

31	03 34 00	Low-Density Concrete
	03 52 00	Lightweight Concrete Roof Insulation
	31 23 23	Fill



MasterCell® 30

Foaming Agent for Controlled Low Strength Materials (CLSM)

Description

MasterCell 30 admixture meets the requirements of ASTM C 869, "Standard Specification for Foaming Agents Used in Making Preformed Foam for Cellular Concrete."

Applications

Recommended for use in:

- Tunnel Annulus Grouting
- Floor Fill
- Nuclear Decommissioning
- Thermal Insulation
- Basement Abandonment
- Unstable Soil Replacement
- Mining Backfill
- Slab Jacking
- Pipeline/Storage Tank Abandonment
- Roof Decks
- Pipe Bedding
- Roadbase/Abutment Fill
- Load-Reducing Fill
- Void Fill
- Mine Abandonment
- Slipliner Grouting
- Trench Fill
- Backfill
- Structural Fill
- Highway Barriers
- Lightweight Precast Panels

MasterCell 30 admixture is a highly concentrated foaming agent for use in producing Controlled Low Strength Materials (CLSM), and engineered, cellular cementitious mixtures (mortar, concrete, or grout) for numerous applications. MasterCell 30 admixture is suitable for use in combination with various types of foam generating equipment, especially equipment that generates foam via air pressure.

Features

- Liquid, easy to dispense
- Produces stable air and density (unit weight)
- Pre-selected strength and density values

CLSM produced using MasterCell 30 admixture achieves:

- Good thermal insulation
- Reduced bleeding, consequently reduced segregation
- Optimum workability
- Easy placement by means of chutes, pumps, or buckets
- Lightweight structural material



Performance Characteristics

Air Pressure System

Cement Factor, lb/yd ³ (kg/m ³)	600 (356)
Water, lb/yd ³ (kg/m ³)	270 (160)
w/c	0.45
Target Density, lb/ft ³ (kg/m ³)	35 (561)
Initial Density, lb/ft ³ (kg/m ³)	118 (1890)
Density After Foaming, lb/ft ³ (kg/m ³)	36.8 (590)
Foam Time, seconds	26

Density After Pumping, lb/ft³ (kg/m³)

50 ft (15.2 m)	37.8 (606)
100 ft (30.5 m)	40.7 (652)
150 ft (45.7 m)	40.6 (650)

Compressive Strength at 7 days, psi (MPa)

after foaming	60 (0.41)
after pumping 150 ft (45.7 m)	100 (0.69)

Compressive Strength at 28 days, psi (MPa)

after foaming	120 (0.83)
after pumping 150 ft (45.7 m)	220 (1.52)

Laboratory mixture. Foamed material pumped 150 ft (45.7 m) in increments of 50 ft (15.2 m)

Water-Pressure System

MasterCell 30 admixture can be used with a variety of mixture proportions: straight cement, cement and pozzolans and/or sand mixtures.

Lightweight Fill – Straight Cement

Mass as Batched

Type I Cement, lb/yd ³ (kg/m ³)	600 (356)
Water, lb/yd ³ (kg/m ³)	270 (160)
Foam Time, seconds	5.9
Initial Density, lb/ft ³ (kg/m ³)	118 (1,890)
Density After Foaming, lb/ft ³ (kg/m ³)	37 (593)
Compressive Strength at 7 days, psi (MPa)	110 (0.76)
Compressive Strength at 28 days, psi (MPa)	210 (1.45)

Masses shown are as batched prior to foaming. Proportions for the CLSM mixtures will be different when adjusted to a cubic yard (or cubic meter).
NOTE: Data taken from laboratory evaluations.

Guidelines for Use

Dosage: There is no standard dosage for MasterCell 30 admixture foaming agent. The dosage is dependent upon the required density and end use. A trial evaluation should be conducted to determine the foaming time necessary to obtain the required density. Contact your local sales representative for mixture proportioning assistance.

Air Pressure Systems: MasterCell 30 admixture is a ready-to-use solution for producing lightweight cellular concrete.

Pre-Foamed Method:

1. Dilute MasterCell 30 admixture with water by 20-40 times depending on the application.
2. Control the amount of compressed air and flow of diluted MasterCell 30 admixture in order to obtain appropriate foam volume. MasterCell 30 admixture has an expansion rate of approximately 20-25 times the diluted solution.
3. Introduce foam into either a continuous mixer or agitator truck directly and mixture well with mortar or concrete.

Water-Pressure Systems: MasterCell 30 admixture is introduced to the CLSM mixture using a MasterCell foam gun.

4. Do not dilute or mix MasterCell 30 admixture with water or any other admixture.
5. Connect the MasterCell foam gun to the water supply of the ready-mixed concrete truck or other main source of water supply. A water source with a pressure of 30 psi (207 kPa) is required.
6. Introduce foam directly into the ready-mixed concrete truck or continuous mixer and mix well.

Product Notes

When needed, set-controlling admixtures (i.e., accelerators or retarders) meeting ASTM C 494/C 494M requirements may be used to control the rate of set. However, the set-controlling admixture should be added separately to the mixture.

Storage and Handling

Storage Temperature: MasterCell 30 admixture can be stored at 34 °F (1 °C) or above. Low temperatures may cause flocculation (clumping) of the material.

If flocculation occurs, allow product to warm at room temperature, 70 to 73 °F (21 to 23 °C) and reconstitute by gentle agitation. **Do not use pressurized air for agitation.**

Handling: Any prolonged contact with MasterCell 30 admixture should be avoided, as it may cause irritation. If such contact occurs, the affected area should be washed thoroughly with water. In case of eye contact, seek immediate medical advice. When using MasterCell 30 admixture, the use of chemical gloves and goggles are recommended.

Shelf Life: MasterCell 30 admixture has a 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 MasterCell 30 admixture has been exceeded.

Packaging

MasterCell 30 admixture is supplied in 3 gal (11.4 L) pails, 55 gal (208 L) drums and 275 gal (1,040 L) totes.

Related Documents

Safety Data Sheets: MasterCell 30 admixture

Additional Information

For additional information on MasterCell 30 admixture or its use in developing a concrete or mortar mixture, 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.

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