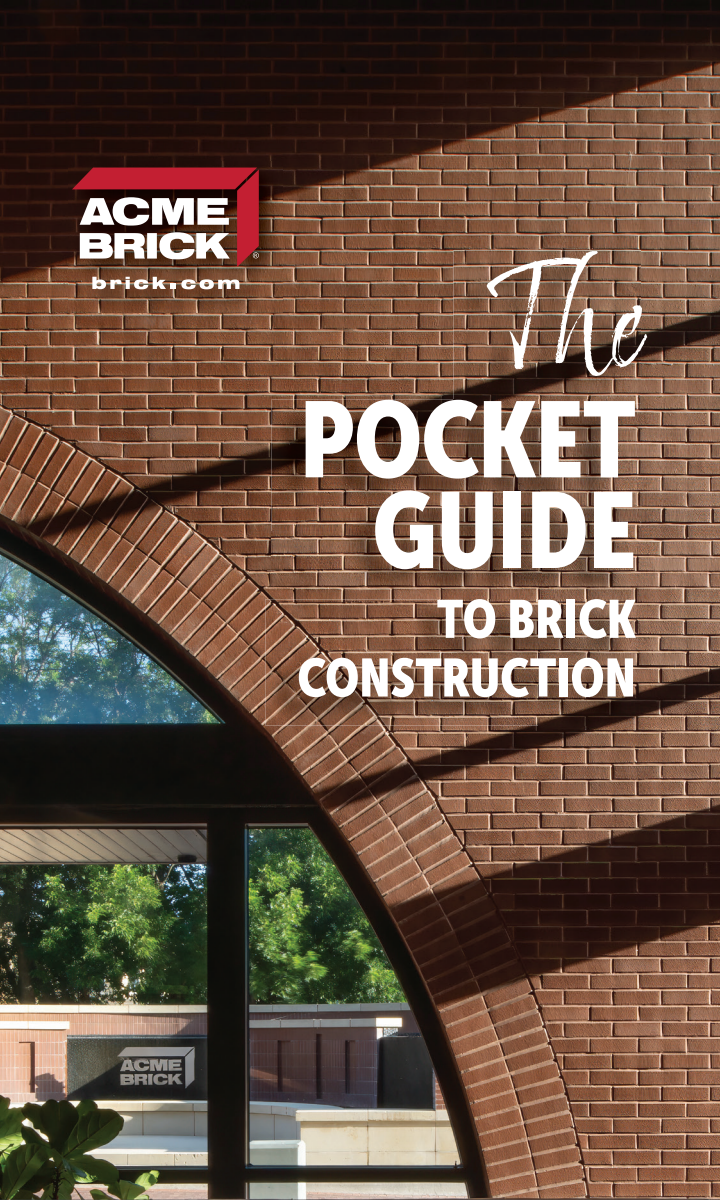
ACME BRICK
brick.com
The
POCKET GUIDE
TO BRICK CONSTRUCTION
ACME BRICK

ACME BRICK COMPANY

POCKET GUIDE TO BRICK CONSTRUCTION™

This pocket guide belongs to...

Technical Services Department
3024 Acme Brick Plaza • Fort Worth, TX 76101-0425
(817) 332-4101

Table of Contents

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VIRTUAL MASON

Build realistic renderings of homes or commercial buildings by selecting brick, mortar, roofing, and trim - and then compare two versions side by side! Save and download your renderings as JPEG images.

MASONRY DESIGNER

Build virtual wall sections of nearly any size and export them as bitmap images. Choose a brick size, color, mortar color, and coursing. You can build walls of multiple colors, brick by brick.

SPECIAL SHAPES CATALOG

Interactive pdf detailing special shapes commonly made at five of our plants. Dimensions and in use wall drawings make selecting shapes easy.

THE BRICK INDUSTRY ASSOCIATION

TECH NOTES

Technical Notes on Brick Construction are FREE bulletins that contain design, detailing, and construction information based on the latest technical developments in brick masonry.

BRICK IN ARCHITECTURE AWARDS

The Brick in Architecture Awards competition features the most incredible and sustainable ways to design with clay brick. These inspiring projects compete for Best in Class, Gold, Silver, and Bronze awards across nine different categories: Thin Brick, International, Residential Single Family, Commercial, Residential Multi-Family, Education (Colleges & Universities), Education (K-12), Paving and Landscaping, and Historic Renovation.

Consider submitting your hard work at gobrick.com.

Beauty. Safety. Strength. These core values guide everything we do at Acme Brick—including our commitment to strengthening and sustaining our people, communities, and the environment.

HEALTH PRODUCT DECLARATION (HPD)

This HPD covers all Acme-manufactured clay brick across all colors and product options. Scan the QR code to download the full document as a PDF.

ENVIRONMENTAL PRODUCT DECLARATION (EPD)

The brick industry recognizes that the stewardship of our planet lies in the hands of our generation. Acme Brick is committed to continually seeking innovative, environmentally responsible opportunities—both in the manufacturing process and in the end use of our clay brick products.

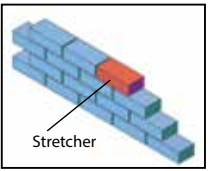
OUR SUSTAINABILITY COMMITMENT

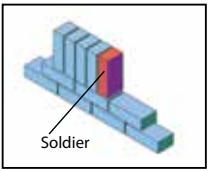
Our vision is to be the trusted materials solution for enduring beauty, safety, and strength in building communities. To achieve this, we focus on:

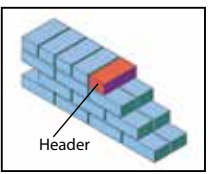
- Training and developing our people
- Auditing and improving our processes
- Transparent reporting on our progress

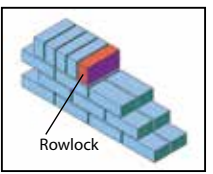
View our annual Corporate Responsibility Report.
Learn more at brick.com/our-company/sustainability

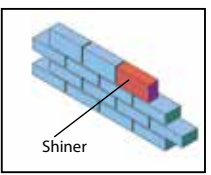
BRICK POSITION NOMENCLATURE

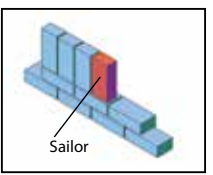


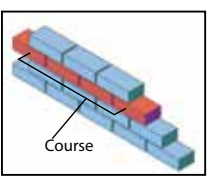


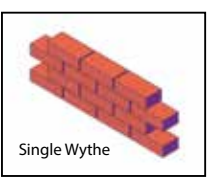


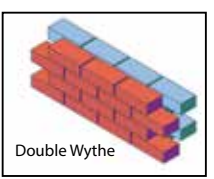












BRICK TEXTURES

Various textures are available throughout the industry to achieve different visual effects. The most common are shown below. Acme Brick offers mostly smooth and velour, with exceptions for certain blends.

Smooth

Velour
(aka wirecut)

Blade Cut

Craftwork

Rustic

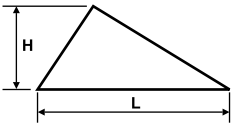
Heritage

Ruff

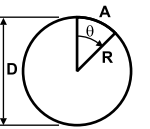
Bark

Vertical

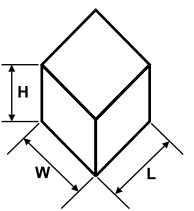
ESTIMATING AREA AND VOLUME



1/2 × L × H = Area (ft^2)



Arc Length



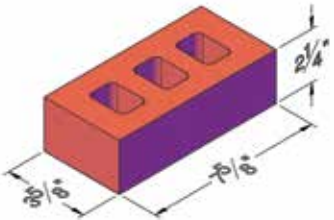
Volume = L × W × H (ft^3)

C = D × π
π = 3.14
A = θ/360° × C
A = θ/360° × 3.14 × D

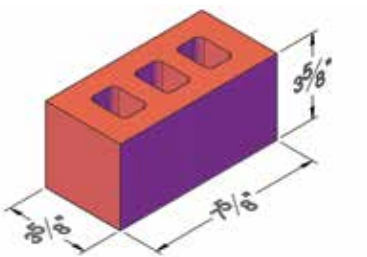
where:
C = circumference
A = arc length
θ = angle of radius intersections
R = radius
D = diameter

Example:
If D = 20 ft. and θ = 40°:
A = 40°/360° × 3.14 × 20 ft.
A = 7 ft

COMMON BRICK SIZES

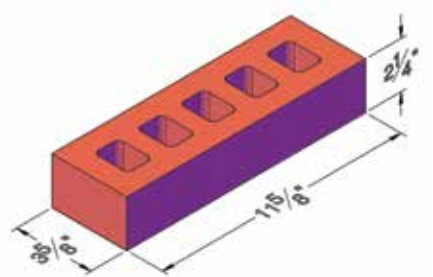


Unit Name	Actual Size (inches)		Equivalent (mm)	Modular Metric Size (mm)	Equivalent (inches)	Vertical Coursing	Actual Units/ SF
Modular	Thk H L	3 5/8 2 1/4 7 5/8	92 57 194	90 57 190	3 9/16 2 1/4 7 1/2	2 5/8" 67 mm	6.86

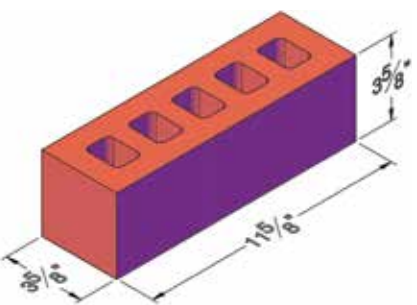


Unit Name	Actual Size (inches)		Equivalent (mm)	Modular Metric Size (mm)	Equivalent (inches)	Vertical Coursing	Actual Units/ SF
Economy Modular (Closure)	Thk H L	3 5/8 3 5/8 7 5/8	92 92 194	90 90 190	3 9/16 3 9/16 7 1/2	4" 100 mm	4.5

COMMON BRICK SIZES

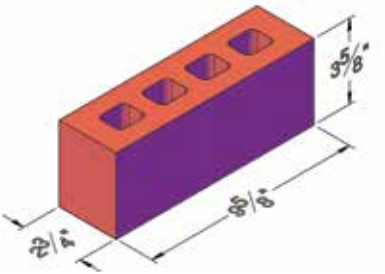


Unit Name	Actual Size (inches)		Equivalent (mm)	Modular Metric Size (mm)	Equivalent (inches)	Vertical Coursing	Actual Units/ SF
Norman	Thk H L	3 5/8 2 1/4 11 5/8	92 57 295	90 57 290	3 9/16 2 1/4 11 7/16	2 2/3" 67 mm	4.58

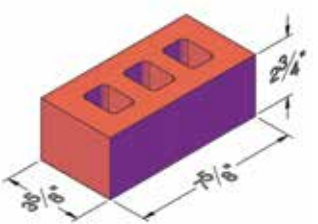


Unit Name	Actual Size (inches)		Equivalent (mm)	Modular Metric Size (mm)	Equivalent (inches)	Vertical Coursing	Actual Units/ SF
Utility	Thk H L	3 5/8 3 5/8 11 5/8	92 92 295	90 90 290	3 9/16 3 9/16 11 7/16	4"" 100 mm	3.0

COMMON BRICK SIZES



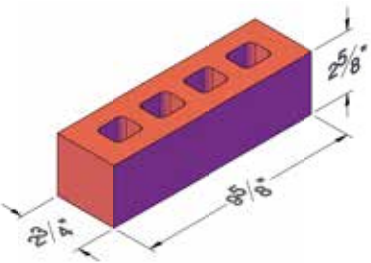
Unit Name	Actual Size (inches)		Equivalent (mm)	Modular Metric Size (mm)	Equivalent (inches)	Vertical Coursing	Actual Units/ SF
Estate	Thk H L	2 1/2 - 2 3/4 2 5/8 9 5/8	70 92 244	n/a	n/a	4" 100 mm	3.6



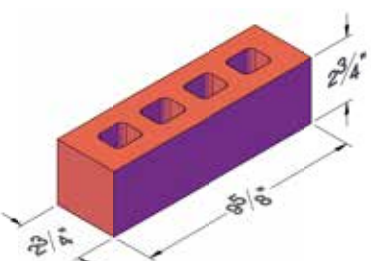
Unit Name	Actual Size (inches)		Equivalent (mm)	Modular Metric Size (mm)	Equivalent (inches)	Vertical Coursing	Actual Units/ SF
Engineer	Thk H L	3 5/8 2 3/4 7 5/8	92 70 194	90 70 190	3 9/16" 2 3/4 7 1/2	3.2" 80 mm	5.76

(Montgomery Plant)

COMMON BRICK SIZES



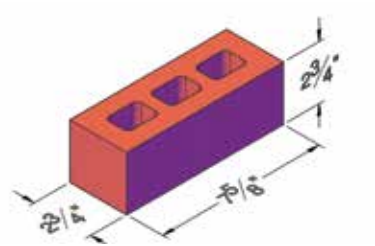
Unit Name	Actual Size (inches)		Equivalent (mm)	Modular Metric Size (mm)	Equivalent (inches)	Vertical Coursing	Actual Units/ SF
King	Thk H L	2 1/2 - 2 3/4 2 5/8 9 5/8	63.5 - 70 67 244	n/a	n/a	3" 76 mm	4.8



Unit Name	Actual Size (inches)		Equivalent (mm)	Modular Metric Size (mm)	Equivalent (inches)	Vertical Coursing	Actual Units/ SF
King Plus	Thk H L	2 1/2 - 2 3/4 2 3/4 9 5/8	63.5 - 70 70 244	n/a	n/a	3.125" 80 mm	4.61

(Birmingham Plant)

COMMON BRICK SIZES



Unit Name	Actual Size (inches)		Equivalent (mm)	Modular Metric Size (mm)	Equivalent (inches)	Vertical Coursing	Actual Units/ SF
Queen	Thk H L	2 3/4 2 3/4 7 5/8	70 70 194	n/a	n/a	3.2" 80 mm	6.0

(Birmingham and Montgomery Plants)

Other sizes like Builders Special and Meridian may be available with a special order. Your Acme sales rep can help determine if it is possible.

