

webercem

five star grout SP

High flow, high strength,
shrinkage compensated,
cementitious precision grout.

- * High initial and long term strength development
- * Can be pumped, poured or trowelled
- * Ideal for use under machinery, grouting rails and bridge bearings

About this product

webercem five star grout SP is premixed cementitious grout similar to standard **webercem five star grout**, developed for applications where an economical grout with good flow and retention of flow and higher strengths is required.

webercem five star grout SP is based on specially selected Portland cements, graded aggregates and admixtures including a special form of carbon.

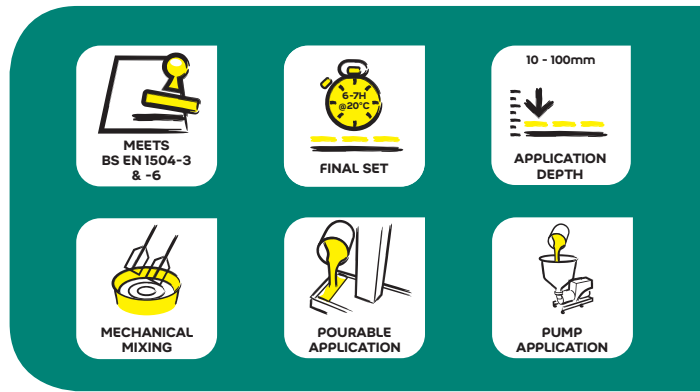
webercem five star grout SP is designed primarily as a flowing grout but can also be used at a trowellable consistency.

Meets Highways Agency Specification for Highway Works, Vol. 1, Clause 2601.

Complies with BS EN 1504-3 and -6.

Features and benefits

- Complies with HA Specification Clause 2601.4 at 5°C and 20°C
- Precision grout suitable for use over a range of temperatures and site conditions
- Can be pumped, poured or trowelled
- Thermal expansion similar to that of good quality concrete
- Excellent flow properties
- Can be applied in thicknesses from 10mm to 100mm
- Does not significantly lose workability during pot life
- High initial and long term strength development



Uses

- Under machinery and stanchion plates
- Grouting rails and bridge bearings
- Fixing bolts
- Underpinning
- Void filling

Constraints

webercem five star grout SP must only be used in confined situations, e.g. under baseplates, in holes etc.

Technical Data EN1504

Performance Characteristic	Method	Requirement	Result	Pass/Fail
Compressive Strength	EN 12190	≥45 MPa	57.0	Pass
Chloride ion content	EN 1015-17	≤0.05 %	0.02	Pass
Adhesive bond	EN 1542	≥2.0 MPa	2.0	Pass
Carbonation resistance	EN 13295	dk ≤ control concrete (1,3)		Pass
Elastic modulus	EN 13412	≥20 GPa	22.1	Pass
Thermal compatibility Part 1 Freeze-thaw	EN 13687-1	Bond strength after 50 cycles ≥2.0 MPa	2.0	Pass
Capillary absorption	EN 13057	≤0.5 kgm ⁻² h ^{-0.5}	0.25	Fail
Testing of Anchoring Products by the Pull-Out Method	BS EN 1881: 2006	Displacement ≤ 0.6 mm at 75 kN	0.4	Pass

Technical Data EN1504 continued...

Performance Characteristic	Method	Requirement	Result	Pass/Fail
Flow cone at 5°C and at 20°C	DTp Specification c2600, Clause 2601.4 ASTM C939-02	Efflux time of repeat to be within $\pm 5\%$ of each other & record average recorded	5°C - 37 seconds 20°C - 32.5 seconds	Satisfied
Flow between glass plates at 5°C and at 20°C	DTp Specification c2600, Clause 2601.4 HCD drawing no.K2	Mortar should rise $\geq 10\text{mm}$ above the underside of the top plate at all positions, without signs of segregation, bleeding, effervescence or air inclusions	Satisfactory	Satisfied
28 Day compressive strength at 20°C	DTp Specification c2600, Clause 2601.4 EN 12190	$\geq 50.0 \text{ N/mm}^2$	65.5 N/mm ²	Satisfied
Expansion test	DTp Specification c2600, Clause 2601.4 ASTM C827-01a	$\geq 0.25 \leq 2.5\%$	2.18%	Satisfied
Elastic Stability	DTp Specification c2600, Clause 2601.4 BS 6319: Part 1	$\leq 1.0\%$	0.93%	Satisfied

Preparation

All surfaces should be clean and sound. Concrete surfaces must be free from any contamination including oil, grease, laitance and dust – and for maximum bond, the surface should be roughened and presoaked with clean water.

