



CEM I 42,5 N

Portland cement MSZ EN 197-1:2011

Beremend



In harmony with the environment.

DUNA-DRÁVA CEMENT
HEIDELBERGCEMENT Group

Portland cement MSZ EN 197-1:2011

The CEM I 42,5 N type portland cement as construction binder is suitable for the following applications:

- prefabricated concrete paving stones, concrete blocks, kerbstones, artificial stones
- paving exposed to high mechanical stress, abrasion resistant and frost resistant concretes
- pre and post-tensioned concrete structures
- adhesives, plasters, mortars
- monolithic reinforced concrete structures for structural engineering

Composition, cement components:

Portland cement clinker, additive content according to standard composition between 0-5%, the required amount of setting control material (gypsum, REA gypsum), chromate reducing agent.

Key features, areas of application:

The CEM I 42,5 N portland cement is a cement with high early and ultimate strength, high specific surface area and significant heat evolution.

Due to its high early strength and heat evolution, it is primarily recommended for rapid formwork demand and low ambient temperatures. Its colour is medium grey.

Its use is beneficial in the production of concrete and reinforced concrete with strength classes C 25/30 to C 55/67, pre and post-tensioned concrete structures, industrial floor covering and paving exposed to high mechanical stress, and the manufacture of concrete tiles, artificial stones and paving stones. In winter, when used at low ambient temperatures, the critical strength required for concrete to withstand freezing is achieved more quickly, thus reducing the cost of winterization.

Suitable for the production of frost-resistant concrete (XF1 – XF4), abrasion resistant concrete (XK1 – XK4) and watertight concrete (XV1 – XV3).

Suggested use for the production of concrete mix and the construction of concrete structures:

The use of cement requires basic construction knowledge. If you do not have sufficient professional knowledge, consult a concrete technologist.

Basic criteria for the production of durable concrete:

- low water content
- as high density as possible
- meticulous aftercare

When creating the concrete mix, the amount of added mixing water should be as little as possible. To improve the workability of the concrete, it is recommended to add plasticizer additives. In order to achieve higher strength and a more favourable concrete structure, care must be taken to ensure that the fresh concrete is properly compacted. Aftercare of the concrete must be started immediately after placing, by spraying and flooding it with water, covering it with plastic, keeping it in the formwork, and applying a vapour barrier coating. It is advised to keep the concrete moist for 7-21 days without interruption, depending on the composition of the concrete mix, the type of concrete structure and the ambient temperature. In the event of low ambient temperatures, the frost protection and thermal insulation of the concrete structure must be ensured until the critical strength required for the concrete's resistance to freezing is reached. Recommended placing temperature: above +5°C daily average temperature.

Technical characteristics: /DDC, Labor-MEO/

	Standard requirement	Average value Beremend Plant
Compressive strength (MPa)		
■ at 2 days	≥10	27,6
■ at 28 days	≥42,5≤62,5	57,4
Setting time (min)		
■ beginning	≥60	157
■ end	-	214
Specific surface area (cm ² /g)	-	3690
Water demand (%)	-	31,0