



Technical Data Sheet

Product name:

Portlandsement

Product class:

Main class: CEM II / A-M, Portland composite cement.

Strength class: 42.5R, according to standard EN 197-1:2000.

Product description:

Portlandsement is a cement of the portland composite type and is intended for general purpose use in concrete and mortar. It renders high overall strength and comparatively high early strength. It contains 6% microsilica of the silica fume type and 3% natural pozzolana of the rhyolite type, both intermilled. Such quantities of silica fume, together with the finely ground rhyolite, impart the cement a very strong resistance to damages caused by alkali-silica reactions, that could possibly occur in alkali-reactive aggregates in concrete at heavy moisture loads. Comparatively, the microsilica enhances the strength of concrete and, furthermore, reduces its permeability. A resulting low water absorption of properly formulated concrete generally imparts a strong resistance to deteriorating effects such as freeze-thaw effects, as well as dissolved chloride ions and carbon dioxide, both of which can cause corrosion of reinforcing steel.

Below are typical physical property and composition values as well as requirements as and where specified according to EN 197-1:2000 for the cement class.

Physical properties:	PORTLANDSEMENT	CEM II / A-M	UNIT
Density	3.05		g/cm ³
Fineness - particle surface (Blaine)	4600		cm ² /g
- retained on a 45 µm sieve	14		%
Expansion (Le Chatelier)	1	≤10	mm
Initial setting time (Vicat)	110	≥60	minutes
Compressive strength - after 2 days	25	≥20	MPa
(cf. EN 196) - after 28 days	54	≥42.5; ≤62.5	MPa

Chemical composition:

SiO ₂	25.4		%
Al ₂ O ₃	4.8		%
Fe ₂ O ₃	3.2		%
CaO (including free lime)	57.0		%
MgO (based on clinker analysis)	3.1		%
SO ₃	3.3	≤4.0	%
Cl	0.02	≤0.1	%
Na ₂ O-eq. (based on clinker analysis)	1.5		%
Free lime (based on clinker analysis)	1.5		%

Clinker Phases: C₃S: 52 C₂S: 20 C₃A: 7.5 C₄AF: 11.5 (Bogue calculation)

Quality control:

Portlandsement is manufactured under the certification scheme of ISO 9001 and is subject to an independent quality control by the Icelandic Building Research Institute, including an attestation of the CE conformity marking. EC certificate of conformity no.: 1066-CPD-01.

Delivery:

Portlandsement is a stock product available in bulk, in 1,000 and 1,500 kg plastic sacks, and 40 kg paper bags.

The technical information given on this sheet is in accordance with the best of our present knowledge; it is intended for guidance only and is subject to alteration without notice; the quoted property and composition values, being typical ones, are approximate only.

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