

Heidelberg Materials Bulk CEM II/A-LL 52.5N Cement

Technical data sheet

Heidelberg Materials Bulk 52.5N cement is manufactured to comply with the requirements of BS EN 197-1 CEM II Cement. Heidelberg Materials Bulk CEM II/A-LL 52.5N cement incorporates quality-controlled limestones to produce a high-performance cement with enhanced sustainability credentials.

Heidelberg Materials Bulk CEM II/A-LL 52.5N cement is suitable for use in concrete, mortars, renders and screed.

Quality

Heidelberg Materials Bulk CEM II/A-LL 52.5N cement is produced using carefully selected raw materials. Strict quality control throughout each stage of the manufacturing process ensures that a consistent final product is achieved.

Heidelberg Materials Bulk CEM II/A-LL 52.5N cement is UKCA marked in accordance with Construction Products Regulation (Amendment etc.) (EU Exit) Regulations 2020, which provides independent third-party certification of product conformity. It confirms that in addition to applying a system of factory control production control, based on the ISO 9001 and defined in BS EN 197-2, independent sampling and testing of the cement has confirmed conformity with all the requirements of BS EN 197-1.

Heidelberg Materials Bulk CEM II/A-LL 52.5N Cement is suitable for use with a wide range of additives and admixtures to extend the properties and uses of concretes, mortars, renders and screeds. It is recommended that trial mixes are carried out to determine optimum proportions.

Data and certification

Current data and routine certification of tests for all essential characteristics are available on a weekly basis. These include including compressive strength of mortar prisms, fineness, setting times, soundness and chemical composition including alkali levels and can be accessed from www.heidelbergmaterials.co.uk.

Strength

Heidelberg Materials Bulk CEM II/A-LL 52.5N cement achieves similar early strength to conventional CEM I cement due to careful controls in manufacturing.

The durability, ultimate strength, shrinkage and creep associated with concrete made from Bulk CEM II/A-LL 52.5N are similar to those made with conventional CEM I cement.

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Strength (continued)

Optimum performance in terms of strength and durability is achieved in concrete when the water/cement ratio is kept as low as possible, consistent with ensuring satisfactory placing and thorough compaction. Other factors affecting strength include conditions of curing as well as the individual properties of the constituent materials and their proportions in the mix.

The potential strength of any Heidelberg Materials Bulk CEM II/A-LL 52.5N cement-based product will best develop under conditions where loss of mixing water is minimised during initial hardening. Appropriate curing for optimum performance is essential as well as preventing moisture loss to the surrounding materials. The rate of strength development will depend on ambient conditions and the initial temperature of the mix.

In hot weather and mass concrete pours there is increased risk of loss of water by evaporation, cracking caused by thermal stresses and reduced ultimate strength.

Concrete mix design

Concrete mix design needs to be adapted to suit individual circumstances. It is strongly recommended that trial mixes are carried out prior to commencement of work to ensure that the mix design and material combinations meet the requirements of the specification and method of use.

Please refer to current standards and recommendations for the manufacture of concretes, renders mortars and screeds.

The general principles of concrete mix design using Heidelberg Materials Bulk CEM II/A-LL 52.5N cement are similar to those when using conventional CEM I cement. However, some modifications to mix design may be helpful to achieve the full benefit of its properties.

The chemical resistance of products made from Heidelberg Materials Bulk CEM II/A-LL 52.5N is similar to those made from conventional CEM I cement. Therefore, the same general requirements to achieve durability should be applied, i.e. cement content, supplementary additions such as GGBS and fly ash, water/cement ratio, compaction and curing.

Curing methods

The term curing refers to methods to prevent loss of moisture from exposed surfaces of concrete in the first 7 days after casting, the following are the most common methods.

- Covering with impermeable sheeting ensuring that the edges are held down
- Covering with wet sacking (this must be kept wet by spraying with clean water)
- Ponding with clean water
- Spraying with a proprietary curing membrane preferably pigmented to ensure full coverage

Admixtures and cement replacements

Admixtures such as air-entraining agents and workability aids and cement replacements such as Heidelberg Materials Bulk GGBS are compatible with Heidelberg Materials Bulk CEM II/A-LL 52.5N cement, although reference should be made to BS 8500 to ensure that correct maximum replacement levels are used. It is recommended that trial mixes are carried out to verify performance.

Health and Safety

Cement causes skin, eye and respiratory irritation, severe burns and dermatitis. Always wear suitable personal protective equipment (PPE) and refer to the full Material Safety Data Sheet (MSDS) for further information.

Hexavalent Chromium (vi)

In accordance with the REACH Regulations, the soluble chromium (VI) content is limited to a maximum of 2ppm. The chromium (VI) content is determined in accordance with EN 196-10.

Availability

Heidelberg Materials Bulk CEM II/A-LL 52.5N cement is available across the United Kingdom, despatched by Bulk road tankers to customers local to the cement works, and by rail and road via Heidelberg Materials Cement distribution hubs.

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Conditions of use

- Methods to prevent loss of moisture from exposed surfaces of concrete, known as curing, should be employed for at least the first 7 days after casting
- As a general rule, concrete should be placed within the range of 5°C to 30°C.
- In cold weather, freshly poured concrete should be protected from low temperatures to avoid frost damage.
- In hot weather and mass concrete pours there is increased risk of loss of water by evaporation, cracking caused by thermal stresses and reduced ultimate strength.
- Heidelberg Materials cannot be held responsible for poor workmanship.
- Heidelberg Materials Bulk CEM II/A-LL 52.5N cement is made from natural materials, therefore slight colour variations may occur.
- Heidelberg Materials Bulk CEM II/A-LL 52.5N cement produced at different manufacturing works may also have variation in colour.

Technical support and further information

For further advice please contact Heidelberg Materials cement technical support on **0330 123 4525** or **cement@uk.heidelbergmaterials.com**

Further copies of this technical data sheet may be obtained from www.heidelbergmaterials.co.uk