

# CEM I 42,5 R

## Portland cement

**Cement for highest loads and structures subject to stress**



High-strength pure Portland cement for concretes requiring the highest strengths and a fast form removal or load of the structure, also suitable for concreting in cool weather.

### Characteristics

CEM I 42,5 R is characterized by a rapid increase in strengths, attaining high early and final strengths (after 2 days in the range of 29 to 36 MPa, after 28 days from 57 to 62 MPa). During hardening, this manifests itself by a high development of heat of hydration.

### Use

- concretes of high strength classes and concretes where fast demolding is required
- demanding structures made of reinforced concrete and plain concrete (bridge structures, pillars, etc.)
- production of prefabricated elements and ready-mixed plasters
- concrete pavements and concrete surfaces subject to high stress
- industrial floors
- all kinds of industrial and civil structures

### Advantages

- the **rapid increase in early strengths** enables a
  - quick demolding of products
  - quick walk-on-ability of concrete surfaces
  - quick load of the concretes produced
- **high** early and final compressive **strengths**
- **good workability**, colour fastness and **low volume changes**
- the **high development of heat of hydration** enables concreting even in cool weather

### Quality

The quality of cements is supervised by the TSÚS (Building Testing and Research Institute), Bratislava. CEMMAC is a holder of an ISO 9001: 2008 quality management certificate and an ISO 14001: 2004 environmental management certificate.

Essential properties	Harmonized Standard EN 197-1	CEMMAC CEM I 42,5 R
2-day compressive strength (MPa)	≥ 20	29 – 36
28-day compressive strength (MPa)	≥ 42,5 ≤ 62,5	57 – 62
Initial setting time (min)	≥ 60	210 ± 30
Volume stability (expansion) – Le-Chatelier (mm)	≤ 10	0,0 – 1,3
SO <sub>3</sub> sulphate content (%)	≤ 4	3,2 ± 0,2
Chloride content (%)	≤ 0,1	0,03 – 0,02

The content of tricalcium aluminate in this cement is less than 5%.

### Increase in strengths

