



## INTEGRA LEGO TIXO - LT 650

ONE COMPONENT PRE-BLENDED SHRINKAGE COMPENSATING FINE THIXOTROPIC MORTAR FOR ANCHORING TIE RODS AND BOLTS IN TUNNEL INJECTIONS AND FILLING CAVITIES.



**INTEGRA LEGO TIXO - LT 650** is one component, pre-blenched and chloride free injection mortar, composed of high strength cements, fine grading aggregates, mineral additions, expanding agent and specific admixtures, formulated to achieve the best suitable rheology for pumping and injection in rocks and soils, with optimized viscosity to ensure, at the same time, anti wash-out characteristics and complete filling at the end of operations.

These characteristics make it particularly suitable for anchoring injection of tie rods and bolts, in geotechnical consolidation works, even for overhead applications, as well as for structural filling of cavities in soils and rocks and between concrete elements (rigid sealing joints).

**LEGO TIXO LT - 650**, with a workability retention of about 90 minutes at +20°C, allows for easy pumping operations even in case of using large quantities of product per injection, facilitating the filling of voids far from the injection point.

**LEGO TIXO LT - 650** Meets the performance requirements of the European Standard EN1504-6 (anchoring products) and the general principles indicated in EN1504-9 (products and systems for the protection and repair of concrete structures).



# INTEGRA LEGO TIXO - LT 650

## INSTRUCTIONS FOR USE

Characteristic	Product performance
Appearance	grey powder
Average consumption	1.75kg of dry product for every Liter of cavity to be filled
Mixing water	19÷21% (4.75-5.25 liters per 25kg bag)
Particle size	<0.5mm (EN 12192-1)
Application temperature	+5°C ÷ +35°C
Workability maintenance at +20°C <sup>(1)</sup>	approx. 90min
Initial setting time at +20°C	>3 h
Final setting time at +20°C	<6 h
Packaging	25 kg
Storage	3 months from the date of manufacture

Note<sup>(1)</sup> = with mixing water equal to 19% and R.H. 60÷65%

## PERFORMANCE CHARACTERISTICS

Property	Method of test	Value	Minimum requirement according to EN 1504-6
Fresh density <sup>(1)</sup>	EN 12190	2. 10 ± 0. 05 kg/dm <sup>3</sup>	-
Chloride ion content	EN 1015-17	≤0,05% (absent)	≤0,05%
Bleeding	UNI 8998	absent	absent
Free expansion in plastic phase	UNI 8996	≥1,5%	-
Compressive strength at 1, 7 and 28 days at +20°C <sup>(1)</sup>	EN 12190	≥ 20 / ≥ 40 / ≥ 50 MPa	> 80% of the value declared by the manufacturer
Compressive strength at 1, 7 and 28 days at +5°C <sup>(1)</sup>	EN 12190	≥ 20 / ≥ 40 / ≥ 50 MPa	not required
Flexural strength at 1, 7 and 28 days at +20°C <sup>(1)</sup>	EN 196-1	≥ 4 / ≥ 6 / ≥ 7 MPa	not required
Flexural strength at 1, 7 and 28 days at +5°C <sup>(1)</sup>	EN 196-1	≥ 4 / ≥ 6 / ≥ 7 MPa	not required
Pull-out strength of steel bars (movement under 75 kN load), mm	EN 1881	≤0,6 mm	≤0,6 mm
Reaction to fire	EN 13501 -1	A1	Euroclass

Note<sup>(1)</sup> = with mixing water equal to 19% and R.H. 60÷65%

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## METHOD OF USE

### SURFACE PREPARATION

Before injecting the product and placing the tie rods or rock bolts, it is necessary to pre-clean the cavity with water or compressed air, in order to remove any loose material, mud or other unstable drilling residues.

### PREPARATION OF THE PRODUCT

**INTEGRA LEGO TIXO – LT 650** can be mixed and transported with continuous mixing machines, adjusting the machine manometer until the water flow will reach a value of 20% water by the weight of the powder, corresponding to about 5.0 liters of water per bag (25 kg).

