

Quality Certificate of cement

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

Requirements acc. to: PN-EN 197-1:2012

Values obtained for the period of: **June**

2018

	Unit	Results	Requirements acc. to: PN-EN 197-1:2012
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1.Properties (by standards)

Compressive strength			
Early strength, after 2 days	MPa	28,7	≥ 20
Standard strength, after 28 days (results from previous month)	MPa	58,4	≥ 42,5 i ≤ 62,5
Initial setting time	min	164	≥ 60
Expansion of cement	mm	0,4	≤ 10
Sulfate content (as SO ₃)	%	3,23	≤ 4,0
Chloride content Cl ⁻	%	0,070	≤ 0,10
Na ₂ O _{eq}	%	0,61	-
Loss on ignition ^{a)}	%	2,91	≤ 5,0
Insoluble residues ^{a)}	%	0,62	≤ 5,0
C ₃ A ^{b)}	%	-	-

2. Additional information

Specific surface area	cm ² /g	3515	-
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a) only for CEM I and CEM III

b) C₃A clinker calculated from chemical analysis acc. to Bogue, only for common cements resistant to sulphates „SR”

Kierownik Jakości
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stamp/signature