AfriSam Eco Building Cement

A masterpiece of cement engineering
AfriSam Eco Building Cement is the result of careful research and development by our cement technicians. It is a specially blended, high quality cement engineered for use in all structural, building and masonry applications. It is perfect for reducing the heat of hydration in mass concrete and for improving concrete's resistance to chemical attack including sulphate, chloride and soft water. It makes concrete highly resistant to alkali-aggregate reaction and is suitable for reducing permeability of concrete in water retaining structures.

AfriSam Eco Building Cement is extremely easy to work with and produces consistently excellent results. This consistent quality, versatility and proven strength make it the choice for builders, architects, engineers, contractors and DIY enthusiasts.

AfriSam quality guaranteed
AfriSam stakes its reputation on the consistency of our high-quality products and AfriSam Eco Building Cement is no exception. AfriSam's manufacturing facilities are ISO 9001 certified and boast the highest possible Quality Management Systems. AfriSam Eco Building Cement fully complies with the SANS 50197 cement specification for common cements. The composition of the cement is constantly monitored and maintained to guarantee high quality performance in the 32,5 N MPa strength class.

Performance
AfriSam Eco Building Cement produces durable concrete, mortar and plaster that will remain strong and stable for years. It can be successfully used in any application where high early strengths are not of primary importance. Its long term strengths are consistent with cements in the 32,5 N MPa strength class.

The choice for every job
AfriSam Eco Building Cement offers consistent strength, workability and durability, making it ideal for brick and block making, reservoirs and swimming pools, precast operations, road stabilisation, mining applications, structural concrete, plaster and mortar as well as shotcrete. AfriSam Eco Building Cement is not recommended for further on-site blending with components such as ground granulated blast furnace slag or fly ash.

Storage
The best way to store your AfriSam Eco Building Cement is in a dry enclosed area, off the floor on a wooden pallet or on plastic sheeting. This will ensure that the bag does not absorb moisture from the floor. Doors and windows should be kept closed to eliminate air flow.

Availability
It is available at reputable builders' merchants primarily in the Greater Gauteng area where AfriSam distributes this product. Please contact AfriSam Customer Service for the location of your nearest AfriSam Cement stockist.

Health and Safety
Occupational exposure limits to cement are recommended in the Occupational Health and Safety Act. In terms of the time weighted average occupational exposure limit, the recommended limit for total inhalable dust is 10 mg/m^3 and the respirable recommended limit is 5 mg/m^3. Direct skin contact for extended periods can result in severe burns. It is therefore recommended that suitable attire be worn to prevent dust inhalation and direct skin contact. A detailed 'Safety Data Sheet' and 'Guide to the safe use of cement and concrete' is available on request.

Client support

Behind every bag of AfriSam Eco Building Cement is AfriSam's unique and highly developed sales support, technical service and supply infrastructure. The purpose of this infrastructure is to ensure that each of our clients can be assured that every bag is perfect in terms of its quality and consistency. AfriSam also operates a fully equipped laboratory run by qualified and experienced technicians, ready and able to assist with specific requirements. A range of guide brochures for different cement applications is available from stockists of AfriSam Cement or AfriSam sales outlets.

AfriSam's Eco Building Cement – the 'greener' alternative

AfriSam's Eco Building Cement was produced using a unique combination of Portland cement and mineral components and is the most environmentally responsible cement available. The cement has a CO_2 footprint of 453g/kg, which is almost half of the world average of 890g/kg, a milestone achievement reached by AfriSam without compromising on product performance. The product is SABS-approved and complies fully with the EN 197 and SANS 50197 specification for CEM III A 32,5N.

Eco Building Cement is part of AfriSam's company-wide drive geared towards minimising the impact of its operations on the environment and sustaining life for future generations. These initiatives are a reflection of the company's belief in 'planet' as one of the core values that drive its business.

AfriSam Customer Service
PO Box 6367
Weltevredenpark 1715
South Africa
Phone: 0860 141 141
email: customer.service@za.afrisam.com
www.afrisam.com

Your guide to the use of Eco Building Cement

Cement products

AfriSam is committed to sustainable development

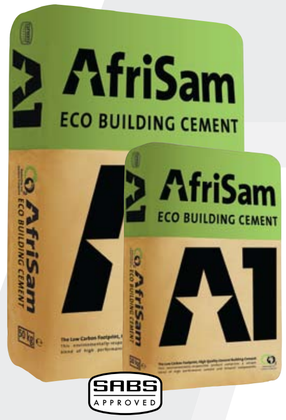
The company is committed to sustainable development, which includes legal compliance, the optimal use of resources, waste reduction, reduced use of fossil fuels, the minimisation of environmental degradation and pollution, employee training and stakeholder engagement.

