

POLYHEED®

Superior pumping/finishing admixture

DESCRIPTION:

POLYHEED® multi-component, non-chloride, mid-range water-reducing admixture is formulated to produce:

1. True mid-range (5-18%) water reduction and excellent performance across a wide concrete slump range, especially the difficult slump range of 6-8 inches (150-200 mm);
2. Normal concrete setting time throughout the recommended dosage range;
3. Superior workability, pumpability and finishability qualities even in concrete mixes containing low amounts of cementitious materials;
4. Strength performance comparable to chloride-bearing, water-reducing admixtures at all ages;
5. Improved performance with a wide range of cements, fly ashes, silica fumes, granulated slags, and aggregates (including coarse and manufactured sands).

POLYHEED admixture meets ASTM C 494 requirements for Type A, water-reducing admixtures, and Type F, water-reducing high-range admixtures, specifically:

- Reduced water content for a given slump
- Normal setting time characteristics
- Increased compressive and flexural strength performance at all ages
- Improved concrete durability to damage from freezing and thawing

ADVANTAGES:

POLYHEED admixture facilitates the production of quality concrete through these special benefits:

- Superior workability and pumpability in various concrete applications
- Reduced segregation
- Superior finishing characteristics for residential/ commercial flatwork and formed surfaces
- Consistent performance in low to high slump concrete mixtures, in particular, the mid-range slump of 6-8 inches (150-200 mm)
- Effective as a singular admixture or as a component in a Master Builders admixture system



PERFORMANCE CHARACTERISTICS:

MIX DATA

500 lb of Type I cement per cubic yard (295 kg/m³); slump, 6 3/4 inches (170 mm), Non-air-entrained concrete. Concrete temperature, 70 °F (21 °C), ambient temperature, 70 °F (21 °C).

Setting Time Performance¹

Initial set Mix	Difference Hrs:Min	Hrs:Min
Plain	4:46	—

POLYHEED admixture

5 fl oz/cwt (325 mL/100 kg)	4:40	-0:16
10 fl oz/cwt (650 mL/100 kg)	5:12	+0:26
15 fl oz/cwt (950 mL/100 kg)	6:15	+1:29

Compressive Strength Performance

Mix	7 Day			28 Day		
	PSI	MPa	%	PSI	MPa	%
Plain	3390	23.4	100	4230	29.2	100

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5 fl oz/cwt (325 mL/100 kg)	4040	27.8	119	5260	36.3	124
10 fl oz/cwt (650 mL/100 kg)	4710	32.5	139	5890	40.6	139
15 fl oz/cwt (980 mL/100 kg)	4820	33.2	142	5970	41.1	141

¹NOTE: The data shown is based on controlled laboratory tests. Reasonable variations from the results shown here may be experienced as a result of differences in concrete making materials and jobsite conditions.

WHERE TO USE:

POLYHEED mid-range water-reducing admixture is recommended for use in all concrete where normal setting characteristics, superior workability, pumpability and finishability qualities are desired.

POLYHEED admixture is particularly useful in placing concrete in the mid-range slump of 6-8 inches (150-200 mm). Field data have consistently shown improved workability, pumpability and finishability versus conventional water-reducing admixtures.

This admixture improves conventionally placed concrete mixes containing a wide range of cements, granulated slags, class c and F fly ashes, silica fumes, and aggregates. It improves reinforced, precast, prestressed, lightweight or normal weight concrete, and pumped concrete.

POLYHEED admixture can be used with air-entraining admixtures approved under ASTM, AASHTO and CRD specifications when air-entrained concrete is specified or desired. Master Builders air-entraining admixtures are recommended for use with **POLYHEED** admixture when air-entrained concrete is specified or desired.

POLYHEED admixture may be used in all colored and architectural concrete.

When used in conjunction with other admixtures, each admixture must be dispensed separately into the mix.

QUANTITY TO USE:

POLYHEED mid-range water-reducing admixture has a recommended dosage range of 3-15 fl oz per 100 lb (195-975 mL per 100 kg) of cement for most concrete mixes.

As the dosage rate of **POLYHEED** admixture increases to 15 fl oz per 100 lb (975 mL per 100 kg) of cement, normal concrete setting time characteristics are maintained, and early and ultimate compressive strengths increase.

Master Builders does not recommend the use of dosage rates outside the recommended range without trial testing. Consult your local Master Builders sales representative for assistance in determining the dosage rate for optimum performance.

PACKAGING:

POLYHEED is supplied in 55 U.S. gallon (208 liter) drums and by bulk delivery.

TEMPERATURE PRECAUTION:

If **POLYHEED** admixture freezes, thaw at 35 °F (2 °C) or above and completely reconstitute by mild mechanical agitation. Do not use pressurized air for agitation.

NON-CHLORIDE, NON-CORROSIVE:

POLYHEED admixture will not initiate or promote corrosion of reinforcing steel in concrete. This admixture does not contain intentionally added calcium chloride or chloride-based ingredients. The admixture, due to chlorides originating from all the ingredients used in its manufacture, contributes less than 0.00011% (1.1 ppm) chloride ions by weight of the cement when used at a dosage rate of 1 fl oz per 100 lb (65 mL per 100 kg) of cement.

For additional information on **POLYHEED** admixture or on its use in developing a concrete mixture with special performance characteristics, contact your local Master Builders representative.

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