Alternatively, mixing can be done with a drill equipped with a whisk using hand pumps or render sprayer machines for pumping. The amount of water per bag can vary between 4.75 and 5.25 liters, depending on the desired consistency. Pour 4.75 liters of water into a clean bucket and slowly add the 25 kg bag while mixing, then add the rest of water to adjust the workability but never exceed the value of 5.25 liters per bag. Keep on mixing for 2-3 minutes until a lump-free and homogeneous paste is obtained.

### INJECTION

Connect the lance to the injection pipe securely and allow the **INTEGRA LEGO TIXO – LT 650** mixture to flow until the cavity is filled, shown by the leak of mortar from the control pipe or a sudden increase in pumping pressure value. Close both the lance and the injection pipe before disconnecting the parts. If it is necessary to interrupt the injection, it can be resumed from the same pipe within the setting time of the product. Tighten or tension the reinforcement when the required strengths are reached.

The very fine aggregate particle makes the product compatible with any type of pumping machinery in good working conditions and equipped with high-pressure rubber pipes with a diameter between 25 and 50mm, with limitations on flow rate, distance and pumping height due to the power of the equipment.

On rock substrates, **INTEGRA LEGO TIXO – LT 650** can be injected from the bottom of the cavity before positioning the element to be anchored, ensuring the correct wrapping of the mortar to the bolt along the drilling by pushing the rock bolt inside the mortar until complete filling.

In case of unstable or fractured supports, it is suggested to inject the mortar after steadily positioning the element to be anchored, using a suitable injection pipe for applying the mortar and another one at the bottom of the cavity for checking the right filling. The sealing of the mouth of the hole, essential for maintaining the injection pressure, can be carried out by polyurethane foam, cement mortar, wooden wedges or other suitable material.

When **INTEGRA LEGO TIXO – LT 650** is used as a rigid sealing joint between concrete elements, ensure that the support is clean, free of oils or greases and properly saturated with water, to obtain maximum adhesion of the mortar to the substrate.

### CURING

Only in case of use as a rigid sealing joint between concrete elements, protect any parts of the product exposed to the air from evaporation until hardening will be completed.

## CONSUMPTION

Approximately 1.75 kg of dry product is required for each liter of cavity to be filled.

## PACKAGING AND STORAGE

**INTEGRA LEGO TIXO – LT 650** is packaged in 25 kg polyethylene paper bags, on pallets of 1,500 kg equipped with waterproof protection.

It is recommended to store the product in a covered, dry place, at a temperature between +5°C and +35°C. Under these conditions, the product can be used within 3 months from manufacturing date.

# INTEGRA LEGO TIXO - LT 650

## SAFETY INSTRUCTIONS

During handling and application, wear protective clothing and gloves, goggles and dust masks. In case of contact with skin, wash with soap and water. In case of contact with eyes, wash with water and seek medical attention if irritation persists. For information on safety and for the use and storage of the product, the user must refer to the latest Safety Data Sheet.

## WARNINGS

It is recommended to carry out preliminary application tests in order to verify the process on the specific support to ensure the best technical and aesthetic result.

The quality of the application will be influenced by the equipment, equipment and tools used, as well as the environmental conditions of application such as temperature, relative humidity and the presence of dust in the application area.

Do not apply at temperatures below +5°C or above +35°C.

Do not apply to frozen substrates or at risk of frost within the next 24 hours.

Do not dispose of the contents in the environment and dispose of residues in accordance with current regulations.

The information contained in this data sheet and any technical advice provided verbally or in writing, regarding the methods of use and performance of our products, corresponds to the current state of scientific and practical knowledge. They do not involve any responsibility or guarantee on our part for the final result of the work using our products. It is the Customer's responsibility to determine whether Fibre Net products are suitable for the use and purposes they intend and to ensure compliance of workplaces and disposal procedures in accordance with applicable laws and regulations. Fibre Net may modify the technical characteristics, descriptions and illustrations of the product subject of this data sheet at any time. The Customer is required to verify that this data sheet is not outdated as it is replaced by subsequent editions and/or new products.

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