VARAPLAST EPG

PLASTICIZED EXPANDING GROUT ADMIXTURE

DESCRIPTION

VARAPLAST EPG is supplied as a powder admixture. The material is a combination of a plasticising agent and a gas producing expansion medium. The plasticising agent allows the use of a reduced water / cement ratio with consequent increased strengths and durability. The expansive medium counteracts the natural settlement and plastic shrinkage of the grout and adds stability and cohesion. Sufficient restrained expansion is developed to ensure a high degree of interfacial contact. For Non - Shrink concrete mixes, the plasticization effect of VARAPLAST **EPG** is minimal, hence suitable superplasticiser, water reducer or retarder should be used when appropriate.

USES

VARAPLAST EPG is an admixture for cementitious grouts where a reduced water / cement ratio and positive expansion are required. Applications include bed grouting, duct grouting, non-shrink concrete infilling & jointing.

ADVANTAGES

- Gaseous expansion system compensates for plastic shrinkage and settlement in properly designed cementitious grout.
- Reduced water / cement ratio in the grout mix ensures low permeability and long term durability in service.
- Gives high grout fluidity with low water / cement ratio, thus making placement or injection of the grout easy.
- No metallic iron content to corrode and cause staining and deterioration due to rust expansion in the grout.
- Composition allows high early strength development in grouts, without the use of chlorides.

STANDARDS

VARAPLAST EPG is a suitable pre-stressing grout admixture when complying with **BS 8110 Part 1, 1985, Section 8.9.4.6.**

TECHNICAL DATA

- **Chloride Content :** Nil to **BS 5075**
- **Compressive Strength: VARAPLAST EPG** allows reduction of the water / cement ratio of cementitious grouts whilst maintaining flow properties. This gives improvement in strength and long term durability when cured under restraint.
- **Setting Times : VARAPLAST EPG** does not significantly affect the setting times of cement based grouts.
- **Expansion Characteristics:** The controlled positive expansion in unset grouts incorporating **VARAPLAST EPG** overcomes plastic settlement when measured in accordance with **ASTM C827.** An unrestrained expansion of up to 4 % is typical.
- **Time for Expansion:** 15 minutes to 2 hours. Temperatures above 20° C may slightly reduce these times.
- **Compatibility: VARAPLAST EPG** is compatible with all types of portland cements. **VARAPLAST EPG** may be used in mixes containing certain other **AKARSH** admixtures. Consult **AKARSH** for further information.

INSTRUCTIONS FOR USE

MIXING :

Grouts

For best results a mechanically powered grout mixer must be used. For quantities up to 50 kg. a slow speed drill fitted with a high shear paddle is suitable. Larger quantities will require a high shear vane mixer.

It is essential that machine mixing capacity and labour availability is adequate to enable the grouting operation to be carried out continuously. This may require the use of a holding tank with provision for gentle agitation to maintain fluidity. The selected water content should be accurately measured into the mixer. Slowly add cement (and sand if required) and **VARAPLAST EPG**. Mix continuously for 5 minutes, making sure that a smooth even consistency is obtained.

Concrete

For dry mixing process add **VARAPLAST EPG** with cement. For wet mixing process, add **VARAPLAST EPG** prior to placement and mix for 3 to 5 minutes before casting.

APPLICATION

Areas to be grouted should be prepared to ensure substrates are clean, sound and then pre-wetted. The unrestrained surface area of the grout must be kept to a minimum. Place the grout within 20 minutes of mixing to gain the full benefit of the expansion process. Adopt usual placing or pumping procedures ensuring a continuous operation.

Dosage

OPC	Concreting Sand	Water	VARA PLAST EPG	Approx. Yield
50 kg.	-	20-22 ltr.	250 g	36 litres
50 kg.	50 kg.	22-24 ltr.	250 g	57 litres

Note : For grout, mortar or non - shrink concrete mixes with an aggregate / cement ratio more than 1, use 4 x 250 g units of **VARAPLAST EPG** per 100 kg. of cement.

Effects of Overdosing

Drastic overdosing of **VARAPLAST EPG** increases expansion and may cause frothing.

Curing

On completion of the grouting operation, any exposed areas which are not to be cut back should be thoroughly cured by means of water application. **VARACURE** curing compounds or wet hessian.

Cleaning

Grouts with **VARAPLAST EPG** should be removed from tools and equipment with clean water immediately after use. Remove cured material mechanically with **AKARSH's VARACLEAN**

LIMITATIONS

VARAPLAST EPG is incompatible with high alumina cement.

PACKAGING

VARAPLAST EPG is supplied in packs containing 24 x 250 g units and in 5 kg. and 25 kg. bags.

CAUTION

When using 5 kg. & 25 kg. bags, the proportioning for each mix has to be done by using a weighing balance, and the balance material in the bag should be closed tightly after use as the material is highly hygroscopic.

STORAGE

VARAPLAST EPG has a shelf life of 12 months if kept in dry store in its original packaging. High temperature and humidity storage may reduce this period.

HEALTH & SAFETY

VARAPLAST EPG is of low hazard. Contact with skin and eyes, or inhalation of dust should be avoided. Wear suitable protective clothing, gloves, eyes / face protection and dust masks. After contact with skin, wash off with clean water. In case of contact with eyes, rinse immediately with plenty of water and seek medical attention.