

Quality Certificate of cement

Type of cement: **CEM I 42,5N-SR3**
CEM I 42,5N-SR3/NA

Requirements acc. to: **PN-EN 197-1:2012**
Requirements acc. to: **PN-B-19707**

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

2019

	Unit	Results	Requirements acc. to: PN- EN 197- 1:2012	Requirements acc. to: PN-B- 19707:2013	Additional requirements
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1. Properties (by standards)

Compressive strength					
Early strength, after 2 days	MPa	21,6	≥ 10	-	-
Standard strength, after 28 days (results from previous month)	MPa	54,7	$\geq 42,5$ i $\leq 62,5$	-	-
Initial setting time	min	263	≥ 60	-	-
Expansion of cement	mm	0,4	≤ 10	-	-
Sulfate content (as SO ₃)	%	2,56	$\leq 3,0$	-	-
Chloride content Cl ⁻	%	0,045	$\leq 0,10$	-	-
Na ₂ O _{eq}	%	0,48	-	$\leq 0,60$	-
Loss on ignition ^{a)}	%	1,05	$\leq 5,0$	-	-
Insoluble residues ^{a)}	%	0,59	$\leq 5,0$	-	-
C ₃ A ^{b)}	%	1,28	$\leq 3,0$	-	-
C ₄ AF+2C ₃ A ^{c)}	%	17,88	-	-	$\leq 20,0$
Al ₂ O ₃ ^{d)}	%	3,70	-	-	$\leq 5,0$

2. Additional information

Specific surface area	cm ² /g	3088	-	-	-
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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”

c) Regulation of the Minister of Transport and Maritime Economy

d) Technical Recommendation of the Research Institute of Roads and Bridges

Kierownik Jakości

Jolanta Zdunowska

stamp/signature

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