



LAFARGE

Mortar Cement

**Architect, engineer,
or contractor –**

When your reputation is on the line,
make sure you specify Lafarge Mortar
Cement to meet the architectural,
structural, seismic, and construction
requirements of your next project.





Lafarge Mortar Cement

Lafarge North America is the leading supplier of cement and concrete in the United States and Canada. Through its leadership position, Lafarge applies its expertise to the development of its high performance Mortar Cement. Mortars made with cost-effective Lafarge Mortar Cement excel in the key areas of performance, including bond **strength and water resistance**.

Bond and Compressive Strengths. In independent testing, mortars made with Lafarge Mortar Cement exceeded the flexural bond strengths required in ASTM C 1329, Standard Specification for Mortar Cement; International Building Code Standard 2103.7, Mortar; Uniform Building Code Standard 21-14, Mortar Cement; and CSA-A3002, Masonry and Mortar Cement. They also achieved flexural bond and compressive strengths that meet all seismic zone requirements – enhancing structural stability and maintaining the margin of safety so important to you.

Durability. Independent lab tests confirm that mortars made with Lafarge Mortar Cement perform equal to or better than those made with Portland cement and lime on both high and low IRA brick.

Each type of Lafarge Mortar Cement features specialized qualities to meet the demands unique to each project.

The following table is a suggested guide for the selection of mortar type; however, other considerations, such as climate, exposure, type of masonry unit, applicable building codes and engineering requirements should also be considered.

Suggested Guide for Selection of Mortar Type

Location	Building Segment	Mortar Type	
		Recommended	Alternative
Exterior, above grade	load-bearing wall	S	
	parapet wall	S	
	non-load-bearing wall	N	S
Exterior, at or below grade	foundation walls, retaining walls, manholes, sewers, pavements, walls, patios	S ¹	M
		M	
Interior	load-bearing wall	S	
	non-load-bearing partitions	N	S

¹ Masonry exposed to weather in a nominally horizontal surface is extremely vulnerable to weathering. Mortar for such masonry should be selected with due caution.

Permeability. Mortar is often exposed to freezing and thawing cycles. Mortars made with Lafarge Mortar Cement withstand these weather extremes with low water absorption rates and increased water repellence. These factors, together with good workmanship, ensure tight and dense joints.

Workability and Boardlife. Plasticity and water retention are important aspects of workability. Lafarge Mortar Cement retains a maximum amount of water to provide plasticity to achieve excellent boardlife.

Minimal Shrinkage. Reducing shrinkage is an important factor in preventing cracks in mortar. In lab tests, mortars prepared with Lafarge Mortar Cement demonstrated minimal shrinkage.

Mixing Ease. Mixing is faster and easier, because Lafarge Mortar Cement ingredients come in one bag. Only sand and water must be added on site.

Uniformity. Because ingredients are blended to exact specifications at the Lafarge plant, Lafarge Mortar Cement provides uniform mortar color and strength.





Physical Requirements for Mortar Cement Uniform Building Code 21-14

Type	Flexural Bond Strength 28 Days Minimum	
	PSI	kPa
N	71	490
S	104	717
M	116	799

Physical Requirements for Mortar Cement Based upon ASTM C 1329

Type	Flexural Bond Strength 28 Days Minimum	
	PSI	MPa
N	70	0.5
S	100	0.7
M	115	0.8



Lafarge Mortar Cement

Basic Use: Lafarge Types N, S and M Mortar Cement meet ASTM C 1329, IBC 2103.7, and UBC 21-14 Standards for Mortar Cement and are used to make Type N, S and M masonry mortars as defined in ASTM C 270. When mixed with 2 to 3 parts loose, damp masonry sand meeting the requirements of ASTM C 144 and potable water, Lafarge Mortar Cement produces mortar with flexural strengths meeting the requirements of ASTM C 1329.

Composition and Materials: Lafarge Mortar Cement is composed of portland cement, plasticizers, and air entraining additives. These components are proportioned at the cement plant under controlled conditions to assure uniformity of performance.

Size: Type N available in 70-pound bags, Type S available in 75-pound bags. Type M available in 80-pound bags.

Limitations: Lafarge Mortar Cement should be mixed with clean, damp, loose masons' sand and potable water. The use of admixtures in masonry construction should have prior approval by the specifier, comply with ASTM C 1384, and be tested in the mortar at the temperature extremes anticipated at the job site. Insufficient mixing and improper sand contents can reduce the quality of the masonry mortar. Overloading a mixer will reduce masonry mortar quality regardless of length of mixing. See mixing instructions printed on bag.

Mixing: Place 2/3 of the required mixing water and half of the sand in the mixer. Next, add the Mortar Cement and then add the remaining sand. Mix for two minutes to permit the fluidizing of the ingredients to become effective. Next, add the remaining water to obtain the desired workability. Five minutes of mixing is recommended after all ingredients are in the mixer. At no time should the amount of material in the mixer cover the mixer blades when they are at the top of their travel.

Retempering: Mortars shall be retempered as needed to restore workability. Unused mortar shall be discarded after two hours.

Tooling of Joints: Tooling of masonry mortar joints increases the density, durability, and water resistance of the mortar. Tooling also increases the bond between the masonry mortar and the masonry unit. The moisture content of the masonry mortar at the time of tooling will affect final masonry mortar color. Delayed tooling normally results in darker mortar joints while early tooling will cause lighter joints.

