

# StrongGrout UW

## Premix

**Non-Shrink, High Performance Cementitious Microconcrete for Under Water Applications**

### Description

**StrongGrout UW Premix** is supplied as a ready to use powder. The addition of a controlled amount of clean water produces a free flowing microconcrete. The microconcrete exhibits exceptional resistance to 'washing-out' of the cement phase when placed in stationary or moving water.

**StrongGrout UW Premix** is a blend of cement, graded fine aggregate, selected coarse aggregate and chemical additives which impart controlled expansion, water reduction and anti 'wash-out' additive. The aggregate grading minimises segregation and bleeding whilst assisting the flow characteristics.

### Uses

**StrongGrout UW Premix** is used for free flow or pumped microconcrete applications of underwater or in tidal zones. There will be no significant 'wash-out' of the cement phase. Applications include bridge columns, quay pillars, concrete piling, slipways and dams.



### Standards Compliance

- ASTM C109
- ASTM C348
- ASTM C940

### Advantages

- No risk of significant 'wash-out' of cement phase when placed underwater
- Displaces water effectively
- Shrinkage compensated
- High early and ultimate strength and exceptional resistance to freeze-thaw cycling ensures durability
- Chloride free
- Pre-packaged needing only on-site addition of water

### Physical Properties

Water-powder ratio at 0.13 ( 28°C)

Test Method	Typical Result
Compressive Strength ASTM C-109	> 28 N/mm <sup>2</sup> @ 1 day > 48 N/mm <sup>2</sup> @ 7 days > 64 N/mm <sup>2</sup> @ 28 days
Flexural strength ASTM C-348	> 8 N/mm <sup>2</sup> @ 28 days
Water requirement	4.0 liter per 30 kg
Expansion ASTM C-940	0.3 – 2.0 %
Setting Time(28°C) ASTM C403	5 - 6 hours (initial) 6 - 7 hours (final)
Fresh wet density	<b>2,200 ± 0.05 kg/m<sup>3</sup></b>
Ion Chloride Permeability (Coloumbs)	1.2 mm/ mm

### Application Instructions

#### Preparation

The substrate surface must be free from oil, grease or any loosely adherent material. If the concrete surface is defective or has laitance, it must be cut to a sound base. Substrates which are permanently immersed should be sand-blasted or cleaned with a high pressure water jet. Non-immersed or intermittently immersed substrates can be prepared using these techniques. Alternatively scabbling or bush hammering may be appropriate.

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### Formwork

The formwork should be constructed to be leakproof, as **StrongGrout UW Premix** is a free flowing microconcrete, using foam rubber strip or mastic sealant beneath the formwork and between joints. Coat all formwork with to enable easy formwork release.

### Mixing

For best results a mechanically powered grout mixer should be used. It is essential that machine mixing capacity and labour availability is adequate to enable the grouting operation to be carried out continuously. This may require the use of a holding tank with provision for gentle agitation to maintain fluidity.

Measure 4.0 – 4.5 litres of water for each 30 kg bag into the mixer. Slowly add the **StrongGrout UW Premix** whilst mixing continuously. When all the powder is added mix continuously for 2 minutes ensuring a smooth even consistency is obtained.

### Placing

Place the grout within 20 minutes of mixing to gain the full benefit of the expansion process. Continuous grout flow is essential. The mixed grout should be poured or pumped through a flexible tremie tube to the lowest point in the formwork. Care must be taken at the start of the grouting operation to restrict the grout flow so that water is not entrapped. The tube may be raised as necessary to reduce any back pressure. It should not be raised above the surface level of the grout.

### Curing

Curing will not be required in intermittently or totally submerged situations. However, when cast above water, exposed areas should be thoroughly cured with curing membrane, continuous application of water and/or wet hessian.

### Cleaning

Because of its water resisting properties, equipment used for **StrongGrout UW Premix** will be difficult to clean. The use of hot water for cleaning purposes will assist. Cured material can be removed mechanically.

### Packing

**StrongGrout UW Premix** is packed in 30 kg bags.

### Yield

1 bag 30 kgs → yield : 15 litres  
67 bags @ 30 kg → yield : 1 m<sup>3</sup>  
(actual yields depending on water added)

### Limitation

**StrongGrout UW Premix** is not suitable to be used for unrestrained grouting.

### Storage

**StrongGrout UW Premix** should be stored on pallets in dry and shaded conditions where under such conditions, the product will have a shelf life of 12 months.

### Safety Precaution

**StrongGrout UW Premix** should not be in contact with sensitive skin and eyes. Avoid inhalation of dust during mixing. Wear gloves, goggles and dust mask.

### Technical Support

**Estrong** provides technical support to specifiers, end-users and contractors, as well as on-site technical assistance.

### Additional Information

**Estrong** is Indonesian company, manufactures and sells wide range of construction chemical products, such as grouts, anchors, repair mortars, waterstops, waterproofing product,

concrete strengthening products and  
specialized flooring products.

