



**TSIRCON CO LTD**

MANUFACTURERS & TRADERS  
OF BUILDING MATERIALS

Ημ. έκδοσης 7/2003

# TSIRCO- SPECCEM

## Expansive Cement

### INTRODUCTION

TSIRCO SPECCEM is a cement that sets fast, expands as it sets, does not shrink and develops significant strength within two hours of mixing. TSIRCO-SPECCEM offers unique properties, which make it superior to other cements as a patching or grouting composition. TSIRCO-SPECCEM is normally used neat but it may be blended 1:1 with fine dry building sand preferable quartz sand to produce a mortar or grout with expansive properties.

### **PROPERTIES**

The properties of TSIRCO-SPECCEM depends on the water: cement ratio used. At a low water: cement ratio (0.28) mouldable putty is produced. If the water: cement ratio is increased to 0.31 a pourable paste results which is suitable for grouting applications in restricted areas. In order to facilitate these low w/c ratios, plasticiser or superplasticiser additive may be added like Tsirco Flo S3 or S1.

- ✓ TSIRCO-SPECCEM is rapid setting. Final set varies between 25 and 35 minutes depending on water: cement ratio and ambient temperature.
- ✓ TSIRCO-SPECCEM exhibits good mechanical and adhesive bond to both concrete and steel.
- ✓ TSIRCO-SPECCEM exhibits rapid build up in compressive strength, e.g. approximately 10N/mm<sup>2</sup> one hour after final set at a water: cement ratio of 0.28.
- ✓ TSIRCO-SPECCEM expands rapidly on setting.



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## **USE OF TSIRCO-SPECCEM IN MORTARS**

TSIRCO-SPECCEM should be mixed with water to give the required consistency. For optimum performance a water: cement ratio of 0.26-0.28 should be used. Where full properties are not required TSIRCO-SPECCEM may be blended 1:1 with fine dry quartz sand, at a water: cement ratio of 0.33.

## **USE OF TSIRCO-SPECCEM IN GROUTS**

TSIRCO SPECCEM can be used as a pourable grout at a water: cement ratio of 0.31-0.33 maximum. Where a very fluid grout is required super plasticiser Tsirco-Flo S1 may be incorporated.

The following formulations are suggested:

i) Neat TSIRCO-SPECCEM fluid grout:

SPECCEM ..... 1 kg  
Water ..... 308 ml  
Tsirco-Flo S1 .....30 ml

ii) TSIRCO-SPECCEM: Sand fluid grout:

SPECCEM ..... 1 kg  
Dry quartz sand.....1 kg  
Water .....400 ml  
Tsirco-Flo S1 .....60 ml

## **WHERE TO USE**

TSIRCO-SPECCEM is used for void filling and patching applications where its fast set and rapid gain of strength will allow light trafficking within one or two hours of setting.

It is an excellent material for any grouting applications requiring a rapid setting, high strength, cementitious grout. Being totally inorganic in nature, the material is not subjected to loss of property due to heat. TSIRCO-SPECCEM is not recommended for continuous immersion in water.

When used in applications such as crack filling, patching, etc, it is recommended that the TSIRCO-SPECCEM is finished to the final profile required within one hour of initial set, due to the high strength developed by this material.

For special applications, please contact our Technical Department for further advice.



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## TYPICAL TEST DATA

- (i) Setting times Initial Vicat setting time at water: cement ratio of 0.28= 25 minutes.
- (ii) Unconfined Compressive Strength at 28 days (w/c ratio= 0,26)=40 N/mm<sup>2</sup>.
- (iii) Linear Expansion (BS 1191: 1967) after 24 hours.

### Neat TSIRCO-SPECCEM

	Linear Expansion
Water:cement 0.28	0.32%
Water:cement 0.32	0.28%

### 1:1 TSIRCO-SPECCEM: SAND blend

	Linear Expansion
Water:cement 0.33	0.15%
Water:cement 0.48 + Tsirco-Flo S1	0.10%

- (iv) Tensile strength BS 12 briquettes using TSIRCO-SPECCEM at water: cement ratio= 0.28, 24 hours after final set. Tensile Strength=3.0N/mm<sup>2</sup>.

## STORAGE LIFE

Six months in 25 and 10 kg sacks in unopened containers in dry ideal conditions out of direct sunlight.

## HOW TO SPECIFY

TSIRCO-SPECCEM expansive cement to be used strictly in accordance with the instructions of the manufacturers, Tsircon Co. Ltd