Product Technical Manual

Revision Date: 2025-03-01 TDS Number:
Product Name: Wanhua Hydraulic Engineering Asphalt Version: V 3.0

Product Introduction

Wanhua Hydraulic Engineering Asphalt is formulated with low-wax, naphthenic crude oil. It features low wax content, superior impermeability, balanced composition, and low brittle point. Primarily used in hydraulic and hydroelectric projects—such as earth-rockfill dams, concrete dams, masonry dams, pumped storage reservoirs, and canals—for rolled asphalt concrete construction, this product delivers exceptional impermeability.

Performance Features

1. Flexible Waterproof Material: Adapts to structural movements while maintaining integrity.
2. Exceptional Durability: Asphalt concrete prepared with this material exhibits a flow value **<0.8 mm** after 48 hours at 70 ℃ (per DL/T 5411–2009).
3. Excellent Aggregate Adhesion: Meets Grade 5 bonding requirements for long-term stability.
4. Uniform Coating and Impermeability: Ensures seamless coverage and resistance to seepage.

Key Performance Indices

Standards: DL/T 5411–2009 Design Code for Asphalt Concrete Panels and Cores of Earth-Rockfill Dams

Item	Index
Penetration100g, 5s, 25℃, 0.1mm	68
Ductility (15℃, 5cm/min)	≥150
Ductility (4℃, 1cm/min)	70
Softening Point , ℃	50.5
Brittle Point, ℃	-19
Flash Point (COC) , ℃	290
Wax Content (Pyrolysis) , %	1.9
Solubility (Trichloroethylene) , %	99.70

Mass Change, %	-0.012
Residual Penetration Ratio (25℃) , %	77.2
Residual Ductility (15℃) , cm	101
Residual Ductility (4℃) , cm	40
Softening Point Rise, ℃	1.5
60℃ Dynamic Viscosity, Pa • s	396
135℃ Dynamic Viscosity, Pa • s	0.61

Note: Values listed are typical test results and may vary slightly with environmental conditions. Legal binding is not claimed for these data.

Construction Process

1. Construction Conditions

• Wind Speed: <4 levels for rolled asphalt concrete.

• Rainfall: <5 mm/day for rolled asphalt concrete; prohibited during paving.

• Temperature:

• Rolled asphalt concrete: ≥0°C (base) and ≥5°C (panel).

• Cast asphalt concrete: ≥-20 ℃ (base), <5 mm/day snowfall.

2. Construction Methods

• Rolled Asphalt Concrete: Mechanized construction with manual assistance for localized connections.

• Cast Asphalt Concrete: Mechanized or manual methods (mechanized preferred for dams >30m).

3. Mixing and Transportation

• Use stationary batching plants with insulated storage bins.

• Mixing Process: Dry-blend aggregate and filler for 15s, then mix with hot asphalt for ≥45s. Ensure uniform color and no segregation.

4. Rolled Asphalt Concrete Construction

• Base Preparation: Compact soil subgrade, spray herbicide, and apply emulsified asphalt to cushion layers.

• Material Placement: Use pavers with vibratory rollers for compaction. Manual placement for inaccessible areas.

• Joint Treatment: Compact joints immediately with handheld rollers.

5. Cast Asphalt Concrete Construction

• Surface Treatment: Clean panels, apply 0.15–0.20 kg/m ²diluted asphalt, and dry.

• Pouring: Temperature ≥150°C (≥170°C in cold seasons). Pour continuously in 20–30 cm layers, compact with vibratory tampers until air bubbles dissipate.

Hydraulic asphalt concrete paving and rolling

Panel paving of hydraulic asphalt concrete effect

Packing Details

Specialized tankers for storage and transportation.

Storage (Usage) Precautions

• Store in heated, insulated tanks to maintain consistency.

Expiration Date

12 months under sealed, dry conditions.

For more information, please refer to the Safety Data Sheet (SDS) of our products or contact our Customer Service Center.

The indicators and data provided in this document are based on our current level of technical knowledge and practical experience, and are for reference only. Specific guaranteed indicators are subject to the quality assurance certificate or supply contract. The user is responsible for testing the products purchased from our company to verify their suitability for their intended processes and applications, and to achieve the desired objectives. Further application and processing of our products are beyond our control. Therefore, our liability for the products provided is limited to the portion delivered by us and used by you. We do not assume responsibility for indirect losses incurred during the production process using our products as raw materials. Our technical support and customer service center are available to provide consultation and technical services related to our products. We welcome your inquiries and communication via mail or phone.

Address: Wanhua Energy-Saving Technology (Yantai) Co., Ltd.
No. 56 Taiyuan Road, Yantai City, Shandong Province, China
Email: mouwen@126.com