



Normal Cement (Bulk)

I.S. EN 197-1:2001 CEM II / A-L Class 42.5N

Normal Cement is a high quality general purpose cement and is suitable for most applications.

The product has been specifically designed to reduce the carbon intensity of cement production and complies with the specification for Portland-limestone cement in I.S. EN 197-1 'Cement Part 1: Composition, Specifications and Conformity Criteria for Common Cements'. The product is independently certified by the National Standards Authority of Ireland and is CE marked.

Normal Cement is produced by grinding a combination of cement clinker, selected limestone and grinding aids, along with a small quantity of gypsum, to produce the final fine grey powder. Cement clinker is made by fusing together, at high temperatures, a precisely controlled blend of very finely ground limestone and shale. Normal Cement CEM II / A-L is manufactured in modern dry process works at Platin, Co Meath and Castlemungret, Co Limerick and is supplied in bulk.

Applications

Normal Cement is suitable for a wide range of applications where no special or unusual considerations arise. Typical applications include use in general readymixed and site-mixed concrete, precast and prestressed concrete, masonry, mortars, renders and grouts. Normal Cement is also suitable for use with a wide range of approved additives and admixtures.

Product Data

Regular information is available on the performance aspects of Normal Cement, which are of direct interest to specifiers and users.

The requirements of I.S. EN 197-1 for CEM II/A-L class 42.5N cement are compared hereafter to typical performance data for Normal Cement.

Setting time

I.S. EN 197-1 requires a minimum initial setting time of 60 minutes. Initial set for Normal Cement typically exceeds 90 minutes.

Strength

Minimum compressive strengths for standard mortar prisms of 10 MPa at 2 days and 42.5 MPa at 28 days are stipulated in I.S. EN 197-1 for cement class 42.5N, in accordance with particular compliance rules.

Class 42.5N typical mortar prism strengths are in the range 50-60 MPa at 28 days for Normal Cement, with approx. 75% of this strength being achieved at 7 days.

Users are particularly interested in strength development and durability in concrete. Strength is significantly affected by mix constituents and proportions, ambient temperature and the efficiency of curing. A durable concrete requires an adequate cement content and a low water/cement ratio. Guidance is available in Irish Standards for concrete and concrete products and, for all applications, directly from Irish Cement's Technical Marketing Department.





Chemical Composition

Cement clinker consists predominantly of compounds formed from Calcium, Silica, Alumina and Iron. Calcium Sulfate in the form of gypsum is added to cement to control the setting time. Limestone (Calcium Carbonate), complying with specified requirements in I.S. EN 197-1, is present in the range 6% - 20% in CEM II/A-L Normal Cement, as stipulated in I.S. EN 197-1. (Limestone content will not exceed 7% in 2007/2008).

Specific data on chemical and compound composition of Normal Cement is available on request.

Test Certificates

Routine product test data covering the key physical and chemical parameters is made available on a weekly basis on request.

Quality Assurance and Certification

In addition to the company's own guarantee, Normal Cement is CE marked in accordance with the requirements of the EU Construction Products Directive. The CE mark has been awarded by the National Standards Authority of Ireland (NSAI).

Irish Cement Ltd holds Quality Systems Certification to I.S. EN ISO 9001: 2000 and Environmental System Certification to I.S. EN ISO 14001: 2004 from NSAI.

Storage

Cement should be stored dry, otherwise its quality will deteriorate through premature hydration and carbonation. Moisture from the air can be as harmful as direct moisture. Cement stored in bulk in a well-maintained silo should maintain its quality for some months.

Health & Safety

Cement is irritating to eyes, respiratory system and skin. Keep out of the reach of children. Avoid contact with the skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. Wear suitable protective clothing. A chromium VI reducing agent has been added and is effective for 2 months from the date of despatch if stored in dry conditions. A detailed Safety Data sheet is available from Irish Cement Limited (Tel. 041 987 6000).

Advice and Information

As part of its ongoing commitment to the quality of design and construction in concrete, Irish Cement provides a comprehensive technical advisory service on the use of cement and concrete.

This technical support is provided by a team of civil engineers, with wide experience of cement and concrete technology, who are available to answer queries and give advice.

They can be contacted at: Technical Marketing Department, Irish Cement Ltd, Platin, Drogheda, Co Louth.

Tel: 041 987 6464 Fax: 041 987 6400

Email: info@irishcement.ie Web: www.irishcement.ie

Other Cements

Irish Cement Limited also manufactures Rapid Hardening Portland Cement and Sulfate Resisting Portland Cement. Similar data sheets on each of these products are available on request.

OCTOBER 2007

