



# CITADEL

## Masonry Cements

### Types N and S

### Custom Color Cement

#### MANUFACTURER

CEMEX  
2720 Highway 341 South  
Clinchfield, Georgia 31013  
Sales Office: 1-800-854-2872

#### PRODUCT DESCRIPTION

Citadel Masonry Cements are produced to meet the criteria of ASTM C91 "Standard Specification for Masonry Cements" for Types N, S, and M (Table 1).

Color selection may be made from the local Citadel Masonry Cement sample kit which is available through your Citadel representative.

Citadel Masonry 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.

**Basic Use:** Citadel Masonry Cements are used to produce Types N, S, and M mortars as defined in ASTM C270 "Standard Specification for Mortar for Unit Masonry."

Citadel Masonry Cements when mixed with the recommended volumes of sand (ASTM C144) will produce a mortar that will comply with the requirements of ASTM C270 for both the Proportion Specification (Table 2) and the Property Specification (Table 3).

**Size:** Citadel Masonry Cements are available in one cubic foot sacks containing a plastic moisture barrier and in bulk via pressurized bulk containers.



#### INSTALLATION

**Mixing:** 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.

No admixtures should be used without written approval. Citadel Masonry Cements have an additive containing a water-repellent component which is interground with the cement during manufacture. No other additives are necessary, unless specified.

**Water:** All water should be clean and free from organic material and deleterious amounts of dissolved acids, alkalis and salts.

**Retempering:** To minimize rettempering, mortar should not be mixed more than 15 minutes prior to use. Retempering will not adversely affect mortar quality if only evaporated water is replaced. Colored mortar should not be retempered.

**Tooling of Joints:** Tooling of mortar joints increases the density, durability and water tightness of the mortar surface. The moisture content of the mortar when tooled will affect the color; the drier the mortar, the darker its final color.

**Table 1. ASTM C91 Masonry Cement**

<b>Physical Requirements of Masonry Cements</b>			
<b>Masonry Cement Type</b>	<b>Compressive Strength Min., psi (MPa)</b>	<b>Water Retention Minimum %</b>	<b>Air Maximum %</b>
<b>N</b>	<b>900 (6.2)</b>	<b>70</b>	<b>21</b>
<b>S</b>	<b>2100 (14.5)</b>	<b>70</b>	<b>19</b>
<b>M</b>	<b>2900 (20.0)</b>	<b>70</b>	<b>19</b>

**Table 2. Proportion Specification (Parts by Volume)**

<b>Mortar Type</b>	<b>Masonry Cement Type N</b>	<b>Masonry Cement Type S</b>	<b>Masonry Cement Type M</b>	<b>Masonry Sand</b>
<b>N</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>2 1/4 - 3</b>
<b>S</b>	<b>-</b>	<b>1</b>	<b>-</b>	<b>2 1/4 - 3</b>
<b>M</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>2 1/4 - 3</b>

**Table 3. Property Specification**

Under the Property Specification, the cement-to-sand proportions are to be in the range of 1:2 1/4 to 1:3 1/2, and should meet the requirements outlined in Table 3.

<b>Mortar Type</b>	<b>Compressive Strength Min., psi (MPa)</b>	<b>Water Retention Minimum %</b>	<b>Air Maximum %</b>
<b>N</b>	<b>750 (5.2)</b>	<b>75</b>	<b>20</b>
<b>S</b>	<b>1800 (12.4)</b>	<b>75</b>	<b>18</b>
<b>M</b>	<b>2500 (17.2)</b>	<b>75</b>	<b>18</b>

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.

## **WARRANTY**

CEMEX warrants that the products identified are in accordance with the appropriate current ASTM and Federal 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 the other ingredients mixed with this product or the final application, CEMEX does not and cannot warrant the finished work. The user is responsible for following industry standards and recommended practices.

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.

## **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).

## **TECHNICAL SERVICES**

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

# **CEMEX**

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