



ITEMS	UNIT	TESTING METHOD	RANGE	RESULTS
CHEMICAL PROPERTIES				
CaO	PCT	ASTM C114-18	Min 65.0	65.80
SiO ₂	PCT	ASTM C114-18	20.0 – 23.0	21.35
Al ₂ O ₃	PCT	ASTM C114-18	Max 6.0	5.64
Fe ₂ O ₃	PCT	ASTM C114-18	Max 4.5	3.22
MgO	PCT	ASTM C114-18	Max 4.0	2.19
F-CaO	PCT	ASTM C114-18	Max 2.0	1.45
SO ₃	PCT	ASTM C114-18	Max 1.0	0.28
Insoluble residue (IR)	PCT	ASTM C114-18	Max 0.75	0.15
LOI	PCT	ASTM C114-18	Max 1.0	0.25
Total Alkali (Na ₂ O + 0.658K ₂ O)	PCT	ASTM C114-18	Max 0.8	0.68
C ₃ S	PCT	LMIN-HAPG-TST-WI-8008 (*)	Min 55.0	62.32
C ₂ S	PCT		Max 25.0	14.20
C ₃ A	PCT		Max 12.0	9.50
C ₄ AF	PCT		Max 13.0	9.80
LSF	PCT		Min 92.0	95.58
Moisture (average)	PCT	Refer ASTM D2216-2019	Max 1.0	0.08
Size(average): 5-25mm	PCT	LMIN-HAPG-TST-SOP-8119	≥ 40	81.60

Remark: (*) The formulas were applied to calculate for LSF, C₃S, C₂S, C₃A & C₄AF as follows:

$$LSF (\%) = 100 \times (\%CaO - 0.7x\%SO_3) / (2.8 \times \%SiO_2 + 1.18 \times \%Al_2O_3 + 0.65 \times \%Fe_2O_3)$$

$$C_3S = (4.071x\%CaO) - (7.600x\% SiO_2) - (6.718x\%Al_2O_3) - (1.430x\%Fe_2O_3) - (2.852x\%SO_3)$$

$$C_2S = (2.867x\% SiO_2) - (0.7544x C_3S)$$

$$C_3A = (2.650x\% Al_2O_3) - (1.692x\%Fe_2O_3)$$

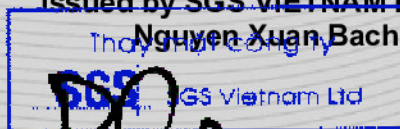
$$C_4AF = 3.043x\% Fe_2O_3$$

Survey was carried out at CAM PHA PORT, QUANG NINH PROVINCE, VIETNAM and SGS's lab from 02 to 12 September 2022.

The manual sampling method was agreed with the SGS Principal, as sampling by more reliable methods that provide probability samples was not possible or was not selected by the SGS Principal. The Holder of this document is cautioned that collected MANUAL samples of this type do not satisfy the minimum requirements for probability sampling, and as such cannot be used to draw statistical inferences such as precision, standard error, or bias. The suitability of this sampling method is defined by the sampling standard.

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