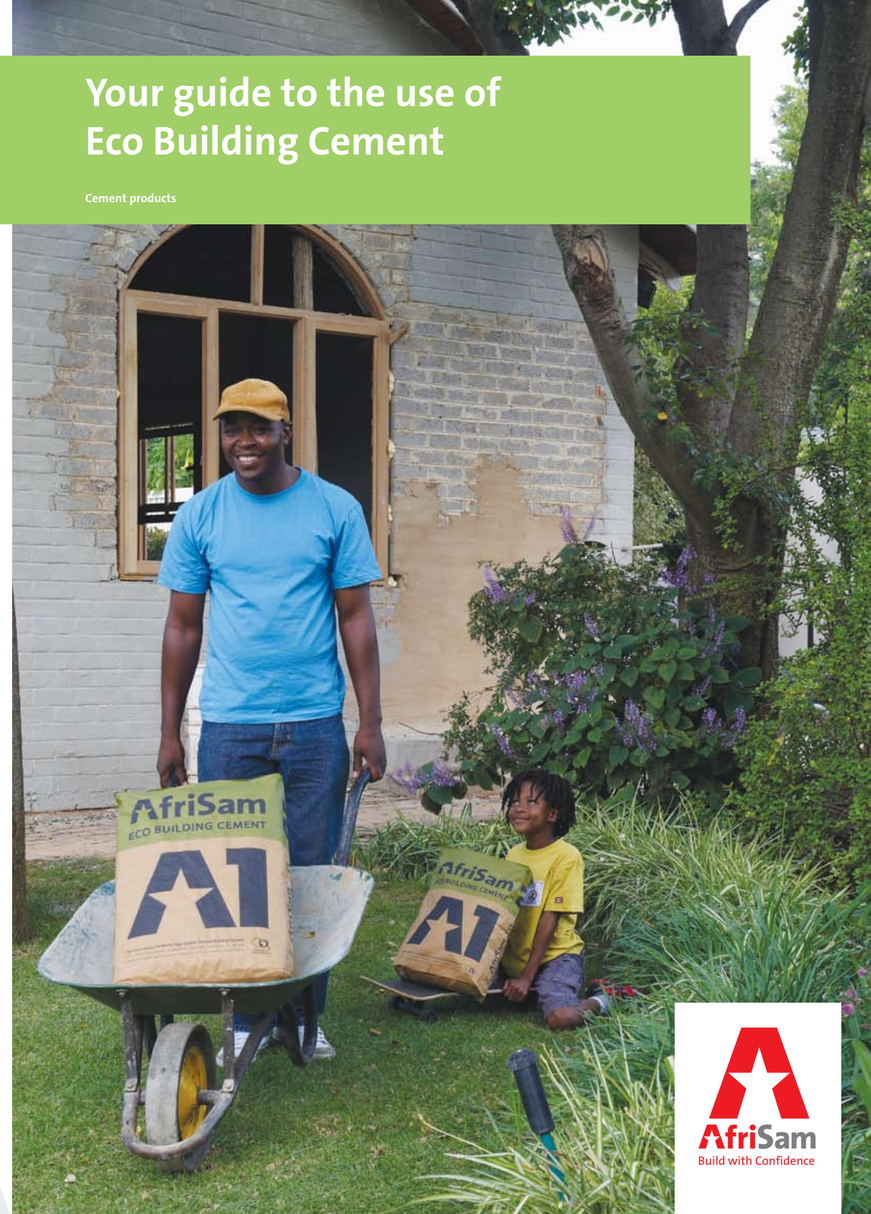
CO_2 rated cement

Eco Building Cement comes hot on the heels of the company's introduction of a CO_2 rating system on all its cement products, which indicates the Carbon Footprint of each product relative to the world average as calculated by the World Business Council for Sustainable Development (WBCSD). This is now printed on each and every cement bag that AfriSam produces, to enable consumers to make informed and responsible decisions on the products they purchase.

Delivering on quality in a responsible way

With the increasing environmental awareness of our customers, we not only offer quality products but customer peace of mind through our commitment to sound environmental stewardship.





