Your guide to the use of
ECO BUILDING CEMENT

www.afrisam.com

Creating Concrete Possibilities

AfriSam

AfriSam Eco Building Cement

Mixes for concrete

Low-strength concrete

10-15MPa (nominal at 28 days)

Suitable for unreinforced foundations for single-storey houses and free-standing walls. Allow an additional 10% of required quantities for wastage.

2 bags = 1 wheelbarrow

Batching by bucket

All Purpose Cement	Coarse sand	Stone	Approximate yield
1 bucket	4 buckets	4 buckets	6 buckets

Batching by wheelbarrow

Eco Building Cement	Coarse sand	Stone	Approximate yield
2 bags (1=50kg)	4 wheelbarrows	4 wheelbarrows	0,39m³

Quantities per m³ of concrete

Eco Building Cement	Coarse sand	Stone	Approximate yield
5,13 bags (1=50kg)	0,67m³	0,67 m³	1m³

Medium-strength concrete

15-25MPa (nominal at 28 days)

Suitable for reinforced foundations and slabs, light-duty house floors, paths, patios, steps, driveways and garage floors. Allow an additional 10% of required quantities for wastage.

2 bags = 1 wheelbarrow

Batching by bucket

All Purpose Cement	Coarse sand	Stone	Approximate yield
1 bucket	3 buckets	3 buckets	4½ buckets

Batching by wheelbarrow

Eco Building Cement	Coarse sand	Stone	Approximate yield
2 bags (1=50kg)	3 wheelbarrows	3 wheelbarrows	0,3m³

Quantities per m³ of concrete

All Purpose Cement	Coarse sand	Stone	Approximate yield
6,59 bags (1=50kg)	0,64m³	0,64m³	1m³

High-strength concrete

25-30MPa (nominal at 28 days)

Suitable for suspended structural beams and slab, precast items such as flagstones and heavy-duty floors such as workshop floors. Allow an additional 10% of required quantities for wastage.

2 bags = 1 wheelbarrow

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 bags (1=50kg)	2½ wheelbarrows	2½ wheelbarrows	0,26m³

Quantities per m³ of concrete

Eco Building Cement	Coarse sand	Stone	Approximate yield
7,7 bags (1=50kg)	0,63m³	0,63m³	1m³

Ultra high-strength concrete

45MPa (nominal at 28 days)

Suitable for suspended structural beams and slabs, columns and water-retaining structures. Allow an additional 10% of required quantities for wastage.

2 bags = 1 wheelbarrow

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 bags (1=50kg)	2 wheelbarrows	2 wheelbarrows	0,22m³

All Purpose Cement	Coarse sand	Stone	Approximate yield
9,23 bags (1=50kg)	0,6m³	0,6m³	1m³

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	3⅓ buckets

Batching by wheelbarrow

Eco Building Cement	Building sand	Approximate yield
2 bags (1=50kg)	4 wheelbarrows	0,229m³

Quantities per m³ of concrete

Eco Building Cement	Building sand	Approximate yield
9,23 bags (1=50kg)	1,20m³	1m³

Class II - Mix A

Exterior/Exposed to dampness.

Batching by bucket

Eco Building Cement	Building sand	Approximate yield
1 bucket	4½ buckets	3⅔ buckets

Batching by wheelbarrow

Eco Building Cement	Building sand	Approximate yield
2 bags (1=50kg)	4½ wheelbarrows	0,24m³

Quantities per m³ of concrete

Eco Building Cement	Building sand	Approximate yield
8,33 bags (1=50kg)	1,22m³	1m³

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 bags (1=50kg)	6 wheelbarrows	0,3m³

Quantities per m³ of concrete

Eco Building Cement	Building sand	Approximate yield
6,66 bags (1=50kg)	1,3m³	1m³

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 100m² of walling
Standard brick	222	100	75	52	0,32	1,66
Maxi brick	290	140	90	34	0,55	1,87
Common brick	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 All Purpose 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 brick	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 10mm thick bedding, 10mm 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
90-110mm	20
140mm	0
190-220mm	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

Class II - Mix A

Exterior/Exposed to dampness.

Batching by bucket

Eco Building Cement	Building sand	Approximate yield
1 bucket	4½ buckets	3⅔ buckets

Batching by wheelbarrow

Eco Building Cement	Building sand	Approximate yield
2 bags (1=50kg)	4½ wheelbarrows	0,24m³

Quantities per m³ of concrete

Eco Building Cement	Building sand	Approximate yield
8,0 bags (1=50kg)	1,22m³	1m³

Area of plaster per 2 bag mix

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

Class II - Mix B

Interior/Dry.

Batching by bucket

Eco Building Cement	Building sand	Approximate yield
1 bucket	6 buckets	4⅓ buckets

Batching by wheelbarrow

Eco Building Cement	Building sand	Approximate yield
2 bags (1=50kg)	6 wheelbarrows	0,3m³

Quantities per m³ of concrete

Eco Building Cement	Building sand	Approximate yield
6,0 bags (1=50kg)	1,3m³	1m³

Area of plaster per 2 bag mix

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

Water usage

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 strength at a slower rate at low temperatures and concrete, mortar and plaster must be protected from freezing.

A masterpiece of cement engineering

AfriSam Eco Building Cement, the greener alternative, is the result of our company-wide strategy geared towards minimising the impact of our operations on the environment. It was developed through careful research and development by our cement technicians for use in all structural, building and masonry applications.

It possesses the following properties:

- Reduces heat of hydration in mass concrete.
- Improves concrete's resistance to chemical attack, including sulphate, chloride and soft water.
- Makes concrete highly resistant to alkali-aggregate reaction.
- Reduces permeability of concrete in water-retaining structures.
- Easy to work with and produces consistently excellent results every time.

