

Shieldplug 1

Rapid Setting, Cement-based Water Plugging Mortar
(Formerly Known as Plug 1)



MICSHIELD®

Description

Shieldplug 1 is a single-component, pre-mixed, cement-based powder that requires the addition of clean water on site, to set rapidly within 1 minute. Once mixed, the product is used to stop active water leaks from cracks, holes, and other concrete and masonry openings immediately.

Uses

- Rapid setting mortar for plugging leaking cracks, joints, and holes in concrete structures.
- Temporary repair/patching of active water leaks.
- Emergency repair on concrete water pipes or manholes.
- Water tanks, basements, elevator pits, sewage treatment plants, etc.

Characteristics / Advantages

- Factory-controlled pre-blended dry mix, only requires the addition of water.
- Rapid-setting - within 1 minute.
- Easy to apply.
- High early strength and excellent adhesion.
- Non-toxic and Chloride-free.

Shelf Life and Storage

Shieldplug 1 has a shelf life of 12 months when stored in its original unopened packaging in cool and dry conditions, protected from direct sunlight, heat, and moisture. Shelf life may be reduced if the recommended storage conditions are not followed.

Safety Instructions

Shieldplug 1 contains hydraulic cement and may cause irritation to skin or eyes. Refer to the most recent Material Safety Data Sheet for information and advice on the safe handling, storage, and disposal of the product.

Typical Properties

Color / Appearance	Grey powder
Fresh Wet Density (@ 23°C)	2.15 ± 0.05 g/ml
Setting Time (@ 23°C)	1 minute
Yield	1.3 Liters per 2 kg pack 3.3 Liters per 5 kg pack
Compressive Strength (ASTM C109)	
@ 2 hours	≥ 10.0 MPa
@ 24 hours	≥ 20.0 MPa
@ 28 days	≥ 40 MPa
Application Temperature	+5 to +40 °C

Packaging

Shieldplug 1 is supplied in 2 kg and 5 kg packs.

Application Instructions

1. Surface Preparation

Leaking Cracks

The area around the leak or crack must be free from dust, loose materials, surface contamination, and materials that may prevent the adhesion of the mortar.

Chase along the crack the shape of a "U" letter with a depth of 20 mm and width of 15 mm, and avoid a "V" shape cut, in order to improve the adhesion and durability of the mortar. Pre-damp dry surfaces with water (SSD) prior to repair.



Patching

The area to be patched should be cut back to 15 mm depth and 15 mm width (square shape), and the exposed surfaces roughened to provide a mechanical key for resisting water pressure. No feather edges are allowed. The surface shall be cleaned of any loose material and debris.

Any surrounding surface contaminants such as mould growth, algae, and slime must be removed by steam cleaning or high-pressure water jetting. Oils and grease should be removed using a proprietary degreasing agent.

2. Mixing

Shieldplug 1 should be quickly mixed with clean water to avoid rapid curing before application. Only mix the required amount of material that can be applied for immediate use within 1 minute.

- Add the pre-measured amount of water to a clean mixing bucket.
- Add **Shieldplug 1** powder to the water and mix immediately using a trowel or gloved hand until a putty-like consistency is achieved.
- As a guide, ~280 ml of water / 1 kg of **Shieldplug 1** gives a satisfactory consistency (or 1.4 liters / 5 kg bag of **Shieldplug 1**).

3. Application

After forming a solid ball-like quantity of **Shieldplug 1**, apply the mixed material to the prepared leaking crack or hole with a gloved hand or trowel. The material will start to expand, hold firmly in place until the mortar is sufficiently hard to resist the water pressure. Continue this process until the leak is stopped throughout the length of the crack or from the hole.

Eliminate excess material with a gloved hand or using a trowel once the mortar has hardened. The material can be painted after finishing and the full cure.

4. Cleaning

All mixing and application equipment should be cleaned immediately with clean water. Hardened material should be mechanically removed.

Limitations

- Do not apply the product if the ambient temperature is less than 5°C.
- Hot weather practices should be adopted during application and curing if the temperature is above 35°C. In hot conditions, store the material in a cool environment prior to mixing.

Technical Support

Refer to technical information, method statement, or contact technical support team for any inquiry.

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