

POWERFLOW 690

High RANGE WATER REDUCER - SUPERPLASTICIZER

DESCRIPTION

POWERFLOW 690 is a high range water-reducing admixture. It may be added to the concrete at the job site or at the ready mix concrete plant. POWERFLOW 690 is formulated to retain plastic consistency for 30-60 minutes after dosing depending on the initial slumps, dosage rates, and ambient temperature. No chlorides are used in its formulation; consequently, it is recommended for prestressed concrete. It is also compatible with air-entraining agents, waterproofing agents, calcium chloride and many other admixtures; however, each material should be added to the concrete separately.

PRIMARY APPLICATIONS

- High performance concrete
- General ready mix concrete
- Prestressed concrete
- Flatwork and mass concrete
- Minimum water content concrete
- Low water/cement ratio concrete

FEATURES/ BENEFITS

- Produces low water content and low water/cement ratio concrete allowing higher strengths
- Produces flowing concrete with better than normal strengths
- Aids in concrete placement and reduces labor cost
- When used in precast work with Type I and Type III cements, POWERFLOW 690 will produce high early strength

TECHNICAL INFORMATION

Chemical Base:

Aqueous Solution of Modified sulfonates Co-Polymers

Technical Data:

Description	Standard	Typical Values
Form	Visual	Liquid
Appearance / Colour	Visual	Dark Brown
Specific Gravity	ASTM - D1298	1.19-1.2 @ 25 °C
Typical Dosage		0.5-2.5 % of Binder

Standard:

This Product Conforms to the requirements of ASTM C 494, Type A & F, and EN 934-2

PACKAGING

POWERFLOW 690 is packaged in bulk, 200 Ltr (240 Kg) Drum, 1000L (1200 Kg) IBC.

SHELF LIFE

1 year in original, unopened package.

SPECIFICATIONS/COMPLIANCES

- Fully complies with the requirements of ASTM C 494, Types A & F admixtures.
- Complies with the requirements of AASHTO M 194.

DIRECTIONS FOR USE

POWERFLOW 690 can be added to the initial batch water or directly on the freshly batched concrete and mixed for approximately 5 minutes or 70 revolutions. However, better results have been observed batching directly on the freshly batched concrete. It should not come into contact with dry cement or other admixtures until mixed thoroughly with the concrete batch.

POWERFLOW 690 is typically used at dosages of 6 to 18 oz per 100 lbs (390 to 1170 mL per 100 kg) of cementitious material. Other dosages are acceptable with prior testing and confirmation of the desired performance with specific materials being used.

For any concrete application including Self-Consolidating Concrete (SCC), the dosage of POWERFLOW 690 will vary depending on the mix design, local materials, and individual needs of the concrete producer. Trial mixes should be run to verify plastic and hardened performance with local materials. If the material gradations are not optimum for SCC, a viscosity modifier may be used to improve the quality of the mix. Please consult a local PCC Chemical Sales Professional for trial mixtures and dosage recommendations.

POWERFLOW 690 is compatible with most admixtures including air-entraining agents, accelerators, most water-reducers, retarders, shrinkage reducers, corrosion inhibitors, viscosity modifiers, and microsilica; however, each material should be added to the concrete separately.

Figure 1: Recommended Dosage Powerflow 690 to achieve flowable concrete (7-9" / 180 - 230 mm slump)

Initial Slump, inches (mm)	Dosage Range of Powerflow 690, oz/cwt (mL/100 kg)
4 (100)	8 - 10 (520 - 650)
3 (75)	10 - 12 (650 - 780)
2 1/2 (65)	12 - 14 (780 - 910)
2 (50)	14 - 16 (910 - 1040)
1 1/2 (40)	16 - 18 (1040 - 1170)

Placement

Concrete treated with POWERFLOW 690 may be placed in the same fashion as conventional concrete.

Formwork

Forms for walls or narrow sections must be watertight, strong and have good bracing. During the "flowing period", when the concrete is at a slump of 7" to 9" (178-229 mm), the concrete will exert a higher pressure at the base of the form than conventional concrete. Formwork for slabs is the same as for conventional concrete.

PRECAUTIONS / Limitations

- Care should be taken to maintain POWERFLOW 690 above freezing; however, freezing and subsequent thawing will not harm the material if thoroughly agitated. Never agitate with air or an air lance.
- Keep concrete from freezing until a minimum strength of 1000 psi (7 MPa) is reached.
- In all cases, consult the Safety Data Sheet before use.



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