, wood, expanded polystyrene and most building materials
- Enhanced corrosion protection
- Proven performance
- Similar thermal expansion and modulus properties to concrete
- Can be used with potable water (WRC approved)

DIRECTIONS FOR USE

Preparation of substrate:

Surfaces receiving **FUERZA SBR-modified mixes** must be clean, structurally sound, and free from contaminants that could impair adhesion or performance. Remove all traces of laitance, grease, oil, mould-release agents, and curing compounds from concrete surfaces using suitable mechanical preparation methods such as wire brushing, bush hammering, scabbling, or other appropriate equipment. Reinforcing steel should be thoroughly cleaned and free from rust, scale, grease, and oil. For repairs to deteriorated or spalled concrete, remove all unsound material until a solid substrate is exposed. Form a saw-cut edge of at least **6 mm depth**, or deeper as required by the application, and avoid tapering repairs to a thin feather edge.

Bonding slurry:

Pre-wet absorbent substrates such as concrete and brick so that they are damp but free from surface water at the time of applying the bonding slurry. Prepare the bonding slurry by mixing approximately **1.5 parts OPC to 1 part FUERZA SBR by volume**. This ratio may be adjusted within the range of **1:1 to 1:2 (SBR to cement)** to achieve the required consistency for specific applications. Combine FUERZA SBR and cement using a slow-speed electric drill fitted with a paddle mixer until a smooth, lump-free slurry is obtained.

Apply the slurry using a stiff brush, thoroughly scrubbing it into the surface to ensure full and even coverage. The typical thickness of a single coat is **0.3 to 0.5 mm**, and excessive build-up should be avoided. Where a second coat is required, it should be applied perpendicular to the first layer. Ensure that the slurry is not allowed to dry out before the subsequent render or screed is applied, ideally within **15 minutes**.

For FUERZA SBR-modified mixes, use sharp, well-graded, washed sand free from excessive fines. For general applications, sand complying with **BS 882 C&M (Zone 2 equivalent)** is recommended. For rendering works, use washed sand conforming to **BS 1199 Table 1** or equivalent locally approved standards.

Cement:

FUERZA SBR is suitable for use with all common cement types, including OPC, sulphate-resisting cement, and high alumina cement. However, when used with high alumina cement, setting and hardening may be delayed. For compatibility with other cement types, it is recommended to consult the FUERZA Technical Services Department for guidance.

Water:

The powerful plasticizing effect of **FUERZA SBR** significantly lowers the amount of water needed to achieve a desired level of workability.

Mixing:

Mixing is preferably carried out using a forced-action mixer, with a Creteangle type recommended for best results. Manual batching should only be used for small quantities below 25 kg in total. Begin by adding the required amounts of sand and cement into the mixer and dry blending for about one minute. Then introduce the specified quantity of **FUERZA SBR** and mix for approximately 30 seconds to limit air entrainment.

Gradually add water while continuing to mix until the desired consistency is achieved, pausing the mixer when checking workability. The overall mixing time after adding FUERZA SBR should not exceed two minutes. Due to its strong plasticizing effect, the mix may become fluid quickly, so excessive water addition should be avoided.

Application:

Rendering to Vertical Surfaces: Apply the bonding slurry onto the prepared substrate and place the render while the slurry remains wet or tacky, typically within **15 minutes**. FUERZA SBR-modified mortars should generally be applied in layers not exceeding **6 mm thickness per coat**, as thicker applications may cause slumping. However, multiple coats may be applied in quick succession, usually within **15 to 30 minutes**. Where increased thickness is required, appropriate formwork should be used. Finish the surface using a wooden float or steel trowel.

Alternatively, the first coat may be scratched after application and left to cure overnight before applying the second coat. This method is suitable for general rendering where drying is slow but is not recommended for waterproofing works. Another approach is to allow the first coat to cure overnight, followed by the application of a fresh slurry coat before placing the subsequent layer of render.

Screeds and Toppings (Horizontal Surfaces): Screeds, patch repairs, and similar applications using FUERZA SBR-modified cement can be laid at thicknesses ranging from **40 mm down to a minimum of 6 mm**. After mixing, the material should be placed onto the still-wet bonding slurry, thoroughly compacted, and struck off to the required level. The surface can then be finished using a wooden float or steel trowel to achieve the desired texture.

Note: When placing screeds over existing concrete, it is essential that any movement or expansion joints in the base slab are carried through into the FUERZA SBR-modified layer. This can be achieved by inserting a temporary timber strip wrapped in polythene to form the joint.

Curing:

Proper curing of **FUERZA SBR-modified mixes** is essential for achieving optimum performance. The material should be moist cured for at least 24 hours, followed by gradual drying. The initial moist curing stage is required to ensure proper hydration of the Portland cement. After this, the mortar should be allowed to dry slowly so that the latex particles can coalesce, forming continuous films and reinforcing strands within the matrix.

Cleaning:

All tools must be washed with water immediately after use. If cleaning is delayed, soap along with coarse wire wool may assist in removal. In cases where the mortar has partially hardened, solvents such as white spirit or FUERZA Cleaning Solvent can be used if required.

COVERAGE

When used as a bonding coat, **1 liter of FUERZA SBR** typically yields sufficient slurry to cover approximately **3 square meters** of substrate, depending on surface texture and application thickness. For general applications, the standard dosage of **10 liters of FUERZA SBR per 50 kg of Portland cement** is considered adequate.

In more demanding conditions where enhanced adhesion, waterproofing, water vapour resistance, or chemical resistance is required, the dosage may be increased to **15 liters per 50 kg of Portland cement**. At this higher dosage, only a minimal amount of additional water is needed; therefore, the use of wet aggregates may lead to excessive workability.

SHELF LIFE:

Up to one year when stored under normal conditions and temperatures (5°C - 40°C)

PACKAGING:

FUERZA SBR is supplied in 210 liters drums.

STORAGE:

Stir well before use. Store under frost-free conditions, as FUERZA SBR can suffer permanent damage if it freezes, especially when thawed rapidly.

WATCH POINTS:

Use fresh, cool cement along with clean, sharp, and well-graded aggregate that is free from excessive fines. Keep the mixing duration as short as possible, following the recommended guidelines.

For users unfamiliar with its handling, FUERZA SBR-modified mixes may appear misleading in consistency; when correctly proportioned, the mix may seem relatively dry. However, it will still compact and trowel properly. Avoid adding excess water.

Never apply FUERZA SBR-modified mortars or concrete onto a bonding slurry that has already dried. Trowelling should be carried out in line with the progress of the work, avoiding overworking or re-trowelling the surface. Also, protect the material from rapid surface drying before finishing.

In cold weather, rapid-hardening cement should be used and standard cold-weather precautions must be observed. Work can continue at temperatures down to **2°C**, provided the mortar temperature does not fall below **4°C** until it has fully hardened.

Newly placed work must be protected from frost until it achieves a compressive strength of at least **5 N/mm²**. FUERZA SBR-modified mixes may appear slightly darker than conventional unmodified mixes.

HEALTH & SAFETY:

For complete health and safety information related to this product, the relevant Safety Data Sheet should be consulted. The following general precautions apply to all products. As with all chemical materials, care must be taken during handling and storage to prevent contact with eyes, mouth, skin, and food items, which may also be affected by vapours until the product is fully cured and dry.

Any splashes to the eyes or skin should be treated immediately. In case of accidental ingestion, seek medical advice without delay. Keep the product out of reach of children and animals, and ensure containers are tightly resealed after use.

