CEMENT DATA SHEET

MANUFACTURED IN: PLANT SECIL-OUTÃO,OUTÃO, PORTUGAL

CEM I 52,5R (nl)

EN 197-1:2011	**Certificate of Conformity 0856 – CPR - 0189**	**13.01.2017**
	CE + LA BENOR Certificate CEP/4738/0450	**22.04.2024**
	CE + KOMO Certificate SKGIKOB.010275.04.NL	**01.03.2023**
	CE + NF Certificate 1028.07	**03.06.2023**

CE

Declared Composition (%)

Constituents		Calcium Sulfate	
Portland Cement Clinker (K) (source: Outão)	99,0	Gypsum	5,0
Granulated Blastfurnace Slag (S)	-	Other source of calcium sulfate	-
Natural pozzolana (P)	-		
Natural calcined pozzolana (Q)	-	**Additives**	
Siliceous fly ash (V)	-	Grinding Aid CHRYSO-LAND AMA60C	0,1
Calcareous fly ash (W)	-	Reducing Cr VI Agent	0,018
Burnt shale (T)	-		
Limestone (L)	0,0		
Minor constituents (L, V)	1,0		

Compressive Stenghts (MPa)

Time	Test Method	Mean Values	Range of Values		
1 day	EN 196-1	34,0	31,0		37,0
2 days	EN 196-1	44,0	41,0	-	47,0
7 days	EN 196-1	56,0	53,0	-	59,0
28 days	EN 196-1	67,0	64,0	-	70,0

Physical Properties

Property	Test Method	Mean Values	Range of Values		
Specific density(kg/m^3)	EN 196-6	3,11	3,01	-	3,21
Bulk density (kg/m^3)	IT L 04 14 02	800	705	-	905
Specific surface (cm^2/g)	EN 196-6	5350	4600	-	6100
200μm Fineness (%)	EN 196-6	0,0	0,0	-	1,0
32μm Fineness (%)	EN 196-6	0,7	0,0	-	2,1
Standard consistence (%)	EN 196-3	35,0	34,5	-	35,5
Initial setting time (min)	EN 196-3	130	90	-	170
Final setting time (min)	EN 196-3	175	135	-	215
Soundness (mm)	EN 196-3	1,0	0,0	-	2,0

Chemical Properties

Property	Test	Mean	Range	Property	Test Method	Mean	Range
LOI (%)	EN 196-2	2,00	1,20-5,00	SO_3 (%)	EN 196-2	3,45	2,95-4,00
IR (%)	EN 196-2	1,25	0,45-2,05	K_2O (%)	EN 196-2	0,63	0,55-0,71
SiO_2 (%)	EN 196-2	19,90	18,20-21,60	Na_2O (%)	EN 196-2	0,13	0,09-0,17
Al_2O_3 (%)	EN 196-2	5,15	4,75-5,55	Cl (%)	EN 196-2	0,04	0,01-0,10
Fe_2O_3 (%)	EN 196-2	2,85	2,55-3,15	Cr(VI)(ppm)	EN 196-10	0,9	0-2
CaO (%)	EN 196-2	62,55	58,95-66,15	Na_2Oeqv		0,53	0,46-0,60
MgO (%)	EN 196-2	1,75	1,55-1,95	C_3A (%)	XRD (Rietveld)	5,8	4,8-6,8