ASTM Standard Specifications for Brick and Applicable Standard Testing for Units and Masonry Assemblages

Definitions of Terms

ASTM	C 51	Definition of Terms Relating to Lime and Limestone
ASTM	C 119	Definition of Terms Relating Dimension Stone
ASTM	C 1232	Standard Terminology of Masonry

Units

Brick:

ASTM	C 32	Sewer and Manhole Brick
ASTM	C 55	Dry-Cast Concrete Building Brick
ASTM	C 62	Building Brick (Solid Units)
ASTM	C 73	Calcium Silicate Face Brick (Sand-Lime Brick)
ASTM	C 126	Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units
ASTM	C 216	Brick and Solid Masonry Units Facing Brick (Solid Units)
ASTM	C 279	Chemical-Resistant Masonry Units
ASTM	C 410	Industrial Floor Brick
ASTM	C 652	Hollow Brick
ASTM	C 902	Pedestrian and Light Traffic Paving Brick
ASTM	C 980	Industrial Chimney Lining Brick
ASTM	C 1088	Thin Veneer Brick Units Made from Clay or Shale
ASTM	C 1261	Firebox Brick for Residential Fireplaces
ASTM	C 1272	Heavy Vehicular Paving Brick

ASTM Specifications (continued)

Tile:

ASTM	C 34	Structural Clay Load-Bearing Wall Tile
ASTM	C 56	Structural Clay Non-Load-Bearing Tile
ASTM	C 57	Structural Clay Floor Tile
ASTM	C 126	Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units
ASTM	C 212	Structural Clay Facing Tile
ASTM	C 315	Clay Flue Linings and Chimney Pots
ASTM	C 530	Structural Clay Non-Load-Bearing Screen Tile

Concrete Masonry Units (CMU):

ASTM	C 90	Load-Bearing Concrete Masonry Units
ASTM	C 129	Non-Load-Bearing Masonry Units
ASTM	C 139	Concrete Masonry Units for Construction of Catch Basins and Manholes
ASTM	C 936	Solid Concrete Interlocking Paving Units

Stone:

ASTM	C 503	Marble Building Stone
ASTM	C 568	Limestone Dimension Stone
ASTM	C 615	Granite Dimension Stone
ASTM	C 616	Quartz- Based Dimension Stone
ASTM	C 629	Slate Dimension Stone

Mortar and Grout

ASTM	C 270	Mortar for Unit Masonry

Sampling and Testing

ASTM	C 67	Sampling and Testing Brick and Structural Clay Tile

ASTM Specifications (continued)

Masonry

TMS	402	Building Code Requirements for Masonry Structures
TMS	602	Specifications for Masonry Structures
ASTM	C 901	Prefabricated Masonry Products

Concrete Masonry Units:

ASTM	C 140	Sampling and Testing Concrete Masonry Units and Related
ASTM	C 426	Test for Drying Shrinkage of Concrete Block
ASTM	C 1006	Splitting Tensile Strength of Masonry Units

Mortar:

ASTM	C 136	Test Method for Sieve Analysis of Fine and Coarse Aggregate
ASTM	C 780	Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry
ASTM	C 1324	Standard Test Method for Examination and Analysis of Hardened Masonry Mortar

Masonry:

ASTM	E 72	Conducting Strength Tests of Panels for Building Construction
ASTM	E 119	Fire Tests of Building Construction and Materials
ASTM	E 447	Tests for Compressive Strength of Masonry Prisms
ASTM	E 514	Water Penetration and Leakage Through Masonry
ASTM	E 518	Flexural Bond Strength of Masonry
ASTM	E 519	Diagonal Tension (Shear) in Masonry Assemblages
ASTM	C 952	Bond Strength of Mortar to Masonry Units
ASTM	C 1072	Measurement of Masonry Flexural Bond Strength

ASTM C216 Standard Specification for Facing Brick and ASTM C652 Standard Specification for Hollow Brick

	Min. Compressive Strength (Brick Flatwise) PSI (MPa) Gross Area		Maximum Water Absorption 5-Hr Boiling (Percent)		Maximum Saturation Coefficient*	
Designation	Avg 5 brick	Individual	Avg 5 brick	Individual	Avg 5 brick	Individual
Grade SW	3000 (20.7)	2500 (17.2)	17	20	0.78	0.80
Grade MW	2500 (17.2)	2200 (15.2)	22	25	0.88	0.90

** The saturation coefficient requirement can be waived if the cold water absorption of any single unit of a random sample of five brick does not exceed 8%.*

There are three types of brick in each of two grades covered in ASTM C 216 and four types in each of two grades in ASTM C 652. Grades classify brick according to their resistance to damage by freezing when wet. The two grades of facing brick are covered and the requirements are shown in the table above.

Grade SW: Brick intended for use where high and uniform resistance to damage caused by cyclic freezing is desired and where the brick may be frozen when saturated with water.

Grade MW: Brick which may be used where moderate resistance to cyclic freezing damage is permissible or where the brick may be damp but not saturated with water when freezing occurs. Physical requirements for these two grades are identical for C216 and C652 and are as shown in the above table.

Types of Brick Regarding Appearance & Dimensional Tolerance

Three types of facing brick are covered:

Type FBS and HBS: Brick for general use in masonry.

Type FBX and HBX: Brick for general use in masonry where a higher degree of precision and lower permissible variation in size than permitted for Type FBS and HBS are required.

Type FBA, HBA, and HBB: Brick for general use in masonry selected to produce characteristic architectural effects resulting from nonuniformity in size and texture of the individual units.

When the type is not specified, the requirements for Type FBS or HBS shall govern.

THIN BRICK INFORMATION

Three Type of Thin Brick:

- TBS-Thin brick veneer for general use in masonry.
- TBX-Thin brick veneer for general use in masonry where a higher degree of precision and lower permissible variation in size than permitted for Type TBS is required.
- TBA-Thin brick veneer for general use in masonry selected to produce aesthetic effects resulting from non-uniformity in size and texture.

TBS - TBX - TBA Dimensional Tolerances as defined by: ASTM C1088

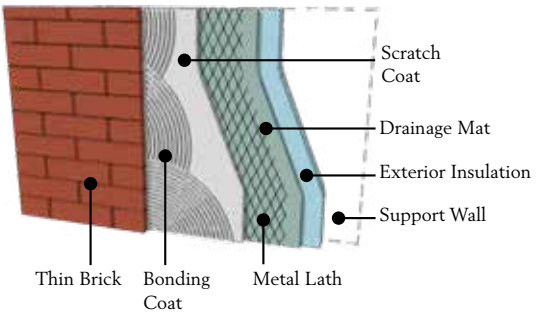
Specified Dimension, in. (mm)	Maximum Permissible Variation from Specified Dimension ± in (mm)	
	Type TBX	Type TBS
3 (76) and under	1/16 (1.6)	3/32 (2.4)
Over 3 to 4 (76 to 102) incl	3/32 (2.4)	1/8 (3.2)
Over 4 to 6 (102 to 152) incl	1/8 (3.2)	3/16 (4.7)
Over 6 to 8 (152 to 203) incl	5/32 (4.0)	1/4 (6.4)
Over 8 to 12 (203 to 305) incl	7/32 (5.6)	5/16 (7.9)
Over 12 to 16 (305 to 406) incl	9/32 (7.1)	3/8 (9.5)

TBS - TBX - TBA Warpage Tolerances as defined by: ASTM C1088

Maximum Face Dimension, in. (mm)	Maximum Permissible Warpage ± in (mm)	
	Type TBX	Type TBS
8 (203) and under	1/16 (1.6)	3/32 (2.4)
Over 8 to 12 (203 to 305) incl	3/32 (2.4)	1/8 (3.2)
Over 12 to 16 (305 to 406) incl	1/8 (3.2)	3/16 (4.7)

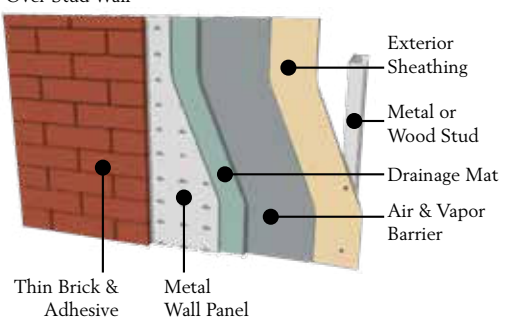
Thick Set Mortar System

Over Exterior Insulation



Modular Panel System

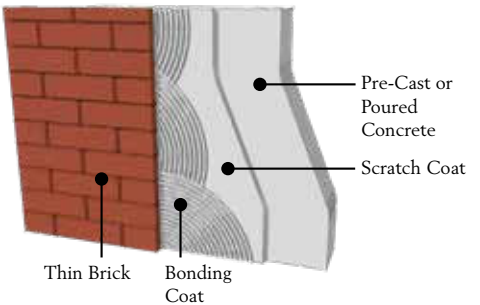
Over Stud Wall



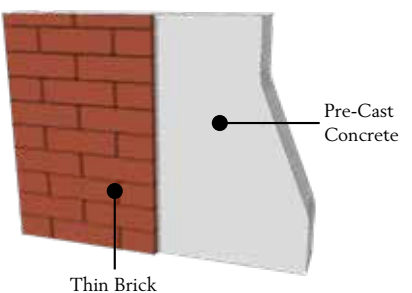
THIN BRICK APPLICATIONS

Thin Set Mortar System

Over Concrete Wall

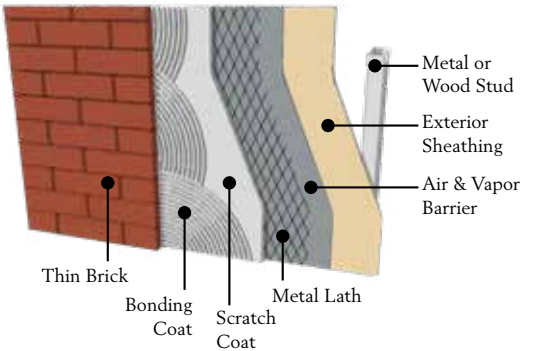


Pre-Cast Wall System



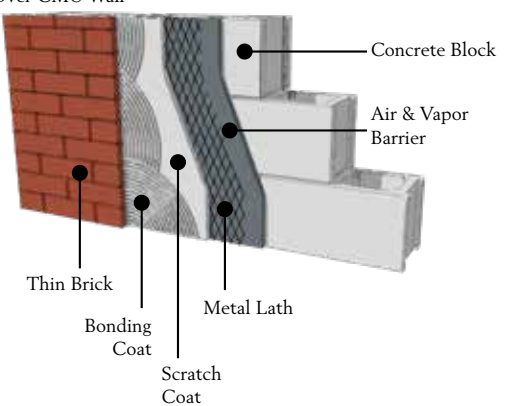
Thick Set Mortar System

Over Stud Wall



Thick Set Mortar Bed System

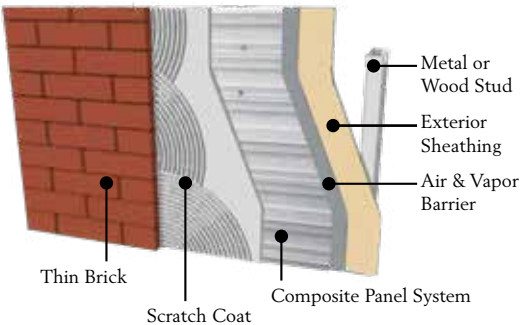
Over CMU Wall



THIN BRICK APPLICATIONS

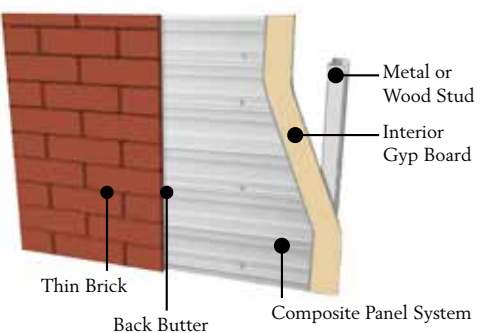
SPEEDYMASON™ SYSTEM EXTERIOR APPLICATION

Over Stud Wall



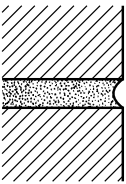
SPEEDYMASON™ SYSTEM INTERIOR APPLICATION

Over Stud Wall

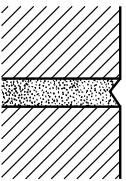


MORTAR JOINTS

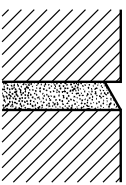
The concave and the V joints are the two most watertight joints. The weather joint, struck joint and flush joint fall in the middle, with the raked joint being the least weathertight.



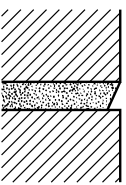
Concave Joints



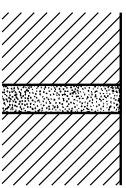
V Joints



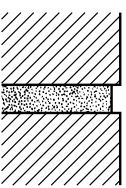
Weather Joints



Struck Joints



Flush Joints



Raked Joints

MORTAR PROPORTIONS BY VOLUME

Property Method for Specifying Mortar

There is much confusion concerning property specifications of mortar. Property specifications contain requirements for compression strength testing of mortar, but these strengths are only to be used for qualifying alternate mix proportions for field mixed mortar. THERE IS NO PROVISION FOR STRENGTH TESTING OF JOB SITE MORTAR.

