

Your guide to the use of RAPID HARD CEMENT



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Creating Concrete Possibilities



RAPID HARD CEMENT



A masterpiece of cement engineering

AfriSam Rapid Hard (RHC) is a superior early-strength development product suitable for applications where quick mould turn-around times are required. This early-strength development can be attributed to its fineness and the use of a strength modifier.

Applications

AfriSam Rapid Hard Cement is ideal for the following applications:

- High early-strength specialist products.
- Precast concrete applications where quicker de-moulding times are required.
- Fast-track construction projects to facilitate earlier stripping of formwork, earlier bridge launching or higher sliding rates.
- Cold weather concreting as the high early liberation of heat of hydration can offset the retardation effect of low temperatures.

Typical performance in relation to SANS 50197-1 criteria

Criteria	SANS 50197-1 requirement class 52,5R	Typical performance
Physical		
Early (2-day) strength, MPa	≥30	33
28-day strength, MPa	≥52,5	59
Initial setting time, minutes	≥60	191
Soundness: Le Chatelier expansion, mm	≤10	1
Chemical		
Sulphate content, %	≤3,5	2,99
Chloride content, %	≤0,1	0,04

Properties

- It is milled to a carefully controlled fineness and contains a strength modifier to ensure higher early strengths.
- Its fineness provides a larger surface area to react with water, increasing the rate of hydration and therefore resulting in higher early-strength development.
- It is ideal for use in cold weather conditions due to its rapid hydration rate.
- Where durability is of paramount importance, RHC can be further blended on site with Fly Ash, Condensed Silica Fume (CSF) or Ground Granulated Blast Furnace Slag (GGBFS).

This consistent quality, versatility and proven strength makes it the proven choice for the precast industry.

Physical characteristics

Relative density, g/ml	3,12
Loose bulk density after consolidation, kg/l	1,26

Typical chemical composition

Chemical compound (% by mass, ignited basis)	CEM1 52,5R
Loss on ignition	2,98
SiO ₂	20,79
P ₂ O ₅	0,07
Al ₂ O ₃	4,64
Fe ₂ O ₃	2,69
CaO	65,05
MgO	1,73
K ₂ O	0,47
TiO ₂	0,39
Na ₂ O	0,15
SO ₃	2,99
Mn ₂ O ₃	0,12

The difference between a 52,5N and a 52,5R cement product

AfriSam Rapid Hard Cement is specially formulated to achieve exceptionally high early strength gain for those specialist applications requiring this attribute.



AfriSam Quality Guaranteed

AfriSam stakes its reputation on consistently high quality products and our Rapid Hard Cement is no exception.

- AfriSam manufacturing facilities are ISO 9001 certified.
- We have the highest possible Quality Management Systems.
- AfriSam Rapid Hard Cement complies with SANS 50197-1 specification for common cements.
- The composition of our cement is constantly monitored and maintained to guarantee high quality performance in the 52,5R MPa strength class.

The choice for every job

AfriSam's Rapid Hard Cement offers consistent quality, versatility and proven strength.

Tips for storage

- Store in a dry enclosed area.
- Store off the floor on a wooden pallet or plastic sheeting.
- Keep doors and windows closed to eliminate airflow.

Health and safety

Occupational exposure limits to cement are recommended in the Occupation Health and Safety Act summarised as follows:

- The recommended limit for total inhalable dust is $10\text{mg}/\text{m}^3$, and the respirable recommended limit is $5\text{mg}/\text{m}^3$.
- Direct skin contact for extended periods can result in severe burns.
- Suitable attire should be worn to prevent dust inhalation and direct skin contact.

A detailed safety data sheet is available on request.

Client support

AfriSam offers a unique and highly developed sales support, technical service and supply infrastructure. This is to ensure that each of our customers can rest assured that every product is of the highest quality. Our fully-equipped laboratory is run by qualified technicians who are ready to assist with specific requirements.

AfriSam is committed to sustainable development

AfriSam is committed to sustainable development and, as such, we strive towards:

- Legal compliance at all times.
- Optimal use of natural resources.
- Waste reduction.
- Reduced use of fossil fuels.
- Minimising environmental degradation and pollution.
- Employee training and stakeholder engagement.

CO₂ rating

To enable consumers to make informed purchase decisions, all AfriSam bags now reflect the carbon rating of each product.

Delivering on quality in a responsible way

Through our commitment to sound environmental stewardship, we offer high quality products and customer peace of mind.



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OUR QUALITY PROMISE



With the planet as one of our core values, we assess the carbon footprint of each and every one of our operations and products while actively striving to drive down our impact on the environment.

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AfriSam's commitment to superior performance gives customers the peace of mind that comes with guaranteed technical excellence, top quality products, sustainability and continuous innovation.