



Material Datasheet

HIGH STRENGTH Portland cement BS EN 197-1 - CEM I 52,5 N



Rugby® High Strength is designed to give higher strengths for a given cement content than Rugby® Cement or Premium products, making it the ideal solution in thin sections or more critical concrete applications. Rugby® High Strength delivers high strength without rapid setting or significant reduction of the workable period.

Features/benefits/applications

- Suitable for general purpose concrete, render and mortar
- Suitable for any application where higher strength is required
- Helps counteract the effects of cold weather
- Compatible with most admixtures
- Chromium (VI) compliant

Delivery and storage

Delivered by road in a curtain-sided vehicle, the standard load size is 28-30 tonnes. All CEMEX drivers are fully trained and experienced in the safe delivery and unloading of our vehicles, but please do all you can to ensure your site is accessible with no obstructions. Rugby® High Strength is available in paper sacks delivered as shrink-hooded, 1.4 tonne modules on non-chargeable pallets. To avoid premature

deterioration of the reducing agent incorporated in the cement for control of soluble Chromium (VI), storage should be in accordance with our recommendations given on bags and despatch documents.

Health and safety

Contact with wet cement, concrete or mortar may cause irritation, dermatitis or severe alkali burns. Contact between cement powder and body fluids (e.g. sweat and eye fluids) may also cause irritation, dermatitis or burns. There is serious risk of damage to the eyes. Wear suitable waterproof protective clothing, gloves and eye/face protection. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. After contact with skin, wash immediately with plenty of clean water. Keep out of reach of children. Contains Chromium (VI), may cause allergic reaction, the risk of which is increased if the cement is used beyond the declared storage period shown on bags and despatch documents.



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Product applications

Concrete

Sharp (concreting) sand should be used, together with 20mm maximum size coarse aggregate and the minimum amount of water necessary for placement and compaction. Excess mixing water reduces both strength and durability of concrete. Use of separate sand and coarse aggregate is preferable to all-in aggregate (ballast).

The following tables give nominal mix proportions by volume for common applications:

General purpose mix application:

For most uses except foundation work and outdoor paving.

	Proportions by volume	Amount per M ³ (approx)
Rugby High Strength	1	310 kg
Sand	2	655 kg
20mm aggregate	3	1130 kg
(all - in aggregate)	(4)	(1785 kg)

Foundation mix application:

For footings, foundations and bases for precast paving.

	Proportions by volume	Amount per M ³ (approx)
Rugby High Strength	1	265 kg
Sand	2½	690 kg
20mm aggregate	3½	1110 kg
(all - in aggregate)	(5)	(1800 kg)

Paving mix application:

For all exposed in-situ paving – e.g. pool surrounds and driveways. (Use of air-entraining admixture recommended for this application).

	Proportions by volume	Amount per M ³ (approx)
Rugby High Strength	1	385 kg
Sand	1½	575 kg
20mm aggregate	2½	1150 kg
(all - in aggregate)	(3½)	(1725 kg)

Once in place, concrete requires moisture to develop its full strength and premature drying out must be avoided. In normal conditions and at temperatures in excess of 10°C, concrete should be cured under damp conditions for 1 to 3 days (cover with curing membrane, plastic sheeting or wet hessian); at temperatures below 10°C, this curing time should be doubled. Protection of fresh concrete against freezing is essential and placement under such conditions should be avoided if possible.

Mortar

Rugby® High Strength may be used in the proportions shown below to produce satisfactory cement: sand mortars with clean, well-graded sands. For cement:sand mixes, addition of a mortar plasticiser will be necessary. Alternatively, Rugby® High Strength may also be used with Hydrated Lime to produce cement:lime:sand mortars.

The table below gives volumetric mix proportions for general mortar applications:

	Rugby High Strength : Sand (with plasticiser)	Rugby High Strength : Lime : Sand	Equivalent BS EN 998-2 Mortar class
General usage (low-rise housing)	1 : 6	1 : 1 : 6	M 2,5
Strong (free standing walls)	1 : 3-4	1 : ½ : 4	M 5

Render

Rugby® High Strength should be used in the proportions below for general rendering applications. It is important when applying two-coat renders (normal practice) that the second coat is either thinner or weaker than the scratch coat to avoid problems with shrinkage and de-lamination. A suitable sand for rendering should be chosen. Curing of applied render made with Rugby® High Strength is important and premature drying out must be avoided.

	Rugby High Strength : Sand (with plasticiser)	Rugby High Strength : Lime : Sand
First coat (strong backgrounds)	1 : 3-4	1 : ½ : 4
First coat (moderate backgrounds) or Second coat (moderate and strong backgrounds)	1 : 6	1 : 1 : 6

Product certification

Rugby® products are subject to rigorous third party certification procedures detailed in BS EN 197-2 (Cement – Part 2: Conformity evaluation), which lead to issue of EC certificates of conformity by an EU Notified Body. Products that carry EC certification bear the CE marking to indicate conformity to all requirements of their harmonised technical specification and a presumption of conformity to the essential requirements of the Construction Products Directive.

For further information please contact
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