Product Technical Manual

Revision Date：2025-03-01 TDS Number：

Product Grade：WANSHIELD® Version： V 3.0

Product Introduction

WANSHIELD® low-temperature repair mortar is formulated with cement, graded aggregates and essential admixtures to create an optimally proportioned dry-mix product. Simply add water and mix to achieve a ready-to-use consistency. This mortar exhibits outstanding properties including ultra-early strength, high fluidity, excellent bonding, freeze-thaw resistance and rapid repair capabilities, making it ideal for quick maintenance in cold weather conditions down to -10 ℃ while ensuring durable performance.

Performance Characteristics

1.Low-Temperature Performance: Maintains hydration reaction capability in extreme cold, providing a complete solution for low-temperature floor repairs.

2.Rapid Strength Development: Enables ultra-efficient construction without production line shutdowns, with operational readiness in as little as 2 hours.

3.Durability: Achieves compressive strength exceeding 40MPa, delivering long-lasting structural performance with high cost-effectiveness.

4.Eco-Friendliness: VOC-free formulation ensures environmental safety, containing no toxic or hazardous substances.

5. Aesthetic Versatility: Available in multiple colors, combining functional repair with decorative appeal.

Product Applications

Widely used for rapid repair of low-temperature flooring in various cold storage

facilities, ice rinks, ski resorts and other sub-zero construction environments.

Physical & Chemical Properties

Part	Type	Compressive Strength 2h	1d	3d	28d	Fluidity (mm)	Usage Temperature (℃)	Applicable Scope
Ground	Normal Temp Type	/	≥30	≥40	≥45	≥270	5～40	Ordinary floor repair at room temperature
	Low Temp Type	/	≥30	≥40	≥45	≥270	-5～5	Fresh storage rooms or floors above -5 ℃
	Ultra-Low Temp Type	≥20	≥30	≥40	≥45	≥270	-20～-5	Cold storage or other floors above -20 ℃
	Freezer-Specific Type	≥20	≥30	≥40	≥45	≥270	-40～-20	Specialized for -40 ℃ freezers
Vertical Surface	Normal Temp	≥20	≥30	≥40	≥45	/	≥0	Repair of damaged wall structures in low-temperature buildings
	Subzero Temp	≥20	≥30	≥40	≥45	/	-40～0	

The values provided in this document are typical test results, and actual data may vary slightly depending on environmental conditions. For our company's products, the listed data are not legally binding in any way.

Construction Method

(1) Substrate Preparation

Vertically cut the edges around the damaged area to the same depth as the repair thickness.

(2) Surface Cleaning

Remove all damaged flooring materials, loose debris, grease, coatings, sealants, and other contaminants thoroughly.

(3) Base Compaction & Roughening

Compact and reinforce any loose subgrade.

Roughen smooth surfaces by scabbling or mechanical abrasion.

(4) Wetting the Interface

Prior to construction, fully wet the substrate (skip this step under subzero temperatures).

Ensure no standing water remains (remove accumulated water with a sponge or dry cloth before proceeding).

Minimum repair thickness: >30mm.

(5) Mixing

Add the material to water at the specified ratio while stirring continuously until a homogeneous mixture is achieved (no dry powder visible).

Mixing time:

Mechanical mixer: 2–3 minutes.

Manual mixing: ≥3 minutes.

(6) Application & Finishing

Pour the mixed material into the prepared damaged area.

Work efficiently to minimize operation time.

Perform trowel finishing before surface hardening begins.

(7) Curing with Membrane

Due to rapid strength development:

Complete surface finishing as quickly as possible.

Immediately cover with a plastic membrane after final set for curing.

Packaging Specifications

Woven bag packaging: 25kg/bag.

Customized packaging specifications are available according to customer requirements.

Storage & Transport Conditions and Shelf Life

Storage & Transport Conditions:

The coating must be stored in its original sealed container in a dry, cool (5-30℃), and well-ventilated environment. Protect from high temperatures and ignition sources. During transportation, stack materials securely and ensure dry, enclosed truck conditions with moisture and freeze protection.

Shelf Life:

6 months from production date when stored under specified conditions in unopened original packaging.

Safety Precautions

1.Before Use

Read all construction instructions and warning labels on the packaging carefully before application.

2. Ventilation Requirements

The product must be used in well-ventilated conditions.

3.Fire Prevention

All open flames (including welding, grinding, smoking and other unspecified ignition sources) are strictly prohibited at the construction site.

4.Personal Protection

Wear approved respirators and proper protective equipment during application.

Avoid inhaling paint mist and prevent skin contact with the coating material.

5.Emergency Treatment

Skin contact: Wash immediately with soap and plenty of water.

Eye contact: Rinse thoroughly with clean water for at least 15 minutes and seek immediate medical attention.

6.Safety Assurance

The cured coating is non-toxic under normal application conditions.

7.Additional Information

For complete hazard information, safety measures and first aid procedures, refer to the product's Material Safety Data Sheet (MSDS).

Fire and Explosion Hazards

This product is not classified as a flammable liquid, explosive, oxidizer, corrosive, toxic or radioactive hazardous material during storage and transportation, and does not qualify as a dangerous good.

Acceptable extinguishing agents include carbon dioxide, foam, or dry chemical powder fire extinguishers. In the absence of other extinguishing agents, large amounts of water mist/spray may be used. Once the fire is extinguished, spilled material must be thoroughly cleaned (refer to Spill Response Procedures).

Firefighting Procedure: Standard Protection

Spill and Leakage Handling

•Small Spills: Rinse with water.

• Large Spills: Contain, recover, and clean with water/detergent. Dispose of waste per local environmental regulations.

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