LKAB Minerals

Product data sheet

GGBS

Ground Granulated Blastfurnace Slag (GGBS) from LKAB Minerals is a partial cement-replacement which is manufactured from a by-product of the iron and steel industry. GGBS has the appearance of an off white powder, which has a slight sulphurous odour.

GGBS is used In combination with Portland cement to produce a superior longer lasting concrete. It can replace up to 70% and beyond of Portland Cement in a concrete mix. It is classed as an addition and counts fully towards the cement content in concrete. GGBS conforms with the standards BS EN 15167-1 and within the British Standards is referenced as “Ground granulated blastfurnace slag for use in concrete, mortar and grout”.

GGBS is commonly used for ready-mix concrete, precast, mining industry and soil stabilization and cementitious formulations, but it is suitable in a wide range of other applications. GGBS has many benefits which can be further looked at by reading the product brochure available on our website.

Chemical analysis	Average % by weight
SiO_2	37
Al_2O_3	12.90
Fe_2O_3	0.50
CaO	41.
MnO	0.4
TiO_2	0.7
S_{2-}	0.8
SO_3	0.2
Cl	0.04
Na_2O eqv.	0.75

Physical properties	
7 Day Activity Index	72
28 Day Activity Index	93
Glass Count (%)	90-100
Fineness (m_2/kg)	470-540
Initial Setting Time (mins)	190-250
Relative Density (g/cm_3)	2.9
Bulk Density (mg/m_3)	1.033
Brightness L* Whiteness (%)	80-90

*LKAB GGBS has an Alumina content of less than 14% qualifying it for use in +SR with all Portland cement combinations

Cement Combination Designation (Table 1 BS 8500-2:2015)

BS8500 Designation	GGBS Proportion (%)		Equivalent Cement
CII/A-S	6	20	BS EN 197-1 CEM II/A-S
CII/B-S	21	35	BS EN 197-1 CEM II/A-S
CIII/A+SR	36	65	BS EN 197-1 CEM III/A
CII/B+SR	66	80	BS EN 197-1 CEM III/B

* Replacement levels for GGBS vary up to 70% and sometimes beyond. Typically 40 to 50% Cement replacement is used in most instances.