



PRODUCT DATA SHEET

DP 83 – Cement Replacement

Description - DP 83 is a high efficiency pozzolanic material, obtained by selection and processing of power station fly ashes resulting from the combustion of pulverised bituminous/sub-bituminous coal. DP 83 is subjected to strict quality control.

General Information

Presentation	Finely divided dry powder
Colour	Greyish white
Bulk Weight	Aprox. 0.9 metric ton per cubic meter
Specific density	Aprox. 2.3 metric ton per cubic meter
Particle size	95% < 45 micron
Particle shape	Spherical
Package	30 kg bags, 1 metric ton big-bags and bulk tankers

Recommended uses

Concrete	General purpose plain and reinforced structural concrete with 28 day strength levels exceeding 60 MPa. Special purpose concrete, such as pre-stressed pre-cast concrete and high performance concrete.
Cement	High grade, sulphate resistant/marine resistant blended cements (Portland Pozzolana Cement).
Mortar	High performance mortars for use on external plastering on sea areas. Mortars to be used in the repair of structural concrete.
Grout	Specialised micro-grouts for crack sealing in repair works.

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Recommended dosages

The dosages of DP 83 and the other mix constituents should be determined by appropriate mix design testing. They will depend on required mix properties, cement grade and properties, admixtures used, etc. The following figures are indicative.

	Percentage of total binder	Dosage
High strength concrete >50MPa	25%	100 – 120 kg/m ³
Medium grade concrete (30-50 Mpa)	33%	100 – 130 kg/m ³
Pre-stressed pre-cast concrete	20%	80 - 100 kgs/m ³
High Performance concrete	25%	80 – 100kgs/m ³
High grade Portland Pozzolana Cement	25%	-----
High performance mortars	25%	-----
Mortars for concrete repair	25%	-----
Micro-grouts for crack sealing	33%	-----

Typical concrete performance – Replacement 1:1
(compared to plain OPC mixes)

	Better	Similar	Worse
Water Demand	Reduced by 8% - 10%		
Workability	Improved		
Setting Time	Increased 15 - 45 min		
Long Term Strength	Increased 25% - 30%		
28 day Strength	Increased 15% - 20%		
Early Strength (7 days)		Similar	
Required Curing		Similar	
Permeability	Reduced 2 - 5 times		
Sulphate Attack	Reduced		
Chlorine Penetration	Reduced		