

03 30 00	Cast-in-Place Concrete
03 40 00	Precast Concrete
03 70 00	Mass Concrete

MasterPolyheed® I020

Mid-Range Water-Reducing Admixture

Description

MasterPolyheed I020 admixture is a patent-pending ready-to-use mid-range water-reducing admixture. MasterPolyheed I020 admixture, is very effective in producing concrete with different levels of workability and with enhanced finishing characteristics. MasterPolyheed I020 admixture meets ASTM C 494/C 494M requirements for Type A, water-reducing, and Type F, high-range water-reducing, admixtures.

Applications

Recommended for use in:

- All concrete applications where superior workability, pumpability and finishability qualities are desired, in particular, flatwork, pumped concrete and pervious concrete
- Concrete containing manufactured sand and harsh concrete mixtures

Features

- Based on MasterGlenium® technology
- Dosage flexibility - provides up to 20% water reduction
- Reduced water content for a given level of workability
- Provides better slump retention
- Provides excellent workability
- Enhanced later-age strength
- Excellent finishability, even with manufactured sands and in lean mixtures

Benefits

- Can be used in a wide variety of concrete mixtures as a multi-purpose admixture meeting the performance requirements for ASTM Type A or Type F admixtures
- Faster setting at higher dosages compared to other mid-range water-reducing admixtures
- Enhanced flowability, strength and durability
- Reduces effort required to finish
- Lowers in-place cost
- Increases service life of structures

Performance Characteristics

Setting Time: Concrete produced with MasterPolyheed I020 admixture sets faster than a mixture containing a typical mid-range water-reducing admixture.

Mixture Data: 517 lb/yd³ (307 kg/m³) of Type I/II cement; slump 5 in. (125 mm); non-air-entrained concrete; Admixture dosage adjusted for 8% water reduction.

Setting Time

Mixture	Initial Set (h:min)	Difference over Reference (h:min)
Reference	4:48	—
Ref. Mid-Range Water-Reducer	6:12	+1:24
MasterPolyheed I020 admixture	5:18	+0:30

Compressive Strength: Concrete produced with MasterPolyheed 1020 admixture achieves higher compressive strength at later ages compared to plain concrete and concrete mixtures produced with a typical mid-range water-reducing admixture.

Mixture Data: 517 lb/yd³ (307 kg/m³) of Type I/II cement; slump 5 in. (125mm); non-air-entrained concrete; Admixture dosage adjusted for 12% water reduction.

Compressive Strength, psi (MPa)

Mixture	1-Day	7-Day	28-Day
Plain	1330 (9.2)	3670 (25.3)	5080 (35.0)
Reference MRWR*	1760 (12.1)	5160 (35.6)	6720 (46.3)
MasterPolyheed 1020 admixture	1940 (13.4)	5370 (37.0)	7150 (49.3)

*Mid-Range Water-Reducer

Note: The data shown are based upon 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.

Guidelines for Use

Dosage: MasterPolyheed 1020 admixture has a recommended dosage range of 3 to 12 fl oz/cwt (195 to 780 mL/100 kg) of cementitious materials for most concrete mixtures. A dosage range of 3 to 5 fl oz/cwt (195 to 325 mL/100 kg) is typical for Type A applications and up to 12 fl oz/cwt (780 mL/100 kg) for mid-range and high-range applications. Because of variations in concrete materials, job site conditions, and/or applications, dosages outside of the recommended range may be required. In such cases, contact your local sales representative.

Mixing: MasterPolyheed 1020 admixture can be added with the initial batch water or at the end of the batching sequence.

Product Notes

Corrosivity – Non-Chloride, Non-Corrosive: MasterPolyheed 1020 admixture will neither initiate nor promote corrosion of reinforcing or prestressing steel embedded in concrete, or of galvanized steel floor and roof systems. Neither calcium chloride nor other chloride-based ingredients are used in the manufacture of MasterPolyheed 1020 admixture.

Compatibility: MasterPolyheed 1020 admixture is compatible with most admixtures and can be used in combination with other Master Builders Solutions admixtures, unless stated otherwise. When used in conjunction with other admixtures, each admixture must be dispensed separately into the concrete mixture.

MasterPolyheed 1020 admixture is designed to be used with MasterAir® VR 10 and MasterAir AE 90 air-entraining admixtures when the production of air-entrained concrete is desired. **Do not use MasterPolyheed 1020 admixture in combination with naphthalene-based admixtures. Erratic performance in slump may be experienced.**

Storage and Handling

Storage Temperature: MasterPolyheed 1020 admixture should be stored between 35 and 105 °F (2 and 41 °C). If MasterPolyheed 1020 admixture freezes, thaw at 40 °F (5 °C) or above and completely reconstitute using mild mechanical agitation. **Do not use pressurized air for agitation.**

Shelf Life: MasterPolyheed 1020 admixture has a minimum shelf life of 12 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your local sales representative regarding suitability for use and dosage recommendations if the shelf life of PolyHeed 1020 admixture has been exceeded.

Dispensing: Consult your local sales representative for the proper dispensing equipment for MasterPolyheed 1020 admixture.

Packaging

MasterPolyheed 1020 admixture is supplied in 55 gal (208 L) drums, 275 gal (1040 L) totes, and by bulk delivery.

Related Documents

Safety Data Sheets: MasterPolyheed 1020 admixture

Additional Information

For additional information on MasterPolyheed 1020 admixture or its use in developing concrete mixtures with special performance characteristics, contact your local sales representative.

Master Builders Solutions creates technologies for the construction industry inspiring people to build better. We are active in ~40 countries and operate 35 production sites with over 1,600 employees. We develop, produce, and market high-quality chemical admixtures, as well as adjacent core technologies, to master the challenges of today and support a decarbonized future. Our people are pivotal and pair leading technologies and a strong brand heritage to surpass our customers' expectations and drive continuous value creation.

Limited Warranty Notice

Master Builders Solutions Admixtures US, LLC ("Master Builders Solutions") warrants this product to be free from manufacturing defects and to meet the technical properties on the current Technical Data Guide, if used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond our control. MASTER BUILDERS SOLUTIONS MAKES NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS PRODUCTS. The sole and exclusive remedy of Purchaser for any claim concerning this product, including but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is shipment to purchaser of product equal to the amount of product that fails to meet this warranty or refund of the original purchase price of product that fails to meet this warranty, at the sole option of Master Builders Solutions. Any claims concerning this product must be received in writing within one (1) year from the date of shipment and any claims not presented within that period are waived by Purchaser. MASTER BUILDERS SOLUTIONS WILL NOT BE RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR PUNITIVE DAMAGES OF ANY KIND.

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