



## Material Datasheet

# SULFATE

## Portland-fly ash cement BS EN 197-1 - CEM II/B-V 42,5 N



CEMEX is a world leader in packed cement, backed with excellent technical expertise in blended cements and fly ash for more than 20 years.

The Rugby® brand signals a refreshed, coherent and extended range for the future. It not only reinforces our CEM II products and our commitment to sustainable development, but also stands for improved reliability and availability.

More specific information on CEM II cements can be found on the reverse of this datasheet.

Rugby® Sulfate is designed to prevent the rapid deterioration of concrete made from Portland cements which occurs in structures exposed to certain types of soils and groundwaters.

Building Research Establishment document Special Digest 1; 'Concrete in aggressive ground', recognises that Portland-Fly Ash cement (incorporating at least 25% fly ash) provides enhanced durability when used in concrete placed in aggressive ground conditions.

Special Digest 1 permits CEM II Portland-Fly Ash cement in the same aggressive sulfate ground conditions as Sulfate Resisting Portland Cement, (SRPC), to BS 4027.

### Features/benefits/applications

- Ideal for concrete or mortar work where sulfates are known to be present in soil or groundwater
- Suitable for use with admixtures
- Suitable for use in below ground concrete
- Used to improve the resistance of mortar to sulfates in brickwork
- 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® Sulfate 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 the 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.

## 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 Special Digest 1 notation for Rugby® Sulfate is CEM II/B-V+SR and this should be used with the Special Digest 1 document for guidance regarding minimum cement contents and maximum free water : cement ratios. (See table).

### Concrete qualities to resist chemical attack for the general use of in-situ concrete : limiting values for composition (BRE SD1):

Design chemical (DC) class	Max free-water/cement ratio	Min CEM II/B-V+SR content (kg/m <sup>3</sup> ) for maximum aggregate size of:			
		40mm +	20mm	14mm	10mm
DC-1	–	–	–	–	–
DC-2	0.55	300	320	340	360
DC-2z	0.55	300	320	340	360
DC-3	0.4	360	380	380	380
DC-3z	0.5	320	340	360	380
DC-4	0.35	380	380	380	380
DC-4z	0.45	340	360	380	380

## 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.

## CEM II information

CEMEX is committed to continuous improvement in environmental and sustainability performance, particularly through utilising recycled content, minimising landfill waste and improving our energy efficiency.

CEM II cements are factory produced Portland composite cements. Packed CEM II cements from CEMEX are of the Portland-fly ash type.

This product contains a minimum of 25% fly ash which is a by-product of Coal Fired Power Stations, making not only a more sustainable cement but also enhancing it's performance characteristics.



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