

## Water proof, Fast Setting, Structural Grade Cement for Tie hole sealing. WRAS approved.

### USES

For the filling of tie-holes formed by formwork bolts in new construction, particularly where a rapid setting, durable, waterproof mortar is required. Can also be used for sealing grout holes and voids around fixings in pre-cast elements as well as general concrete repairs. **WRAS** Approved Material for contact with potable water. Approved for use under **DWI Regulation 31 (4)(b)**.

### ADVANTAGES

- USER FRIENDLY:** Materials are pre-packaged and only require mixing with clean water on site.
- LOW SHRINKAGE:** Maintains high bond strength to substrate and ensures monolithic performance of the repair.
- RAPID SETTING:** Sets in 30 minutes at 20°C, yielding a durable, high strength mortar.
- WATERPROOF:** Can withstand 10bar pressure after 72 hours curing.
- POLYMER MODIFIED:** Ensures enhanced adhesion and low permeability, giving excellent protection from acid gases, moisture ingress and chlorides.
- INNOVATIVE:** Incorporates the latest proven cement chemistry, polymer and fibre technology.
- FIBRE REINFORCED:** Improved tensile and impact strength. Excellent low sag properties.
- SAFE:** Non-toxic when cured

### DESCRIPTION

**TIESTOP** is a single component, polymer modified, fibre reinforced, Portland cement based repair compound, which exhibits unique hydraulic properties to produce a rapid curing mortar with enhanced polymer properties.

The product is supplied as a single component system requiring only the addition of clean water to give a rapid setting, yet durable high strength mortar. It is ideally suited for the filling of voids particularly in new construction which need to be rapidly put into service, such as tie-holes, grout holes and voids around fixings.

### TECHNICAL DATA

Mixed Colour:	Concrete Grey.
Mixed Density:	2150kg/m <sup>3</sup> .
Min. Application Thickness:	5mm.
Max. Application Thickness:	50mm in vertical and soffit situations.
Min. Application Temperature:	5°C.
Max. Application Temperature:	35°C.
Working Life:	20 minutes at 20°C.
<b>Bond Strength (BS 6319: Part 4)-Slant Shear Method:</b>	
28 days	51.0N/mm <sup>2</sup> .
<b>Water Permeability:</b>	
8.75mm of <b>TIESTOP</b> = 100mm of typical concrete	

### Compressive Strength at 20°C:

1 hour	8.5N/mm <sup>2</sup> .
2 hours	15.0N/mm <sup>2</sup> .
4 hours	25.0N/mm <sup>2</sup> .
1 day	39.5N/mm <sup>2</sup> .
7 days	51.0N/mm <sup>2</sup> .
28 days	59.5N/mm <sup>2</sup> .



Direct Chemicals Ltd.  
Unit 6, Stokes Farm, Binfield Road, Wokingham, Berkshire, RG40 5PR  
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0086-CPR-602636

EN1504-3: Concrete repair product for structural repair  
PCC mortar (based on hydraulic cement polymer modified)

Compressive Strength:	Class R4 ≥ 45 MPa
Adhesive Bond:	Class R4 ≥ 2.0 MPa
Chloride Ion Content:	≤ 0.05%
Carbonation Resistance:	Passes
Elastic Modulus:	R4 ≥ 20 GPa
Thermal Capability Part 1:	Class R4 ≥ 2.0 MPa
Capillary Absorption:	≤ 0.5 kg.m <sup>-2</sup> .h <sup>0.5</sup>
Dangerous Substances:	Complies with 5.4
Reaction to Fire:	Euroclass A2-s1, d0

### APPLICATION

#### PREPARATION

The areas to be repaired must be free from all unsound material, i.e. dust, oil, grease, corrosion by-products and organic growth. Smooth surfaces should be roughened, all loose material and surface laitance removed.

**TIESTOP** does not use a separate primer system. It is only necessary to ensure the hole/repair area is thoroughly saturated with clean water, removing any excess surface water prior to filling or commencing a repair. If the concrete to be treated is new (hours old), use warm water to prevent thermal shock.

For the treatment of tie-holes formed by through-ties, any remaining plastic tube should be cut back and removed to approximately 40-50mm from the concrete face. Additionally, to eliminate the possibility of water tracking around the plastic tube, it should be plugged with a cork, proprietary rubber stopper or "Flupp" plug.

