

## PRODUCT DESCRIPTION

**STARGROUT PAG** is polyester resin based grout material carefully blended with a curing compound and fillers and supplied as a pre measured, two-part, resin grout. It is a specially formulated fast setting, high strength, and corrosion resistant grout suitable for anchoring of bolts & bars into concrete, masonry, rock and metal surfaces. After hardening, the grout has high mechanical properties. It is used where the difference between the hole diameter and bar diameter is  $\leq 25\text{mm}$ .

## BENEFITS

- Rapid setting and strength achievement
- No expansion, no shrinkage
- Resistant to corrosion
- Resistant to vibration
- Shorter depth and smaller holes- Reduced drilling costs

## USES

- **STARGROUT PAG** can be used where high speed of installation and early application of load is required.
- It can be used for rock bed anchors and fixing of marine equipment since it can be used for underwater operations.
- It can be used for permanent installation of reinforcement starter bars, foundation bolts, base plates, balustrading, barriers and safety fences, railway tracks, tie-back anchors, reinforcement dowelling abutments, ground anchors for towers, cranes, dock sills etc.

## TECHNICAL DATA SHEET

Testing Parameters	Typical Results
<b>Physical Appearance</b>	Part A(Liquid): Pale yellow colour liquid Part B (Powder): Grey colour powder
<b>Mix Ratio:</b>	Resin: Powder 250 g: 750 g
<b>Specific Gravity</b>	$1.90 \pm 0.05$
<b>Adhesion to concrete</b>	> tensile strength of concrete
<b>Compressive Strength</b>	After the minimum time before load the grout typically attains a compressive strength in excess of 20 N/mm <sup>2</sup> and an ultimate compressive strength of 90 N/mm <sup>2</sup> .

## STAR SPECIALTIES POLYMERS PVT. LTD.

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Temperature at Time of Mixing (X°C)	Gel time (min)	Minimum time required before loading (hours)
20	80	7
30	40	3
40	15	1

Chemical resistance: The cured resin is resistant to fresh and salt water, petrol, oils, grease and mineral acids, and mild alkalis.

## DESIGN CRITERIA

The high strength of the cured resin permits strong anchors to be created. The ultimate bond strength developed depends upon:

Strength of host material length of resin bond to bar hole preparation and formation type and dimension of bar the following formula may be used to determine the minimum depth of installation for Type 1 rebar bolts, to ensure the shear stress within the concrete is kept within the limits set out in BS 8110.

## DEPTH OF ANCHORING

Minimum depth in mm =  $(0.15d^2/D) \times (S/P)$

Where d is the diameter of the bar in mm

D is the diameter of the hole in mm

S is the Yield Strength of the steel (460 N/mm<sup>2</sup>)

P is the Permitted Shear Stress in the concrete (N/mm<sup>2</sup>) which is as given below:

Characteristic Strength of concrete	P for type I bar
M20	1.8
M25	2.0
M30	2.2
>M40	2.5

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## METHOD OF APPLICATION:

### HOLE PREPARATION:

Optimum performance of STARGROUT PAG requires rough sided, dust free holes. Rotary percussive drills with air or water flushing is recommended for better preparation. Diamond drilled holes should be under-reamed unless necessary safety factors are incorporated. If parallel sides holes are cast they should be rough enough to provide adequate keying for anchorage.

### BAR PREPARATION:

All bars or bolts should be de-greased and rust flakes are to be removed and surface should be roughened before use.

### MIXING:

1. Mixing of component, A&B should be carried out mechanically until uniform consistency is achieved.
2. Grout has to be placed within the gel time which is dependent on the temperature.
3. Do not add any other substances other than component A & component B.
4. Packs have been designed to produce practical and economic volumes of grout. Do not attempt to mix partial pack components.

### APPLICATION:

Using the calculated volume of grout based on the below table, the grout should be poured steadily into the prepared holes. The anchor bar is then pressed into the hole to the required depth. Slight agitation of the bar will assist in achieving a complete bond. The bar should then be left undisturbed in the required position until the resin is set.

Estimation Table indicates no of holes that can be filled with respect to Bolt Diameter & Hole Diameter. Approximately 25% wastage is considered. It may increase as per site condition and skill of the applicator.

Bolt length is considered 200 mm.

Hole diameter (mm)	Bolt diameter (mm)		
	12	16	20
20	9	x	x
25	5	6	10

### YIELD:

Pack Size	Approx. Yield in ltr	Yield in m3
1 kg	0.5 ltr	0.0005 m3

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# STARGROUT

## PAG

Rev. No./SSPL-1222/02

## Product Data Sheet



## HEALTH & SAFETY

As with all chemicals, caution should always be exercised. Protective clothing such as gloves and goggles should be worn.

**INHALATION:** Inhalation of vapor or mist should be avoided. If inhaled symptoms include coughing, wheezing, laryngitis, and shortness of breath, headache, nausea, and vomiting. Immediately shift victim to fresh air, and, if needed immediately start artificial respiration. Give oxygen if breathing is labored. Get emergency medical help.

**EYE CONTACT:** Flush eyes with water for 15 minutes and call for medical help.

**INGESTION:** causes nausea, vomiting, and loss of consciousness. If accidentally swallowed do not induce vomiting rather call for medical help immediately.

**SKIN CONTACT:** Flush with water or soap and water till all traces have been removed. Seek medical attention if required.

## STORAGE & SHELF LIFE

The pails and drums must be stored in a covered area, away from direct sunlight, UV and other sources of heat. The shelf life of the product is up to 6 months if stored as per recommendations. Excessive exposure to sunlight and UV will result in the deterioration of the quality of the product and reduce its shelf life.

## PACKING

**STARGROUT PAG** is available in 1 Kg.

## WARRANTY

The information given is based on our knowledge and performance of the material. Every precaution is taken in the manufacture of the product and our responsibility is limited to the quality of supplies with no guarantee of the results in the field, as manufacturer has no control over site conditions or execution of work.

## DISCLAIMER

The product information & application details given by the company & its agents has been provided in good faith & meant to serve only as a general guideline during usage. Users are advised to carry out tests & take trials to ensure on the suitability of products meeting their requirement prior to full scale usage of our products. Since the correct identification of the problems, quality of other materials used and the on-site workmanship are factors beyond our control, there are no expressed or implied guarantee / warranty as to the results obtained. The company does not assume any liability or consequential damage for unsatisfactory results, arising from the use of our products.

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