



TSIRCON CO LTD

MANUFACTURERS & TRADERS
OF BUILDING MATERIALS

Ημ. έκδοσης 5/2000

TSIRCO- RES 231/232

Pourable resin grout

Product

A highly filled pourable epoxide resin grout.

Composition

A combination of modified epoxy resin with mixed hardeners and selected fillers.

Purpose

Grouting with precision of heavy-duty rails, machinery, dowel bars and studs. Also for bonding concrete to concrete and steel to concrete.

Pack

4, 8 and 24kg (3 components).

Introduction

TSIRCO-RES 231/232 grouting systems contain selected fillers providing good flow properties to prevent filler separation or excessive aeration. TSIRCO-RES 231 will flow better either at ambient or lower temperatures. Its better flowing properties, together with its longer usable life, make it possible to use it in awkward or inaccessible gaps more efficiently than TSIRCO-RES 232. TSIRCO-RES 232 in comparison with TSIRCO-RES 231 is a more reactive system with excellent curing properties down to 5°C. Care should be taken, due to heat generation, when using this grout in thick sections (greater than 20mm) at ambient temperatures above 20°C. TSIRCO-RES 232 can be poured into place but its penetrating power is less than that of TSIRCO-RES 231.



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Advantages

Easy Handling

The resin and hardener can be mixed with the filler in a separate container. The grout is of a 'creamy' nature and can be readily poured or trowelled. In certain cases it may also be pumped to inaccessible points.

Bonding

Excellent adhesion to steel and concrete. Pull out tests, using steel bars embedded in the grout, resulted in failure of the steel. Bond to prepared concrete has greater strength than that of the concrete.

Durability

Highly resistant to weathering and chemical attack. Shrinkage is negligible.

Properties

TSIRCO-RES 231

Colour	Dark grey
Density (dependent on air content 8kg equivalent to 4,081ccs)	1.7 to 1.90
Usable life after mixing	40/50 mins at 20°C
Initial Viscosity	Approx.135 poise at 15°C

* Unconfined Compressive Strength

		N/mm ²
20°C	1 day	35
	3 days	65
	7 days	75
	28 days	90

** Tensile Strength

20°C	28 days	17 N/mm ²
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*** Flexural Strength

20°C	28 days	40 N/mm ²
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Temperature Limitations

- | | |
|------------------------|-------------|
| 1. Mixing and Grouting | 5 to 35°C |
| 2. Service | -20 to 60°C |
- * According to BS6319, Part 2, 1983
** According to ASTM C307-77
*** According to BS 6319, Part 3,1990

PLEASE NOTE:

The above given strength values refer to mixtures containing entrapped air. Air is not considered to be a problem since it is evenly distributed throughout the mixture. If desired, the air can be taken out by using special vacuum mixers.

Placing of TSIRCO-RES 232 in constricted gaps when temperatures exceed 20°C, or TSIRCO-RES 231 when temperatures exceed 30°C can be difficult. Please consult our Technical Department in such a case.

Strength properties are dependent upon cure temperature and test temperature. The numbers given in the above table represent the minimum attainable values at the specified cure temperatures.

How to use

Preparation

Prepare the surface to be treated following the instructions provided in the general information sheet on how to use TSIRCO-RES 231/232 Epoxy Resins.

Mixing

TSIRCO-RES 231/232 grouting system comes in three separate components which must be mixed. These are the RESIN, the HARDENER and the FILLER. Begin mixing by pouring the HARDENER into the RESIN. Stir the two components well until a uniform clear liquid is obtained. Mechanical stirring is preferable and an electric drill may be used with a stirrer attachment. Place the resin mixture in a plastic bucket and then pour the FILLER gradually into the liquid and stir well, until it dissolves completely and the mixture becomes uniformly thick. Surface priming is not required.

Cleaning

Clean all tools with TSIRCO-EPOSOLVE immediately after use.



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Handling Precautions

Always handle resins with care to prevent skin irritation. Refer to “**TSIRCO-RES Handling Guide**” for detailed instructions.

Storage life

Not less than one year if kept in manufacturer’s undamaged sealed containers and stored in dry environment, out of direct sunlight and at temperatures above 10°C and below 30°C.