



TSIRCON CO LTD

MANUFACTURERS & TRADERS
OF BUILDING MATERIALS

Ημ. έκδοσης 12/2003

TSIRCO- RES 101/102/103

Epoxy Adhesives and protective coatings

Multi-use Epoxy Adhesives specifically designed for use in building and construction

Product: High strength adhesives and protective coatings for concrete.

Composition: Two pack solvent-free Epoxy Resin.

Purpose: Bonding new to old concrete. Protecting concrete or metals with a strong chemical resistant coating.

Usage: 1 kg pack will treat a surface area of approximately 3.3m².

Pack: 1 and 2kg.

Powerful Bonding: Excellent adhesion to most building materials. Will bond to damp surfaces and will cure under water.

High Strength: Compressive and tensile strengths greater than those of concrete.



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Durability: Highly resistant to weathering and chemical attack. Negligible shrinkage.

Introduction: TSIRCO-RES 101 is an Epoxy Resin specifically designed for use with concrete. It has the special advantage of bonding firmly to wet surfaces while a very low viscosity makes application easy.

TSIRCO-RES 102 is an Epoxy Resin with qualities similar to those of TSIRCO-RES 101 but with faster setting. Curing is possible at temperatures down to 0°C, making it especially suitable for work under cold weather conditions.

TSIRCO-RES 103 is a slow curing, high strength Epoxy Resin with excellent adhesion qualities. It is specially suitable for application at high ambient temperatures.

Properties:

	101	102	103
Colour	pale straw	reddish brown	reddish brown
Viscosity			
@ 20°C	300cp	450cp	13 poise
@ 40°C			2 poise
Pot life	50min	20min	2 1/2 - 3hrs at 20°C 50 min at 40°C
Curing time	2 days	12 hours	3 hrs at 40°C 9 hrs at 23°C
Compressive strength	86N/mm ²	103N/mm ²	84N/mm ²
Tensile strength	49N/mm ²	57N/mm ²	47N/mm ²
Flexural strength	73N/mm ²	110N/mm ²	71N/mm ²
Temperature range:			
- During application	12 to 30°C	3 to 20°C	18 to 45°C
- In service	-20 to 35°C	-20 to 35°C	-20 to 45°C



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Where to use:

- To bond renders, screeds fresh concrete to existing concrete surfaces.
- To bond together precast concrete units.
- To repair broken concrete.
- To protect concrete and steel from weathering and chemical attack.

How to use:

1. Preparation

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

2. Mixing

TSIRCO-RES 101/102/103 Epoxy Resins come in two components which must be mixed together. These are the BASE RESIN and the HARDENER. The components are supplied in correct pre-weighed proportions. To enhance the ease of mixing in cold weather the tins must be stored in a warm environment. However care must be taken so that the tins are not kept under direct sunlight during or after mixing, especially in the summer season and when the temperatures are high. Begin mixing by pouring the HARDENER, into the BASE can. Then stir the two components well until a uniform liquid is obtained. Mechanical stirring is preferable and an electric drill may be used with a stirrer attachment.

3. Application

(a) For bonding together concrete sections: Apply a uniform layer of resin to both prepared surfaces. Use a brush or a roller and work thoroughly ensuring that both surfaces to be joined have been saturated by the resin. Applying light pressure, bring the two sections together and remove any resin extruding from the joint. Make sure that the two sections are not moved or shacked until the resin has set. Use some dry O.P. Cement to thicken the resin into a light paste if gap filling is required between the two sections. Avoid using excessive amount of filler as this weakens bonding strength.



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(b) For bonding screeds: Render or fresh concrete to existing concrete surfaces with a brush or roller apply an even layer of resin to the prepared concrete surface. Place the fresh concrete or mortar on top of the resin layer at least 15 minutes after the application of the resin and definitely before the material has set and while is still tacky. It is important that the fresh concrete or mortar is applied within these time limits therefore the rate of application of resin must be controlled accordingly. For the placing, consolidation and curing of the applied layers follow normal concreting procedures. If the resin sets before the fresh concrete is placed then a new layer of resin must be applied. For very porous surfaces two coats is recommended allowing the first coat to harden before placing the second coat.

(c) If used as a protection layer: Two layers of resin should be applied. Apply the second layer 24 hours after the first.

Coverage: As a general guide you should allow 0.3kg of resin for every m² of surface to be covered. This ratio may vary depending on the texture and porosity of the surface.

Cleaning: Clean all tools with TSIRCO-RES SOLVENT immediately after use.

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

Storage Life: Not less than one year if kept in the manufacturers undamaged sealed containers and stored in a dry and cool environment, away from direct sunlight.



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How to Specify: New concrete/renders/screed* to be bonded with TSIRCO-RES 101/102/103 strictly in accordance with the instructions of the manufacturers, TSIRCON CO. LTD.

* Delete as applicable.

This material complies to ASTM C881-83 and tested to ASTM C882-83.