

OPTIMUM 380

PREMIUM HIGH RANGE SUPERPLASTICIZER

PRODUCT DESCRIPTION: OPTIMUM 380 plasticizer is a modified polycarboxylated high range water reducing admixture formulated to produce self-compacting type (S.C.C.) concrete. OPTIMUM 380 plasticizer is specifically intended for use in precast concrete providing very high spread rates, improved workability and greater fluidity with reduced or minimal vibration. The improved dispersing action of OPTIMUM 380 plasticizer results in concrete with “self placing” properties that surpass competitive “S.C.C.” properties and benefits. Very low water to cement ratios can be obtained with as much as 25-30% total water reduction.

BENEFITS: GREATER WATER REDUCTION AND LOWER DOSAGE RATES THAN COMPARABLE S.C.C. SUPERPLASTICIZERS...HIGH EARLY STRENGTHS WITH IMPROVED DENSIFICATION OF SURFACES... IMPROVED FLOW (SELF LEVELING) WITH SELF-HEALING RHEOLOGY... REDUCTIONS IN VIBRATION AND MANUFACTURING NOISE LEVELS

COMPOSITION: Modified polycarboxylate solution. OPTIMUM 380 plasticizer does not contain any calcium chloride or intentionally added chlorides that would initiate or promote corrosion of reinforcement steel, or contribute to efflorescence.

PHYSICAL PROPERTIES at 70° F (21° C):	APPROXIMATE VALUES:
Weight per gallon:	9.0 +/- 0.2 lb./ gallon
pH:	11.0 +/- 0.5 (alkaline)
Color:	Clear amber-white liquid
Viscosity –Brookfield:	250 +/- 50 cps
Weight % Active Solids	35.0% +/- 2.0%

TECHNICAL DATA: OPTIMUM 380 plasticizer is formulated to comply with ASTM C-494 requirements for Type F high range water reduction. OPTIMUM 380 plasticizer is fully effective and compatible with most concrete admixtures, however, each admixture should be added separately to the concrete mix (see Cautions). By adding fluidity to the mix, OPTIMUM 380 plasticizer liquid allows extended workability. The duration of workability depends on temperature, brand and type of cement, aggregate type and gradation, method of mixing, and method of transport. Concrete mixes containing higher overall cement “sulfate” content give easier fluidification of the mix than low sulfate cements. When added at normal dosages, OPTIMUM 380 plasticizer will not significantly affect the concrete’s heat of hydration. OPTIMUM 380 plasticizer is compatible with most mineral and chemical components common to Portland cement, calcium alumina cement, and calcium sulfate (gypsum).

PERFORMANCE CHARACTERISTICS - Run @ 70° F (21° C) ambient temperature

MIX DATA:	OPTIMUM 380 DOSAGE:
Dosage, fl oz./cwt (ml/100 kg)	3.5 (228)
Cement, Type I lb/yd ³ (kg/m ³)	520 (307)
Air Content %	Non-Air Entrained Series-results below

Compressive Strength psi (mPa)	Plain (Control)	OPTIMUM 380 addition
1 day	1700 (11.7)	2500 (17.3)
3 days	3240 (22.4)	4250 (29.2)
7 days	4400 (31.0)	5300 (36.5)
28 days	6075 (41.9)	7150 (49.3)

Flexural Strength psi (mPa)	Plain (Control)	OPTIMUM 380 addition
3 days	530 (3.7)	610 (4.2)
7 days	635 (4.4)	680 (4.7)
28 days	840 (5.7)	880 (6.0)

Length Change %	Plain (Control)	OPTIMUM 380 addition
Increase over reference -0.01 max	-0.028	-0.029 (+0.001)

Freeze Thaw resistance- Air Entrained Series	Plain (Control)	OPTIMUM 380 addition
300 cycles-Durability factor- 80 min.	91	95

*This data is based on in house laboratory tests. Slight variations from the results shown here may be experienced as a result of jobsite conditions, different mix design components, or other factors.

DIRECTIONS FOR USE: OPTIMUM 380 plasticizer is normally dosed as supplied at a rate of 3-5 ounces per 100 lbs. of cement (56 –93 ml/100 kg). Other dosages may be required depending on specific conditions. OPTIMUM 380 plasticizer's improved flow properties allow typical dosage rates approximately 40% less than of standard melamine and naphthalene based superplasticizers, while maintaining the same percent water reduction.

AIR ENTRAINMENT: OPTIMUM 380, when used at the dosage listed above, will only provide small percentages of air entrainment due to its high flowing composition. Depending on final end product requirements for air entrainment, additional air entraining agent (A.E.A.) may have to be added to achieve adequate levels. Air entrainment naturally varies in concrete mixes depending on the type of A.E.A used, the cement, W/C (water to cement ratio), the temperature of the mix, and many other factors. When using OPTIMUM 380, refer to the W/C ratio below for addition of the desired A.E.A for obtaining 6-8% air in standard Portland Type I mixes:

WATER TO CEMENT (W/C) RATIO:	DOSAGE OF ADDITIONAL A.E.A. NEEDED:
0.45	0.5 TO 0.9 FL. OUNCES / CUBIC YARD CONCRETE
0.40	1.0 TO 2.0 FL. OUNCES / CUBIC YARD CONCRETE
0.35	3.0 TO 4.0 FL. OUNCES / CUBIC YARD CONCRETE

CAUTIONS: OPTIMUM 380 plasticizer should be tested and evaluated with actual materials and blending processes to gauge overall performance and compatibility with mix components. OPTIMUM 380 plasticizer is water based and will freeze at 32° F, but may be completely restored by thawing at room temperature and mechanically agitating thoroughly. OPTIMUM 380 should be stirred before using if the material has set for an extended period (3-6 months).

WARNINGS: Avoid contact with skin and eyes. Wear protective clothing and safety glasses during application. Keep away from food and drink. Do not take internally. Refer to product M.S.D.S. (Material Safety Data Sheet) for further health and safety information. FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN. **H.M.I.S. CODES:** HEALTH = 0, FLAMMABILITY= 1, REACTIVITY = 0, PERSONAL PROTECTION = C (GLOVES, GOGGLES, APRON)

SHIPPING NAME: Concrete Admixture Water base - Not regulated **SHELF LIFE:** 1 year stored properly.

STORAGE: Ideal storage is between 60° to 80° F. Keep from freezing.

PACKAGING: 1 quart, 1 gallon, 5 gallon pails, 55 gallon drums.

LIMITED WARRANTY: This product is warranted to be of merchantable quality when used according to the instruction herein. It is not warranted to be suitable for any purpose or use other than the general purpose for which it is intended. Liability under this warranty is limited to the replacement of the product as purchased, if found to be defective upon inspection by the manufacturer. This limited warranty is issued and accepted in lieu of all other expressed warranties and explicitly excludes liability for consequential damages. Buyer assumes all risk and liability resulting from the use of this product.

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