



## TufFlow NC

### Chloride Free Accelerating Admixture

#### Uses

- Typical applications include concrete or mortar placed in cold weather and precast concrete.
- To accelerate the stiffening and early strength gain of Portland cement concrete and mortar

#### Typical Applications & Advantages

- Also provides a degree of water reduction or increased workability.
- Chloride free, safe for use in reinforced concrete.
- Accelerated setting gives added protection against early age frost attack.
- Suitable for use in bricklaying mortar
- Particularly effective in assisting to offset the delaying effect of low temperatures on setting and strength gain.

#### Standards Compliance

TufFlow NC complies with the requirements of the following standards:  
ASTM C494 as Type C.

#### Product Description

TufFlow NC is a chloride free accelerating admixture based on a combination of formate and nitrite salts. It is supplied as a straw coloured solution that instantly disperses in water.

TufFlow NC accelerates the early stages of cement hydration, producing more rapid stiffening and allowing strength gain to commence at an earlier stage. This effect is particularly noticeable at low temperatures and is most significant in the first 24 hours after mixing.

#### Typical Properties

<b>Appearance</b>	: Straw coloured liquid
<b>Specific Gravity</b>	: 1.26 @25±2 <sup>0</sup> C

#### Technical Support

GIC provides a comprehensive technical support service to specifiers, end users and contractors and is able to offer on-site technical assistance.

#### Instructions for Use

##### Compatibility

TufFlow NC is compatible with other GIC admixtures in the same concrete mix. The admixtures must be added to the concrete separately with the mixing water and must not be directly mixed together prior to addition. The performance of concrete containing more than one admixture should be assessed by trial mixes to ensure the desired combination of effects is obtained.

TufFlow NC is suitable for use with ordinary Portland cement. Contact GIC for advice on use with sulphate resisting cements and cement replacement materials.

##### Durability

TufFlow NC has no detrimental effect on the protection given to embedded steel by the alkalinity of cement and is safe for use as an accelerator in situations where chloride containing admixtures cannot be used.

##### Dispensing

The correct quantity of TufFlow NC should be measured by means of a recommended dispenser. The admixture should then be added to the concrete with the mixing water to obtain the best results. Contact GIC Technical Service Department for advice regarding suitable equipment and its installation.

##### Dosage

The optimum dosage of TufFlow NC to meet specific requirements should always be determined by trial using the materials and conditions that will be experienced in use.

This allows the optimization of admixture dosage and mix design and provides a complete assessment of the concrete mix. A starting point for such trials is to use a dosage within the normal typical range of 2.00 to 3.00 litres / 100 kg of cement.

##### Use at Other Dosages

Dosages outside the typical range quoted above may be used if necessary and suitable to meet particular mix requirements. Provided that





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adequate supervision is available. Compliance with requirements must be assessed through trial mixes. Contact GIC for advice in these cases.

#### Effects of Over Dosage

An overdose of double the intended amount of **TuffFlow NC** may result in increased acceleration. In common with other accelerators this may slightly reduce the ultimate strength of the concrete.

#### Curing

As with all structural concrete, good curing practice should be maintained.

#### Watch Points

**TuffFlow NC** is most effective at low temperatures and early ages. Where compressive strength gain is the major requirement, and stiffening rates are less important, a more cost effective performance may be obtained through the use of a **TuffFlow plasticizer** or super plasticiser.

Normal precautions for cold weather concreting should be followed where **TuffFlow NC** is used.

**TuffFlow NC** is an oxidizing agent and should be stored away from reducing agents and combustible materials.

#### Packaging & Storage

**TuffFlow NC** is available in 210 litres. For site installations deliveries will be made in bulk to site storage tanks. It has a minimum shelf life of 12 months provided it is stored under cover, out of direct sunlight.

#### Health & Safety Precautions

**TuffFlow NC** does not fall into the hazard classifications of current regulations. However, it should not be swallowed or allowed to come into contact with skin and eyes. Suitable protective gloves and goggles should be worn. Splashes on the skin should be removed with water. In case of contact with eyes rinse immediately with plenty of water and seek medical advice. If swallowed seek medical attention immediately – do not induce vomiting.

For further information refer to the Material Safety Data Sheet available for this product.

#### Important note

GIC endeavors to ensure that the technical information contained herein is true, accurate and represents our best knowledge and experience. No warranty is given or implied with any recommendations made by us, our representatives or distributors, as GIC has no control over the conditions of use and the competence of any labor involved in the application are beyond our control.

**As all GIC technical data sheets are updated on a regular basis it is the customer's responsibility to check that the product is suitable for the intended application, and that the actual conditions of use are in accordance with those recommended.**

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