Immediately prior to grouting, remove free water including that in bolt holes or recesses.

Metal surfaces must be free from rust, scale, oil or grease but removable metal shims should be lightly oiled. Ensure that bolt holes are free of dust, water or any loose material. Formwork should be well sealed to prevent leakage.

Mixing

This grout needs only to be mixed with sufficient water to give the consistency required. Mixing should be carried out in a proprietary grout mixer or in a bucket (where the height is at least $1\frac{1}{2}$ times its diameter) by using a medium-speed drill (650 rpm) with an MR4-type helical attachment.

When using the maximum water to obtain a pourable grout, the following procedure is recommended. Pour about 2 litres of water into a suitable bucket, then add half the powder and mix to a thick paste consistency, ensuring any lumps are broken down by the shearing action. Continue mixing, adding more powder and some more water gradually into the vortex. After adding all the powder and having produced a mix of uniform creamy consistency, add the rest of the water slowly into the vortex to obtain the pourable grout. **Do not mix the grout for more than 5 minutes.**

Avoid entraining excessive quantities of air during mixing by keeping the mixing head below the grout level at all times. To obtain the consistency required, add water as follows:

To obtain the consistency required, use the following water content:

Trowellable mix	Approx. 2.8 litres of water per 25kg bag
Pumpable mix	4.0 to 4.6 litres of water per 25kg bag
Pourable mix	4.6 to 4.8 litres of water per 25kg bag

Application

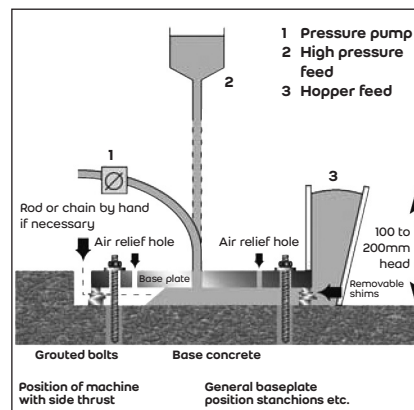
When pouring, the area to be grouted should be shuttered and a header box used to maintain a grout head of 150 – 200mm during the pour. Machine mixing is recommended to achieve continuous pouring. For large

applications **webercem five star grout SP** should be placed by pump and it has been formulated to give a 45 minute working time, considered essential for pumping. It does not contain metal particles; wear and tear on equipment is similar to conventional sand/cement mixes.

Mixing and placement can be carried out between +5°C and +40°C. In service, **webercem five star grout SP** will perform similarly to other cementitious mixes based on Portland cement in the temperature range of -20°C to +150°C.

Continuous grout flow is essential and sufficient grout and water should be available to be mixed to ensure there is no discontinuity of the flow.

The diagram illustrates typical methods of placing **webercem five star grout SP**.



Where the thickness of grout is greater than 50mm, the grout may be bulked out with clean single sized aggregate. However, other Weber products, including **webercem five star repair concrete**, which may be more suitable. Please contact our Technical Department. The grout around the edges of baseplates must be finished flush with the sides by cutting the grout while still green after stripping formwork.

Precautions

webercem five star grout SP is based on Portland cement and good concreting practice with regards placing and curing especially under winter conditions must be observed.

Do not add water above the recommended stated dosages.

Use only clean (potable) water. Avoid leaving unconfined areas of grout proud around bearings etc.

Packaging and yield

webercem five star grout SP is supplied in 25kg polythene lined bags.

Coverage

For a pourable mix each 25kg bag produces approximately 14.0 litres of grout i.e. 71 bags per cubic metre. When using the trowellable mix the yield is 13.0 litres i.e. 77 bags per cubic metre. For estimating purposes, 5% extra should be allowed for spillage during mixing and placing.

Storage and shelf life

When stored unopened in a dry place at temperatures above 5°C, shelf life is 12 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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