

## TEST CERTIFICATE

### Ground Granulated Blast Furnace Slag

START STRONG . GROW STRONGER.

| Sr. No. | Characteristic   | Requirement as per IS 16714:2018                              | Test Result   |
|---------|--|---|---------------|
| 1       | Fineness (M <sup>2</sup> /KG)  | 320 (Min.)  | <b>391</b>    |
| 2       | Specific Gravity   |   | <b>2.91</b>   |
| 3       | Residue by wet basis on 45μ (%)  |   | <b>4.88</b>   |
| 4       | Manganese oxide (MnO) %  | 5.50 (Max)  | <b>0.21</b>   |
| 5       | Magnesium oxide (MgO) %  | 17.00 (Max.)  | <b>7.92</b>   |
| 6       | Sulphide Sulphur (S) %   | 2.00 (Max.)   | <b>0.52</b>   |
| 7       | Sulfate (as SO <sub>3</sub> ) %  | 3.00 (Max.)   | <b>0.24</b>   |
| 8       | Insoluble residue, %   | 3.00 (Max.)   | <b>0.18</b>   |
| 9       | Chloride content %   | 0.10 (Max.)   | <b>0.002</b>  |
| 10      | Loss on ignition, %  | 3.00 (Max.)   | <b>0.43</b>   |
| 11      | Moisture content %   | 1.00 (Max.)   | <b>0.010</b>  |
| 12      | Glass content %  | 85 (Min.)   | <b>97.65</b>  |
| 13      | Slag Activity Index (SAI) (%)  |   |               |
| (A)     | 7 days   | Not less than 60 % of control OPC 43 Grade cement mortar cube | <b>81.96</b>  |
| (B)     | 28 days  | Not less than 75 % of control OPC 43 Grade cement mortar cube | <b>100.82</b> |
| 15      | Chemical Moduli  |   |               |
| (A)     | (CaO + MgO + 1/3Al <sub>2</sub> O <sub>3</sub> ) / SiO <sub>2</sub> +2/3Al <sub>2</sub> O <sub>3</sub> | 1.00 (Min)  | <b>1.10</b>   |
| (B)     | CaO + MgO + Al <sub>2</sub> O <sub>3</sub> / SiO <sub>2</sub>  | 1.00 (Min)  | <b>1.82</b>   |
| (C)     | (CaO + MgO + 1/2MgO + Al <sub>2</sub> O <sub>3</sub> ) / SiO <sub>2</sub> + MnO                        | 1.50 (Min)  | <b>2.14</b>   |

**Note :**

Slag activity index (SAI) shall be determined using blend of 50 % GGBS and 50 % control OPC 43 conforming to IS 269, having total alkalies (Na<sub>2</sub>O+0.658 K<sub>2</sub>O not less than 0.6 % and not more than 0.9 %). The blend shall be tested in accordance with IS 4031 ( Part 6), for determining compressive strength of mortar.

SAI shall be determined as:

$$\frac{\text{Compressive strength of the mortar cube using blend}}{\text{Compressive strength of control OPC mortar cube}} \times 100$$

**Week No.:** 12 **Month:** 3 **Year:** 2019

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**Associated General Manager**