

# TARGET Type MCS MORTAR CEMENT (Type S)

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## TECHNICAL DATA

TARGET® Mortar Cement is suitable for all masonry construction, especially projects that require higher flexural bond and comprehensive strengths.

Applicable standards: TARGET 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 requirement of ASTM C 144: Standard Specification for Aggregate for Masonry Mortar and an appropriate amount of water, Type S Mortar Cement will result in Type S Mortar (respectively) meeting the requirements of IBC 2103.7(2), UBC 21-15, ASTM C 270.

## BASIC USE

Type S Mortar Cement meets ASTM 1329, IBC 2103.7, and UBC 21-14 Standards for Mortar Cement and is used to make Type S 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, Mortar Cement produces mortar with flexural strengths meeting the requirements of ASTM C1329.

## COMPOSITION AND MATERIALS

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.

## 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.

Product performance is affected by many factors, including storage, method and conditions of application and use. User testing is ESSENTIAL to determine suitability of product for intended method of application and use. Target's SOLE WARRANTY is that the product has been manufactured to specifications. No oral or written information or advice shall increase this warranty or create new warranties. Target's SOLE LIABILITY is to replace product proved defective. In no event shall Target be liable for any consequential, indirect or other damages whether arising from negligence or otherwise.

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## TOOLING AND 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 S (kPa)
<b>Flexural Bond Strength</b>	104 (717kPa)
<b>Air Content of Mortar:</b>	
Minimum % by volume	8
Maximum % by volume	14
<b>Mortar Cement:</b>	
Air content (as per ASTM C270) (maximum % by volume)	12

### Property Requirements for Mortar<sup>1</sup>

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

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

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.

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## 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

### BONDS AND COMPRESSIVE STRENGTHS

In independent testing, mortars made with 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 Mortar Cement perform equal to or better than those made with Portland cement and lime on both high and low IRA brick.

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## Suggested Guide for Selection of Mortar Type

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.

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,	S <sup>1</sup>	M
	Manholes, sewers, Pavements, walls, patios	M	
Interior	load-bearing wall	S	
	non-load-bearing wall	N	S

<sup>1</sup> Masonry exposed to weather nominally horizontal surface is extremely vulnerable to weathering. Mortar for such masonry should be selected with due caution.

## 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 Materials Safety Data Sheet (MSDS).

## LIMITATIONS

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.

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