

## 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.)                                                    | 380         |
| 2       | Specific Gravity                                                                                       |                                                               | 2.90        |
| 3       | Residue by wet basis on 45μ (%)                                                                        |                                                               | 5.50        |
| 4       | Manganese oxide (MnO) %                                                                                | 5.50 (Max)                                                    | 0.27        |
| 5       | Magnesium oxide (MgO) %                                                                                | 17.00 (Max.)                                                  | 7.94        |
| 6       | Sulphide Sulphur (S) %                                                                                 | 2.00 (Max.)                                                   | 0.51        |
| 7       | Sulfate (as SO <sub>3</sub> ) %                                                                        | 3.00 (Max.)                                                   | 0.22        |
| 8       | Insoluble residue, %                                                                                   | 3.00 (Max.)                                                   | 0.21        |
| 9       | Chloride content %                                                                                     | 0.10 (Max.)                                                   | 0.001       |
| 10      | Loss on ignition, %                                                                                    | 3.00 (Max.)                                                   | 0.42        |
| 11      | Moisture content %                                                                                     | 1.00 (Max.)                                                   | 0.011       |
| 12      | Glass content %                                                                                        | 85 (Min.)                                                     | 97.65       |
| 13      | Slag Activity Index (SAI) (%)                                                                          |                                                               |             |
| (A)     | 7 days                                                                                                 | Not less than 60 % of control OPC 43 Grade cement mortar cube | 80.92       |
| (B)     | 28 days                                                                                                | Not less than 75 % of control OPC 43 Grade cement mortar cube | 102.60      |
| 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)                                                    | 1.10        |
| (B)     | CaO + MgO + Al <sub>2</sub> O <sub>3</sub> / SiO <sub>2</sub>                                          | 1.00 (Min)                                                    | 1.82        |
| (C)     | (CaO + MgO + 1/2MgO + Al <sub>2</sub> O <sub>3</sub> ) / SiO <sub>2</sub> + MnO                        | 1.50 (Min)                                                    | 2.20        |

**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.:** 10 **Month:** 3 **Year:** 2019

**Address:**

Date of Dispatch   
 Truck No   
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**Associated General Manager**