

*Economical, cement-based,
dry-spray concrete*

weber.cem conspray

construction spray concrete



Uses

- Repairs to large areas of concrete
- Rock and embankment stabilisation
- General infilling
- Repairs of sea walls
- Spraying of mine shafts and tunnels
- Bridge abutment build-up
- Tunnel linings and masonry arches
- Diaphragm wall lining

About this product

weber.cem conspray is a ready-to-use, cement-based concrete mix. It contains inert graded aggregates and dust suppressants. The formulation has been designed for dry process spray application to give rapid throughput, reduced rebound and to maximise application thickness.

Features and benefits

- ▲ Single component- ready to use
- ▲ Contains 5 mm inert coarse graded aggregate
- ▲ Fast throughput on large volume reinstatement jobs: over 5 tonnes per hour
- ▲ Economical – low rebound, less wastage of materials and labour (rebound levels of about 10% on vertical faces can be achieved by experienced nozzle operatives using well adjusted equipment)
- ▲ Safe to use and handle. Relatively low dust emission, no caustic accelerators
- ▲ High-build – up to 300 mm thickness can be applied in one pass on vertical faces
- ▲ Good adhesion to well prepared concrete
- ▲ Better ultimate strength than site-mixed gunite and many general purpose products

Technical data

The values given below are indicative of typical properties that are achievable in good conditions by an experienced contractor. All the tests have been carried out on actual sprayed samples – not reconstituted mixes

Physical properties

Dry density	2200 – 2300 kg/m ³
Initial set	2 – 3 hours
Drying shrinkage (BS 6073-1:1981)	0.05% – 0.08%
Adhesion to concrete	> 2.0 N/mm ²

Mechanical properties

Compressive strength	3 days	20 – 30 N/mm ²
	7 days	30 – 40 N/mm ²
	28 days	40 – 50 N/mm ²
Flexural strength	7 days	6.5 – 7.5 N/mm ²
	28 days	7 – 9 N/mm ²
Direct tensile strength	28 days	> 2.0 N/mm ²

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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

- 1 Concrete substrates must be adequately prepared by a suitable mechanical method such as scabbing, grit blasting, water jetting or needle gunning, or by such other means as appropriate. Concrete must be carefully prepared to give a clean, freshly exposed surface. The outer limits of concrete patches should be cut square to avoid feather edges.
- 2 Old concrete surfaces contaminated with oil or grease must be cleaned with a suitable detergent. Care must be taken to ensure that the oil or grease is removed from the surface and not simply spread over a larger area.
- 3 In thicker sections, the engineer may require the sprayed concrete to be reinforced with mesh or bars. Reinforcing bars greater than 25 mm should be avoided. Mesh helps to evenly distribute stresses due to thermal movement or shrinkage and reduces the risk of cracking especially on corners. The mesh should be fixed in accordance with the recommendations in Concrete Society Technical Report No 15.
- 4 In some cases, additional mesh reinforcement may not be required by the Engineer.
- 5 Soak the concrete surface thoroughly, allowing surplus water to drain off.

Steel

- 1 Steel substrates including exposed reinforcement should be free of loose rust and grease. Ideally they should be grit blasted to a uniform grey metal finish to achieve first quality to BS7079: Part A1 followed by degreasing with a suitable solvent immediately prior to bonding.
- 2 Any formwork or extra reinforcement such as steel mesh should be designed / prepared and fixed in accordance with the guidelines of the Code of Practice (see opposite).

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.

weber.cem conspray 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 water added at the spraying nozzle will be controlled by the nozzle operator - 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.

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 a maximum air pressure and water flow through the nozzle to ensure that any laitance and all weak or loose material has been removed. The surface should be allowed to drain before proceeding with the next coat.

weber.cem conspray can be applied down to 20 mm thickness, but the recommended minimum thickness for protection over steel is 40 mm.

Finishing

Any necessary trowelling or profiling should be done immediately after spraying has finished. An 'as sprayed' appearance is recommended, but, if overcoating is to follow, finish with a wooden float or damp sponge.

Curing

weber.cem conspray must be properly cured if it is to achieve its optimum properties. Cure immediately with **weber.tec ritecure** unless the surface is to be overcoated or subject to chemical impregnation, in which case cure with polythene sheeting and/or wet hessian for a minimum of 3 days.

Protect from frost.

Packaging

weber.cem conspray is packed in 25 kg paper sacks.

Yield

Approximately 11 litres per 25 kg bag, but an allowance must be made for rebound and profiling.

Storage and shelf life

When stored airtight in a dry place at temperatures above 5°C and protected from frost, shelf life is 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.

Technical services

Weber's Customer Services Department has a team of experienced advisors available to provide on-site advice both at the specification stage and during application. Detailed specifications can be provided for specific projects or more general works. Site visits and on-site demonstrations can be arranged on request.

Technical helpline
Tel: (01525) 722110

Sales enquiries

Weber products are distributed throughout the UK through selected stockists and distributors. For UK sales enquiries and overseas projects, contact Weber's Sales office.

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