



Standard Practice for Construction of Dry-Stacked, Surface-Bonded Walls¹

This standard is issued under the fixed designation C 946; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

^{ε1} NOTE—Keywords were added editorially in November 1996.

1. Scope

1.1 This practice covers material, workmanship, and construction procedures for applying surface bonded mortar to both sides of dry stacked concrete masonry units. It does not include grout, reinforcing, anchorage, or control joints since their use is essentially the same as conventional concrete masonry construction, unless specifically mentioned in this practice.

NOTE 1—Design and construction procedures for conventional concrete masonry construction have been written by the American Concrete Institute, “Building Code Requirements for Concrete Masonry Structures” and the National Concrete Masonry Associations, “Specification for the Design and Construction of Load-Bearing Concrete Masonry.”

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are provided for information only.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

- C 55 Specification for Concrete Building Brick²
- C 90 Specification for Loadbearing Concrete Masonry Units²
- C 129 Specification for Nonloadbearing Concrete Masonry Units²
- C 145 Specification for Solid Load-Bearing Concrete Masonry Units³
- C 270 Specification for Mortar for Unit Masonry²
- C 887 Specification for Packaged, Dry, Combined Materials for Surface Bonding Mortar²

2.2 American Concrete Institute Standard:

- 531 Building Code Requirements for Concrete Masonry

¹ This practice is under the jurisdiction of ASTM Committee C-12 on Mortars for Unit Masonry and is the direct responsibility of Subcommittee C12.06 on Surface Bonding.

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² Annual Book of ASTM Standards, Vol 04.05.

³ Discontinued. See 1989 Annual Book of ASTM Standards, Vol 04.05.

Structures, Commentary-ACI 531R-79⁴

2.3 *International Masonry Industry All-Weather Council Standards:*

Recommended Practices and Guide Specifications for Cold Weather Masonry Construction⁵

2.4 *National Concrete Masonry Association Standard:*
Specification for the Design and Construction of Load-Bearing Concrete Masonry⁶

3. Storage

3.1 Deliver and store surface bonding mortar in original containers off the ground to prevent contact with water. Protect from rain with suitable covering.

3.2 Store concrete masonry units off the ground to prevent contamination by mud, dust, and materials likely to cause staining or other defects, and protect from rain.

4. Materials and Manufacture

4.1 Concrete masonry units shall be clean and dry, meeting the requirements of Type I, moisture-controlled units, of the applicable ASTM specification (Specifications C 55, C 90, C 129, and C 145). The surface to receive surface bonding mortar shall be free of paint, oil, efflorescence, or foreign materials that interfere with bonding.

4.2 Mortar shall be mixed in accordance with the proportion specification of Specification C 270 and shall be selected on the basis of Appendix X1 of Specification C 270.

4.3 Surface bonding mortar shall meet the requirements of Specification C 887. If the dry mix contains hard lumps, it shall not be used.

4.4 Shims shall be corrosion-resistant metal or plastic with a minimum compressive strength of 2000 psi (13.8 MPa), or steel protected from corrosion by a coating of zinc at least 0.8 oz/ft² (2.4 gm/mm²), or by a coating of cadmium or zinc of equivalent corrosion resistance.

5. Leveling Courses

5.1 Leveling courses, when needed, are to provide a smooth

⁴ Available from the American Concrete Institute, P.O. Box 19150, Detroit, MI 48219.

⁵ Available from the International Masonry Industry All-Weather Council, Mason Contractors Association of America, 17 W601 Fourteenth St., Oakbrook Terrace, IL 60181.

⁶ Available from the National Concrete Masonry Assn., P.O. Box 781, Herndon, VA 22070.