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#### Direct Chemicals Ltd

Unit 6, Stokes Farm, Binfield Rd,  
Wokingham, Berkshire, RG40 5PR

Tel: 0118 989 2666  
sales@dichem.co.uk  
dichem.co.uk

## Water proof, Fast Setting, Structural Grade Cement for Tie hole sealing. WRAS approved.

### MIXING

Mix only sufficient **TIESTOP** as can be used within the working life of the material. Using the mixing scoop provided, proportion the material using the guide mix ratios as follows:

Initial Mixing Ratio

**TIESTOP**:water 6:1 by volume

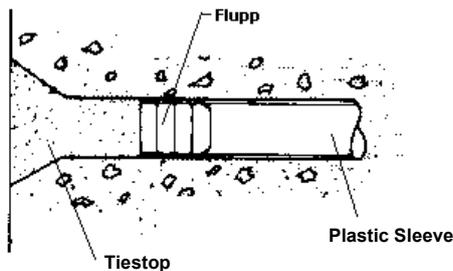
**TIESTOP**:water 9.4:1 by weight

Always add powder to water. Small quantities, i.e. less than 2kg, can be mixed by hand. Larger quantities should be mechanically mixed in a clean drum using a slow speed drill and paddle. A normal mixer is NOT suitable. Mix together thoroughly for 1-2 minutes to produce a cohesive thixotropic mortar. If necessary, when volume batching, the consistency can be adjusted by the minimum addition of extra powder or water. Use without delay.

### PLACING

For normal applications, **TIESTOP** should be compacted, using a placing technique to remove entrapped air, in layers not exceeding 50mm in vertical or soffit situations, or 100mm deep in pockets. For repairs which require multi-layer applications it is important to ensure that the previous layers are well keyed and stable but not fully set (usually 30-45 minutes dependent upon temperature) prior to the application of subsequent layers.

When the colour and surface texture of the surrounding concrete has to be matched, the final 15-25mm layer should be filled with **MATCHPATCH**. Consult the relevant Data Sheet for further information. Final profiling of a high quality can be easily achieved with clean, dampened steel float.



### CURING

**TIESTOP** cement used in small repairs does not normally require curing. However, for large repairs, screeds, or its use in hot climatic conditions, normal concrete curing techniques are recommended, i.e. damp hessian or white polythene sheet.

All tools should be cleaned with water immediately after use.

### PACKAGING & TRANSPORT

Tiestop is supplied in 8kg Tubs

Yield is 4 litres per 8kg pack.

Not Regulated for Road Transport

### CONSUMPTION TABLES

#### SHE BOLT TYPE

Tie Rod cover (mm)	She Bolt size (in)	Tie Rod size (in)	No. of holes per 8kg pack 4ltrs approx*	No of holes per 6:1 mix 285cc approx*
38	1¼	¾	88	6
	1	¾	144	10
	¾	½	247	18
50	1¼	¾	72	5
	1	¾	117	8
	¾	½	200	14

#### THROUGH TIE TYPE

Depth of fill (mm)	Diameter of hole (mm)	No. of holes per 8kg pack 4ltrs approx*	No. of holes per 6:1 Mix 285cc approx*
30	26	229	16

\*These figures assume holes are filled to concrete wall faces and allow for 10% wastage.

### CERTIFICATION

Water Regulations Advisory Scheme Approved Material  
Listing Number 1702538.



Fully complies with the Highways Agency Standard BD 27/86 for use on Highway Structures. CE Marked.

### STORAGE & HANDLING

**TIESTOP** in manufacturer's sealed tubs requires no special storage facilities. Shelf life is 12 months in dry, frost free conditions with unopened containers at 20°C.

### HEALTH & SAFETY

Refer to separate material safety data sheet. Copies available by request.

### QUALITY ASSURANCE

Direct Chemicals Ltd is a firm of assessed capability. The Company's quality system conforms to BS EN ISO 9001:2008 and is assessed by QMS International PLC. Products are manufactured under quality assured schemes.

Direct Chemicals Ltd products are guaranteed against defective materials and manufacture. Products are sold subject to the Direct Chemicals Ltd Terms and Conditions of Sale, copies of which are available on request. Direct Chemicals Ltd endeavors to ensure that the above data and any further advice is correct, however Direct Chemicals Ltd can not accept liability for the use to which products are put or the way in which they are used. All recommendations stated by the company are made in good faith. Recommendations do not over-ride the basic obligation of the user to satisfy themselves at all times as to suitability of the product for their particular application.