

## Product Code

TG01, packaging listed overleaf.

## Description

CS Grout is a Portland cement based product giving high strength, good flow and non-shrink properties. Placed grout gives structural support and good vibration resistance.

CS Grout is chloride free and can be safely used in contact with steel. The specialised mix design enables placement at low water content leading to good freeze-thaw stability, low water absorption plus resistance to oil, sea water and mild alkali attack.

Placement thickness may be in the nominal range of 10mm to 100mm. For thicker sections 6mm Aggregate should be added at a rate of up to one to one Aggregate to CS Grout.

## Uses include:

- Crane rail tracks
- Stanchion bases
- Machine bed plates
- Dowel bars between pre-cast units
- Ground anchors
- Bridge Bearing Supports

## Typical Grout Properties @ 20°C

Water addition 4.5 litres per 25kg of CS Grout.

	Minimum	Typical
1 Day	25N/mm <sup>2</sup>	35N/mm <sup>2</sup>
3 Days	40N/mm <sup>2</sup>	56N/mm <sup>2</sup>
7 Days	56N/mm <sup>2</sup>	65N/mm <sup>2</sup>
28 Days	65N/mm <sup>2</sup>	70N/mm <sup>2</sup>
90 Days	70N/mm <sup>2</sup>	75N/mm <sup>2</sup>

## Variation In Water Content

Mix water variation for particular applications will alter grout consistency and compressive strengths as follows.

Water Addition	Consistency	1 Day	3 Days	7 Days	28 Days
4.8 Ltrs	Liquid	25N/mm <sup>2</sup>	47N/mm <sup>2</sup>	51N/mm <sup>2</sup>	56N/mm <sup>2</sup>
4.3 Ltrs	Plastic	41N/mm <sup>2</sup>	60N/mm <sup>2</sup>	69N/mm <sup>2</sup>	72N/mm <sup>2</sup>
3.6 Ltrs	Mortar	50N/mm <sup>2</sup>	66N/mm <sup>2</sup>	72N/mm <sup>2</sup>	75N/mm <sup>2</sup>

## Mechanical Properties

Flexural Strength	10N/mm <sup>2</sup> @ 28 days
Density	2100 kg/m <sup>3</sup>
Coefficient of Thermal Expansion	11 x 10 <sup>-6</sup> /°C
Compressive Modulus	30KN/mm <sup>2</sup>
Initial Set	260 minutes
Final Set	290 minutes

## Specification Outline

Grouting shall be carried out using CS Grout as manufactured by Parex Ltd. The product must be stored, handled and placed in accordance with the manufacturer's instructions.

## Accreditations

Parex Limited has an integrated business management system. This is externally accredited by UK CARES to BS EN ISO 9001:2015, BS EN ISO 14001:2015, BS ISO 45001:2018 and BES 6001.

## Standards

CS Grout has been tested in accordance with the appropriate parts of the following standards:  
 EN 12390 BS 476 ASTM C953 ASTM C1107  
 CS Grout complies with the requirements of Corps of Engineers Specification for Non Shrink Grout CRD C621 and for Highways clause 2601.  
 CS Grout complies with BS 6920  
 WRAS (report no M103248)

## Instructions For Use

### Preparation

Formwork should be erected and made grout-tight. The formwork must be designed with sufficient hydrostatic head to ensure grout flow into and across the grouting area. Saturate the grouting area with water. Leave for 1 hour and then blow out any surplus water.

## Instructions For Use

### Mixing

Pour 4.5 litres of clean water into the mixing vessel for each complete bag of CS Grout to be used. Slowly add the powder to the water whilst continually mixing. Mechanical mixing should be carried out using either a high torque slow speed drill with a Grout Stirrer or a grout mixer set on slow speed. (High speed or colloidal mixing will cause thixotropy leading to loss of flow.)

### Placing

Grout should be placed within 20 minutes of mixing. Continuous placing is important, pouring from one side of the formwork until the grout appears at the opposite side of the grouting area. Do not disturb once grouting has been completed. CS Grout may be placed at temperatures between 5°C and 45°C. For placing at temperatures outside this range contact the Technical Service Department.

### Curing

Placed grout, which is exposed, should be cured in accordance with good concrete practice including water spray or the spray applied curing membrane Polycure.

## Precautions

### Health and Safety

CS Grout is alkaline when mixed with water and should not come into contact with skin or eyes. Avoid inhalation of dust during mixing and wear safety glasses, dust mask and gloves. If skin contact occurs wash thoroughly with clean water. Should eye contact occur rinse immediately with plenty of clean water and seek medical advice. For full health and safety data refer to Product Safety Data Sheet.

### Fire

CS Grout is non-flammable.

### Yield

Each 25kg bag of CS Grout will yield approximately 13.25 litres of mixed grout. Each 25kg bag of CS Grout plus 25kg of 6mm aggregate will yield approximately 22 litres of mixed material..

## Storage And Shelf Life

CS Grout will have a storage life of 6 months in unopened bags when kept in dry conditions at a temperature between 5°C and 45°C. Storage at higher temperatures and high humidity may reduce shelf life.

## Packaging And Ordering

CS Grout is supplied in 25kg bags.

Product Code: TG01

For further information and sales, please contact your local Parex office as listed below.

Parex Ltd products are guaranteed against defective materials and manufacture. Products are sold subject to the Parex Ltd Terms and Conditions of Sale, copies of which are forwarded on invoice and are available on request. Parex Ltd endeavours to ensure that the above data and any further advice is correct, however, it cannot accept any direct or indirect liability for the use of its products as such usage is beyond its control