



Post-Tensioned Duct Grout

high-performance · non-bleed · micro-expansion

1 · Scope of Application

Post-tensioned prestressed concrete duct grouting for large-scale infrastructure projects including:

- High-speed railways
- Highways and bridges
- Nuclear power plants
- Other major civil engineering structures

2 · Product Features

① Excellent fluidity with high strength

② Non-bleeding, non-segregating, non-stratifying

③ Micro-expansion for full void filling

④ Dense grout with no voids; strong bond to concrete

⑤ Superior durability and aging resistance

⑥ Non-corrosive to steel reinforcement

3 · Executive Standard

JTG/T 3650-2020 — *Technical Specifications for Construction of Highway Bridges and Culverts* (China)

4 · Technical Specifications

Testing Item	Condition / Age	Performance Specification
Water-Binder Ratio (%)	—	0.26 – 0.28
Setting Time (h)	Initial Setting	≥ 5
Setting Time (h)	Final Setting	≤ 24
Fluidity (25°C, s)	Initial (at mixer discharge)	10 – 17
Fluidity (25°C, s)	30 min	10 – 20
Fluidity (25°C, s)	60 min	10 – 25
Bleeding Rate (%)	3h wire bleeding	0

Testing Item	Condition / Age	Performance Specification
Bleeding Rate (%)	24h free bleeding	0
Pressure Bleeding Rate (%)	0.22 MPa	≤ 2.0
Pressure Bleeding Rate (%)	0.36 MPa	≤ 2.0
Free Expansion Rate (%)	3h	0 – 2
Free Expansion Rate (%)	24h	0 – 3
Flexural Strength (MPa)	3d	≥ 5
Flexural Strength (MPa)	7d	≥ 6
Flexural Strength (MPa)	28d	≥ 10
Compressive Strength (MPa)	3d	≥ 20
Compressive Strength (MPa)	7d	≥ 40
Compressive Strength (MPa)	28d	≥ 50
Filling Degree	—	Qualified
Air Content (%)	—	1 – 3

5 · Instructions & Precautions

1 Equipment Cleaning

Before mixing, clean all construction equipment thoroughly. Ensure no residue or standing water remains. Check the mixer's filter screen — when grout transfers from the mixer to the storage tank, it must pass through a screen with mesh size ≤ 3 mm × 3 mm.

2 Weighing Accuracy

Weighing of grout powder and water must be accurate to ±1% (by mass). All measuring instruments must be legally verified and used within their calibration validity period.

3 Mixing Sequence

Add 80% of the total mixing water to the mixer. Start the mixer and gradually add all the grout powder. Mix for 2 minutes after all powder has been added. Then add the remaining 20% of water and continue mixing for another 2 minutes.

4 Fluidity Testing

After uniform mixing, conduct an initial fluidity test on site — check one batch out of every 10. When fluidity is within the specified range, the grout may pass through the filter into the storage tank. Continue stirring in the storage tank to maintain fluidity. **Do not add extra water** during construction if fluidity appears insufficient.

5 Duct Grouting

Before injecting grout into the beam duct, start the grouting pump and discharge a small amount of grout from the nozzle to expel air, water, and diluted grout from the line. Begin duct grouting only when the discharged grout has the same fluidity as the grout in the mixing tank.

6 Temperature Control

Grout temperature during placement must be between 5 °C and 30 °C. During grouting and for 3 days after, the beam body and ambient temperature must remain at or above 5 °C; otherwise, appropriate curing measures shall be taken.

6 · Packaging & Storage

- **Packaging:** Sealed multi-layer bags, available in 25 kg or 50 kg units.
- **Storage:** Keep in a dry, well-ventilated area. Store off the ground on pallets and cover with plastic sheeting to protect from direct sunlight and moisture.
- **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-Y (v2.0)

qdnewmaterial.com | qdmaterials.com | qdmaterials888@gmail.com

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