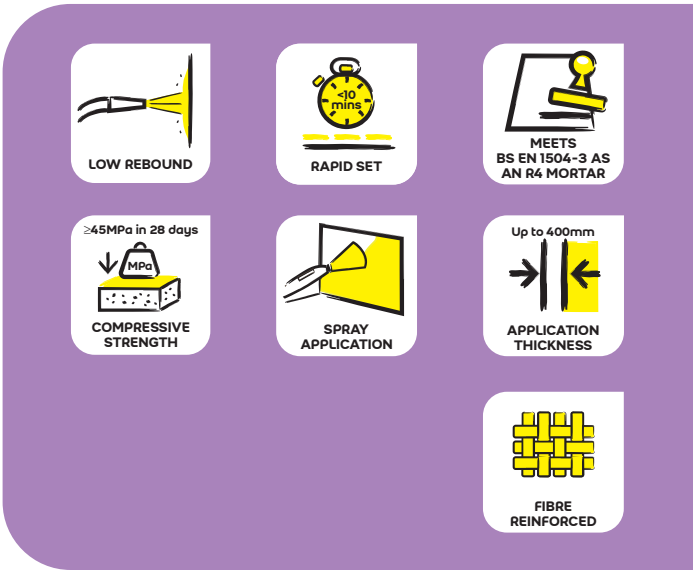
webercem spray RSF

Fibre reinforced, rapid setting, dry spray concrete

* Improved crack resistance
* Extra high build - up to 400mm in one pass
* Increased adhesive bond



About this product

webercem spray RSF is a ready-to-use, polymer-modified, dry sprayed concrete able to achieve rapid early set, ideal for concrete repairs where time constraints demand early strength gain. The material contains inert limestone aggregates, dust suppressants and accelerators. The formulation is designed for the dry spray process method of application with reduced rebound and excellent sprayability. Conforms with BS EN 1504-3 as a Class R4 repair product.

Features and benefits

- Rapid setting concrete allows work to continue in tidal zones
- Rapid set prevents wash out from tidal action or flowing water
- Economical with low rebound
- Fibres help improve resistance to cracking and adhesion to concrete substates
- Extra high-build – up to 400mm thickness can be applied in one pass to vertical faces
- Total chloride ion content does not exceed 0.05% of the weight of cement. No calcium chloride or admixtures containing chloride salts are used
- Good resistance to salts absorption

Uses

- Rapid repairs to structures within tidal zones
- Repairs to dock walls
- Repairs to coastal structures
- Structural repairs to jetties, piers, sea walls, quays and docks
- Repairs to river bridge abutments or piers
- Primary linings to underground workings
- Structural repairs to concrete beams, columns and soffits
- Repairs to railway bridge and viaduct soffits

Technical data EN 1504-3			
Performance Characteristic	**Method**	**Requirement**	**Result**
Compressive Strength	EN 12190	≥45 MPa	>45 MPa
Chloride ion content	EN 1015-17	≤0.05%	< 0.05%
Adhesive bond	EN 1542	≥2.0 MPa	> 2.0 MPa
Carbonation resistance	EN 13295	dk < control concrete (MC 0.45)	dk < control
Thermal compatibility Part 1 Freeze-thaw	EN 13687-1	"Bond strength after 50 cycles ≥2.0 MPa"	≥2.0 MPa
Capillary absorption	EN 13057	≤0.5 kgm-2h-0.5	≤0.5 kgm-2h-0.5
Elastic modulus	EN 13412	≥20 GPa	≥20 GPa
Reaction to fire	EN 1504-3	Declared value	Class A1

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Preparation
As with all repairs and applications it is essential to apply to a clean, sound surface free from all grease, oil, dust and loose material.

Concrete substrates
Concrete substrates must be adequately prepared by a suitable mechanical method such as light scabbling, water jetting or needle gunning. High pressure water jetting using the hydrodemolition technique is an excellent way of removing weak concrete and preparing steel. Concrete must be prepared to give a clean freshly exposed surface. The outer limits of the repair should be cut square to avoid feather edges.

