



Superfine Technical Data Sheet

Low carbon, super high grade
GGBS for specialist applications



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Ecocem Superfine is a finer grade of Ground Granulated Blastfurnace Slag (GGBS) designed to be used as a specialist additive in binders, all dry-mortar applications, Ultra High Performance Concrete, and precast concrete to help reduce carbon emissions, improve rheology, strength, and durability.

Developed by grinding Granulated Blastfurnace Slag (GBS) to a very fine particle size, Ecocem Superfine can be added to products to significantly enhance a range of performance criteria.

Superfine is a white powder that can be used to improve the finish of concrete and reduce the amount of pigment required. It is less irritant, due to lower pH and to lower Cr(VI) content, making it a safe and effective additive for your building material formulations.

Where can Superfine be used



Precast Concrete



Low Carbon Binders



Industrial Mortars



Grout



High Performance/Ultra
High Performance Concrete

Benefits of using Ecocem Superfine

IMPROVED REACTIVITY & STRENGTH

Superfine is ground to such a high particle size that it can be used to boost the GGBS component of material formulations resulting in increased early age and final strength. Ecocem Superfine is used to increase the strength of a variety of applications, most notably those that already contain GGBS.

IMPROVED RHEOLOGY

Superfine can be used to improve the performance of several products without negative impact on rheology of mortar and concrete mixes, that benefit from Superfine addition, enabling the reduction of plasticiser demand by up to 30%.

WHITER COLOUR

The lighter colour of Ecocem Superfine can lower your pigment requirements and improve the surface finish, particularly compared to silica fume and ordinary cement.

IMPROVED DURABILITY

The fineness of Ecocem Superfine improves the microstructure of material formulations making them more durable and better performing.

LOWER CARBON FOOTPRINT

Ecocem Superfine has a carbon footprint of 32kg CO₂ per tonne and has a verified Environmental Product Declaration.



Case Study:

High Performance Concrete Trial with Ecocem Superfine

Ecocem carried out extensive testing in Abu Dhabi, UAE to compare the performance of Superfine in high performance concrete with Silica Fume. The results demonstrated that Ecocem Superfine can replace Silica Fume and achieve superior performance in ultra-high strength concrete.

Results:

		10% Silica Fume	10% Superfine
CEM I (kg/m ³)		440	440
Silica Fume (kg/m ³)		44	-
Superfine (kg/m ³)		-	44
Super plasticiser (l/m ³)		5.3	5.1
Slump (mm)	initial	240	250
	30 mins	230	240
	60 mins	220	230
	90 mins	205	220
	120 mins	190	210
Strength (MPa)	1d	38.5	39.0
	3d	62.5	68.5
	7d	74.0	78.5
	28d	85.0	87.0

Benefits



Cost effective solution for ultra high and higher performance concrete



Lighter brighter finish



Sustainable solution

Results

- Like for like replacement for Silica-Fume
- Improved rheology
- Reduction in Superplasticiser
- Better slump retention
- Comparable strength at 1 day & 28 days





Product Information

Chemical Composition

The typical chemical composition of Superfine GGBS is listed below:

SiO ₂	Al ₂ O ₃	CaO	MgO	TiO ₂	SO ₃	Cl-	S ₂	Na ₂ O _{equiv.}
35.7	11.6	41	8.7	0.6	0.3	0.01	0.85	0.5

Ecocem Superfine is available in:



1 tonne bulk bags delivered by curtain sided vehicle



30 tonne bulk tanker

Other Values

BLAINE	7000 - 8000cm ² /g
D50	5 μ m
RELATIVE DENSITY	2.9g/cm ³
BULK DENSITY	0.8kg/m ³
EMBODIED CARBON (GWP)	32kg CO ₂ /tonne



Certification

Ecocem GGBS has undergone extensive testing in accordance with the I.S. EN 15167 GGBS Standard. The product bears the CE mark 0050-CPR - 0074 and has received an EC certificate of conformity to System +1 of the NSAI. In accordance with the Construction Products Regulations, a declaration of performance is available upon request.



Technical Assistance

Ecocem Superfine is a versatile product that can be used to enhance performance in a wide variety of applications. Ecocem's innovation team has extensive experience with concrete, mortars, and binders and can assist you in incorporating Superfine into your formulation. To begin your Superfine trial, please contact technical@ecocem.ie.



The future can be built. Come with us.

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