



**1. Product Name**

- Holcim Rainbow Mortamix® Custom Color Masonry Cement
- Holcim Rainbow Mortamix® Custom Color Cement/Lime

**2. Manufacturer**

Holcim (US) Inc.  
 P.O. Box 122  
 6211 North Ann Arbor Road  
 Dundee, MI 48131  
 (800) 854-4656  
 (734) 529-2411  
 Fax: (734) 529-4110

Rainbow Products Division  
 200 Safety Street/Highway 453  
 Holly Hill, SC 29059  
 (888) 289-6606  
 (803) 496-2781  
 Fax: (803) 496-2786  
 www.holcim.us  
 www.cementonline.us  
 www.masonrybydesign.com

**3. Product Description**

**BASIC USE**

Holcim Rainbow Mortamix® Custom Color Masonry Cement and Holcim Rainbow Mortamix Cement/Lime produce masonry mortars in a variety of colors which offer design flexibility and enhance the aesthetic effect of brick, block and stone masonry. In addition to 40 standard colors, Rainbow Mortamix Custom Color Masonry Cement and Cement/Lime can be custom blended to match, contrast with or complement the colors of masonry materials (e.g., bricks, block and stone) as specified.

**COMPOSITION & MATERIALS**

Holcim Rainbow Mortamix Custom Color Masonry Cement  
 This product is manufactured from Portland cement, plasticizers, water retaining materials, air entraining additives and pigments. The pigments are either inorganic manufactured oxides or natural mineral oxides. Holcim Rainbow Mortamix Custom Color Masonry Cement meets ASTM C91.

**Holcim Rainbow Mortamix Custom Color Cement/Lime**

This product is manufactured from Portland cement and hydrated lime, meeting the applicable requirements for Type S lime in accordance with ASTM C207. Although there is not a specific ASTM standard specification for packaged cement lime combinations, ASTM C270 provides the property and proportion specifications for mortars containing this material.

**TYPES**

Holcim Rainbow Mortamix Custom Color Masonry Cement and Holcim Rainbow Mortamix Cement/Lime are available in Type N, Type S or Type M. When mixed with the specified amount of sand in accordance with ASTM C144, they produce mortars that conform to the proportion and property specifications of ASTM C270 for Types N, S or M, depending on the specified product. A general guide for selection of mortar types and other relevant information is located in the appendix of ASTM C270. Factors affecting the selection of mortar type include the absorption of masonry units, climate, engineering requirements and code restrictions.

**SIZES**

Both products are available in the following packaging sizes (bags):

- Type N - 32 kg (70.5 lb)
- Type S - 34 kg (75 lb)
- Type M - 36 kg (79.4 lb)

**COLORS**

Both products are available in 40 standard colors, including white. In addition, colors can be custom formulated under laboratory conditions to match desired customer specifications.

**LIMITATIONS**

To ensure optimum product performance, either product should be mixed with clean sand conforming to ASTM C144 and clean water. Mortar should be mixed for 3 - 5 minutes.

**4. Technical Data**

**APPLICABLE STANDARDS**

**ASTM International**

- ASTM C91 Standard Specification for Masonry Cement
- ASTM C144 Standard Specification for Aggregate for Masonry Mortar



Rainbow Palette

- ASTM C207 Standard Specification for Hydrated Lime for Masonry Purposes
- ASTM C270 Standard Specification for Mortar for Unit Masonry

**PHYSICAL/CHEMICAL PROPERTIES**

**Holcim Rainbow Mortamix Custom Color Masonry Cement**

This product is manufactured to conform to the requirements set forth in ASTM C91. For additional information, see Table 1.

When mixed with sand meeting the ASTM C144 requirements and water, this product produces a mortar that conforms to the proportion specification and property specifications set forth in ASTM C270. For data on the proportion specifications and the property specifications for this product, see Tables 2 and 3.

**Holcim Rainbow Mortamix Custom Color Cement/Lime**

When mixed with sand meeting the ASTM C144 requirements and water, this product produces a mortar that conforms to the proportion specifications and property specifications set forth in ASTM C270. For data on the proportion specifications and the property specifications for this product, see Tables 2 and 3.

Note - Requirements for sand to be used in conjunction with the products are outlined in ASTM C144. Both products are formulated to provide consistent workability, strength, color and durability.

**5. Installation**

**PREPARATION & APPLICATION**

For both products, mix 1 bag with 2 1/4 to 3 parts by volume of damp, loose masonry sand that meets ASTM C144 requirements. Add one-half (1/2) to two-thirds (2/3) of the required water for the application, then add half of the required sand to the mechanical mixer. Add the contents of the product's bag to the mixer, followed by the remaining half of the sand and sufficient water to bring the mixture to the desired consistency. The mortar should be mixed in 3 - 5 minutes after all the materials have been added to the mixer.

Holcim Rainbow products are preblended, using laboratory quality control, to ensure uniformity. Mixing instructions are printed on each bag. Machine mixing is required to achieve color uniformity. Each batch should be mixed precisely and consistently to achieve the desired color.

Job sample panels should be constructed before the start of each job in order to properly match color. These panels should be built using sand conforming to ASTM C144, water, masonry units and construction practices which will be used on the project.