Old surfaces contaminated with oil or grease must be cleaned with a suitable detergent. Care must be taken that the contaminants are removed and not simply spread over a wider area.

The designer may require the sprayed concrete to be reinforced with mesh or bars. Any reinforcement shall be fixed with the recommendations outlined in the Spray Concrete Association, SCA-Design and Specification and Concrete Society Technical Report 15. In most cases, no additional mesh reinforcement is required in repairs where existing rebar exist or where thin overlays are applied (i.e. less than 25mm, see SCA recommendations). Soak the concrete thoroughly and allow any surplus water to drain off.

Steel Substrates
Steel surfaces, including exposed reinforcement, should be free of loose rust and grease. The preparation of the steel should follow European standards as referred to in BS EN 1504-10 Clause 7.3 and defined in BS7079, BS ISO 8503-1 & -2, and BS ISO 8504-1 & -2.

Application
Guidelines on the method of working are detailed in the Code of Practice for Sprayed Concrete published by the Concrete Society and should be strictly observed. In addition, request the Weber Technical Information Note on the best practice for using **webercem spray RSF** The recommended ambient temperature for application is between 5˚C and 30˚C.

Reducing suction
Before using **webercem spray RSF**, the concrete substrate must be thoroughly pre-wetted for at least 30 minutes and then all surplus water removed. Water from the spray nozzle followed by high pressure air is the method commonly adopted.

Mixing
webercem spray RSF should be emptied from the bags directly into the hopper of the dry process spraying machine. The equipment should be balanced so as to produce a steady stream of material with minimal pulsing.

The amount of clean water added at the spraying nozzle will be controlled by the nozzleman - too low an addition will increase rebound and dust emission; too wet a mix will slump. The correct amount of water can be judged by the appearance of the sprayed concrete; any glossiness of the surface should be avoided.

Note: **webercem spray RSF** has a lower water demand than **webercem spray DSF** and will require less water. Keep the water content as low as possible.

Spraying
In case of a long delay between applied coats of the sprayed concrete, the surface of the newly applied hardened concrete should be water jetted using maximum air pressure and water flow through the nozzle to ensure that any laitance and all weak or loose material has been removed. All surface water should be allowed to drain before proceeding with the next coat.

webercem spray RSF can be applied down to 15mm thickness but, because of the higher cement content, (due to aggregate loss through rebound) there is the likelihood of greater shrinkage. The recommended minimum thickness is 25mm. The final thickness of cover over steel reinforcement should be specified by the design engineer.

Finishing
This material will set quickly and any finishing must take place within 15 minutes of application. We recommend an 'as sprayed' finish is used with **webercem spray RSF**.

Curing
Proper curing is essential to maintain the strength development. As the **webercem spray RSF** is rapid setting, it develops an exotherm that can drive off water that is needed for full hydration. This water needs to be replaced by curing. The best method for curing this product is to spray the surface with clean water as soon as possible as concrete spraying has been finished. On large areas, the water should be applied as soon as the concrete hardens, in sections rather than waiting for the whole area to be completed.

Where possible and where site restrictions are not a hindrance, water can be applied by direct spray at intervals of about 30 minutes or by spray bar, for at least 2 hours after completion of spraying.

In summer conditions, protect from direct sunlight and warm drying winds and protect from frost in winter.

Further details on curing and protection are available from the Weber Technical Services office.

Packaging
webercem spray RSF is supplied in 25kg polylined paper bags.

Yield
Approximately 11.5 litres per 25kg bag. An allowance must be made for rebound and wastage.

Storage and shelf life
Store the product in a dry covered enclosure off the ground at temperatures above 5˚C and protect from frost, rain and high humidity. This product has a shelf life of 6 months from date of manufacture.

Health and safety
Contains cement (Contains chromium (VI). May produce an allergic reaction). Harmful by inhalation. Irritating to eyes and skin. Keep out of the reach of children. In case of contact with eyes, rinse immediately with plenty of water and seek medical help. After contact with skin, wash immediately with plenty of soap and water. Wear suitable protective clothing, gloves and eye/face protection

For further information, please request the Material Safety Data Sheet for this product.

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