

## خبث محبب من صناعة الحديد والصلب

**GROUND GRANULATED BLAST FURNACE SLAG CERTIFICATE**

Product : GGBFS  
 Standard : BS 6699:1992  
 Week No. : 28/20  
 Sample Date : 08-14.07.2020 تاريخ العينة :  
 Issue Date : 19-Aug-20

Parameters	Units	Results %	Specification	
<b>Chemical Test Results</b>				
Loss On Ignition (Corrected for Oxidation of Sulfur)	LOI	%	1.26	Max. 3.0 %
Silicon Dioxide	SiO <sub>2</sub>	%	33.56	
Aluminium Oxide	Al <sub>2</sub> O <sub>3</sub>	%	13.41	
Ferric Oxide	Fe <sub>2</sub> O <sub>3</sub>	%	1.04	
Calcium Oxide	CaO	%	38.70	
Magnesium Oxide	MgO	%	7.62	Max. 14.0 %
Potassium Oxide	K <sub>2</sub> O	%	0.45	
Sodium Oxide	Na <sub>2</sub> O	%	0.39	
Sulphur Trioxide	SO <sub>3</sub>	%	1.66	Max. 2.5 %
Chloride	Cl	%	0.019	Max. 0.10 %
Sulphide Sulphur	S <sup>-2</sup>	%	0.83	Max. 2.0 %
Manganese Oxide	Mn <sub>2</sub> O <sub>3</sub>	%	0.19	Max. 2.0 %
Insoluble Residue	IR	%	0.20	Max. 1.5 %
Product Moisture		%	0.40	Max. 1.0 %
Glass Content		%	98.2	Min. 67.0 %
<b>Chemical Module</b>				
(CaO + MgO + SiO <sub>2</sub> )		%	79.88	Min. 66.7 %
(CaO + MgO) / SiO <sub>2</sub>		%	1.38	Min. 1.0 %
CaO / SiO <sub>2</sub>		%	1.15	Max. 1.4 %
<b>Physical Test Results</b>				
Fineness (Specific Surface)	Blaines	m <sup>2</sup> /kg	452	Min. 275 m <sup>2</sup> /kg
+45 µm Residue		%	2.62	
Specific Gravity			2.88	
Initial Setting Time	IST	Minutes	250	Not less than OPC
Final Setting Time	FST	Minutes	290	
Soundness-Le-Chatlier	Expansion	mm	0.20	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>	23.5	7.6	NA
7 Days	N/mm <sup>2</sup>	40.0	22.6	Min. 12
28 Days	N/mm <sup>2</sup>	50.8	41.8	Min. 32.5

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)

