



# RAZON

## SUPER PLASTICIZER RS PSC-1 (Super plasticizer for pre-stressed concrete)

Super Plasticizer RS PSC-1 is developed specifically for steam/ mist/ heat cured concrete.

### Its advantages are :-

- Reduction of cement content without affecting the strength of concrete
- Reduction of water content of a given concrete mix.
- Higher early strength due to water reduction; hence faster rotation of moulds
- Improving the strength of concrete at all ages
- Improving the homogeneity of the concrete mix.
- Reducing the variation of strength amongst batches/lots inspite of minor environmental changes.
- Denser and more predictable concrete characteristics amongst lots
- Improving the finish characteristics of the concrete product
- Improving the concretes workability (for wet mix)

Further, concrete subjected to steam curing exhibits accelerated strength due to high activity co-efficient of cement compounds at elevated temperature.

RS PSC-1 provides upto 25%-30% water reduction over conventional methods; and higher workability making it possible to achieve higher strength at reduced water cement ratio.

Steam curing increases probability of iron to oxidation, hence reinforcements in steam cured concrete products need to be safe guarded. RS PSC-1 provides denser concrete viz protection to re-inforcements against oxidation.

Generally pozzolonic material and silica fumes may be incorporated in concrete where RS PSC-1 is used, as per clients recommendations.

**Method of use:-** Prepare concrete as per grade and mix design. Dosage of RS PSC -1 is between 1% to 4% by weight of cement, depending upon the materials, environmental conditions and performance desired. For starting point trials use about 1 litre (1000 ml) Super plasticizer RS PSC-1 per bag cement. The dosage of RS PSC-1 is designed at 1 liter per bag of cement to make it easy to handle, and charge accurately; also this provides better dispersion & uniform mixing in 'no-slump' concrete.

Mix all dry aggregates along with cementitious materials as usual. Add about 75% of total water to this mix, and add RS PSC-1 to balance 25% which may be charged to the mixer after the aggregates are moist. Admixtures are never added to dry aggregates/ cement.

Excess dosage of super plasticizer RS PSC-1 will exhibit accelerating effects, higher water reduction, workability, and lower setting times etc. The ultimate strength of such concrete will be higher.

**Applications:-** Super plasticizer RS PSC-1 is designed for casting Railway sleepers, Prestressed concrete poles, Prestressed Girders, Precast concrete products, heat cured trusses in spans and other prestressed concrete elements. It is designed for use in concrete having no/very low slump, and dry mix concretes. These concretes are generally cast via very high vibration cycles. Site trials must be taken to establish optimum strength and economic dosage.

Thin highly ribbed sections are normally encountered. Re-dosing of super plasticizer RS PSC-1 upto 50% of the initial dose will increase workability, incase of unforeseen delay in placing concrete.

| Sr. no | Concrete Grade | Grey Cement  | Slump | 15 days cured strength (min.) | Fully cured flexural strength (min.) |
|--------|----------------|--|-------|-------------------------------|--------------------------------------|
| 1.     | M – 55         | Min. 350 kg/m <sup>3</sup><br>Max. 450 kg/m <sup>3</sup> | 0 mm  | 55 N/mm <sup>2</sup>          | 5 N/mm <sup>2</sup>                  |

| Sr.no | Product Data  |  |
|-------|---|--|
| 1     | Colour  | Light amber fluid  |
| 2     | Specific gravity  | 1.01 +/- 5%  |
| 3     | Re-dosability   | RS PSC-1 can be re-dosed to increase workability in case of delay in placing mortar.         |
| 4     | pH  | 4-7  |
| 5     | Cement compatibility  | OPC , PCC  |
| 6     | Shelf life  | 1 yr, if stored in sealed container & kept in cool dry place away from direct sunlight.      |
| 7     | Chlorides (Cl)<br>Sulphates (SO <sub>4</sub> )<br>Sulfite (SO <sub>3</sub> )<br>Nitrates (NO <sub>3</sub> )<br>Thiocynate (SCN) | NIL<br>NIL<br>NIL<br>NIL<br>NIL  |
| 8     | Dosage  | 1% upto 4% by weight of cement. Generally 1000ml per bag of cement is considered sufficient. |
| 9     | Packing   | 55 kg, 225kg HDPE drum. Tanker available on request.   |
| 10    | Standards   | ASTM C494 Type E, F<br>IS 9103   |

**Safety precautions:-** Due care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs. If Super Plasticizer RS PSC-1 splatters into the eye, wash immediately with water and visit a doctor. Seek immediate medical attention if Super Plasticizer RS PSC-1 is accidentally swallowed and must be treated symptomatically. Keep away from children and animals. Reseal containers after use. For industrial use only. Super Plasticizer RS PSC-1 is not hazardous and non-toxic under normal circumstances.

**Fire:-** Super Plasticizer RS PSC-1 is non flammable.

### **OTHER PRODUCTS:-**

- ❖ Epoxy grouts for steel inserts
- ❖ Cementitious grouts for anchor bolts
- ❖ Mould release agents
- ❖ Epoxy paint for steel protection & concrete
- ❖ Coal Tar Epoxy
- ❖ Black Japan Paint
- ❖ Green Chrome Oxide Epoxy Primer
- ❖ Metal Clean and Protect
- ❖ Range of WATERPROOFING coatings
- ❖ Bituminous waterproofer
- ❖ Platform/ Floor surface hardners
- ❖ Abrasion resistant mortars
- ❖ Speciality construction chemicals...
- ❖ Range of 1200+ products...



## **RAZON ENGINEERING COMPANY PRIVATE LIMITED**

660, Taboot Street, P.O.Box No.49, PUNE-411001, Maharashtra [India] Website: [www.razonengg.com](http://www.razonengg.com)  
Ph:+91-20-2613 0791,+91-20- 2613 2217, Telefax: +91-20-26130017 E-mail: [razonengg@gmail.com](mailto:razonengg@gmail.com),

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It is strongly recommended that site trials be conducted using site conditions and available raw materials to evaluate the product. Since site materials and conditions are beyond our control and since above suggestions and recommendations are based on our site trials and laboratory product evaluation & trials, and since methods of use at site are beyond our control. Hence, no guarantee can either be implied or enforceable