PENTENS T-805

Standard Non-Shrink Grout

Product Data Sheet

Description

PENTENS T-805 is a ready-to-use rich blend of cement and shrinkage-compensating agents requiring only the addition of water to produce a free-flowing, high strength grout. PENTENS T-805 is an environmentally friendly and low VOC material.

Uses

PENTENS T-805 is suitable for grouting works with clearance of 10mm or more, such as:

- Machine bases
- Columns
- Cable ducts
- Concrete anchors
- Cavities
- Gaps
- Recesses

Advantages

PENTENS T-805 is easy to use, requiring only the addition of water. Other beneficial properties are:

- Low VOC.
- Environmentally friendly.
- Easy to mix and use.
- Low permeability.
- Dense and non-shrinking.
- Excellent bond strength.
- Iron and chloride free.
- Pumpable.
- Non-toxic.
- Rapid strength development.
- Extended working time.
- Good flow characteristics.

Important Notes

Non-shrink grout contains additives which expand either during the plastic stage and/or the hardening stage to compensate for the shrinkage of the cementitious matrix. However, this 'non-shrink' property will be effective only if the material is not subject to water loss.

This is confirmed by a note in the ASTM C1107 Standard Specification for dry, hydraulic packaged cement grout (non-shrinkable), which clarifies the behaviour of the non-shrink grout. Since all conditions of use cannot be anticipated, this specification requires non-shrink grout to exhibit no shrinkage when tested in a laboratory-controlled moist-cured environment, and requires only the reporting of the observed height change, usually shrinkage, when test specimens are subject to some degrees of drying.

Technical & Physical Data

Form	Premixed Powder	
Color	Grey	
Aggregate Size	2.0 mm maximum	
Compressive Strength (N/mm^2)(ASTMC942-81)		
Water Content (Lts)	3.8	4.1
1 day	>39	>30
3 days	>51	>50
7 days	>59	>55
28 days	>70	>65
Density	2.3 (gm/cm^3)	
Water Absorption % (ASTM C 413)	< 1%	
Tensile Strength (N/mm^2) (ASTM C190)	> 4.0	
Initial Set Time	+/- 45 min	
Expansion (ASTM C 827)	0.1 ~ 2%	
Expansion Period (mins)	0 ~ 150	

Mixing Ratio Guide	Consistency	Water (litres) (per 25kg of Grout)
	Flowable	4.5 - 5.0
	Pourable	3.2 - 3.8

Application Criteria (Pure grout)	Max thickness per pour: 75 mm Min thickness per pour: 10 mm
Shelf Life / Storage	12 months in unopened original bags and when stored in a dry, cool place.
Packaging	25kg /bag

Typical Yield

	Flowable Consistency	Pourable Consistency
Pentens T-805	74 x 25kg bag	76 x 25kg bag
Water	332 litres	288 litres
Volume Mortar	$1m^3$	$1m^3$

Green Label Test Data

Heavy Metals: (EPA 3025 / EPA 6010B : ICP)	
a. Cadmium (Cd)	Not Detected
b. Lead (Pd)	Not Detected
c. Total Chromium (Cr)	Not Detected
d. Mercury (Hg)	Not Detected
Volatile Organic Compounds (ISO 11890-2) (g/L)	<1.0
Total Halogenated Organic Solvent (ISO 11890-2) (%)	Not Detected
Total Aromatic Organic Solvent (ISO 11890-2) (%)	Not Detected
Epichlorohydrin (ISO 11890-2) (%)	Not Detected
N-Methyl Pyrrolidinone (ISO 11890-2) (%)	Not Detected
Formaldehyde (High Performance Liquid Chromatography) (%)	Not Detected
Alkyl Phenol Ethoxylate (LCMS-MS) (%)	Not Detected
Flash Point (ASTM D3828-07a) (°C)	>61

Instruction for Use

Surface Preparation

Concrete surfaces should be clean, free from grease, oil, laitance and loosely adhering particles. Metal surfaces (iron and steel) should be free from scale, rust, oil and grease. All absorbent surfaces must be well saturated with clean water, but free from any surface water or puddles prior applying of PENTENS T-805.

Mixing

Place about 80% of the premeasured clean water into a clean container and gradually add the whole bag of PENTENS T-805 into it while continuously mixing. Add the remaining water until the desired consistency is obtained. Mix for 3-4 minutes with a slow speed drill (maximum 500 RPM).

Application

After mixing, stir lightly with a spatula for a few seconds to release any entrapped air. The grout is then poured immediately into the prepared formwork. When carrying out baseplate grouting, ensure sufficient pressure head is maintained for uninterrupted mortar flow. For formwork repair, the prepared formwork must be kept firmly in place and watertight.

When placing grout over a large area, it is important to maintain a continuous flow throughout. Work sequence must be organised to ensure an uninterrupted flow. For sections thicker than 75mm or for large grouting areas, it is necessary to mix the PENTENS T-805 with graded 10mm silt-free aggregates to minimise temperature rise generated during curing stage. The quantity of aggregates should not exceed 1-part aggregates to 1-part PENTENS T-805 by weight. Other precautions such as the use of chilled water, insulation of the formwork or baseplate may be required. Please consult PENTENS Technical Department for further assistance.

To further ensure that entrapped air during mixing is allowed to fully escape, it may be necessary to make breathing holes. Use steel rods or chains to assist the flow of grout where necessary.

Curing

For formwork repair, leave the formwork in place for at least 3 days. Upon removal of the formwork, apply wet burlap with plastic or chemical curing agent on the exposed surface or use only other approved curing methods.

Cleaning

Clean all tools and equipment with water immediately after use. Hardened mortar can only be mechanically removed.

Safety

As cement is highly alkaline and may cause irritation, wear gloves and goggles when handling PENTENS T-805. In cases of contact with eyes, rinse immediately with clean water and seek medical advice if symptoms persist.

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