



## VARAPLAST R

### WATER REDUCING AND RETARDING ADMIXTURE

#### DESCRIPTION

VARAPLAST R is based on a lignosulphonate. Supplied as a brown liquid it is instantly dispersible in water. VARAPLAST R produces more cohesive workable concrete at constant water/cement ratio with slightly improved strength or can give higher strengths at the same workability or can give cement savings upto 15% at the same water/cement ratio, workability and strength.

#### USES

- VARAPLAST R can provide up to 15% reduction in free water without loss of workability, resulting in reduced permeability and early strength gain. Can also be used to give cement savings.
- VARAPLAST R gives extended workability which is useful when concrete is transported in ready mixed trucks and for avoiding cold joints.

#### ADVANTAGES

**Increased Workability :** Reduces placing time.

**Extended Workability :** Some set retardation gives longer working times which are useful for truck transport and for avoiding cold joints.

**Improved Strength:** Water reduction gives higher Strengths without cement increase or workability loss.

**Reduced Permeability:** Reduction of water reduces porosity giving improved water impermeability.

**Surface Finish:** Better dispersion of cement particles and increased cohesion minimises segregation and bleeding and gives improved surface finish for flat work and cast surfaces.

**Chloride Free :** Safe In reinforced concrete.

#### STANDARDS

VARAPLAST R compiles with **BS 5075, 1982** as a water reducing and retarding admixture and **ASTM C - 494 - Type D**.

#### TYPICAL PROPERTIES

**Calcium Chloride Content:** NIL

**Specific Gravity:** 1.20 at 25° C.

**Air Entrainment:** Less than 1 % additional air is entrained.

**Setting Time:** 1 to 4 hours retardation at recommended dosage.

**Cement Compatibility:** Compatible with sulphate resisting and other Portland cements.

**Durability:** Water reduction gives increase in density and water impermeability, which improves durability.

**Compressive Strength:** Reduction in water/cement ratio will result in upto 25% increase in early age compressive strength. See table 2 for typical trial mix results.

**Table 1:**

Effect of VARAPLAST R on workability

Portland cement	310 kg/m <sup>3</sup>
Zone 3 sand (washed)	620 kg/m <sup>3</sup>
20 mm gravel	1210 kg/m <sup>3</sup>
Ambient temperature	20° C

#### CHENNAI WORKS:

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#### KHOPOLI WORKS:

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**AKARSH SPECIALITIES**

**HIGH PERFORMANCE CONSTRUCTION CHEMICALS**

**Table 2:**

Dosage kg/ 50kg Cement	Total W/C Ratio	Slum (mm)	Comp. Strength N/mm <sup>2</sup>			Den sity kg/m <sup>3</sup>
			1 Day	7 Days	28 Days	
Nil	0.60	50	16.0	37.0	45.0	2350
0.10	0.60	80	17.0	38.0	46.0	2340
0.20	0.54	50	18.0	45.0	55.0	2380
0.30	0.54	100	17.0	45.0	56.0	2360

#### INSTRUCTIONS FOR USE :

**Dosage :** The optimum dosage for "VARAPLAST R" should be determined by site trials with the particular concrete mix under prevailing ambient condition.

#### As a guide the dosage is normally:

0.10 - 0.30 kg/50 kg cement, an optimum dose of up to 0.50 kg/50kg cement can be used depending on special circumstances (Hot weather concreting).

**Use at other dosages :** Dosage outside the normal range can be used to meet particular requirement. Contact "AKARSH" for advice in these cases.

**Overdosing :** An over dose of double the intended amount of VARAPLAST R will result in retardation. The ultimate compressive strength of the concrete will not be significantly impaired, but particular care should be taken to cure the concrete thoroughly.

**Curing :** As with all structural concrete, normal methods apply.

#### TECHNICAL SUPPORT

"AKARSH" provides technical support service on mix design, admixture selection, evaluation of trials, dispensing equipment etc. Please contact the Technical department in these cases.

**Cleaning :** Spillages of VARAPLAST R can be removed with water.

#### PACKAGING

VARAPLAST R is supplied in 250 kg drums and in bulk.

**Storage :** VARAPLAST R should be protected from extremes of temperature. Should the material become frozen, it must be completely thawed and thoroughly mixed before use. VARAPLAST R has a minimum shelf life of 12 months provided storage temperature is kept within the range of 5° C to 30° C.

#### PRECAUTIONS

##### HEALTH AND SAFETY

VARAPLAST R is non-toxic. Any splashes to the skin should be washed immediately with water. Splashes to the eyes should be washed immediately with water and medical advice should be sought.

**Fire :** VARAPLAST R is non-flammable.

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