

Chemical Composition and Physical Properties of Masonry cement

NO	DESCRIPTION (EN 413-1 Masonry cement]		UNIT	VALUE	RANGE
CHEMICAL COMPOSITION					
1	Silicon Dioxide	SiO ₂	%	12.85	11.5-14
2	Aluminum Oxide	AL ₂ O ₃	%	4.01	3.8-4.2
3	Ferric Oxide	Fe ₂ O ₃	%	2.78	2.65-3.2
4	Calcium Oxide	CaO	%	60.90	58.8-61.9
5	Magnesium Oxide (Max 5.0)	MgO	%	0.81	0.71-2.5
6	Sulfur Trioxide (Max 3.5)	SO ₃ <3.0	%	2.38	2.25-2.8
7	Chloride < 0.10	Cl ⁻ <0.1	%	0.04	0.02-0.08
8	Insoluble residue (Max 5.0)	I.R< 5	%	0.75	0.5-2.5
9	Loss On ignition		%	17.5	16.5-18
10	Free-Lime < 2	F-CaO< 2	%	1.33	0.08-2.0
11	Chromium Hexavalent (Max 2.0)	Cr VI< 2	ppm	1.55	0.8-1.8
12	Alkali Equivalent	Na ₂ O equivalent	%	0.69	0.6-0.8
PHYSICS TEST					
1	Fineness (Blaine)		Cm ² /g	4649	4300-4800
2	Water consistency		%	26.2	24.5-30.0
3	Initial setting time		Minutes	146	120- 170
4	Final setting time		Minutes	232	180-300
5	7Day (Compressive Strength)	Min7	MPa	8.5	7.0-11.0
6	28Day (Compressive Strength))	12.5-32.5	MPa	13.2	12.0-25.0
7	Soundness	Max 10mm	mm	1.3	1.0-5.00
8	Air Content	8-25	%	17	10-20

