



Technical Data Sheet (TDS) Ground Granulated Blast Furnace Slag (GGBS)

Technical Data Sheet # QNCC.TDS.GGBS.V2.20241106

Product Name: Ground Granulated Blast Furnace Slag (GGBS)

Product Code: **FGSLAG001**

Manufacturer: Qatar National Cement Company (Q.P.S.C)

1. Product Description

GGBS is a supplementary cementitious material produced by granulating molten iron slag from blast furnaces and grinding it to a fine powder. It conforms to BS 6699:1992 / BS EN 15167-1:2006 standards.

2. Technical Specifications

Parameter	Requirement	Typical Value	Unit
Chemical Analysis			
Silicon Dioxide (SiO ₂)	—	31.69	%
Aluminum Oxide (Al ₂ O ₃)	—	12.08	%
Ferric Oxide (Fe ₂ O ₃)	—	0.96	%
Calcium Oxide (CaO)	—	41.86	%
Magnesium Oxide (MgO)	≤ 14.00	6.87	%
Sulfur Trioxide (SO ₃)	≤ 2.50	0.95	%
Manganese Oxide (Mn ₂ O ₃)	≤ 2.00	0.47	%
Alkali Equivalent	—	0.83	% (Na ₂ O+0.658K ₂ O)
Chloride (Cl)	≤ 0.10	0.028	%
Loss On Ignition (LOI)	≤ 3.00	0.90	%
Moisture Content	≤ 1.00	0.41	%
Glass Content	≥ 67.00	99.0	%
Basicity Ratios			



شركة قطر الوطنية لصناعة الأسمنت (ش.م.ع.ق.)

QATAR NATIONAL CEMENT COMPANY (Q.P.S.C)

رأس مال الشركة 653,528,940 ريال قطري (مدفوع) The capital of company QAR 653,528,940 (Paid)



Parameter	Requirement	Typical Value	Unit
$\frac{CaO + MgO}{SiO_2}$	≥ 1.00	1.54	
$\frac{CaO}{SiO_2}$	≤ 1.40	1.32	
Reactivity Index 50:50 (%) OPC: GGBS			
7 days	≥ 45	80.00	
28 days	≥ 70	104.00	
Physical Properties			
Fineness (Blaine)	≥ 2750	4410	cm ² /g

3. Product Features and Benefits

- **Enhanced Durability:** High resistance to sulfate and chloride attacks.
- **High Reactivity:** Enhances strength development in blended cement.
- **Environmental Benefit:** Reduces carbon footprint by replacing part of Portland cement.

4. Applications

- Used in marine structures, foundations, and sulfate-resistant applications.
- Ideal for concrete exposed to aggressive environments, including coastal and industrial areas.

5. Usage Guidelines

- **Mixing:** Replace 30-70% of ordinary Portland cement with GGBS in concrete mixes.
- **Handling:** Use standard PPE (gloves, dust mask) to minimize exposure to dust.
- **Storage:** Store in a dry area to prevent moisture uptake.

6. Safety Information

- **Hazards:** Avoid inhalation and skin contact due to potential irritation.
- **Precautions:** Use adequate ventilation and protective equipment when handling.

7. Compliance

- **Standards:** Compliant with BS 6699:1992 / BS EN 15167-1:2006.

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