

FX-225

Non-Shrink Underwater Grout



A Simpson Strong-Tie® Company

Ref: FX225.TDS.CH-EN.V1

DESCRIPTION

FX-225 Non-Shrink Underwater Grout is a high-strength, non-metallic, non-segregating grout designed with special anti-washout admixtures, corrosion inhibitors and polymers. FX-225 can be pumped or tremied underwater to grout machinery, fibreglass pile jackets and repair deteriorated concrete without de-watering.

GENERAL FEATURES

WHERE TO USE

- Concrete repairs in marine structures
- Underwater grouting applications
- Pile jacket repairs with the FX-70® structural repair system
- Seawall repairs without de-watering

PERFORMANCE FEATURES

- Flowable and pumpable
- No de-watering or cofferdams required
- Shrinkage compensated
- Bonds well to concrete, even underwater
- May be extended with clean, washed nominal 9 mm pea gravel
- Ready to use, simply add potable water

PRODUCT DATA

All testing performed at 23°C and 50% R.H.

Generic Description

Cementitious underwater grout

Packaging

25 kg bag

Product Yield

0.013 m³ per 25 kg bag

0.018 m³ per 25 kg bag extended with 13.6 kg of pea gravel

Working Time

20 minutes at 24°C

Initial Set Time

4 hrs at 24°C

Storage

Store dry between 4 – 35°C

Shelf Life

1 year in unopened packaging

TECHNICAL INFORMATION

All testing performed at 23°C and 50% R.H.

Water demand

14%

Consistency

Flowable

Compressive strength (EN 12190)

24 hours: 47.10 MPa

7 days: 61 MPa

28 days: 66.90 MPa

Flexural strength

24 hours: 8.10 MPa

7 days: 10.80 MPa

28 days: 9.10 MPa

Hardened density

2195 kg/m³

Water demand

16%

Consistency

Fluid

Compressive strength (EN 12190)

24 hours: 36.50 MPa

7 days: 48.60 MPa

28 days: 58.70 MPa

Flexural strength

24 hours: 7.00 MPa

7 days: 8.50 MPa

28 days: 8.70 MPa

Hardened density

2168 kg/m³



PLANNING

LIMITATIONS

- Do not apply in water temperatures below 2°C
- Do not apply in water temperatures above 32°C
- Minimum application thickness is 2.5 cm neat, 5.1 cm extended
- Maximum application thickness is 150 mm
- Maximum 3.9 L water per bag
- Continual agitation required to maintain fluidity
- Underwater product placement should only be attempted by certified and experienced diving contractors

PREPARATION

SURFACE PREPARATION

Surface must be at least 2°C prior to application. All surfaces must be sound, free of loose rust, marine growth, oil, and other contaminants. Consult a qualified professional engineer in all cases when section loss exceeds 25 percent.

Concrete: Prepare surface by high-pressure water blasting or other mechanical means in accordance with EN guidelines. Repair or replace any reinforcing steel as determined by a qualified professional engineer.

Steel: Prepare surface by high-pressure waterjetting or other mechanical means necessary to achieve in accordance with EN guidelines. Repair or replace any structural steel elements with excessive section loss as determined by a qualified professional engineer.

Wood: Prepare surface by high-pressure water blasting or other mechanical means necessary to achieve a sound surface, free of all contaminants.

All submerged forms should be installed by certified professional divers. All forms must be sealed appropriately to prevent grout leakage during installation.

MIXING

For optimal product performance, condition to 21°C. Do not prepare more material than can be used in the pot life of the product. Mix with a mortar mixer or a low-speed (300 – 600 rpm) drill and mixing paddle. Use a maximum of 3.9 L of potable water per 25 kg, adjusting water content for desired consistency. For best results, add 90% of total mixing water and slowly add entire contents of FX-225 while mixing to avoid clumping. Adjust using remaining mixing water until desired consistency is achieved, scraping unmixed material from the sides and bottom of mixing container as needed to ensure all material is mixed. Mix for approximately 3 minutes. Do not re-temper. Continue to slowly agitate to prevent product from setting in the mixer up to the maximum working time of 30 minutes at 24°C.

FX-225 can be extended with 9 mm pea gravel up to 13.6 kg per bag, and requires the use of a concrete mixer. Aggregate used must be non-reactive, clean, well-graded, saturated surface dry (SSD), have low absorption and high density in compliance with EN guidelines.

EXECUTION

APPLICATION

FX-225 can be trowelled, pumped, or tremied. For pumping applications, pump properly mixed FX-225 through a port installed at the bottom of the form (FX-70® Jacket) and fill to the desired level, allowing water to displace from either the top of the form or through a port installed at the top of the form. All submerged forms should be inspected by a professional diver during the filling process to check for leaks and proper placement. For tremie applications, make sure the hose extends all the way to the bottom of the form. Fill the form to the desired level, allowing water to displace from the top of the form. Depending on the depth of the pour and size of the vessel, the tremie hose may need to be retracted as the form fills to maintain flow.

HEALTH & SAFETY

IMPORTANT SAFETY INSTRUCTIONS

For detailed safety information, we recommend that you see the current safety data sheets which are available on www.sp-reinforcement.eu or you can contact us on +41 41 825 0070.

S&P's range of products are for industrial use. They must be installed by specialised personnel and competent professionals with adequate training. The installation instructions must be followed.

CE-MARKING



This product conforms to EN 1504-3 and EN 1504-6.

IMPORTANT INFORMATION

It is the responsibility of each purchaser and user of each product to determine the suitability of the product for its intended use. Prior to using any product, consult a qualified design professional for advice regarding the suitability and use of the product, including whether the capacity of any structural building element may be impacted by a repair. As jobsite conditions vary greatly, a small-scale test patch is required to verify product suitability prior to full-scale application. The installer must read, understand and follow all written instructions, and warnings contained on the Limited Warranty, product label(s), Product Data Sheet(s), Material Safety Data Sheet(s) and the www.sp-reinforcement.eu website prior to use. For industrial use only by qualified applicators. KEEP OUT OF REACH OF CHILDREN!

S&P Clever Reinforcement Company AG
Seewernstrasse 127
CH-6423 Seewen
SWITZERLAND

Phone : +41 41 825 00 70
Fax : +41 41 825 00 75

info@sp-reinforcement.ch
www.sp-reinforcement.eu