

DDC

CEM I 52,5 N-SR 0/NA

Portland cement MSZ EN 197-1:2011

Vác



DDC In harmony with the environment.

DUNA-DRÁVA CEMENT
HEIDELBERGCEMENT Group



CEM I 52,5 N-SR 0/NA

Low alkali (DIN 1164-10) sulphate resistant (EN 197-1) portland cement CEM I 52,5 N-SR 0/NA

The CEM I 52,5 N-SR 0/NA type portland cement as construction binder is suitable for the following applications:

- pre and post-tensioned reinforced concrete structures exposed to highly aggressive sulphate effects
- watertight concretes, hydraulic engineering and waste water treatment elements
- prefabricated reinforced concrete elements of bridge and hall structures, cured concretes
- paving exposed to high mechanical stress, abrasion resistant and frost resistant concretes
- adhesives, plasters, mortars
- high strength prefabricated, and monolithic concrete and reinforced concrete structures

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 52,5 N-SR 0/NA 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, its use is mainly recommended in prefabrication to speed up the turnover of moulds and to reduce the steaming energy during steam curing. Concrete structures made using this cement can also withstand highly aggressive effects caused by sulphate ions. In addition to foundation works it is specifically recommended for use with all concrete structures where the concrete is in direct contact with a sulphate ion-contaminated environment, provided that the amount of SO_4^{2-} -ion in the groundwater does not exceed 6,000 mg/l and in the soil 24,000 mg/kg (XA1, XA2, XA3). Due to its low alkali content, it is suitable for the production of concretes and concrete structures resistant to alkali-silica and alkali carbonate reactions. Its colour is medium grey. Its use is beneficial in the production of concrete and reinforced concrete with strength classes C 30/37 to C 60/75, and pre and post-tensioned reinforced concrete structures exposed to highly aggressive sulphate effects. 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 Vác Plant
C_3A in clinker	=0	0,0
$\text{Na}_2\text{O}_{\text{eqv.}}$	<0,6	0,35
Compressive strength (MPa)		
■ at 2 days	≥20	24,2
■ at 28 days	≥52,5	56,3
Setting time (min)		
■ beginning	≥45	195
■ end	-	250
Specific surface area (cm^2/g)	-	4190
Water demand (%)	-	25,9