



HDS INJECTION GROUT

Technical Data

Revision date: 03/2014

Product codes

TG 108, Packaging listed overleaf.

Description

HDS Grout is a specially formulated Portland cement powder mix designed for the grouting of structural anchors and cables in post-tensioned concrete for EN 446(2007) and CARES Appendix PT10 procedures.

The mix design consists of a blend of fine and ultra fine cements plus a set of synergistic admixtures. The grout powder is packaged in 20kg durable, moisture resistant bags ready for onsite mixing.

The material readily mixes with water to produce a particularly fluid flowing grout which will penetrate and fill fine voids within and around the anchors and cables then harden without shrinking to give a high strength product.

Particular advantages of the product include a quick and easy mixing with water producing a flowing mix which promotes penetration into confined spaces. The grout is shrinkage compensated and contains a powerful corrosion inhibitor to protect the cables and anchors.

Once hardened and cured, high compressive strengths are achieved giving resistance to static and dynamic stresses. HDS Grout has a total chloride, sulphate and sulphide-ion content below that specified in EN 447 CARES PT10.

Uses include:

- ▣ Grouting of cable ducts, voids and fine fissures.
- ▣ Support of cable anchor plates and ground anchors.
- ▣ To provide bearing or contact between structural anchor components.
- ▣ Grouting behind shafts and tunnel linings.
- ▣ Underpinning, loose floor and road slabs.

Standards

HDS Grout has been tested in accordance with the appropriate parts of the following standards: EN445, EN446, EN447, EN196-1, EN196-3

CARES PT10 certificate 080706 (Copies available on request). Specification Outline

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

Accreditations

Parex Ltd. has an integrated management system which is externally accredited to ISO9001:2008, ISO14001:2004 and OHSAS18001:2007. This product also conforms to BES 6001. Parex Ltd. is CARES certified for the production and supply of pre-bagged grout material to appendix PT10 for use in post-tensioning systems.

Typical Grout Properties @ 20°C

Water content by weight 33% minimum to 35% maximum (6.6 to 7 litres per 20kg bag).

Compressive Strength Tested to EN 196-1 (W/P 0.35)

1 Day	3 Days	7 Days	28 Days
18N/mm ²	40N/mm ²	55N/mm ²	65N/mm ²

Typical results from EN445 testing at 33% water content.

Test type	Result specified in EN447:2007 & PT10	Result obtained by testing HDS Grout
2mm sieve test	No lumps	No lumps
Flow cone	$T_0 > 25s$ $T_{30} > 25s$ and within 20% of T_0	$T_0 > 14s$ $T_{30A} > 14.3s$ $T_{30B} > 13.8s$
Bleeding	Bleeding 0.3% max.	Bleeding 0.1%
Volume change	Volume change -1 to 5% max	Volume change -0.27%
Compressive strength test	$> 27 \text{ N/mm}^2$ @ 7 days	84.5 N/mm^2 @ 7 days
Initial and final setting test (EN196-3)	Initial > 3 hours Final < 22 hours	

CONSTRUCTION PRODUCTS SOLUTIONS INTERNATIONAL LTD.

Unit 3, Haslemere Industrial Estate, Pig Lane, Bishop's Stortford, Hertfordshire. CM23 3HG. United Kingdom.
Tel: +44(0)1279 505 514 - Fax: +44(0)1279 755190 - e mail: info@surecps-group.com - www.surecps-group.com
Company Reg. 6969591 VAT Reg. GB 824 4246 40



Please always wear the appropriate safety and protective clothing when installing fixing and anchor products. Always observe the necessary Health & Safety guidelines.

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The above information is given in good faith, and may be subject to alteration at any time without prior notification.



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Instructions for Use:

Preparation

All necessary preparatory work must be completed before the grout is mixed. The fluid nature of the grout at 35% maximum water to powder ratio enables it to flow long distances in well prepared elements. Sufficient head should always be provided by positive pump pressure to ensure grout flow along or upwards in the cable ducts and drilled holes. Site trials may be carried out to confirm that suitable equipment is available and an appropriate water / powder ratio is chosen. A surcharge stand pipe should be allowed for to take up 'shrinkage' as the grout fills voids. Ensure that enough grout is mixed and available for the grouting operation to be completed in one continuous pour.

Mixing

For each 20kg bag of HDS Grout, a maximum of 7 litres of water are required. For single bag mixes suitable mixing may be achieved using a high torque, slow speed drill with a Grout Stirrer. For larger mixes use a standard grout mixer such as the Groutmaster, Putzmeister or Colcrete series. Pour the required quantity of clean water into the mixing vessel. Slowly add the HDS Grout to the water whilst continually mixing. Keep the mixed grout in a slow agitating holding tank prior to placing.

Placing

Where HDS Grout will be pumped into place the grout pump should be of the positive displacement type capable of generating at least 10 bars pressure. Up to 40 bars may be required to fill particularly long or high upward ducts. The rate and continuity of placing should be controlled to encourage good penetration of grout into the voids within the duct and the expulsion of air from the duct. Do not disturb once grouting has been completed before the grout has hardened. HDS Grout may be placed at temperatures between 5°C and 35°C. For placing temperatures outside this range contact the Technical Service Department.

Curing

After grouting has been complete, or when the formwork is removed, any exposed grout must be cured immediately with Polycure at the rate of 10m²/litre. During adverse weather conditions, such as high temperatures and drying winds, a second application of Polycure should be applied after the first application is dry.

Precautions Health and Safety

HDS 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. Full health and safety data are given in Product Safety Data Sheet.

Fire

HDS Grout is non-flammable.

Yield

Each 20kg bag of HDS Grout will yield approximately 13 litres of mixed material at water dose rate of 35%.

Storage and Shelf Life

HDS Grout will have a storage life of 6 months in unopened bags when kept in dry conditions at a temperature between 5°C and 35°C. Storage at higher temperatures and high humidity may reduce shelf life.

Packaging and Ordering

HDS Grout is supplied:
20kg valve bags Product Code TG108

For further information and sales please contact CPSI at the address below.

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