

# MORTAR CEMENT TYPES N, S, and M



UNITED STATES

## PRODUCT DESCRIPTION

Types N, S, and M mortar cement.

### Basic Use

CEMEX mortar cement is specially formulated and manufactured to produce masonry mortar for use in brick, block, and stone masonry construction where flexural bond strength and lower air contents are desired.

### Composition and Materials

CEMEX mortar cement consists of a mixture of portland cement, limestone, and chemical admixtures to provide plasticizing properties and other enhanced performance attributes. These components are proportioned at the cement plant under controlled conditions to assure product consistency.

### Types

CEMEX mortar cements are produced in accordance with ASTM C1329 for the preparation of ASTM C270 Type N, S, and M mortar, respectively. CEMEX mortar cements are available in a standard gray color, unique to each cement plant. In some markets, colored mortar cements may be available. Color selection may be made from the local CEMEX mortar cement sample kit which is available through your CEMEX representative.

### Physical Properties

CEMEX mortar cements conform to the physical requirements of ASTM C1329 (see Table 1).

Mortar Cement Type	28 Day Compressive Strength ASTM C109 Minimum, psi (MPa)	Bond Strength ASTM C1357 Minimum psi (MPa)	Water Retention Minimum %	Air Maximum %
N	900 (6.2)	70 (0.5)	70	17
S	2100 (14.5)	100 (0.7)	70	15
M	2900 (20.0)	115 (0.8)	70	15

## INSTALLATION

Table 2 is a general guide for selection of mortar types. Other factors, such as type and absorption of masonry unit, climate and exposure, applicable

building codes, and engineering requirements should also be considered.

Building Segment	Mortar Type
Exterior, above grade, load-bearing	N or S or M
non load-bearing parapet wall	N N or S
Exterior, at or below grade	S or M
Interior, load-bearing non load-bearing	N or S N

Table 2 is an abbreviated version of Table X1.1 in the Annex of ASTM C 270-06.

### Mixing

CEMEX mortar cements, when mixed with sand meeting ASTM C144, will produce a mortar that can meet either the proportion or property specifications of ASTM C270 for Types N, S, or M masonry mortar (Table 3 and Table 4). Machine mixing should be used whenever possible. First, add most of the water and half of the sand. Next, add the masonry cement and the rest of the sand. After one minute of continuous mixing, slowly add the rest of the water. Mixing should continue for at least three minutes; extending mixing up to five minutes improves mortar qualities.

### Admixtures

No admixtures should be used without the written approval of the architect or engineer of record.

### Hot Weather Construction

Mortars exposed to hot winds and full sun will tend to lose workability due to the evaporation of water. Common sense precautions should be taken to protect the mortar such as shading the mixer, wetting mortar boards, covering wheelbarrows and tubs, and balancing mortar production to meet demand. If it is necessary to restore workability, mortar may be retempered by adding water and remixing. No mortar shall be used beyond 2½ hours after mixing. Please note that retempering may result in color variations of the mortar.

## Cold Weather Construction

Mortar should be maintained at a minimum temperature of 40°F as prescribed by applicable standards. No admixtures should be used without the written approval of the architect or engineer of record.

## Proportion Specifications

Mortar Type	Mortar Cement Type N	Mortar Cement Type S	Mortar Cement Type M	Sand, Damp Loose Condition
N	1	–	–	2¼ – 3
S	–	1	–	2¼ – 3
M	–	–	1	2¼ – 3

## Property Specifications

Under the property requirements of ASTM C270, cement-to-sand proportions are to be in the range of 1:2¼ to 1:3½, and should meet the requirements outlined in Table 4.

Mortar Type	Compressive Strength ASTM C109 Minimum, psi (MPa)	Water Retention Minimum %	Maximum % Air
N	750 (5.2)	75	14
S	1800 (12.4)	75	12
M	2500 (17.2)	75	12

No changes should be made in the field to the laboratory established proportions for mortar that has been tested and accepted under the property specification, except for the quantity of mixing water.

Materials with different physical characteristics than those used in the laboratory should also not be used in the field without testing for compliance with the property specifications.

## TECHNICAL DATA

### Applicable Standards

The following standards apply to the use of CEMEX masonry cements in mortar:

ASTM C1329, *Standard Specification for Mortar Cements*

ASMT C1357, *Standard Test Methods for Evaluating Masonry Bond Strengths*

ASTM C144, *Standard Specification for Aggregates for Masonry Mortar*

ASTM C270, *Standard Specification for Mortar for Unit Masonry*

ASTM C780, *Standard Test Method for Pre-construction and Construction Evaluation of Mortar for Plain and Reinforced Unit Masonry*

## Water

All water should be clean and free from organic material and deleterious amounts of dissolved acids, alkalies and salts.

## Precautions

Freshly mixed cement, mortar, grout or concrete may cause minor skin irritations. Avoid direct contact with skin and eyes and if contacted, wash exposed areas promptly with water. Refer to the applicable CEMEX product MSDS prior to use which may be obtained by calling 1-800-99-CEMEX (1-800-992-3639).

## AVAILABILITY

CEMEX Type N, S, and M mortar cements are available in both bulk and/or bags in some market areas, and can be ordered by contacting CEMEX at 1-800-99-CEMEX (1-800-992-3639).

## WARRANTY

CEMEX warrants that the products identified are in accordance with the appropriate current ASTM specifications. No one is authorized to make any modifications or addition to this warranty. **CEMEX makes no warranty or representation either expressed or implied with respect to this product and disclaims any implied warranty of merchantability or fitness for a particular purpose.**

As CEMEX has no control over other ingredients mixed with this product or the final application, CEMEX does not and cannot warrant the finished work.

**In no event shall CEMEX be liable for direct, indirect, special, incidental or consequential damages arising out of the use of this product, even if advised of the possibility of such damages. In no case shall CEMEX's liability exceed the purchase price of this product.**

## TECHNICAL SERVICES

CEMEX personnel are available to provide technical assistance by contacting 1-800-99-CEMEX (1-800-992-3639).

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