BASF

The Chemical Company

3 | 03 30 00 03 40 00 | Product Data | Cast-in-Place Concrete Precast Concrete

POZZUTEC® 20+

Accelerating Admixture

Description

Pozzutec® 20+ admixture is a multi-component, non-chloride, water-reducing and accelerating admixture formulated to accelerate concrete setting time and increase early and ultimate strengths across a wide range of ambient temperatures (hot, mild, cold and subfreezing). Pozzutec 20+ admixture meets ASTM C 494/C 494M requirements for Type C, accelerating, and Type E, water-reducing and accelerating, admixtures.

Applications

Recommended for use in:

- Concrete being placed in subfreezing ambient conditions
- Reinforced, precast, pumped, flowable, lightweight or normal weight concrete and shotcrete (wet mix)
- Concrete placed on galvanized steel floor and roof systems
- Prestressed concrete
- Fast-track concrete construction
- Concrete subject to chloride ion limitations
- Rheodynamic® Self-Consolidating Concrete
- Pervious Concrete
- 4x4™ Concrete

Features

- Accelerated setting time
- Especially effective for concrete placement at ambient temperatures as low as 20 °F (-7 °C)
- Superior workability
- Increased early and ultimate strength
- Superior finishing characteristics for flatwork and cast surfaces

Benefits

- Earlier finishing of slabs – reduced labor costs
- Reduced in-place concrete costs
- Reduced or eliminated heating and protection time in cold weather
- Earlier stripping and reuse of forms

Performance Characteristics

Mix Data

Type II cement, lb/yd³ (kg/m³)	600 (356)
Slump, in. (mm)	4 ± 1 (100 ± 25)
Air Content, %	Non–air–entrained concrete
Concrete Temperature	55 °F (12 °C)

Mild Weather

Setting Time: Ambient Temperature: 70 °F (21 °C)

	Time of Set	
Mix	Initial Set (h:min)	Comparison (h:min)
Plain	4:30	REF
Pozzutec 20+ admixture @ 10 fl oz/cwt (650 mL/100 kg)	3:18	– 1:12

Cold Weather

Setting Time: Ambient Temperature: 50 °F (10 °C)

	Time of Set	
Mix	Initial Set (h:min)	Comparison (h:min)
Plain	5:48	REF
Pozzutec 20+ admixture @ 20 fl oz/cwt (1,300 mL/100 kg)	4:00	–1:48

Master Builders

Product Data: POZZUTEC® 20+

Subfreezing Weather

Setting Time: Ambient Temperature: 30 °F (–1 °C)

	Time of Set	
Mix	Initial Set (h:min)	Comparison (h:min)
Plain	12:12	REF
Pozzutec 20+ admixture @		
60 fl oz/cwt (3,910 mL/100 kg)	3:54	– 8:18
90 fl oz/cwt (5,850 mL/100 kg)	2:24	– 9:48

Guidelines for Use

Dosage: The specific dosage of Pozzutec 20+ admixture for a given application is dependent on ambient and concrete temperatures, cement chemistry, concrete mixture proportions, the amount of set time acceleration needed and strength performance required. Listed below are the recommended dosage ranges for various weather applications.

Recommended Dosage for Mild and Cold Weather Applications: Use 5 - 60 fl oz/cwt (325 - 3,910 mL/100 kg) of cementitious material. As the dosage rate of Pozzutec 20+ admixture is increased, setting time is accelerated and early and ultimate strengths are increased.

Recommended Dosage for Subfreezing Weather Applications: Use 60 - 90 fl oz/cwt (3,910 - 5,870 mL /100 kg) of cementitious material to reduce the freezable water content of the mixture, to accelerate setting time and to provide early protection against freezing while the concrete is plastic in subfreezing temperatures.

Conservation of the heat generated by the concrete through the use of wind protection and/or insulation will permit placement in subfreezing ambient temperatures. See ACI 306.1, "Standard Specification for Cold Weather Concreting," and ACI 306 R, "Cold Weather Concreting" for recommended protection in cold weather.

