

1 · Product Introduction

Onshore Wind Grout – a high-performance, ultra-high-strength cementitious material specifically engineered for the foundation construction of land-based wind turbines.

In onshore wind projects, it is primarily used for secondary grouting between the turbine tower base (foundation ring or anchor bolt assembly) and the concrete foundation (concrete cap). Although this grouting layer is typically only a few tens of centimetres thick, it serves as the critical structural link. It transfers the immense dynamic loads, bending moments, and rotational torques generated by hundreds of tons of turbine equipment standing over a hundred metres high down into the concrete foundation.

2 · Product Classification

① Excellent flow properties;

② High ultimate strength, ensuring long-term safe and stable operation under static and dynamic loads;

③ Excellent fatigue resistance;

④ Rapid early-age strength development, allowing for quick commissioning;

⑤ Suitable for pumping over long distances and against high vertical lifts;

⑥ Non-shrink grouting, ensuring a long-term, tight bond between the grout and the equipment or structural surfaces;

⑦ High density, free from segregation or bleed water, ensuring stability of physical properties as well as excellent pumpability;

⑧ Capable of being pumped or injected into complex construction zones, or areas difficult to access using conventional grouting methods;

⑨ Low chloride ion content, ensuring long-term structural integrity and safety.

3 · Technical Performance

Test Items	Performance Specifications
Maximum Aggregate Size (mm)	≤ 4.75
Flow / mm	Initial value ≥ 290 30 min ≥ 260
Compressive Strength / MPa	1d ≥ 50 · 3d ≥ 70 · 28d ≥ 110
Flexural Strength (MPa)	≥ 15
Vertical Expansion Rate (%)	3h: 0.1 – 3.5 · 24h-3h diff: 0.02 – 0.50
Chloride Ion Content (%)	< 0.1
Bleeding Rate (%)	0

4 · Scope of Application

- Grouting for onshore wind turbine foundations and tower bolt anchoring;
- Grouting for wind turbine assemblies, and for equipment installed using prestressing techniques;
- Grouting for equipment requiring high fatigue resistance;
- Filling of gaps ranging from 25 mm to 300 mm where exceptionally high strength is required.

5 · Usage Instructions

MIXING Do not add cement, sand, or other materials that could compromise performance; mix only in full-bag batches.

- Utilise one or more mixers (a forced-action pan mixer is recommended) to ensure continuous, uninterrupted mixing and pouring.
- Pour the required amount of water into the mixer, then slowly add the grout material. Mix into a uniform slurry (4-5 minutes) until the desired flowability is achieved.

CONCRETE SUBSTRATE PREPARATION

- Remove all formwork, release agents, and any materials that could hinder adhesion. Thoroughly clean the foundation area to expose sound, clean structural concrete.
- Pre-wet the cleaned foundation with copious water 24 hours in advance. Prior to grouting, remove all standing water, keeping the substrate damp but free of visible surface water.

GROUTING PLACEMENT

- Position the grout material and mixer as close as possible to the area to be grouted.

- Ensure sufficient personnel, materials, and tools are available to facilitate rapid and continuous mixing and placement.
- The grout should be pumped into the designated area; inject continuously from one side only to prevent air entrapment.
- During grouting, ensure the material completely fills the entire void, guaranteeing full contact between the grout, the equipment baseplate, and the foundation.

6 · Packaging & Storage

- **Packaging:** moisture-proof composite bags, available in 25 kg or 50 kg units.
- **Storage:** store in a dry, well-ventilated area, raised off the ground on pallets, covered with plastic sheeting to prevent exposure to direct sunlight or rain.
- **Shelf life:** 3 months; products exceeding this period must be re-tested and verified compliant before use.

Hubei Qiandao New Materials Co., Ltd. · Technical Data Sheet · QD-F110 (v2.1)

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All information is subject to standard quality control. For project-specific guidance, contact our technical team.