



TuffFlow PR 31

Mid Range Superplasticiser with High Slump Retention

Uses

- Used as a multi purpose admixture to produce high to medium water cement ratio.
- Used as a high range plasticizer and medium range superplasticizer.

Typical Applications & Advantages

- Readymix & site batched concrete
- Any applications where high workability combined with exceptional placing properties are required.
- Concrete with high water / cement ratio to medium water / cement ratio.
- Reduces the requirement for compaction considerably.
- Considerable water reduction leading to increase in compressive, flexural and tensile strengths.

Standards Compliance

TuffFlow PR 31 complies with the requirements of the following standards:
ASTM C 494 Type D & G depending on dosage used.

Product Description

TuffFlow PR 31 is a liquid admixture based on Naphthalene Sulphonate and refined hydration control agents which will give high initial workability with high retention properties. **TuffFlow PR 31** will produce a cohesive and high workability concrete. Very high initial workability and high slump retention makes it suitable when long distance placement of concretes has to be done.

Typical Properties

Appearance	: Dark brown liquid
Specific Gravity	: 1.19 @25±2°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

TuffFlow PR 31 is compatible with all types of Portland cement including sulphate resisting. Prior to use with special cements contact GIC. Admixtures being used in the same concrete mix must be dispensed separately and trials must be carried out to determine performance.

TuffFlow PR 31 should be added to the mix during the mixing cycle. It may be added with the gauging water or after all the water has been added. Never add **TuffFlow PR 31** to dry cement or dry aggregates, as some performance is lost in aggregate absorption. No extension to normal mixing times is required. **TuffFlow PR 31** should be dispensed through proprietary dispensers in the batching plant or alternatively via controlled measures at site. When adding admixture at site to produce flowing concrete, allow an additional 5-7 minutes mixing in the transit mixer prior to placement.

Dosage

Dosage rates will vary as per water - cement ratio. Normally 0.6 to 1.4% of the total cement content will give required result. Dosages may be varied depending on mix design

Effects of Over Dosage

Dosage rates of **TuffFlow PR 31** higher than noted above will result in the following:

- Increased workability.
- Slight increase in air entrainment.
- Retardation of initial and final set.

Provided the concrete is properly cured, the ultimate strength will not be adversely affected and will usually be higher than for normal concrete. Early compressive strengths will however be lower than expected. It is important to ascertain the reasons for the over dosage to avoid repetition.

Packaging & Storage

TuffFlow PR 31 is available in 20 litre and 210 litre drums. For site installations deliveries will be made in bulk to site storage tanks. **TuffFlow PR 31** has a minimum shelf life of 12 months provided it is stored under cover, out of direct sunlight.





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Health & Safety Precautions

TuffFlow PR 31 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, 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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