

## خبث محبب من صناعة الحديد والصلب

**GROUND GRANULATED BLAST FURNACE SLAG CERTIFICATE**

Product : GGBFS  
 Standard : ASTM C 989-18  
 Grade of GGBFS : Grade 100  
 Week No. : 07/20  
 Sample Date : 12-18.02.2020 تاريخ العينة :  
 Issue Date : 21-Mar-20

Parameters	Units	Results %	Specification	
<b>Chemical Test Results</b>				
Loss On Ignition (Corrected for Oxidation of Sulfur)	LOI	%	0.91	
Silicon Dioxide	SiO <sub>2</sub>	%	34.42	
Aluminium Oxide	Al <sub>2</sub> O <sub>3</sub>	%	15.91	
Ferric Oxide	Fe <sub>2</sub> O <sub>3</sub>	%	1.06	
Calcium Oxide	CaO	%	36.22	
Magnesium Oxide	MgO	%	8.87	
Potassium Oxide	K <sub>2</sub> O	%	0.38	
Sodium Oxide	Na <sub>2</sub> O	%	0.32	
Sulphur Trioxide	SO <sub>3</sub>	%	0.12	
Chloride	Cl <sup>-</sup>	%	0.014	
Sulphide Sulfur	S <sup>-2</sup>	%	0.78	Max. 2.50 %
Manganese Oxide	Mn <sub>2</sub> O <sub>3</sub>	%	0.19	
Insoluble Residue	IR	%	0.16	
<b>Physical Test Results</b>				
Fineness (Specific Surface)	Blaines	m <sup>2</sup> /kg	446	
+45 µm Residue		%	1.56	Max. 20.00 %
Specific Gravity			2.88	
Air Content of slag mortar		%	2.68	Max. 12.00 %
<b>Slag Activity Index (50% OPC : 50 % GGBFS)</b>				
7 Days		%	81.0	
28 Days		%	107.2	Min. 95.0 %
<b>Reference OPC</b>				
Equivalent Alkali		%	0.60	0.60-0.90 %
28 Days Compressive Strength		Mpa	38.1	Min. 35.0 Mpa

*We hereby certify that above described GGBFS, at the time of consignment, meets the chemical and physical requirements of the ASTM C 989-18a*

*D. Balasubramanian*  
 Quality Control Manager  
 (D. Balasubramanian)