Never change sand sources or amounts during the project. Do not use any other additives or admixtures. Tool all joints at the same degree of firmness. Excessive retempering could result in color variations. It is important to protect masonry units from weather before and after they are set in place.

Efflorescence is a result of moisture entering the wall and causing water-soluble materials to migrate to the surface. It can be avoided by protecting walls from inclement weather during construction and using proper construction practices.

**PRECAUTIONS**

Direct contact with the skin should be avoided. If contact occurs, the skin should be washed with water as soon as possible. Exposure of sufficient duration to wet Holcim Rainbow Mortamix Custom Color Masonry or Holcim Rainbow Mortamix Custom Color Cement/Lime cements can cause serious, potentially irreversible tissue destruction in the form of chemical (caustic) burns. If Holcim Rainbow Mortamix Custom Color Masonry or Holcim Rainbow Mortamix Custom Color Cement/Lime cements get into the eyes, immediately rinse them thoroughly with water and seek medical attention. For more complete

TABLE 1 HOLCIM RAINBOW MORTAMIX TECHNICAL DATA PER ASTM C91

Properties	Type N	Type S	Type M
Fineness (+ 325 M), max	24%	24%	24%
Autoclave expansion, max	1.0%	1.0%	1.0%
Time of setting (Gillmore)			
Initial (minutes), not less than	120	90	90
Initial (minutes), not greater than	1440	1440	1440
Compressive strength, min			
7 days, MPa (psi)	3.4 (500)	9.0 (1300)	12.4 (1800)
28 days, MPa (psi)	6.2 (900)	14.5 (2100)	20.0 (2900)
Air content			
Min volume	8%	8%	8%
Max volume	21%	19%	19%
Water retention, min	70%	70%	70%

TABLE 2 HOLCIM RAINBOW MORTAMIX PROPORTIONS BY VOLUME DATA PER ASTM C270 <sup>1</sup>

Mortar	Mortar type	Holcim Portland Hydraulic or Blended Cement	Holcim Mortamix Rainbow Custom Color			
			M	S	N	Lime
Masonry cement	M	1	-	-	1	-
	M	-	1	-	-	-
	S	1/2	-	-	1	-
	S	-	-	1	-	-
	N	-	-	-	1	-
Cement-lime	O	-	-	-	1	-
	M	1	-	-	-	1/4
	S	1	-	-	-	1/4 - 1/2
	N	1	-	-	-	1/2 - 1 1/4
	O	1	-	-	-	1 1/4 - 2 1/2

<sup>1</sup> Aggregate ratio is not less than 2 1/4 or more than 3 times the combined volumes of the cementitious materials. See ASTM C270 for more details.

TABLE 3 HOLCIM RAINBOW MORTAMIX PROPERTY REQUIREMENTS PER ASTM C270 <sup>1</sup>

Mortar	Mortar type	Compressive strength, at 28 days (min)	Water retention	Air content
Masonry cement	M	17 MPa (2500 psi)	75	18
	S	12 MPa (1800 psi)	75	18
	N	5 MPa (750 psi)	75	20
	O	2 MPa (350 psi)	75	20
Cement-lime	M	17 MPa (2500 psi)	75	12
	S	12 MPa (1800 psi)	75	12
	N	5 MPa (750 psi)	75	14
	O	2 MPa (350 psi)	75	14

<sup>1</sup> Aggregate ratio is not less than 2 1/4 or more than 3 1/2 times the combined volumes of the cementitious materials. See ASTM C270 for more details.



information, reference is made to the applicable Material Safety Data Sheets (MSDS), which should be consulted prior to use of this product. These MSDS are available upon request.

## 6. Availability & Cost

### AVAILABILITY

Holcim Rainbow Mortamix Custom Color Masonry and Holcim Rainbow Mortamix Custom Color Cement/Lime cements are available throughout most of the United States.

### COST

Pricing information can be obtained from the nearest Holcim Sales Office.

## 7. Warranty

Upon request, Holcim can provide Material Certification Reports demonstrating that Holcim Rainbow Mortamix Custom Color Masonry and Holcim Rainbow Mortamix Custom Color Cement/Lime cements meet or exceed applicable ASTM standards. For more warranty information, contact the nearest Holcim Sales Office.

## 8. Maintenance

In areas where concrete cleaners and sealers are required, proper instructions should be followed. Contact the appropriate product manufacturer before application.

## 9. Technical Services

Technical service is available by contacting the nearest Holcim Sales Office. With advance notice, technical service can be provided at jobsite locations.

## 10. Filing Systems

- Reed First Source
- Additional product information is available from the manufacturer.
- [www.holcim.us](http://www.holcim.us)
- [www.cementonline.us](http://www.cementonline.us)
- [www.masonrybydesign.com](http://www.masonrybydesign.com)

## Corporate Headquarters

Holcim (US) Inc.  
201 Jones Road  
Waltham, MA 02451  
(866) 465-2460

## Corporate Office

6211 Ann Arbor Road  
P.O. Box 122  
Dundee, MI 48131  
(800) 854-4656