Physical Requirements for Mortar Cement
(UBC Table No. 21-14A)

	Type N (kPa)	Type S (kPa)	Type M (kPa)
Flexural Bond Strength	71 (489 kPa)	104 (717 kPa)	116 (799 kPa)
Air Content of Mortar:			
Minimum % by volume	8	8	8
Maximum % by volume	16	14	14
Lafarge Mortar Cement:			
Air content (as per ASTM C 270) (maximum % by volume)	12	12	12

Property Requirements for Mortar¹

Based upon IBC 2103.7(2), UBC 21-15A, ASTM C 270, Table 2, and CSA-A179

Mortar	Type	Average Compressive Strength at 28 Days Min.		Water Retention (Min. %)	Air Content (Max. %) ²
		(Min. Psi)	(MPa)		
Cement-	M	2500	(17.2)	75	12
Lime or	S	1800	(12.4)	75	12
Mortar	N	750	(5.2)	75	14 ³
Cement	O	350	(2.4)	75	14 ³

¹ Laboratory-prepared mortar only.

² Determined in accordance with applicable standards.

³ When structural reinforcement is incorporated in the above noted mortars, the maximum air content shall be 12 percent.



Technical Data

Lafarge Mortar Cement is suitable for all masonry construction, especially projects that require higher flexural bond and compressive strengths.

Applicable standards: Lafarge Mortar Cement conforms to the requirements of International Building Code Section 2103.7, Chapter 21-14 of the Uniform Building Code and ASTM C 270: The Standard Specifications for Mortar for Unit Masonry. When mixed with sand meeting the requirements of ASTM C 144: Standard Specification for Aggregate for Masonry Mortar and an appropriate amount of water, Lafarge Types N, S and M Mortar Cement will result in Type N, S and M Mortar (respectively) meeting the requirements of IBC 2103.7(2), UBC 21-15, ASTM C 1329, and ASTM C 270. A certificate attesting to this will be furnished by the manufacturer upon request.

Precautions

Direct contact with wet cement should be avoided. If contact occurs, the skin should be washed with water as soon as possible. Exposure can cause serious, potentially irreversible tissue destruction in the form of chemical (caustic) burns. If cement gets into the eyes, immediately rinse thoroughly with water and seek medical attention. For more information, reference the applicable Lafarge Material Safety Data Sheet (MSDS). The MSDS should be consulted prior to use of this product and is available upon request and online at www.lafarge-na.com.

Company Profile

Lafarge in North America is part of the Lafarge Group. The world leader in building materials, active on five continents, the Lafarge Group holds top-ranking positions in cement, aggregates, concrete and gypsum.

By focusing on the development and improvement of building materials, Lafarge puts the customer at the core of its strategy and offers the construction industry and the general public innovative solutions that will bring more safety, comfort and beauty to our everyday lives.

Please contact your Lafarge Office for specific product information, availability and ordering.

Lakes and Seaway Business Unit

Bingham Farms, Michigan
Phone: 248-594-1991

U.S. East Business Unit

Alpharetta, Georgia
Phone: 678-746-2000

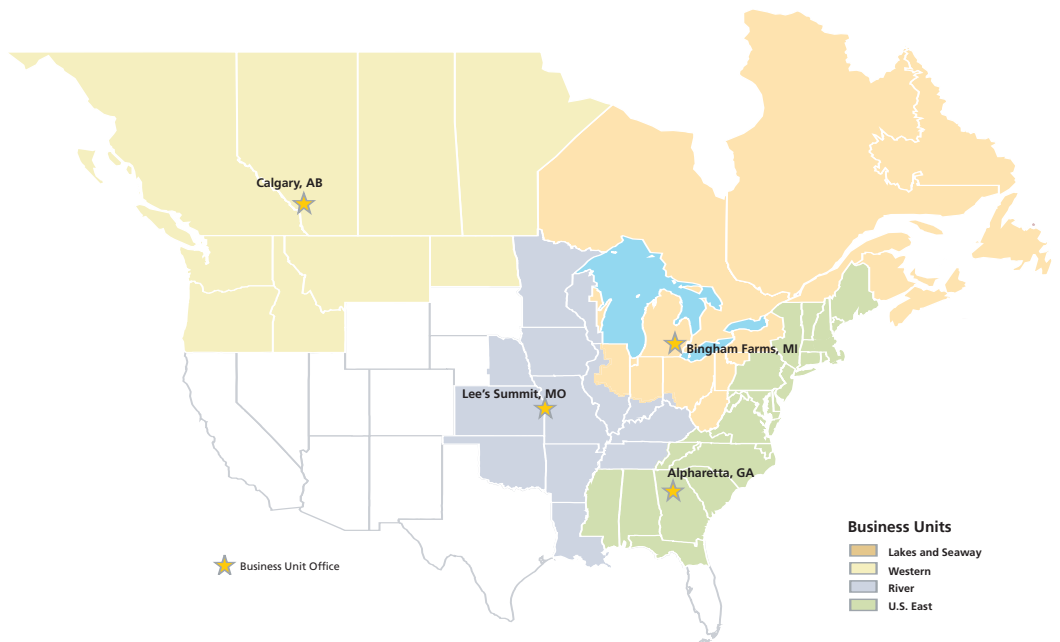
River Business Unit

Lee's Summit, Missouri
Phone: 816-251-2100

Western Business Unit

Calgary, Alberta
Phone: 403-271-9110

Lafarge North America Cement Operating Areas



Limited Warranty

Lafarge warrants that Lafarge Mortar Cement meets the requirements of ASTM C 1329, IBC 2103.7, UBC 21-14 and CSA-A179. Lafarge makes no other warranty, whether of merchantability or fitness for a particular purpose with respect to Lafarge Mortar Cement. Having no control over its use, Lafarge will not guarantee finished work in which Lafarge Mortar Cement is used.

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