Exposure to air movement, concrete surface to volume ratio, and mixture proportions affect performance under extreme cold weather conditions. Concrete containing Pozzutec 20+ admixture may reduce or eliminate the need for recognized protective measures and protection time required in cold or subfreezing weather concreting applications. Field evaluations of the concrete mixture selected for the project should be performed using local materials to determine: the optimum dosage rate of Pozzutec 20+ admixture required to achieve the desired setting time and strength performance, the minimum acceptable ambient and concrete temperatures for placement, and if the recognized protective measures and protection time required for cold and subfreezing weather concreting may be reduced or eliminated.

Concrete containing Pozzutec 20+ admixture that will be exposed to subfreezing weather conditions must be sealed to prevent the ingress of additional water to hardened concrete during curing. A surface sealer must be applied as soon as the concrete reaches initial set or finishing is complete. Confilm® evaporation reducer is recommended to minimize evaporation of surface moisture.

Product Notes

Corrosivity – Non-Chloride, Non-Corrosive: Pozzutec 20+ admixture will neither initiate nor promote corrosion of reinforcing steel in concrete.

Compatibility: Pozzutec 20+ admixture can be used as a singular admixture or as a component in a BASF Construction Chemicals admixture system. When used with other admixtures, each admixture must be dispensed separately into the mixture.

In applications that require Pozzutec 20+ admixture dosages of 30 fl oz/cwt (1,950 mL/100 kg) or more, the use of a Glenium® high-range water-reducing admixture is recommended to obtain increased water reduction and strength performance. At such dosages, erratic slump behavior may be experienced when Pozzutec 20+ admixture is used in concrete mixtures that also contain naphthalene-based admixtures.

Storage and Handling

Storage Temperature: Store at 50 °F (10 °C) or above. If Pozzutec 20+ admixture freezes, thaw at 35 °F (2 °C) or above and completely reconstitute by mild mechanical agitation. ***Do not use pressurized air for agitation.***

Shelf Life: Pozzutec 20+ admixture has a minimum shelf life of 12 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your BASF Construction Chemicals representative regarding suitability for use and dosage recommendations if the shelf life of Pozzutec 20+ admixture has been exceeded.

Packaging

Pozzutec 20+ admixture is supplied in 55 gal (208 L) drums, 275 gal (1040 L) totes and by bulk delivery.

Related Documents

Material Safety Data Sheets: Pozzutec 20+ admixture.

Additional Information

For additional information on Pozzutec 20+ admixture or its use in developing a concrete mixture with special performance characteristics, contact your BASF Construction Chemicals representative.

The Admixture Systems business of BASF Construction Chemicals is a leading provider of innovative additives for specialty concrete used in the ready mix, precast, manufactured concrete products, underground construction and paving markets throughout the NAFTA region. The Company's respected Master Builders brand products are used to improve the placing, pumping, finishing, appearance and performance characteristics of concrete.

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Master Builders

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The Chemical Company

April 22, 2007

Kearney Concrete Company
2001 Avenue C
Kearney, Nebraska, 68847

Attention: Kyle Poff
Project:
Project location:

Certificate of Conformance
Pozzutec® 20 Plus
BASF Construction Chemicals, LLC* Admixture for Concrete
(*Previously doing business as BASF Admixtures, Inc. and prior to that as Degussa Admixtures, Inc. and Master Builders, Inc.)

I, Richard Hubbard, Technical Specialist for BASF Construction Chemicals, LLC, Cleveland, Ohio, certify:

That no calcium chloride or chloride based ingredient is used in the manufacture of Pozzutec® 20 Plus; and

That Pozzutec® 20 Plus, based on the chlorides originating from all the ingredients used in its manufacture, contributes less than 0.00011 percent (1.1 ppm) chloride ions by weight of the cement when used at the rate of 65 ml per 100kg (1 fluid ounce per 100 pounds) of cement; and

That Pozzutec® 20 Plus meets the requirements for a Type C, Accelerating, and Type E, Water-Reducing and Accelerating Admixture specified in ASTM C 494 and Corps of Engineers' CRD-C 87, and AASHTO M194, the Standard Specifications for Chemical Admixtures for Concrete.

Richard Hubbard
Technical Specialist
BASF Construction Chemicals, LLC

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