

## خبث محبب من صناعة الحديد والصلب

**GROUND GRANULATED BLAST FURNACE SLAG CERTIFICATE**

Product : GGBFS  
Standard : BS 6699:1992  
Week No. : 07/20  
Sample Date : 12-18.02.2020  
Issue Date : 3-Mar-20

تاريخ العينة :

Parameters	Units	Results %	Specification
<b>Chemical Test Results</b>			
Loss On Ignition (Corrected for Oxidation of Sulfur) LOI	%	1.13	Max. 3.0 %
Silicon Dioxide SiO <sub>2</sub>	%	33.78	
Aluminium Oxide Al <sub>2</sub> O <sub>3</sub>	%	14.47	
Ferric Oxide Fe <sub>2</sub> O <sub>3</sub>	%	1.04	
Calcium Oxide CaO	%	40.87	
Magnesium Oxide MgO	%	6.61	Max. 14.0 %
Potassium Oxide K <sub>2</sub> O	%	0.31	
Sodium Oxide Na <sub>2</sub> O	%	0.24	
Sulphur Trioxide SO <sub>3</sub>	%	0.12	Max. 2.5 %
Chloride Cl	%	0.015	Max. 0.10 %
Sulphide Sulphur S <sup>-2</sup>	%	0.76	Max. 2.0 %
Manganese Oxide Mn <sub>2</sub> O <sub>3</sub>	%	0.16	Max. 2.0 %
Insoluble Residue IR	%	0.15	Max. 1.5 %
Product Moisture	%	0.24	Max. 1.0 %
Glass Content	%	99.3	Min. 67.0 %
<b>Chemical Module</b>			
(CaO + MgO + SiO <sub>2</sub> )	%	81.26	Min. 66.7 %
(CaO + MgO) / SiO <sub>2</sub>	%	1.41	Min. 1.0 %
CaO / SiO <sub>2</sub>	%	1.21	Max. 1.4 %
<b>Physical Test Results</b>			
Fineness (Specific Surface) Blaines	m <sup>2</sup> /kg	449	Min. 275 m <sup>2</sup> /kg
+45 µm Residue	%	1.48	
Specific Gravity		2.88	
Initial Setting Time IST	Minutes	265	Not less than OPC
Final Setting Time FST	Minutes	295	
Soundness-Le-Chatlier Expansion	mm	0.6	Max. 10 mm
<b>Compressive Strength ( N/mm<sup>2</sup>)</b>			
		OPC-100%	GGBFS -70 % & OPC-30 %
2 Days	N/mm <sup>2</sup>	21.6	7.5
7 Days	N/mm <sup>2</sup>	37.1	25.3
28 Days	N/mm <sup>2</sup>	48.0	47.9

We hereby certify that above described GGBFS, at the time of consignment, meets the chemical and physical requirements of the BS 6699:1992

  
Quality Control Manager  
(D. Balasubramanian)