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 consistently high quality products and our Eco Building Cement is no exception.

- AfriSam manufacturing facilities are ISO 9001 certified.
- We have 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 42,5N MPa strength class.

Performance

AfriSam Eco Building Cement produces durable concrete, mortar and plaster that will remain strong for years. It can be successfully used in any application where high early strength is not of primary importance. Its long-term strengths are consistent with cements in the 42,5N MPa strength class.

The choice for every job

AfriSam Eco Building Cement offers consistent strength, workability and durability, making it ideal for the following applications:

- Brick and block making.
- Reservoirs and swimming pools.
- Precast operations.
- Mining applications.
- Structural concrete.
- Plaster, mortar and shotcrete.

Tips for storage

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

Availability

AfriSam Eco Building Cement is available at reputable merchants in select areas where AfriSam is supplied. Please contact our customer service department for the location of your nearest stockist.

Health and safety

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

- The recommended limit for total inhalable dust is 10mg/m³ and the respirable recommended limit is 5mg/m³.
- 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

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

AfriSam's Eco Building Cement - the greener alternative

AfriSam Eco Building Cement was produced using a unique combination of Portland cement and mineral components. It is the most environmentally responsible cement available. The cement has a carbon footprint almost half that of Ordinary Portland Cement, a milestone achieved with enhanced product performance. It is SABS approved and complies fully with the EN197 and SANS 50197-1 specifications.

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.

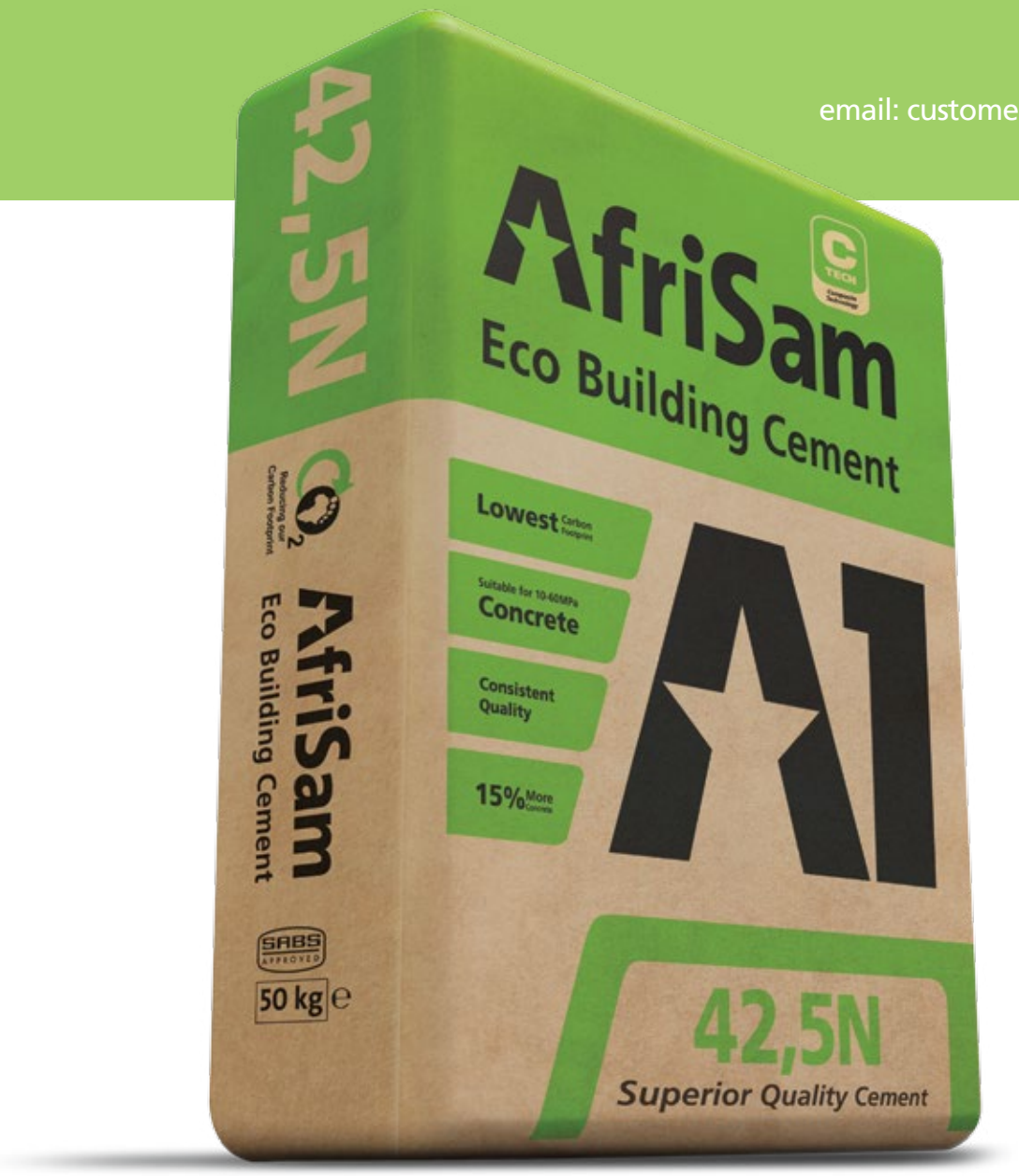
CO_2 rating

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.

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



OUR QUALITY PROMISE

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.

Reducing our Carbon Footprint

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.

30/05/2014