ASTM C 270 specifically states that "The compressive strength values resulting from field tested mortars do not represent the compressive strength of mortar as tested in the laboratory nor that of the mortar in the wall. Physical properties of field sampled mortar shall not be used to determine compliance to this specification and are not intended as criteria to determine the acceptance or rejection of the mortar," (3.3)

Property method strength requirements are as follows but are for LABORATORY PREPARED SPECIMEN ONLY.

Mortar Type	28 Day Compressive Strength
M	2500 psi
S	1800 psi
N	750 psi
O	350 psi

Both the National Concrete Masonry Association and the Brick Industry Association recommend using the weakest mortar THAT WILL MEET STRENGTH REQUIREMENTS.

TYPE N MORTAR IS BEST FOR MOST MASONRY VENEER.

Proportion specifications are preferred to property specifications.

GUIDE FOR THE SELECTION OF MASONRY MORTARS[A]

Location	Building Segment	Mortar Type[a]	
		Recommended	Alternative[b]
Exterior Above Grade	Loadbearing Walls	N	S or M
	Non-Loadbearing Walls	N	S
	Parapet Walls	N	S
Exterior At or Below Grade	Foundation Walls, Retaining Walls, Manholes, Sewers, Pavements, Walks, and Patios	M[c]	S[c]
Interior	Loadbearing Walls	N	S or M
	Non-Loadbearing Partitions	N	S

A. This table does not provide for any specialized mortar uses, such as high bond and acid resistant mortars.

B. Alternatives are presented as suitable for use where design conditions or exposures are other than normal.

C. Masonry exposed to weather in a nominal horizontal surface is extremely vulnerable to weathering. Mortar for such masonry should be selected with caution.

SPECIAL SHAPES

I. Acme's Philosophy

Acme Brick's objective is to manufacture brick shapes which will assist architects in designing more functional and aesthetically pleasing buildings at the most economical cost.

We offer a wide variety of colors and textures in special shape brick by manufacturing shapes at five brick plants:

- Denton, Texas
- Elgin, Texas
- Perla in Malvern, Arkansas
- Montgomery, Alabama
- and Tulsa, Oklahoma.

Each of the plants has its own unique skill set and method; accordingly, not every shape can be made at every plant. Pricing may vary considerably from plant to plant and from blend to blend; quantities may also affect pricing. Be aware that the difficulty in manufacturing textures on special shapes may incur extra cost. The color and texture of special shape brick is intended to be as close as possible to that of the standard field brick, but is subject to limitations of manufacturing.

Special shape brick are considered a custom made item. They are manufactured to order for a specific project. Manufacturing cannot begin until an order has been placed for firm quantities, and shape drawings have been approved. To eliminate errors and to facilitate estimating quantities, Acme Brick will provide drawings of each shape showing the plan, elevations, and dimensions for each shape. All exposed brick faces will be clearly identified, and the coring of the unit will be shown. Brick coursing will be indicated in the areas where shapes are used. Upon completion the architect will receive these drawings for final inspection and approval.

SPECIAL SHAPES PROFILES

Sloped **Bullnose** **Cove** **Ogee** **Bullnose Ogee**

SPECIAL SHAPES CONSIDERATIONS

1. Determine that the plant producing the face brick can manufacture the Special Shapes.
2. Make sure that the Special Shape may be extruded through a standard die.
3. Make sure that the desired texture of the Special Shape can be provided. A velour texture is best.
4. Try to minimize the number of different configurations (dimensions and angles) of Special Shaped Brick required.
5. Be sure to allow time for engineering, pricing, and manufacturing of the Special Shaped Brick.

Note

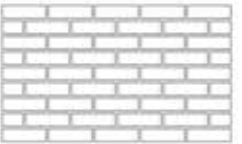
Special Shaped Radial Brick may not be required for curved walls if the radius is not less than the minimums shown below:

Modular Brick	Radius 8'0" or larger
King Size and Estate Size Brick	Radius 10'0" or larger
Utility and Norman Brick	Radius 12'0" or larger

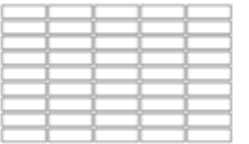
A Special Shapes catalog has been created to make the process of ordering these items as easy as possible. Please visit brick.com/special-shapes to download a copy of the guide, or scan here to view it on your mobile device.

Download the full Special Shapes guide for wall diagrams, placing orders, and detailed information.

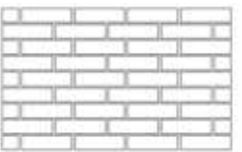
TRADITIONAL BOND PATTERNS



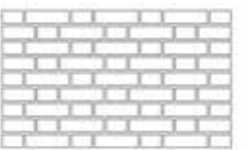
Running Bond



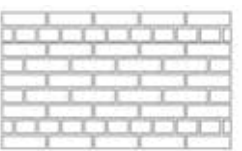
Stack Bond



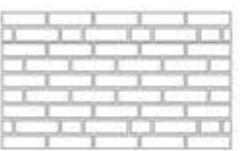
1/3 Running Bond



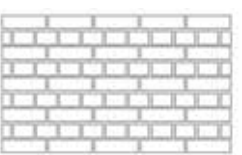
Flemish Bond



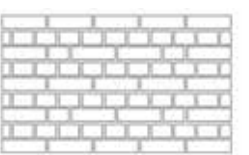
Common Bond
6th Course Header



Common Bond
6th Course
Flemish Header

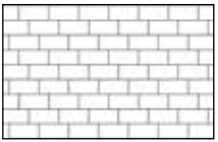


English Bond

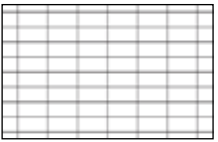


English Cross
or Dutch Bond

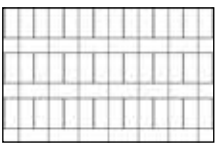
BRICK PAVING BOND PATTERNS



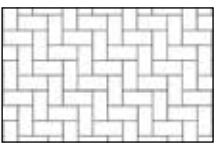
Running



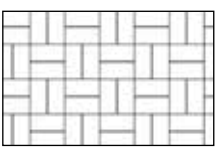
Stacked



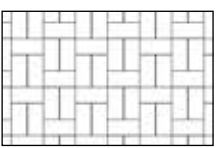
Stack & Running Bond



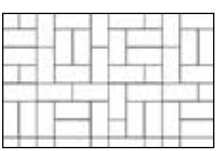
Herringbone



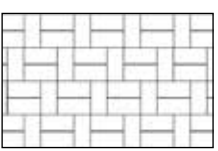
Basketweave



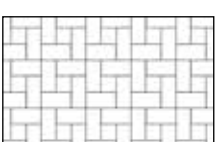
Single Basketweave



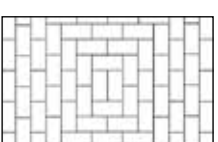
Boxed Basketweave



Half Basketweave



Pinwheel



Pinwheel Running Bond

GUIDELINES FOR PAINTING BRICK

For customers considering painted brick, please note the following guidelines. These requirements must be followed to maintain coverage under Acme Brick Company's 100-Year Limited Guarantee for Single Family Residences (the "Limited Guarantee").

Selecting Paint Products

For exterior masonry applications, Acme Brick Company recommends using only mineral-based paints. Romabio offers products specifically designed for exterior masonry that provide high breathability, durability, and a wide range of colors and finishes. The Brick Industry Association's (BIA) Technical Note 6 offers guidance on proper methods for painting exterior masonry. Any brick painted in a manner that does not follow BIA guidance is excluded from the Limited Guarantee.

Selecting Brick

- Only paint brick suitable for painting.
- Textured brick should have consistent texturing throughout the run, as variations may remain visible even after painting.
- Do not paint brick with manganese or metallic additives.
- Brick with loose coatings should not be painted unless coatings are removed by pressure washing.
- For a list of brick suitable for painting, contact your Acme Brick sales representative.

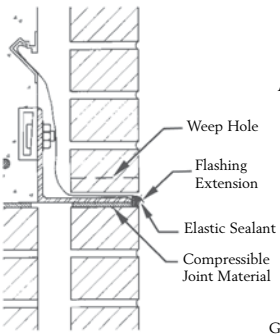
Paint Application

- Follow the paint manufacturer's instructions for cleaning, preparation, and application.
- The Limited Guarantee does not apply to the performance or durability of the paint applied to the brick.

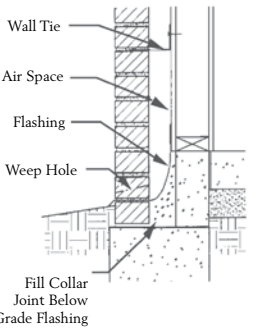
FLASHING AND WEEP HOLES FOR DRAINAGE WALL SYSTEMS

Notes:

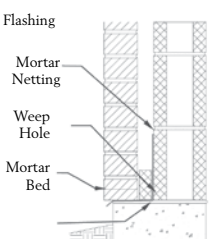
1. Use good quality materials – see TN 7A
2. Install flashing and weep holes when the cavity is interrupted.
3. Weep holes 24" O.C. maximum at flashing
4. All flashing should extend beyond the face of the wall to form a drip.



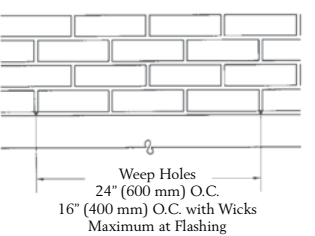
Steel Shelf Angle



Foundation Detail



Mortar Netting



Elevation at Flashing

TIE SPACING RECOMMENDATIONS: BIA TECH. NOTE 44B[1,2]

Wall Type	Anchor System		Max Cavity Width[3]	Max Area Per Anchor	Max Vertical Spacing	Max Horiz. Spacing
Cavity Wall (both wythes designed to resist out-of-plane loads	Unit Tie	9ga/W1.7	4½"	2.67 sf	24"	36"
		3/16"/W2.8		4.50 sf		
	Standard Joint Reinforcement	9ga/W1.7	4½"	2.67 sf	24"	16"
		3/16"/W2.8		4.50 sf		
	Unit Adj. Double Eye and Pintle		4½"	1.77 sf	16"	16"
	Adj Joint Reinforcement					
Brick Veneer on Wood Stud	Corrugated		1 inch	2.67	18"	32"
	Other Than Corrugated		4½"	2.67	18"	32"
	Adj. 2 piece W1.7			3.5		
Brick Veneer on Steel Stud	Adj. Unit/ Veneer Ties	Maximum	4½"	2.67	18"	32"
		Recommended	2"	2.0		24"
Veneer on Concrete or CMU Backing	Adj. Unit and W1.7		4½"	2.67	18"	32"
	Sheet Metal and W2.8			3.5		
Multi-wythe Masonry Composite	Unit Ties	9ga/W1.7	No Cavity	2.67[4]	24"	36"
		3/16"/W2.8		4.5		
	Joint Reinf.	9ga/W1.7		2.67		
		3/16"/W2.8		4.5		

[1] Masonry laid in running bond. Consult applicable building code for special bond patterns such as stack bond.

[2] Based on the requirements of TMS 402/602

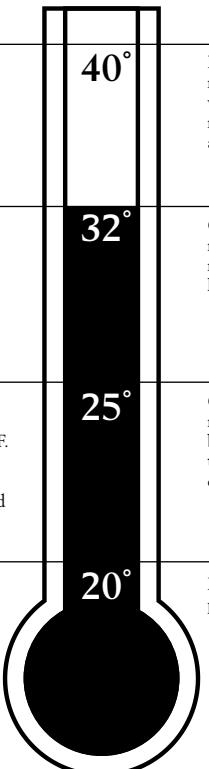
[3] Maximum allowable distance between inside face of veneer and framing material, per MSJC Code, unless noted otherwise.

Table 2: Recommended Minimum Corrosion Protection
BIA Technical Note 44B

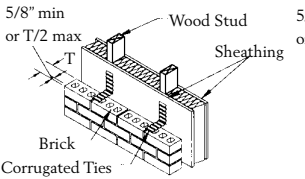
Application		Corrosion Protection
Unit Wire Ties	1. Completely embedded in mortar or grout	ASTM A 641, Class 3
	2. Exposed in air spaces or cavities	ASTM A 153, Class B-3, or ASTM A 899, Class C, 20 mils
	3. Exposed to corrosive elements	ASTM A 580, Type 304
Sheet Steel Ties	1. Completely embedded in mortar or grout	ASTM A 653, Class G 60
	2. Exposed in air spaces or cavities	ASTM A 153, Class B-3 or 20 mils epoxy per surface
	3. Exposed to corrosive elements	ASTM A 240, Type 304
Joint Reinforce-ment	1. Completely embedded in mortar or grout	ASTM A 641, Class 3
	2. Exposed in air spaces or cavities	ASTM A 153, Class B-2 or ASTM A 864, Class A, Type 1 - 7 mils
	3. Exposed to corrosive elements	ASTM A 580, Type 304

COLD WEATHER MASONRY

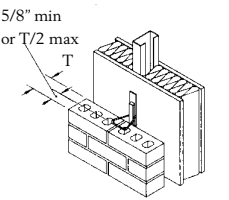
Construction Requirements (air temperature)		Protection Requirements (avg. daily temperature)
Heat sand or mixing water to minimum of 40° F. and maximum of 120° F. at time of mixing.	40°	Protect masonry from rain or snow by covering with a weather resistive membrane for 24 hours after construction.
Heat sand or mixing water to produce mortar temperatures between 40° and 120° F. at time of mixing. Maintain mortar above freezing until used in masonry.	32°	Completely cover masonry with a weather resistive membrane for 24 hours after construction
Heat sand and mixing water to minimum of 40° F. and maximum of 120° F. Use heat on both sides of walls under construction. Employ windbreak if wind exceeds 15 mph.	25°	Completely cover masonry with insulating blankets or equal protection for 24 hours after construction.
Heat sand and mixing water to minimum of 40° F. and maximum of 120° F. Enclose work and heat to above 32° F. Units being laid should be at least 20° F.	20°	Maintain masonry temperature above 32° F. for 24 hours by enclosure and heat.



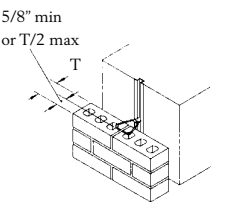
WALL TIES



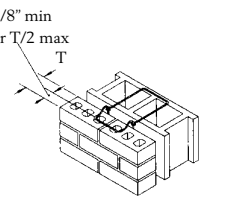
Wood Stud Backup



Steel Stud Backup



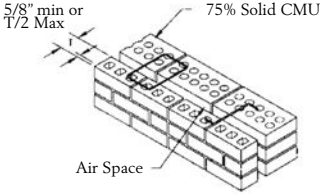
Concrete Backup



Masonry Backup

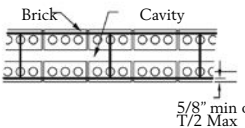
Unit Tie Details

WALL TIES (continued)



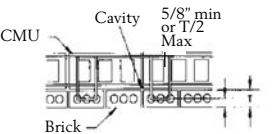
Solid Masonry Backup

Single Eye Pintle



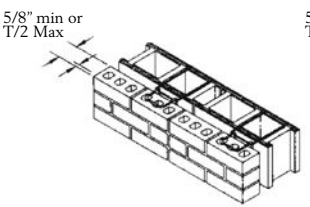
Ladder-Type Cavity Wall*

** For insulated walls – use ladder type*

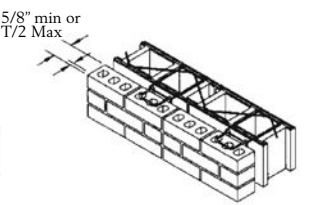


Tab-Type Cavity Wall Solid

Cavity Walls



Ladder Type



Truss Type

Adjustable Assembly Details

THERMAL MOVEMENT

MATERIAL	Avg. Coefficient of Thermal Expansion, in/in - °F.	Thermal Expansion (in./25 ft. @ 100° F. Increase)
CLAY MASONRY		
Clay or shale brick	3.6 E-6	0.108
Fire clay brick or tile	2.5 E-6	0.075
Clay or shale tile	3.3 E-6	0.099
CONCRETE BRICK		
Dense aggregate	5.2 E-6	0.156
Cinder aggregate	3.1 E-6	0.093
Expanded-shale aggregate	4.3 E-6	0.129
Expanded-slag aggregate	4.6 E-6	0.138
Pumice or cinder aggregate	4.1 E-6	0.123
STONE		
Granite	4.7 E-6	0.141
Limestone	4.4 E-6	0.132
Marble	7.3 E-6	0.219
CONCRETE		
Gravel aggregate	6.0 E-6	0.18
Lightweight, structural	4.5 E-6	0.135
METAL		
Aluminum	12.8 E-6	0.384
Bronze	10.1 E-6	0.303
Stainless steel	9.6 E-6	0.288
Structural steel	7.0 E-6	0.21
WOOD, PARALLEL TO FIBER		
Fir	2.1 E-6	0.063
Maple	3.6 E-6	0.108
Oak	2.7 E-6	0.081
Pine	3.6 E-6	0.108
WOOD, PERPENDICULAR TO FIBER		
Fir	32.0 E-6	0.96
Maple	27.0 E-6	0.81
Oak	30.0 E-6	0.9
Pine	19.0 E-6	0.57
PLASTER		
Gypsum aggregate	7.6 E-6	0.228
Perlite aggregate	5.2 E-6	0.156
Vermiculite aggregate	5.9 E-6	0.177

Note: Clay brick also expands slightly due to moisture: average 0.0003 in/in. or 0.09 in/25 ft. This typically takes 2-5 years.

EXPANSION JOINTS OR DIFFERENTIAL MOVEMENT

Where Should Expansion Joints Or Differential Movement Be Considered?

1. At shelf angles.
2. At several locations along long walls (25 ft. maximum).
3. At offsets in walls.
4. At intersections of walls.
5. Where short runs of masonry interface with long runs of masonry.
6. Near corners (10 ft. maximum).
7. At columns.
8. At foundations (bond break).
9. At floor or roof wall connection.
10. At parapet walls.
11. Where materials with different coefficients of thermal expansion are joined.

CLEANING PRODUCT RECOMMENDATIONS

Acme Brick recommends using trusted companies such as Prosoco and EaCo Chem when choosing products to clean and/or protect your masonry. Always test products to ensure desired results before applying to the full project. Proper dilution may be appropriate in some cases.

PROSOCO

Prosoco - prosoco.com - 1.800.255.4255

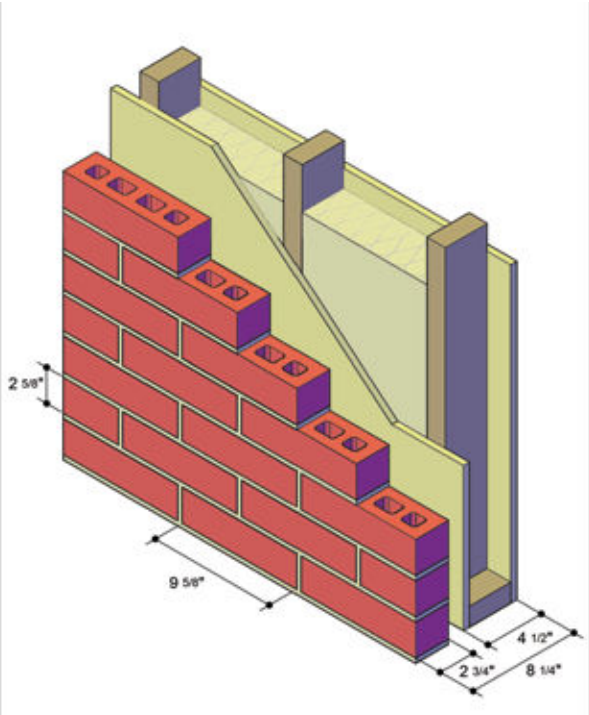
3741 Greenway Circle, Lawrence, KS 66046

EaCo Chem

EaCo Chem - eacochem.com - 1.724.656.1055

65 Commerce Avenue, New Castle, PA 16101

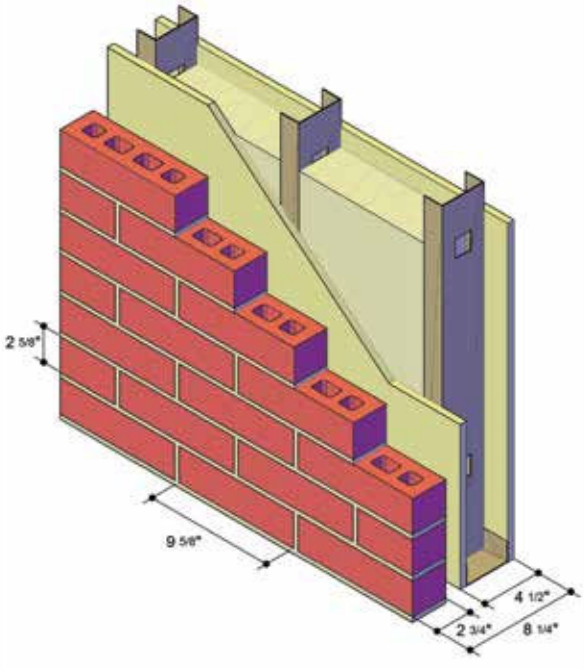
ACME BRICK



King Size Brick Veneer Wall, Wood Stud

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
4" batt	34	.10	10.18	1 hour	55	---
6" batt	35	.07	15.18	1 hour	55	---

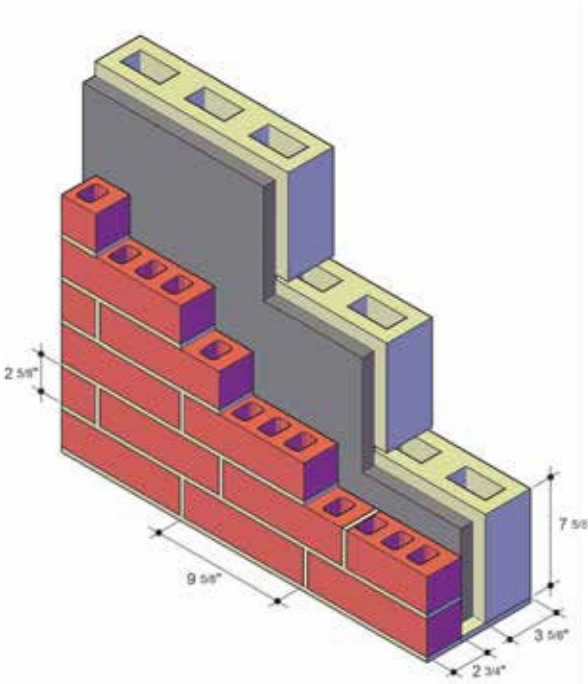
* *Fire rating determined by ASTM E119 test, as documented at: https://brick.com/brochures/tsd-212/*



King Size Brick Veneer Wall, Steel Stud

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
4" batt	39	.11	9.18	1 hour	55	---

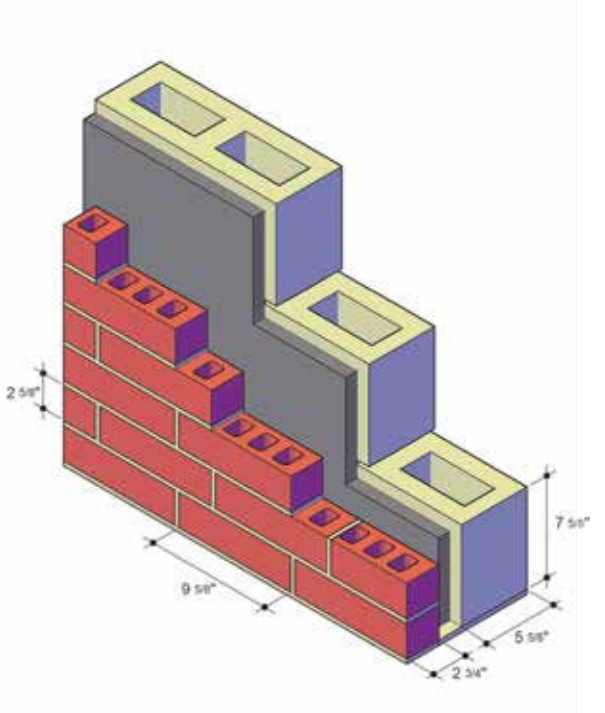
* *calculated fire rating*



King Size Brick and 4" Light Weight Block, Cavity Wall

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
1" foil-faced polyisocyanurate	50	.11	8.78	4 hour	55+	---
2" foil-faced polyisocyanurate	50	.07	15.28	4 hour	55+	---
3" foil-faced polyisocyanurate	51	.05	21.78	4 hour	55+	---
4" foil-faced polyisocyanurate	51	.04	28.28	4 hour	55+	---

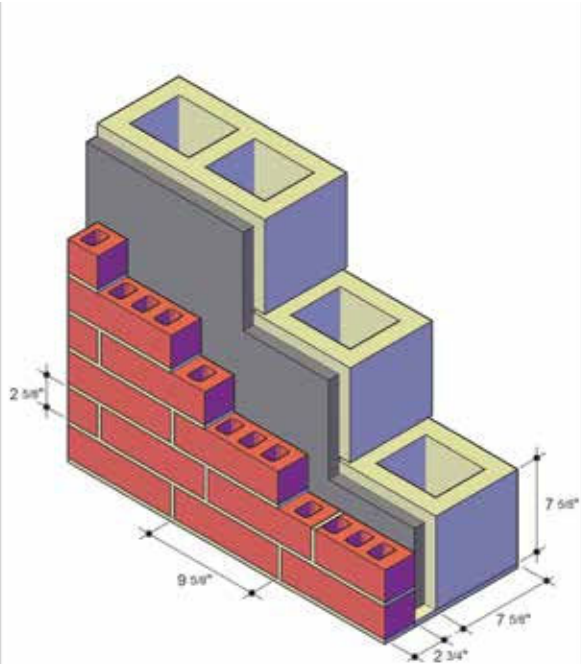
* *calculated fire rating*



King Size Brick and 6" Light Weight Block, Cavity Wall

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
1" foil-faced polyisocyanurate	60	.09	10.58	4 hour	55+	---
2" foil-faced polyisocyanurate	60	.06	17.08	4 hour	55+	---
3" foil-faced polyisocyanurate	61	.04	23.58	4 hour	55+	---
4" foil-faced polyisocyanurate	61	.03	30.08	4 hour	55+	---

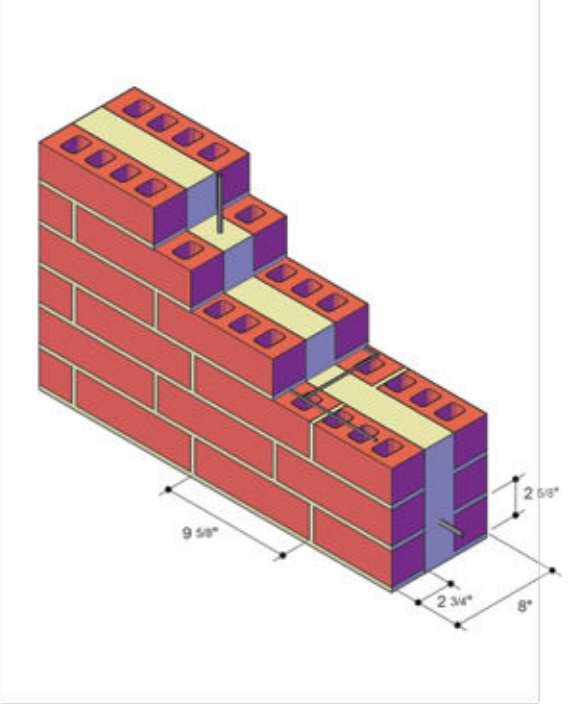
* *calculated fire rating*



King Size Brick and 8" Light Weight Block, Cavity Wall

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
1" foil-faced polyisocyanurate	70	.09	10.78	4 hour	55+	---
2" foil-faced polyisocyanurate	70	.06	17.28	4 hour	55+	---
3" foil-faced polyisocyanurate	71	.04	23.78	4 hour	55+	---
4" foil-faced polyisocyanurate	71	.03	30.28	4 hour	55+	---

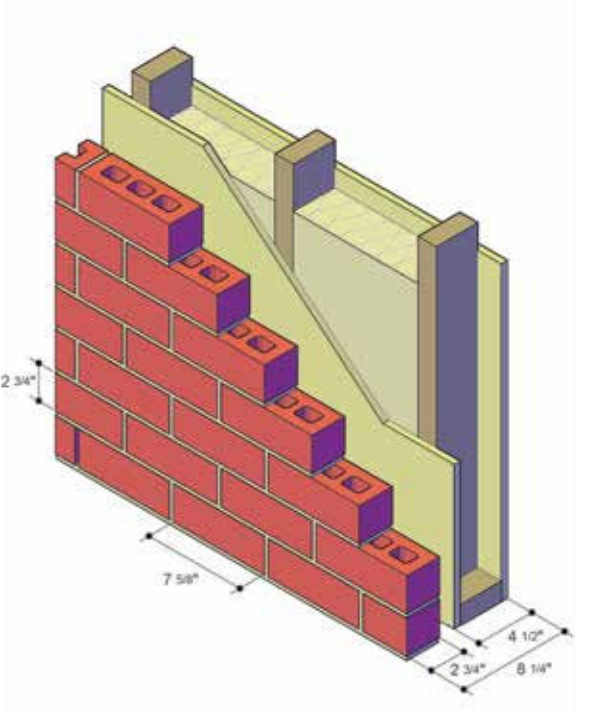
* *calculated fire rating*



King Size Brick, 2 Wythes, Grouted and Reinforced

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
No insulation	86	n/a	n/a	4 hour	50+	---

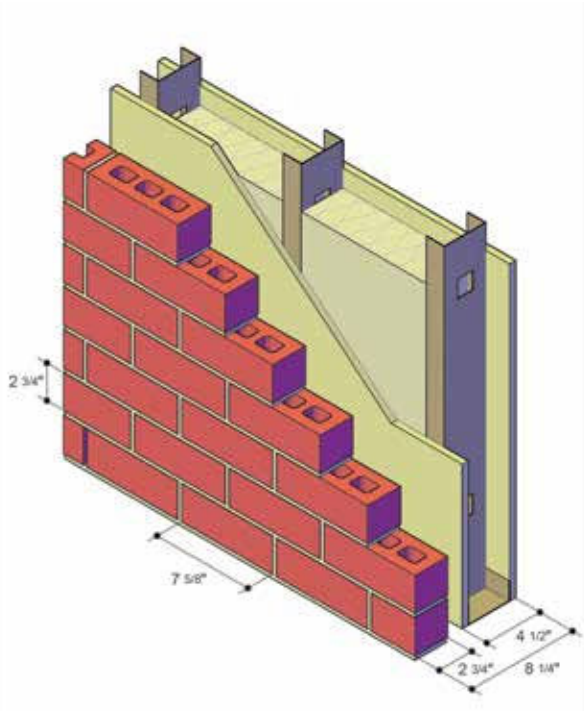
* *calculated fire rating*



Queen Size Brick Veneer Wall, Wood Stud

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
4" batt	34	.10	10.18	1 hour	55	---
6" batt	35	.07	15.18	1 hour	55	---

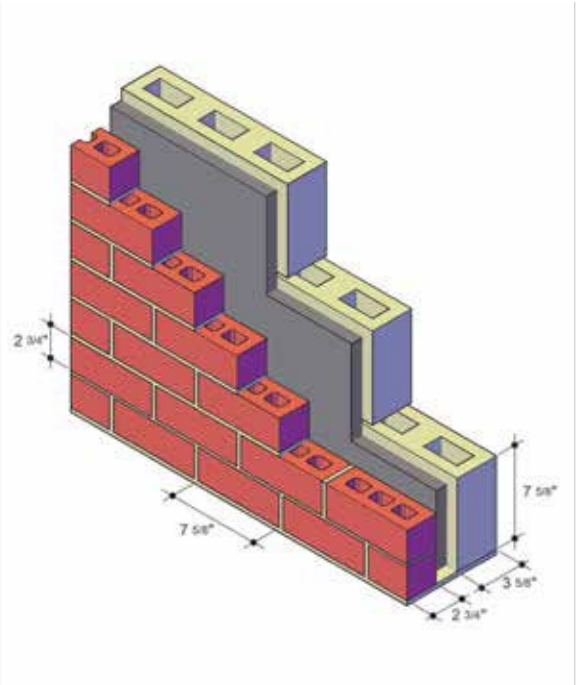
* *Fire rating determined by test, as documented at: https://brick.com/brochures/tsd-212/*



Queen Size Brick Veneer Wall, Steel Stud

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
4" batt	39	.11	9.18	1 hour	55	---

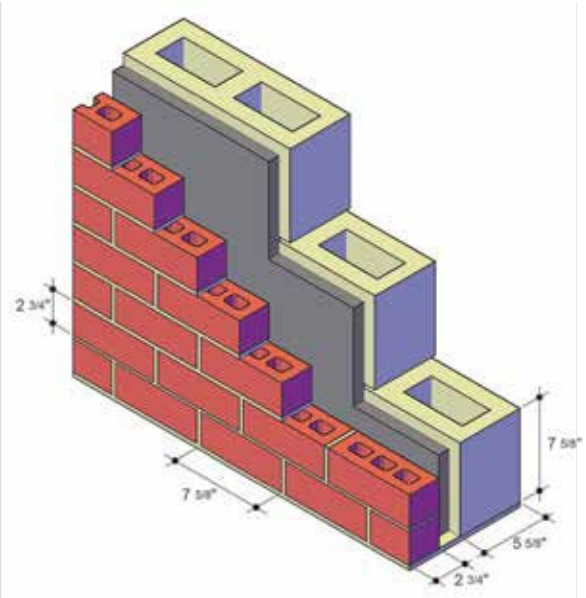
* *calculated fire rating*



Queen Size Brick and 4" Light Weight Block, Cavity Wall

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
1" foil-faced polyisocyanurate	50	.11	8.78	4 hour	55+	---
2" foil-faced polyisocyanurate	50	.07	15.28	4 hour	55+	---
3" foil-faced polyisocyanurate	51	.05	21.78	4 hour	55+	---
4" foil-faced polyisocyanurate	51	.04	28.28	4 hour	55+	---

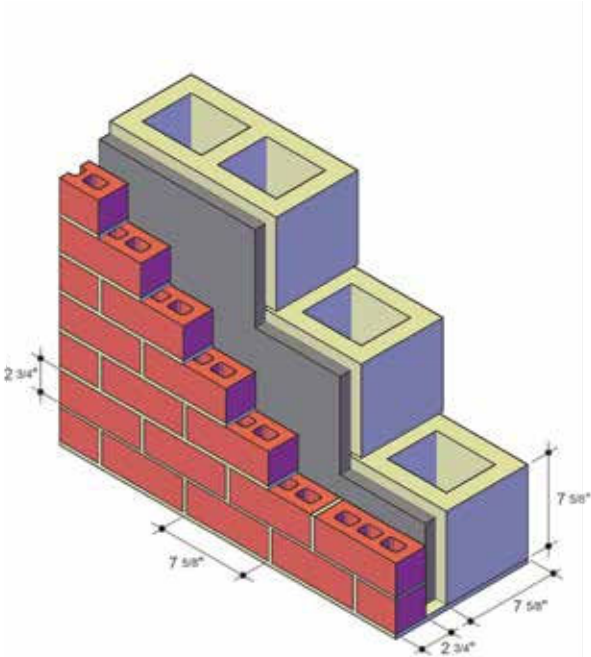
* *calculated fire rating*



Queen Size Brick and 6" Light Weight Block, Cavity Wall

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
1" foil-faced polyisocyanurate	60	.09	10.58	4 hour	55+	---
2" foil-faced polyisocyanurate	60	.06	17.08	4 hour	55+	---
3" foil-faced polyisocyanurate	61	.04	23.58	4 hour	55+	---
4" foil-faced polyisocyanurate	61	.03	30.08	4 hour	55+	---

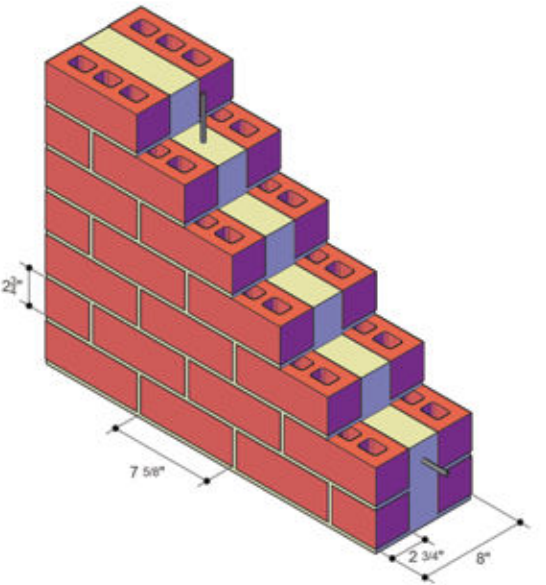
* *calculated fire rating*



Queen Size Brick and 8" Light Weight Block, Cavity Wall

Insulation	Weight lb/sq.ft.	U	R	Fire rating	STC	STL
1" foil-faced polyisocyanurate	70	.09	10.78	4 hour	55+	---
2" foil-faced polyisocyanurate	70	.06	17.28	4 hour	55+	---
3" foil-faced polyisocyanurate	71	.04	23.78	4 hour	55+	---
4" foil-faced polyisocyanurate	71	.03	30.28	4 hour	55+	---

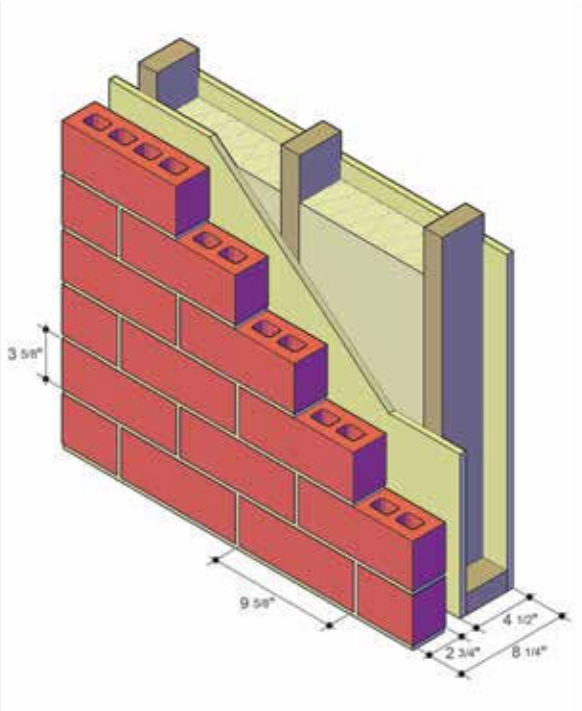
* *calculated fire rating*



Queen Size, 2 Wythes, Grouted and Reinforced

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
No insulation	86	n/a	n/a	4 hour	50+	---

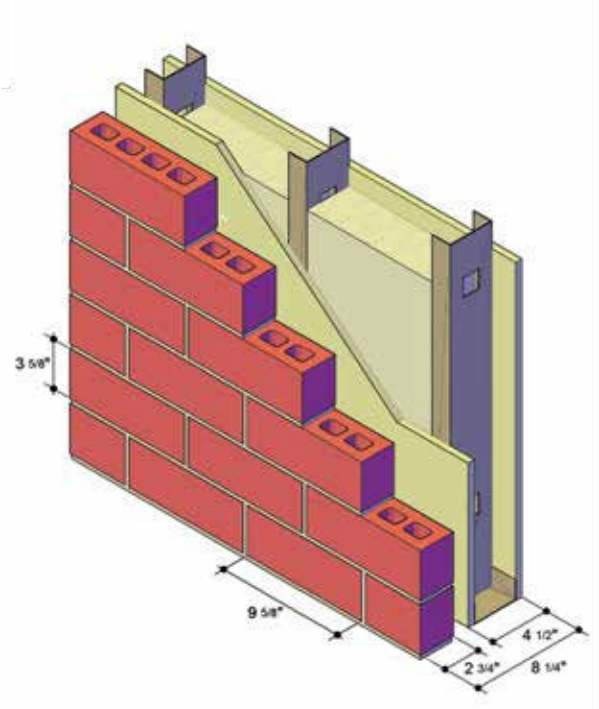
** calculated fire rating*



Estate Size Brick Veneer Wall, Wood Stud

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
4" batt	34	.10	10.18	1 hour	55	---
6" batt	35	.07	15.18	1 hour	55	---

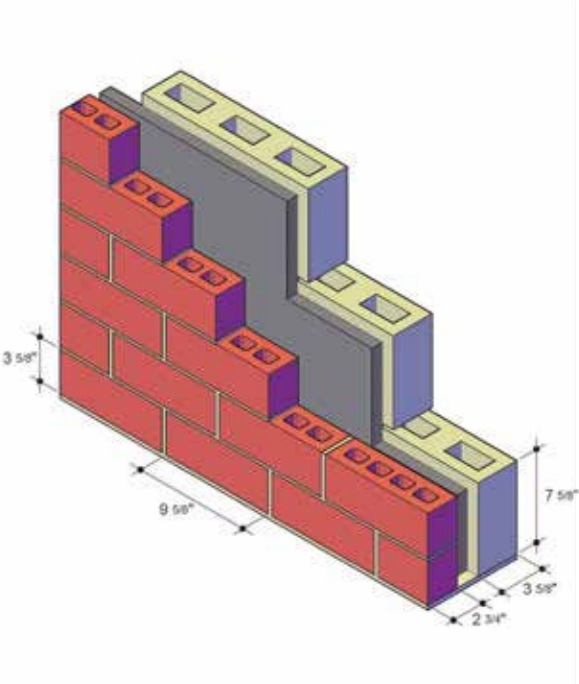
* *Fire rating determined by test, as documented at: https://brick.com/brochures/tsd-212/*



Estate Size Brick Veneer Wall, Steel Stud

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
4" batt	39	.11	9.18	1 hour	55	---

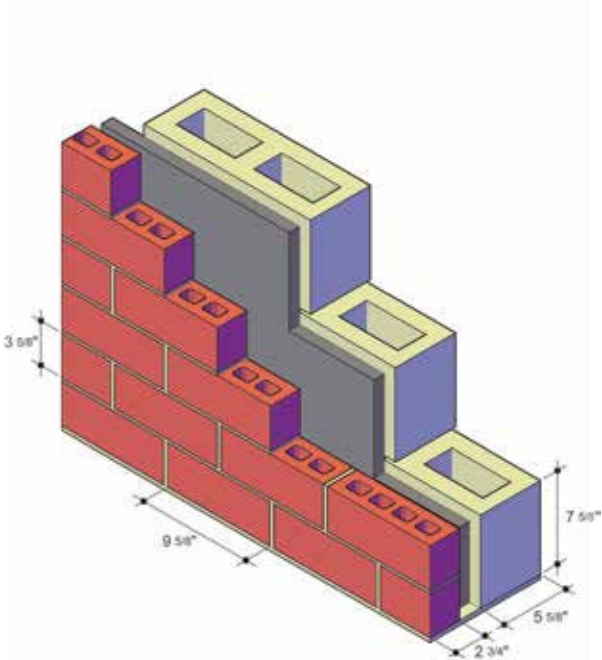
* *calculated fire rating*



Estate Size Brick and 4" Light Weight Block, Cavity Wall

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
1" foil-faced polyisocyanurate	50	.11	8.78	4 hour	55+	---
2" foil-faced polyisocyanurate	50	.07	15.28	4 hour	55+	---
3" foil-faced polyisocyanurate	51	.05	21.78	4 hour	55+	---
4" foil-faced polyisocyanurate	51	.04	28.28	4 hour	55+	---

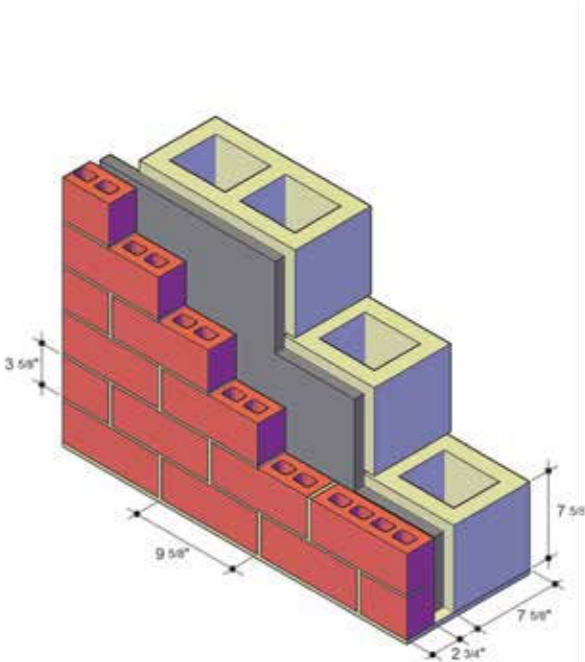
* *calculated fire rating*



Estate Size Brick and 6" Light Weight Block, Cavity Wall

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
1" foil-faced polyisocyanurate	60	.09	10.58	4 hour	55+	---
2" foil-faced polyisocyanurate	60	.06	17.08	4 hour	55+	---
3" foil-faced polyisocyanurate	61	.04	23.58	4 hour	55+	---
4" foil-faced polyisocyanurate	61	.03	30.08	4 hour	55+	---

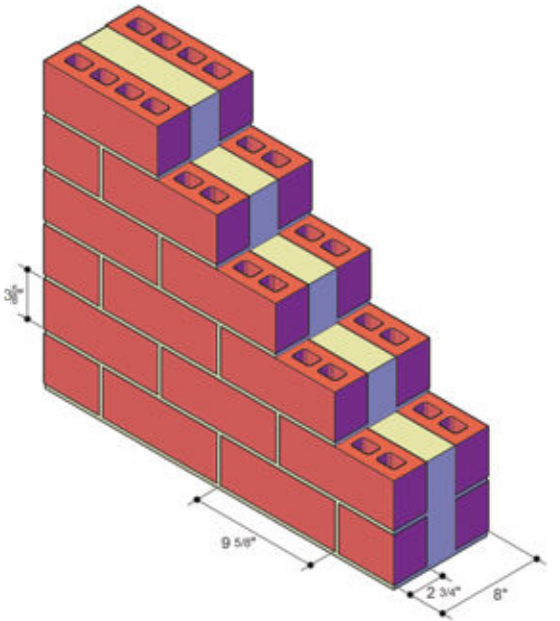
* *calculated fire rating*



Estate Size Brick and 8" Light Weight Block, Cavity Wall

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
1" foil-faced polyisocyanurate	70	.09	10.78	4 hour	55+	---
2" foil-faced polyisocyanurate	70	.06	17.28	4 hour	55+	---
3" foil-faced polyisocyanurate	71	.04	23.78	4 hour	55+	---
4" foil-faced polyisocyanurate	71	.03	30.28	4 hour	55+	---

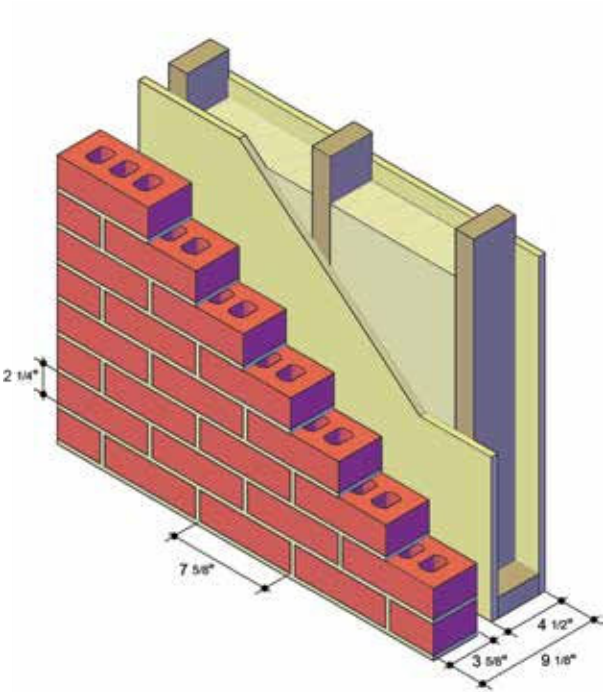
* *calculated fire rating*



Estate Size, 2 Wythes, Grouted and Reinforced

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
No insulation	86	n/a	n/a	4 hour	55+	---

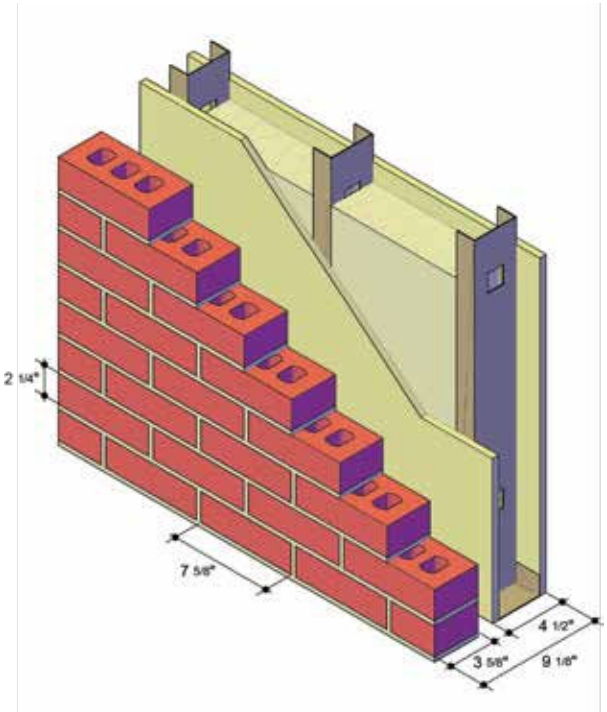
* *calculated fire rating*



Modular Face Brick Veneer Wall, Wood Stud

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
4" studs R13 batt	42	.10	10.29	1 hour	55	---
6" studs R19 batt	43	.07	15.29	1 hour	55	---

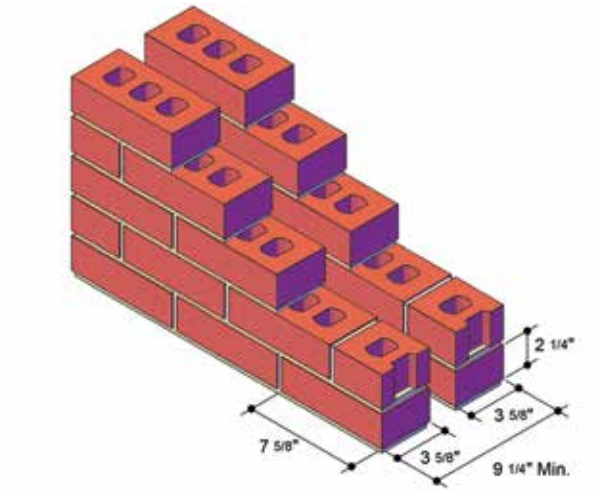
** Fire rating determined by test, as documented at: https://brick.com/brochures/tsd-212/*



Modular Face Brick Veneer Wall, Steel Stud

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
4" batt	46	.11	9.29	1 hour	55	---

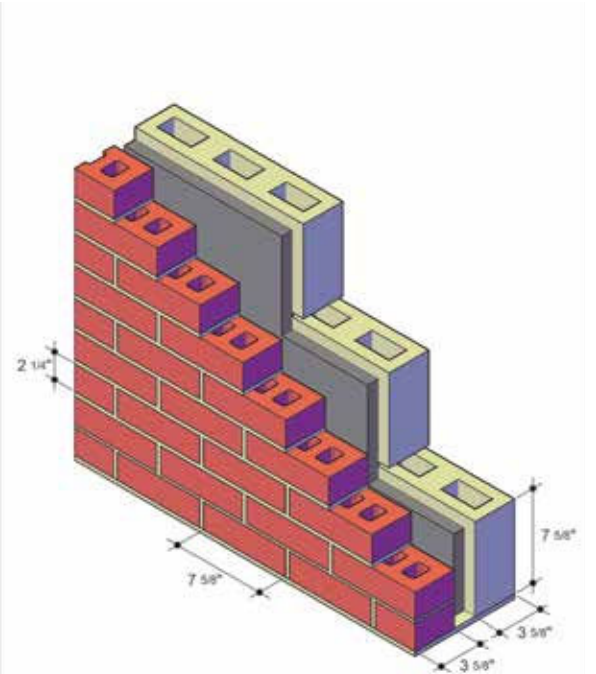
* *calculated fire rating*



Modular Face Brick, 2 Wythes, Cavity Wall

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
No insulation	72	.37	2.73	4 hour	55+	---
1" foil-faced polyisocyanurate	72	.11	9.33	4 hour	55+	---
2" foil-faced polyisocyanurate	72	.06	15.83	4 hour	55+	---
3" foil-faced polyisocyanurate	73	.04	22.33	4 hour	55+	---
4" foil-faced polyisocyanurate	73	.04	27.15	4 hour	55+	---

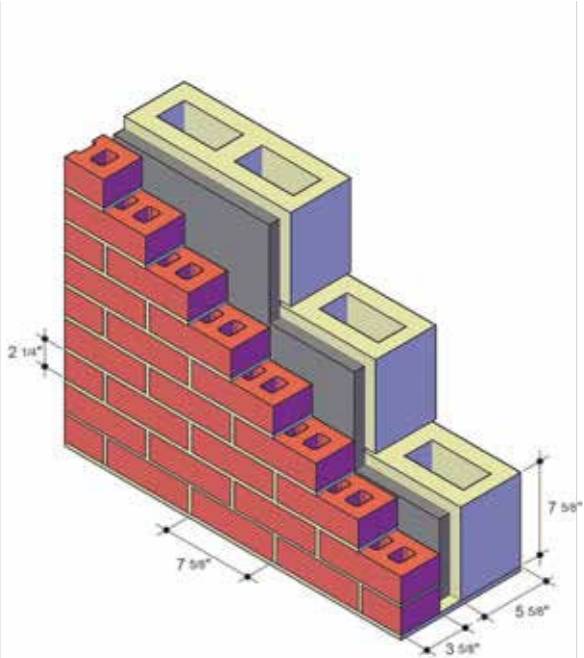
* *calculated fire rating*



Modular Face Brick and 4" Light Weight Block, Cavity Wall

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
1" foil-faced polyisocyanurate	58	.10	10.39	4 hour	55+	---
2" foil-faced polyisocyanurate	58	.06	16.89	4 hour	55+	---
3" foil-faced polyisocyanurate	59	.04	23.39	4 hour	55+	---
4" foil-faced polyisocyanurate	59	.03	29.89	4 hour	55+	---

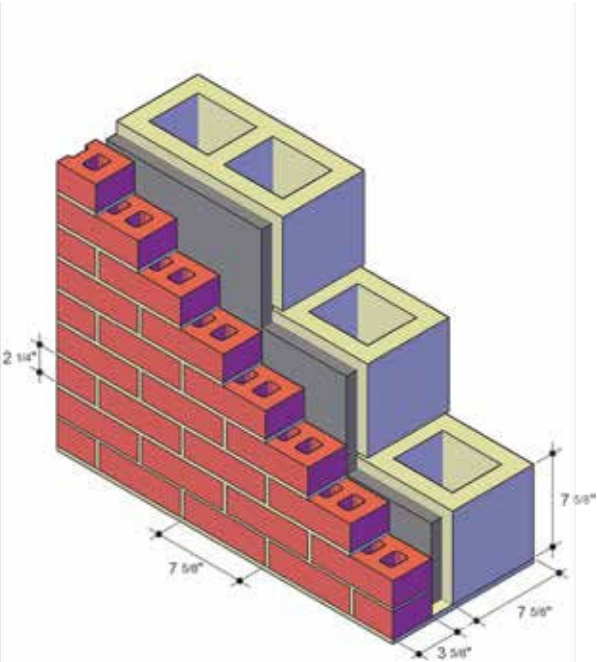
* *calculated fire rating*



Modular Face Brick and 6" Light Weight Block, Cavity Wall

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
1" foil-faced polyisocyanurate	68	.08	12.19	4 hour	55+	---
2" foil-faced polyisocyanurate	68	.05	18.69	4 hour	55+	---
3" foil-faced polyisocyanurate	69	.04	25.19	4 hour	55+	---
4" foil-faced polyisocyanurate	69	.03	31.69	4 hour	55+	---

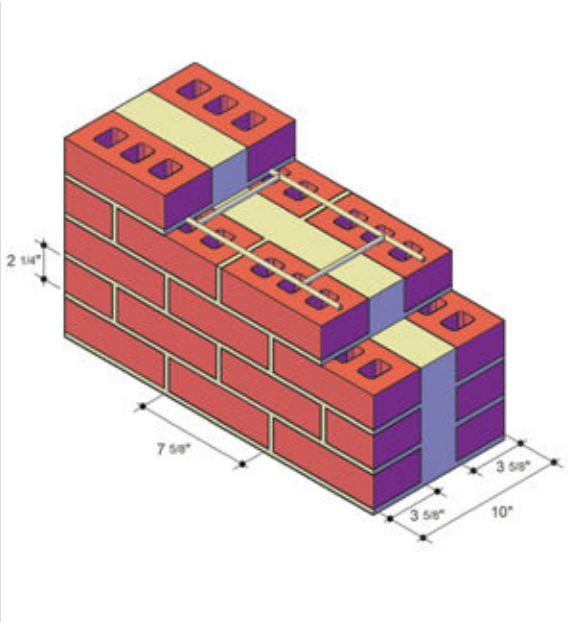
* *calculated fire rating*



Modular Face Brick and 8" Light Weight Block, Cavity Wall

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
1" foil-faced polyisocyanurate	78	.08	12.39	4 hour	55+	---
2" foil-faced polyisocyanurate	78	.05	18.89	4 hour	55+	---
3" foil-faced polyisocyanurate	79	.04	25.39	4 hour	55+	---
4" foil-faced polyisocyanurate	79	.03	31.89	4 hour	55+	---

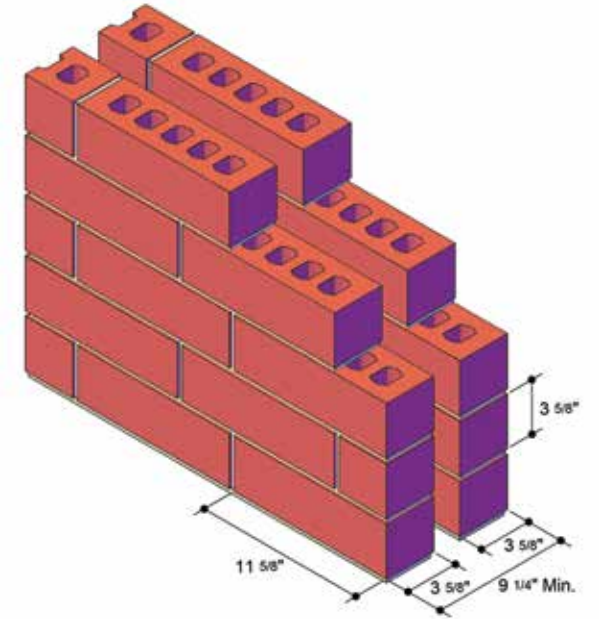
* *calculated fire rating*



Modular Face Brick, 2 Wythes, Grouted and Reinforced

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
No insulation	102	n/a	n/a	4 hour	55+	---

* *calculated fire rating*



Utility Size Brick, 2 Wythes, Cavity Wall

Insulation	Weight lb/sq.ft.	U	R	Fire rating*	STC	STL
No insulation	72	.37	2.73	4 hour	55+	---
1" foil-faced polyisocyanurate	72	.09	10.83	4 hour	55+	---
2" foil-faced polyisocyanurate	72	.06	17.33	4 hour	55+	---
3" foil-faced polyisocyanurate	73	.04	23.83	4 hour	55+	---
4" foil-faced polyisocyanurate	73	.03	30.33	4 hour	55+	---

* *calculated fire rating*

GLOSSARY

Absorption - The amount of water that a solid or hollow clay or concrete masonry unit absorbs when either immersed in cold or boiling water for a specified length of time; expressed as a percentage of the dry unit weight. Usually the lower the percentage the more dense the masonry unit.

Abutment - The supporting wall or pier that receives the thrust of, or dispersed load imposed on an arch.

Accelerator - An ingredient added to mortar to speed hydration of cementitious components to hasten set time.

Acid Resistant Brick - Brick which do not deteriorate in strong acids. Brick which will not display adverse effects of corrosion or general structural deterioration when subjected to chemicals found to have a high positive or negative ph factor. Commonly installed with like resistant mortars.

Actual Dimension - The real measured size of a particular unit, not accounting for including any adjacent or expected thickness of mortar joints, which is typical for expressions of nominal thicknesses.

Adhesion Bond - The physical binding of adjacent masonry units or masonry units to a substrate by means of an applied mortar or other cementitious material by being drawn into the microscopic surface irregularities (pores) of the masonry units by means of capillary action water absorbed from the mortar by the masonry units thereby creating a somewhat homogeneous interface between mortar and masonry units.

Admixtures - Ingredients added to impart special properties to mortar or grout. Traditional materials other than water, aggregates, masonry lime, masonry cement, and Portland cement used as an ingredient of concrete, mortar or grout and added to the mix immediately before or during mixing are admixtures.

Adobe Brick - Large, roughly molded, sun-dried clay brick of various sizes. May be fired to improve strength characteristics and color variety. Sometimes referred to as "burned" adobe.

Aggregates - An inert granular material such as sand, gravel, crushed stone, vermiculite, perlite, and blast furnace slag, which are bound together with cement in concrete, grout and/or mortar.

Air Entraining - The capability of material or process to develop a system of disbursing of minute bubbles of air in the cement paste of mortar or concrete during mixing.

Allowable Loads - The permitted and projected safe load capacity through testing or calculations for a given structural element, including an acceptable safety factor for a given material.

Anchor - Device used to attach masonry to a structural support.

Angle Brick - Any brick or masonry unit shaped to an oblique angle to fit a salient corner.

Angle Closer - A closure unit.

Apron Wall - The portion of a wall between a sill and the wall below.

Arch - A vertically curved compressive structural member spanning openings or recesses.

Arch Brick - Wedge-shaped brick for special use in an arch. Also refers to the hard burned brick units found in the arch section of a scove kiln.

Arching Action - Ability of a deep masonry section to carry vertical loads through an arc-shaped compression region within its depth. Lintels are often designed to support only a 45-degree triangular portion of masonry above them, because the remaining masonry is supported by arching action.

Artificial Stone - A mixture of stone chips or fragments embedded in a matrix of cement or plaster with the surface either ground, polished or molded into slabs of varying size and dimension to lend the appearance and feel of real stone.

Ashlar Masonry - Generally square or rectangular masonry units having sawed or dressed bedding and joint surfaces, typically laid in mortar. Units may be set in wall in either a stacked, coursed or random coursing pattern.

Ashlar, Pattern - Masonry composed of bonded blocks of concrete, either rectangular or square, always of two or more sizes; if the pattern is repeated, it is patterned ashlar; if the pattern is not repeated, it is random ashlar.

Autoclave - In the production of concrete masonry units a curing chamber which utilizes steam under pressure to accelerate hydration of concrete masonry units.

Axial Load - Load exerted along the longitudinal axis of a member.

Backup - That part of a multi-wythe masonry wall which is behind the facing wythe.

Band Course - A continuous, horizontal band of masonry marking a division in the wall elevation. Sometimes called belt course, string course, or sill course.

Bat - A piece of brick, usually half the full size or smaller.

Batter - Masonry that is receding or sloping back in successive courses; the opposite of a corbel.

Beam - A structural member designed to resist flexure (bending).

Bearing Wall - A wall that supports vertical loads in addition to its own weight.

Bed - (1) A layer (stratum) of rock between two bedding planes. (2) In layered stone used for building, a surface parallel to the stratification. (3) In construction, the bottom surface of the masonry unit as it lies in the wall or other structure.

Bed Joint - The horizontal layer of mortar on which a masonry unit is set.

Bedded Area - The area of the surface of a masonry unit which is in contact with the bed joint.

Belt Course - A band course.

Bevel - An inclined surface of a solid object which connects two orthogonal sides.

Bond - (1) The arrangement of units to provide strength, stability, and pattern. (2) Adhesion between mortar or grout and masonry units or reinforcement. (3) To connect wythes or units. (4) Tying various parts of a masonry wall by lapping units one over another or with metal ties or reinforcing.

Bond Beam - (1) The course or courses of masonry units reinforced with longitudinal bars and designed to resist the longitudinal flexural and tensile forces in a masonry wall. (2) A horizontal grouted element within masonry in which reinforcement is embedded.

Bond Breaker - A material used to prevent adhesion between two surfaces.

Bond Course - A course consisting of units that overlap more than one wythe of masonry.

Bond Pattern - The pattern formed by the masonry units and the mortar joints on the face of a wall. The pattern may result from the type of structural bond used or may be purely a decorative one unrelated to the structural bonding.

Bond Strength - Resistance to separation of mortar from masonry units, grout, reinforcing steel or other materials.

Bonded Wall - A masonry wall in which two or more wythes are bonded to act as a unit.

Bonder - A masonry unit that overlaps two or more adjacent wythes of masonry to bond or tie them together. Also called a bond header.

Brick - A solid or hollow manufactured masonry unit, usually formed into a small rectangular prism.

Brick Type - Designation for facing brick that indicates tolerance, chippage, and distortion. Expressed as face brick standard (FBS), face brick extra (FBX), and face brick architectural (FBA) for solid brick, and hollow brick standard (HBS), hollow brick extra (HBX), hollow brick architectural (HBA), and hollow brick basic (HBB) for hollow brick.

Buttress - A projecting mass of masonry set at an angle to or bonded into a wall that it strengthens or supports. A buttress decreases in its cross-sectional area from top to base.

C/B Ratio - Saturation coefficient.

Calcite - A mineral form of calcium carbonate, principal constituent of most limestones.

Calcium Silicate Brick - Brick made primarily from sand and lime.

Cantilever - A structural member, supported at only one end, that projects from its support.

Capacity Insulation - The ability of masonry to resist heat transfer by storing.

Capstone - Any single stone at the top of a masonry structure.

Carbonation - Reaction between carbon dioxide and calcium compounds, especially in cement paste, mortar, or concrete, to produce calcium carbonate.

Cast Stone - (1) A precast building material manufactured from concrete. (2) A refined architectural precast concrete product manufactured to resemble cut and dressed natural stone.

Caulking - Sealing joints in masonry with a resilient compound such as silicones or rubber-based materials.

Cavity Wall - A wall built of masonry units arranged to provide a continuous air space within the wall (with or without insulating material) and in which the inner and outer wythes of the wall are tied together with metal ties or headers.

Cavity Wall Tie - A rigid, corrosion-resistant metal tie that bonds two wythes of a cavity wall together.

Cell - (1) A void space with cross-sectional area greater than 1½ square inches. (2) A hollow space within a masonry unit bounded by face shells and webs.

Cementitious Material - When proportioning masonry mortars the following are considered cementitious material: Portland cement, blended hydraulic cement, masonry cement, and hydrated lime.

Centering - Temporary formwork for the support of masonry arches or lintels during construction. Also called centers.

Ceramic - A broad term for products made from heat-resistant, non-metallic, inorganic materials such as clay, bauxite, alumina, silica magnesia, silicone carbide, and the like which have been fired to incipient fusion.

Ceramic Color Glaze - An opaque colored coating which forms a thin layer of glass fused inseparably into the surface of a ceramic when it is fired.

Chamfer - To bevel an arris or edge.

Chase - A continuous recess in a wall to receive pipes, ducts, conduits, etc. The recess is usually vertical.

Chimney - A shaft built to carry off smoke.

Chimney Breast - The projection of the interior or exterior face of a wall caused by fireplaces or flues.

Chimney Lining - Fire clay or terracotta material or refractory cement made to be built inside a chimney throat.

Clay - A natural mineral consisting essentially of hydrous aluminum silicate. It is plastic when moistened, stiff when dried, and vitrified when fired beyond maturing temperature.

Clay Brick - A ceramic brick of clay or shale, formed while plastic and fired in a kiln.

Clay Mortar Mix - Finely ground clay used as a plasticizer for masonry mortars.

Cleanout / Cleanout Holes - (1) An opening in the first course of masonry for removing mortar droppings prior to grout placement. Required in high lift grouting. (2) An opening to the bottom of a grout space of sufficient size and spacing to allow the removal of debris.

Clear Ceramic Glaze - Same as ceramic color glaze except that it is transparent or slightly tinted.

Clinker Brick - A very hard-burned brick whose shape is distorted or bloated due to nearly complete vitrification.

Closer - (1) The last masonry or portion of a unit laid in a course. (2) A stone course running from one window sill to another (a variety of string course).

Closure Unit - Supplementary or shorter length units used at corners or jambs to maintain bond patterns.

Coatings - Material applied to a surface by brushing, dipping, mopping, spraying, toweling, etc., to preserve, protect, decorate, seal, or smooth the substrate; also refers to foreign or deleterious substances found adhering to aggregate particles.

Collar Joint - Vertical longitudinal joint between wythes of masonry or between masonry wythe and back up construction which is permitted to be filled with mortar or grout.

Column - A relatively long, slender structural compression member supporting loads along its axis.

Common Brick - Brick for building purposes not especially treated for texture or color.

Composite Action - Transfer of stress between components of a member designed so that in resisting loads, the combined components act together as a single member.

Composite Masonry - Multi-component masonry members acting together as a unit.

Composite Wall - A multiple wythe wall in which at least one of the wythes is dissimilar to the other wythe with respect to type or grade of units or mortar.

Compressive Strength - The maximum compressive load which a specimen will support divided by the cross sectional area of the specimen.

Connector, Fastener - Device used to attach other materials to masonry.

Connector, Tie - Device used to join wythes of masonry in a multiwythe wall.

Control Joint - (1) A groove that is formed, sawed, or tooled, in a masonry structure to regulate the location and amount of cracking and separation resulting from the shrinkage of different parts of the structure, thereby avoiding the development of high stresses. (2) A continuous unbonded masonry joint to regulate the location and amount of separation resulting from the shrinkage of different parts of a structure so as to avoid the development of excessively high stresses.

Coping - The materials of masonry units used to form a cap or a finish on top of a wall, pier, chimney, or pilaster to protect the masonry below from water penetration. Commonly extended beyond the wall face and cut with a drip.

Corbel - (1) The projection of successive courses of masonry out from the face of the wall to increase the wall thickness or to form a shelf or ledge. (2) A shelf or ledge formed by successive courses of masonry projecting out from the face of a wall, pier, or column.

Core - A hollow space within a concrete masonry unit formed by the face shells and webs. The holes in clay units.

Cornice - The molding or series of moldings forming the top member of a facade, door or window frame, or interior wall.

Course - A layer (range) of masonry units running horizontally in a wall or, much less commonly, curved over an arch.

Crazing - The development of fine cracks in a web-like pattern on a surface.

Creep - Time-dependent deformation due to sustained load.

Cryptoflorescence - Concealed, interstitial salt crystals within masonry.

Culls - Masonry units that do not meet the standards or specifications and that have been rejected.

Curing - The maintenance of proper conditions of moisture and temperature during hydration to develop required strength and reduce shrinkage in products containing Portland cement.

Curtain Wall - An exterior non-loadbearing wall in skeleton frame construction. Such walls may be anchored to columns, spandrel beams or floors.

Damp-Proof Course - Treatment of masonry to retard the passage or absorption of water, or water vapor, either by application of a suitable coating to exposed surfaces, or by use of a suitable admixture or treated cement.

Dampproofing - Prevention of moisture penetration due to capillary action by the addition of one or more coatings of a compound that is impervious to water.

Dead Load - Any load caused by the weight of building materials which are a permanent part of a structure or element, as defined by the building code.

Degree Day - A unit, based upon temperature difference and time, used in estimating fuel consumption and specifying nominal heating load of a building in winter. For any one day, when the mean temperature is less than 65° F, there exist as many degree days as there are Fahrenheit degrees difference in temperature between the mean temperature for the day and 65° F.

Diaphragm - A roof or floor system designed to transmit lateral forces to shear walls or other vertical resisting elements.

Dolomitic Lime - A trade term for high-magnesium lime. Also a misnomer as the product does not contain dolomite.

Dovetail Anchor - A splayed tenon that is shaped like a dove's tail.

Drip - Groove or slot cut beneath and slightly behind the forward edge of a projecting member, such as a sill, lintel, or coping, to cause rainwater to drip off and prevent it from penetrating the wall.

Dry Press Brick - Brick formed in molds under high pressures from relatively dry clay (5% to 7% moisture content).

Durability - The ability of a material to resist weathering action, chemical attack, abrasion, and other conditions of service.

Eccentricity - The normal distance between the centroidal axis of a member and the parallel resultant load.

Edgeset - A brick set on its narrow side instead of on its flat side, especially during drying and firing.

Effective Height - (1) The height of a member that is assumed when calculating the slenderness ratio. (2) Clear height of a braced member between lateral supports and used for calculating the slenderness ratio of a member.

Effective Thickness - The thickness of a member that is assumed when calculating the slenderness ratio.

Effective Width - That part of a width of a member taken into account when designing T- or L-beams.

Efflorescence - A deposit of water soluble salts or alkalis, usually white, which form on the surface of masonry when a moisture solution migrates from the interior and evaporates. Efflorescence is often caused by free alkalis or salts leached from mortar, grout, adjacent concrete, or soil.

Empirical Design - A design based on the application of physical limitations learned from experience or observations gained through experience, without a structural analysis.

Engineered Masonry - Masonry which has been analyzed for vertical and lateral load resistance and whose members have been proportioned to resist design loads in accordance with working stress or strength design principles.

Equivalent Thickness - The solid thickness to which a hollow unit would be reduced if there were no voids and the same face dimensions. The percent solid volume times the actual width divided by 100.

Expansion Joint - (1) A joint or space to allow for expansion or contraction movement due to temperature changes or other conditions without rupture or damage. (2) A separation between adjoining parts of a masonry structure which is provided to allow small relative movements, such as those caused by thermal changes, to occur without one part affecting an adjacent part.

Face - The exposed surface of a wall or masonry unit.

Face Shell Bedding - Mortar is applied only to the face shells of hollow masonry units to a depth equal to the thickness of the face shell.

Facing - Any material, forming a part of a wall, used as a finished surface.

Facing Brick - Brick made especially for facing, or exposure purposes, and often treated to produce special surface textures. These bricks are made of selected clays, or treated, to produce the desired color.

Fascia - A flat horizontal band that appears as a vertical face. The fascia is used decoratively, alone or in combination with moldings.

Fat Mortar - Mortar containing a high ratio of binder to aggregate; sufficiently sticky to adhere to a steel trowel.

Fire Brick - Brick made of refractory ceramic material that will resist high temperatures.

Fire Clay - A clay that is highly resistant to heat without deforming and used for making brick.

Fireproofing - Any material or combination protecting structural members and increasing their fire resistance.

Fire Wall - Any wall which subdivides a building so as to resist the spread of fire, by starting at the foundation and extending continuously through all stories to, or above, the roof.

Flashing - (1) An impervious material placed in mortar joints and between wythes in masonry to prevent water penetration and provide water drainage. (2) Manufacturing method to produce specific color tones in clay units.

Flow - A laboratory measured property of mortar that indicates the percent increase in diameter of the base of the truncated cone of mortar when it is placed on a flow table and mechanically raised an dropped specified times under specified conditions.

Flush Joint - A mortar joint in which excess mortar is struck off flush with the face of masonry units.

Fly Ash - The finely divided residue resulting from the combustion of ground or powdered coal.

Foundation Wall - Walls below the floor nearest grade serving as a support for a wall, pier, column, or other structural part of a building.

Freeze-Thaw - Freezing and thawing of moisture in materials and the resultant effects on these materials and on structures of which they are a part or with which they are in contact.

Frog - A depression in the bed surface of a brick, sometimes called a panel.

Furring - Fastening wood or metal strips to a wall at regular intervals to attach sheet boards or siding.

Furrowing - Striking a "V" in a bed of mortar with the point of the trowel.

Gargoyle - (1) A spout, commonly of stone but may be metal, tile, or other material, to discharge water outward from gutters, especially those behind parapets. (2) By usage, the carved or molded ornamentation, generally in the form of a grotesque figure, of a projecting gutter spout.

Gauged Brick - (1) Brick that has been ground or otherwise produced with accurate dimensions. (2) A tapered arch brick.

Glass Block - Hollow or solid glass masonry unit.

Glazed Coatings - A ceramic coating, usually thin, glossy, and glasslike, formed on the surface of a masonry unit; the material from which the ceramic coating is made; the burning of a ceramic coating at high temperatures and fusing it to the body.

Gradation - The particle size distribution of aggregate as determined by separation with standard screens. Sieve analysis, screen analysis, and mechanical analysis are terms used synonymously in referring to gradation of aggregate. Gradation of aggregate is expressed in terms of the individual percentages passing standard screens.

Granite - (1) In technical geologic terms, igneous rock with crystals or grains of visible size and consisting mainly of quartz and the sodium or potassium feldspars. (2) In building stone, crystalline silicate rock with visible grains. The commercial term thus includes gneiss (a metamorphic rock) and igneous rocks that are not granite in strict sense.

Green Mortar - Mortar that has set but not hardened.

Gross Area - The total cross-sectional area of a specified section.

Ground - Nailing strips placed in masonry walls as a means of attaching trim or furring.

Grout - A mixture of cementitious material and aggregate to which sufficient water is added to produce pouring consistency without segregation of the constituents.

Grout Lift - The height to which grout is placed in a wall in a continuous pour.

Grouted Cell Masonry - Construction made with hollow units in which all cells and voids are filled with grout.

Grouted Hollow-Unit Masonry - That form of grouted masonry construction in which certain designated cells of hollow units are continuously filled with grout. Partially grouted masonry.

Grouted Masonry - (1) Concrete masonry construction composed of hollow units where hollow cells are filled with grout, or multi-wythe construction in which space between wythes is solidly filled with grout. (2) Masonry construction made with solid masonry units in which the interior joints and voids are filled with grout.

Hacking - (1) The procedure of stacking brick in a kiln or on a kiln car. (2) Laying brick with the bottom edge set in from the plane surface of the wall.

Hard-Burned - Nearly vitrified clay products that have been fired at high temperatures.

Head Joint - The vertical mortar joint between ends of masonry units. Also called a cross joint or vertical joint.

Header - A masonry unit that overlaps two or more adjacent wythes of masonry to tie them together. Also called a bonder.

Header Course - A continuous bonding course of header brick. Also called a heading course.

Hydraulic Cement - An inorganic material or a mixture of inorganic materials, which sets and develops strength by chemical reaction with water by formation of hydrates and is capable of doing so under water.

Initial Rate of Absorption (IRA) - The weight of water absorbed when a brick is partially immersed in water for one minute, expressed in grams per 30 square inches of contact surface. Also called suction.

Intrados - The concave curve that bounds the lower side of the arch.

Jack Arch - An arch that has little or no curvature.

Joint - The surface at which two members join or butt. If they are held together by mortar, the mortar-filled space is the joint.

Joint Reinforcement - Welded steel wire reinforcement that is placed in mortar bed joints.

Jointing - The finishing of joints between courses of masonry units before the mortar has hardened.

Jumbo Brick - A generic term indicating a brick larger in size than the standard. Some producers use this term to describe oversize brick of specific dimensions manufactured by them.

Kerf - A cut or removal of material in a unit to facilitate breaking the unit to a desired shape or length.

Kiln - A furnace, oven, or heated enclosure used for burning or firing brick or other clay material.

Kiln Run - Bricks from one kiln that have not yet been sorted or graded for size or color variations.

Lap - The distance one masonry unit extends over another.

Lateral Support - Means whereby structural members are braced in the horizontal span by columns, buttresses, pilasters, cross walls, or in the vertical span by beams, floors or roof construction.

Lead - The section of a wall built up and racked back on successive courses. A line is attached to leads as a guide for constructing a wall between them.

Lean Mortar - Mortar which is deficient in cementitious components. It is usually harsh and difficult to spread. Oversanded mortar.

Lime - Calcium oxide (CaO); A general term for the various chemical and physical forms of quicklime, hydrated lime, and hydraulic lime.

Hydrated Lime - