

## **Anti-static Non-sparking Wear-resistant Hardener**

### **Step 1: Substrate Preparation**

Clear any debris from the ground and repair any defects to ensure the surface is level. Use tools such as a milling machine or electric chisel to remove loose parts and oil stains. Roughen the smooth parts of the foundation and clean up any cement dust and sand residue generated during the roughening process. Ensure the substrate has strength and adhesion (to prevent hollow sounds and cracking).

### **Step 2: Primer Treatment**

1. Thoroughly moisten the ground to avoid the substrate absorbing too much water from the material, which could lead to air bubbles and affect the appearance and strength.
2. Apply two coats of a specialized repair interface agent (penetrating type) to improve the adhesion of the non-sparking mortar. For the first coat, dilute the agent at a ratio of 1:4-5 and spray it until the ground is fully absorbed (the white emulsion disappears, forming a transparent layer). Spray the second coat once there is no standing water. For the second coat, dilute the agent at a ratio of 1:1-2 and wait for it to dry (forming a transparent layer) before laying the non-sparking mortar.

### **Step 3: Grid Reinforcement / Laying Steel Mesh (Increase Grip and Flexural Strength)**

1. To ensure the depth of the reinforcement, the roughening should be consistent, exposing the concrete aggregate and cleaning it thoroughly. According to the construction thickness, reserve 1 cm for the reinforcing bar. The spacing of the reinforcement should be 20/40/60 cm, depending on the site conditions. Clean up any sand residue generated. (Note: This step should be completed before "Step 2: Primer Treatment".)
2. Before laying the steel mesh, apply two coats of a specialized repair interface agent (penetrating type). Once the agent dries, lay the steel mesh, elevating it according to the construction thickness.

### **Step 4: Material Mixing**

Mix the material at a water-to-powder ratio of 13-14% (add 6.5-7 kg of water to one bag) using a handheld mixer. First, add the water to the bucket, then the non-sparking wear-resistant mortar. Mix for 2 minutes until thoroughly combined without dry powder. Let it rest for 1 minute (allowing the fine materials to hydrate fully), then mix for another 1-2 minutes before use. For larger quantities, use a concrete mixer to improve construction efficiency.

### **Step 5: Laying the Material**

Pour the mixed material into the designated area, paying attention to the reinforcing bars and steel mesh. Level and compact the material according to the designed elevation to form a uniform layer of wear-resistant material. Avoid having the reinforcing bars or steel mesh protrude, as this can affect the final appearance.

#### **Step 6: Cutting Expansion Joints**

After the material has fully set, cut expansion joints according to the actual site conditions to prevent cracking due to expansion.

#### **Step 7: Curing**

Water-cure the material for 15 days after it has fully set.

#### **Characteristics of Non-Sparking Wear-Resistant Flooring:**

1. **Non-Sparking:** Does not generate sparks when struck by metal or other hard objects.
2. **Wear Resistance:** Has high wear resistance suitable for high-traffic or heavily loaded areas.
3. **Impact Resistance:** Can withstand physical impact without damage.
4. **Moisture Resistance:** Suitable for humid environments while maintaining good stability.
5. **Decorative:** Provides a certain level of aesthetic appeal to meet various decorative needs.
6. **Ease of Construction:** Easy to mix and lay, with a simple construction process.
7. **Dust-Free:** The surface is solidified and does not produce dust after curing.

#### **Summary:**

The construction method for non-sparking wear-resistant flooring offers high wear resistance, impact resistance, and the ability to resist spark generation when metal objects are struck against it. This method has been proven reliable and feasible through practical engineering applications and is suitable for use in areas with high requirements for wear resistance, impact performance, and fire prevention.