

MasterRoc[®] TIX 20

Hydraulic prefabricated portland-cement-based mixture

Material Description

MasterRoc TIX 20 is a prefabricated product featuring very low shrinkage, volume stability and showing no tendencies to segregation even at high temperatures.

When mixed with water, MasterRoc TIX 20 forms a liquid grout in a short time achieving high compressive and tensile strengths when bending (depending on the w/c ratio).

Areas of Application

- Post-tensioned structures
 - Cable duct grouting
 - Cable anchoring
- Underground structures
 - Ground and rock bolts
 - Filling and reinforcing grouting
- Geotechnical
 - Slope stabilization
 - Retaining wall tie backs

Characteristics and Benefits

- High early and ultimate strengths ensure durability and safety for these critical installations.
- Good workability retention ensures perfect encapsulation of tendons even when grouting long pipes in high ambient temperatures.
- Stable rheological properties, shrinkage compensation and low water content guarantee excellent anticorrosion protection of steel tendons.
- High adhesiveness to steel increases the level of cohesion between concrete and reinforcement.

Packaging

MasterRoc TIX 20 is packed in 25 kg bags

Technical Data

Mixing water consumption	230 ml/kg
Grain size	<0.5 mm
Flow cone*	2l sec
Water bleeding (tendency to water separation)	no bleeding detected even after 3 hours
Volume change	+0.8 %/24 hrs
Compressive strength after 8 hrs**	min. 1 MPa
Compressive strength after 1 day	min. 25 MPa
Tensile strength after 1 day	min. 5 MPa
Compressive strength after 28 days	min. 50 MPa
Tensile strength in bending after 28 days	min. 6.5 MPa

* Flow cone for measuring the cement materials fluidity; cone volume approx. 0.47 liters, inner diameter of flow aperture approx. 10 mm.

** Properties listed are based on laboratory-controlled tests (approx. +23 °C and 50% relative humidity).

Application

Mixing

- Higher temperatures
Use chilled water and store the bags in a cool place to keep the mixed grout temperature below +25°C where possible, however the maximum grout temperature should not exceed 32°C.
- Low temperatures
Use warm water and store the bags in a warm place to ensure the mixed grout temperature is above 5°C at all times.
- Small applications
MasterRoc TIX 20 may be mixed using a drill and paddle; however trials to assess the efficiency of such mixing equipment and procedure used should be conducted. Mixing procedure may vary depending on



MasterRoc[®] TIX 20

Hydraulic prefabricated portland-cement-based mixture

the mixing equipment but as a starting point add 80% of the water to the empty mixing vessel and then add the MasterRoc TIX 20 powder while mixing and continue mixing for 1 minute. Add the remaining water whilst mixing and continue mixing for a further 3 minutes.

- Large applications
For larger quantities use a high shear colloidal type mixer (1400 rpm) and slow speed agitator and pump. Add the full mixing water to the mixer and add the powder in a controlled manner to prevent lump formation. Continue mixing for approximately 3 minutes after adding all the powder. Mixing for longer may lead to a marked increase in temperature and premature setting of the product.
- Upon completion of mixing the grout should be transferred to the agitator vessel, but should pass over a 2 mm sieve on route, where it should not remain for more than 30 minutes.

Mixing Watchpoints

- Do not use excess water.
- Do not use hardened or lumpy grout caused by torn or water damaged bags.
- Do not mix by hand.
- Discard any grout that has been left in excess of 30 minutes.

Please contact your Master Builders Solutions technical representative for further information.

Grout Placement

- In most applications MasterRoc TIX 20 should be pumped with a diaphragm, piston or other special type pump designed for pumping of cement-based mixtures.
- The chosen pump should provide a continuous flow of grout.
- The pump should be fitted with a pressure limiting device capable of limiting pressure below 2 MPa; prior to starting, hoses and connections should be checked at such pressures. In certain applications it may be necessary to cool and presoak the hoses; care should be taken to blow out such fluid prior to starting grouting.
- Typically, inlets for grouting shall be at the lowest point and outlets at the highest. The consistency of the grout at the outlet should be checked prior to starting grouting operations.
- Refer to Master Builders Solutions technical representative for specific installation advice.

Storage

MasterRoc TIX 20 has a shelf life of 6 months when stored in a cool dry environment.

Precautions

MasterRoc TIX 20 is not toxic, but as with other materials containing Portland cement it has an alkaline nature and thus can be irritating to skin and eyes. Wear simple dust masks and gloves when handling. Keep out of reach of children. Wash off splashes of grout with clean water. If irritation persists, seek medical advice.

MasterRoc[®] TIX 20

Hydraulic prefabricated portland-cement-based mixture

Disclaimer

The information given here is true, represents our best knowledge and is based not only on laboratory work but also on field experience. However, because of numerous factors affecting results, we offer this information without guarantee and no patent liability is assumed. For additional information or questions, please contact your local representative.

Headquarters:

Master Builders Solutions Deutschland GmbH
Glücksteinallee 43-45
68163 Mannheim
Germany

ugc@masterbuilders.com

For more information, visit us: <https://ugc.master-builders-solutions.com/en/>

