

# WANSHIELD®EM660

## Modified Epoxy Leak-Sealing

### Grouting Material

## Product Description

WANSHIELD®EM660 Modified Epoxy Leak-Sealing Grout is a solvent-free, two-component epoxy grout offering high strength, corrosion resistance, superior adhesion, and excellent moisture tolerance. With a working time of  $\leq 30$  minutes and rapid strength development, it is specifically designed for emergency reinforcement of concrete and rock structures.

## Product Characteristics

Solvent-free with outstanding environmental performance; exhibits lower shrinkage compared to conventional solvent-based low-viscosity grouting materials; provides high bond strength to concrete and metal components; possesses excellent overall mechanical properties with a degree of toughness.

## Recommended Uses

Primarily used for reinforcement and strengthening of concrete and rock cracks in concrete dam surfaces, intake tunnels, tailrace tunnels, spillway tunnels, spillways, powerhouse buildings, and other structures; bonding and reinforcement of metal components to concrete.

## Technical Specifications

### Physical Parameters

Color	Light yellow liquid
Specific Gravity	$1.08 \pm 0.02$ kg/L
Initial Viscosity of Mixed Slurry	$350 \pm 100$ mPa • s, 25°C
Workability Time	20min
Tensile Strength	$\geq 15$ MPa
Compressive Strength	$\geq 70$ MPa
Underwater Compressive Strength	$\geq 40$ MPa
Tensile Shear Strength	$\geq 8.0$ MPa
Dry Substrate Bond Strength	$\geq 4.0$ MPa
Wet Substrate Bond Strength	$\geq 2.5$ MPa
Water Resistance Pressure	$\geq 1.2$ MPa
Permeability Pressure Ratio	$\geq 400$ %

The values provided herein represent typical test results; actual data may vary slightly depending on environmental conditions. For our company's products, the listed data is not legally binding.

## Application Guidance

### Application Conditions

Coating environment temperature range: 5 – 35°C

Coating environment humidity range: 30 – 85%

### Application Method

Specialized high-pressure airless grouting equipment.

### Mixing Ratio

Mass ratio: 3:1

Pot life: 2mins/25 °C

### Ventilation conditions

Ensure the work area is well-ventilated and dust-free, but avoid strong winds that could carry in dust and affect the surface finish. For the safety of workers and to ensure the product performs correctly, all sections of the work area must have adequate ventilation.

## Application Steps

### Surface Preparation

Grind the area surrounding cracks to expose the solid concrete substrate.

### Drilling and Embedding

Drill holes across or at an angle to the crack (depth must penetrate the crack surface), spaced 20 – 30 cm apart (adjust slightly based on crack width), and embed grouting tubes. For low-pressure applications, epoxy mortar/putty can be used to bond grouting boxes instead.

### Seam Surface Sealing

Seal the seam surface with high-strength epoxy mortar/putty to prevent leakage; or chisel a groove and fill with high-strength cement mortar/903 polymer mortar, smoothing the surface. After drying, apply epoxy mortar to reinforce the seal.

### Seal Integrity Test

Brush soapy water onto the seam surface and inspect for leaks using compressed air. Re-seal any leaking areas until no leakage occurs.

### Grout Preparation

Weigh components at A:B = 3:1 (manufacturer's standard ratio), mix for  $\geq 2$  minutes until uniform;

Prepare small batches frequently: Control single batch volume based on grout flow rate to ensure low-viscosity injection;

### Pressure Grouting

Grout vertical joints from bottom to top; horizontal joints from one end to the other.

Gradually pressurize to design value (typically 0.2 – 0.5 MPa). Close valves after grout emerges from all ports, maintaining pressure until full saturation.

### **Post-Treatment**

After 24 – 48 hours of curing, cut off exposed grouting pipes.

Fill pipe holes with mortar. Apply 1 – 2 coats of epoxy mortar for surface protection.

## **Packaging and Storage**

### **Packaging**

Two-component system: Component A: 20 kg per drum Component B: 20 kg per drum or 6.7 kg per drum.

### **Storage**

Product storage must comply with national regulations. Store in a cool, well-ventilated area away from excessive heat. Containers must be securely sealed.

### **Shelf Life**

1 year

## **Safety Measures**

### **Warning**

May cause eye and skin irritation. Vapors may cause respiratory irritation in sensitive individuals. May cause skin sensitization. Avoid breathing vapors. Avoid contact with eyes and skin. Use eye, ear, and skin protection, and wear an appropriate respirator to avoid potential respiratory irritation. After use, thoroughly wash skin with water. If discomfort occurs, consult a physician. Wash clothing before reuse. If breathing has stopped, perform artificial respiration, preferably mouth-to-mouth, and seek medical attention. Burns: Exothermic reactions may cause product to become excessively hot. Handle mixtures with caution. Wear gloves. First Aid: If product contacts eyes, immediately flush with water for at least 15 minutes. Remove contaminated clothing and shoes. Wash exposed skin with soap.

Before and during use, observe all safety labels on the packaging. Consult the Safety Data Sheet and comply with relevant national or local government safety regulations.

### **Statement**

The information listed in this document is reliable. Each value provided is calculated as theoretical data based on the product formulation. Upon request, our company can disclose the internal standard measurement methods used to determine any of the above data. Since usage conditions are beyond the manufacturer's control, this information is provided without warranty. The product is intended for professional use only. For any inquiries, please contact our company.

Our Technical Support and Customer Service Center is available to provide consultation and application



technical services regarding the product. We welcome your inquiries via mail or phone. National Customer Service Hotline: 400-059-1116 ext. 3.