



QD-004

Fast-Setting Repair Mortar

high-strength · rapid strength gain · superior bonding

1 · Product Overview

Qiandao QD-004 is a fast-setting, high-strength repair mortar specifically formulated for restoring damaged concrete surfaces, offering rapid strength development, excellent bonding performance, and long-lasting durability.

This high-performance material achieves exceptional early strength, with compressive strength reaching **≥15 MPa** in just **6 hours** and **≥20 MPa** in **24 hours**, enabling rapid return to service. Its specially formulated fast-setting system provides an initial set time of **≥30 minutes** and final set within **50 minutes**, balancing adequate working time with quick hardening for minimal construction disruption.

QD-004 exhibits outstanding tensile bonding strength of **≥0.6 MPa** at 1 day on untreated substrates, ensuring superior adhesion to existing concrete surfaces without the need for specialized primers. Ideal for structural and non-structural concrete repairs, this mortar delivers lasting performance and excellent dimensional stability in various environmental conditions.

2 · Key Features & Benefits

① **Fast Setting & Rapid Strength Gain:** Achieves **≥15 MPa** in 6 hours and **≥20 MPa** in 24 hours, minimizing downtime.

② **Optimal Setting Time:** Initial set **≥30 min** provides adequate working time; final set **≤50 min** ensures rapid hardening.

③ **Superior Bonding Strength:** **≥0.6 MPa** tensile bonding at 1 day on untreated substrates for excellent adhesion.

④ **Versatile Application:** Suitable for crack repair, surface restoration, and structural patching in interior and exterior environments.

⑤ **Easy to Use:** Simple water mixing and application with standard trowels or spray equipment.

⑥ **Durable Performance:** Excellent resistance to weathering, freeze-thaw cycles, and mechanical wear.

3 · Executive Standards

- **GB/T 25181-2019** — *Ready-mixed Mortar*
- **JC/T 2381-2016** — *Repair Mortar* (reference standard for performance requirements)

4 · Technical Specifications

Note: Performance indicators based on standard testing conditions.

Test Items	Condition / Age	Performance Indicator (QD-004)
Compressive Strength (MPa)	6 hours	≥ 15.0
Compressive Strength (MPa)	24 hours	≥ 20.0
Compressive Strength (MPa)	28 days	≥ 40.0
Setting Time (min)	Initial Set	≥ 30
Setting Time (min)	Final Set	≤ 50
Tensile Bonding Strength (MPa)	1 day (untreated substrate)	≥ 0.6
Flexural Strength (MPa)	28 days	≥ 6.0
Vertical Expansion Rate (%)	3h	0.02 – 0.50
Chloride Ion Content (%)	—	≤ 0.03
Water Bleeding Rate (%)	—	0

5 · Applications

Qiandao QD-004 is ideal for a wide range of concrete repair applications, including but not limited to:

- Concrete crack repair and sealing
- Damaged surface restoration and resurfacing
- Structural patch repairs for spalled or delaminated concrete
- Repair of concrete floors, walls, columns, and beams
- Infrastructure maintenance for bridges, roads, and parking structures
- Rehabilitation of industrial and commercial concrete structures

6 · Usage Instructions

1 Substrate Preparation

The substrate must be clean, sound, and free from dust, oil, grease, laitance, and loose particles. Pre-wet the surface to a saturated surface dry (SSD) condition, with no standing water.

2 Mixing

Add clean water to a mixing container at the recommended water-to-powder ratio. Gradually add the QD-004 powder while mixing with a mechanical mixer or drill with a paddle attachment. Mix until a uniform, lump-free consistency is achieved. Do not over-water.

3 Application

Apply the mixed mortar using a trowel or suitable equipment. For deep repairs, apply in layers not exceeding 20 mm thickness per layer. Subsequent layers should be applied after the previous layer has hardened sufficiently.

4 Curing

Protect the repaired area from rapid drying, direct sunlight, wind, and rain. Maintain moist curing for at least 24 hours using curing compound, wet hessian, or plastic sheeting.

7 · Packaging & Storage

- **Packaging:** 25 kg bag.
- **Storage:** Store in a dry, well-ventilated area. Keep off the ground on pallets and cover with plastic sheeting to protect from direct sunlight and moisture.
- **Shelf Life:** 6 months. Products exceeding this period must be re-tested and verified compliant before use.

8 · Frequently Asked Questions (FAQ)

1. What is the recommended mixing procedure for QD-004?

QD-004 should be mixed with clean water using a mechanical mixer or drill with a paddle attachment until a uniform, lump-free consistency is achieved. Always follow the specified water-to-powder ratio provided in the technical data sheet to ensure optimal performance and strength development.

2. What is the working time after mixing?

The initial set time is ≥ 30 minutes, providing adequate working time for mixing, application, and finishing. The final set is achieved within 50 minutes, allowing for rapid hardening and quick return to service.

3. Can QD-004 be applied without a primer or bonding agent?

Yes. QD-004 achieves ≥ 0.6 MPa tensile bonding strength on untreated substrates at 1 day, demonstrating excellent adhesion without the need for specialized primers or bonding agents. However, for optimal results, the substrate should be clean, sound, and saturated surface dry (SSD).

4. Is QD-004 suitable for outdoor applications?

Yes. QD-004 is formulated to provide excellent weather resistance and durability in both interior and exterior environments, making it suitable for a wide range of infrastructure repair projects.

5. What is the coverage rate per 25 kg bag?

Coverage depends on the thickness of application. For a 10 mm thick layer, approximately 25 kg of QD-004 will cover 0.8 to 1.0 square meters. For specific project requirements, please consult the technical data sheet or contact our technical support team.

Hubei Qiandao New Materials Co., Ltd. · Technical Data Sheet · QD-004 (v2.0)

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