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Guide to the use of Eco Building Cement

Mixes for concrete

NB For all mixes indicated, the 50 kg bag is referred to.

2 x 50 kg = 5 x 20 kg

Low-strength concrete

15 MPa (nominal at 28 days)

Suitable for unreinforced foundations for single storey houses and free-standing walls. Use 1 part AfriSam Eco Building Cement + 3½ parts coarse sand + 3½ parts stone. To make a mix for 1 cubic metre of low-strength concrete you will need: 5,7 (50 kg) bags of AfriSam Eco Building Cement + 0,65 cubic metres of coarse sand + 0,65 cubic metres stone. Allow an additional 10% of required quantities for wastage.

Batching by bucket

Eco Building Cement	Coarse sand	Stone	Approximate yield
1 Bucket	3½ Buckets	3½ Buckets	5½ Buckets

Batching by wheelbarrow

Eco Building Cement	Coarse sand	Stone	Approximate yield
2 x 50 kg Bags	3½ Wheelbarrows	3½ Wheelbarrows	0,35 m³

Quantities per m³ of concrete

Eco Building Cement	Coarse sand	Stone	Approximate yield
5,7 x 50 kg Bags	0,65 m³	0,65 m³	1 m³

Medium-strength concrete

25 MPa (nominal at 28 days)

Suitable for reinforced foundations and slabs, light-duty house floors, paths, patios, steps, driveways and garage floors. Use 1 part AfriSam Eco Building Cement + 2½ parts coarse sand + 2½ parts stone. To make a mix for 1 cubic metre of medium-strength concrete you will need: 7,7 (50 kg) bags AfriSam Eco Building Cement + 0,63 cubic metres of coarse sand + 0,63 cubic metres stone. Allow an additional 10% of required quantities for wastage.

Batching by bucket

Eco Building Cement	Coarse sand	Stone	Approximate yield
1 Bucket	2½ Buckets	2½ Buckets	4 Buckets

Batching by wheelbarrow

Eco Building Cement	Coarse sand	Stone	Approximate yield
2 x 50 kg Bags	2½ Wheelbarrows	2½ Wheelbarrows	0,26 m³

Quantities per m³ of concrete

Eco Building Cement	Coarse sand	Stone	Approximate yield
7,7 x 50 kg Bags	0,63 m³	0,63 m³	1 m³

High-strength concrete

30 MPa (nominal at 28 days)

Suitable for suspended structural beams and slabs, precast items such as flagstones and heavy-duty floors such as workshop floors. Use 1 part AfriSam Eco Building Cement + 2 parts coarse sand + 2 parts stone. To make a mix for 1 cubic metre of High-Strength concrete you will need: 9,23 (50 kg) bags of AfriSam Eco Building Cement + 0,6 cubic metres of coarse sand + 0,6 cubic metres stone. Allow an additional 10% of required quantities for wastage.

Batching by bucket

Eco Building Cement	Coarse sand	Stone	Approximate yield
1 Bucket	2 Buckets	2 Buckets	3½ Buckets

Batching by wheelbarrow

Eco Building Cement	Coarse sand	Stone	Approximate yield
2 x 50 kg Bags	2 Wheelbarrows	2 Wheelbarrows	0,22 m³

Quantities per m³ of concrete

Eco Building Cement	Coarse sand	Stone	Approximate yield
9,23 x 50 kg Bags	0,60 m³	0,60 m³	1 m³

Note: Specified strength is the characteristic strength of the mix at an age of 28 days.

Mixes for mortar

Class I - Mortar

Highly stressed masonry incorporating high strength structural units as used in multi-storey loadbearing buildings and walls exposed to severe dampness.

Batching by bucket

Eco Building Cement	Building sand	Approximate yield
1 Bucket	4 Buckets	3½ Buckets

Batching by wheelbarrow

Eco Building Cement	Building sand	Approximate yield
2 x 50 kg Bags	4 Wheelbarrows	0,22 m³

Quantities per m³ of mortar

Eco Building Cement	Building sand	Approximate yield
9,23 x 50 kg Bags	1,20 m³	1 m³

Class II - Mortar Mix A

Exterior/ Exposed to dampness.

Batching by bucket

Eco Building Cement	Building sand	Approximate yield
1 Bucket	4½ Buckets	3¾ Buckets

Batching by wheelbarrow

Eco Building Cement	Building sand	Approximate yield
2 x 50 kg Bags	4½ Wheelbarrows	0,24 m³

Quantities per m³ of mortar

Eco Building Cement	Building sand	Approximate yield
8,33 x 50 kg Bags	1,22 m³	1 m³

Class II - Mix B

Interior/ Dry.

Batching by bucket

Eco Building Cement	Building sand	Approximate yield
1 Bucket	6 Buckets	4⅔ Buckets

Batching by wheelbarrow

Eco Building Cement	Building sand	Approximate yield
2 x 50 kg Bags	6 Wheelbarrows	0,3 m³

Quantities per m³ of mortar

Eco Building Cement	Building sand	Approximate yield
6,66 x 50 kg Bags	1,3 m³	1 m³

Quantities of popular sizes of masonry units and corresponding mortar requirements
Exterior / Exposed to dampness

Masonry unit type	Masonry unit size (mm)			Masonry units per m² (single leaf wall)	Mortar required in m³	
	Length	Width	Height		Per 1000 units	Per 100 m² of walling
Standard brick	222	106	73	52	0,32	1,66
Maxi brick	290	140	90	34	0,55	1,87
Common Blocks	390 390 390	90 140 190	190 190 190	13 13 13	0,53 0,83 1,12	0,69 1,08 1,46

Quantities for mix B mortar
Interior / Dry

Masonry unit type	Masonry unit size (mm)			50 kg bags of Eco Building Cement per 1000 units	Cubic metres of building sand per 1000 units
	Length	Width	Height		
Standard brick	222	106	73	2,1	0,4
Maxi brick	290	140	90	3,6	0,7
Common Blocks	390 390 390	90 140 190	190 190 190	3,5 5,5 7,4	0,7 1,1 1,4

Notes

1. The tables are based on exact sizes of solid masonry units with 10 mm thick bedding, 10 mm thick vertical joints and no wastage.

2. There are a number of factors which may influence mortar quantities. The following adjustments should be made:
   - To allow for wastage, increase all mortar mix quantities:
     - by 10% for excellent control on site
     - by 30% for average control on site
   - For hollow units, reduce mortar quantities by:

Width of units, mm	% Reduction
90-110 mm	20
140 mm	30
190-220 mm	40

   - For units with perforations or holes, increase mortar quantities by 15%.
   - For units with frogs with the frog laid face up (as required for structural walls), increase mortar quantities by 15%.

Mixes for plaster

Mix A

Exterior/ Exposed to dampness.

Batching by bucket

Eco Building Cement	Plaster sand	Approximate yield
1 Bucket	4½ Buckets	3½ Buckets

Batching by wheelbarrow

Eco Building Cement	Plaster sand	Approximate yield
2 x 50 kg Bags	4½ Wheelbarrows	0,24 m³

Quantities per m³ of plaster

Eco Building Cement	Plaster sand	Approximate yield
8,0 x 50 kg Bags	1,22 m³	1 m³

Area of plaster per 2 bag mix

Eco Building Cement	Plaster thickness	Area of wall (m²)
	10 mm	24
	15 mm	16
	20 mm	12

Mix B

Interior/ Dry.

Batching by bucket

Eco Building Cement	Plaster sand	Approximate yield
1 Bucket	6 Buckets	4⅔ Buckets

Batching by wheelbarrow

Eco Building Cement	Plaster sand	Approximate yield
2 x 50 kg Bags	6 Wheelbarrows	0,3 m³

Quantities per m³ of plaster

Eco Building Cement	Plaster sand	Approximate yield
6,0 x 50 kg Bags	1,3 m³	1 m³

Area of plaster per 2 bag mix

Eco Building Cement	Plaster thickness	Area of wall (m²)
	10 mm	30
	15 mm	20
	20 mm	15

Water comment
Only use sufficient water to make the mixture workable. Excessive water use results in reduced strength.

Retempering
All mixes should be used within a maximum of two hours after being mixed and must **never** be retempered by mixing in additional water, as this reduces the resultant strength of the mix.

Curing
After your concrete, mortar and plaster work has been completed, it is essential to protect it from the sun and wind by covering it with a plastic sheet, damp sand or hessian and to keep it moist for a minimum of 7 days.

Cold weather - CAUTIONARY NOTE
All cements gain strengths at a slower rate at low temperatures and concrete, mortars and plasters must be protected from freezing.

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