

## Quality Certificate of cement

Type of cement : **CEM I 42,5R**

Requirements acc. to: EN 197-1:2011

Values obtained for the period of: **December 2023**

	Unit	Results	Requirements acc. to: EN 197-1:2011
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### 1. Properties (by standards)

Compressive strength			
Early strength, after 2 days	MPa	27,9	≥ 20
Standard strength, after 28 days <small>(results from previous month)</small>	MPa	57,7	≥ 42,5 i ≤ 62,5
Initial setting time	min	190	≥ 60
Expansion of cement	mm	0,5	≤ 10
Sulfate content (as SO <sub>3</sub> )	%	3,01	≤ 4,0
Chloride content Cl <sup>-</sup>	%	0,067	≤ 0,10
Loss on ignition <sup>a)</sup>	%	3,94	≤ 5,0
Insoluble residues <sup>a)</sup>	%	1,04	≤ 5,0

### 2. Additional information

Laser particle size distribution passing 8 μm/32 μm	%	32/75	-
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a) only for CEM I and CEM III

*Anna Kozłowska*

Kierownik Jakości  
  
 Cementownia Kujawy w Bielawach

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 stamp/signature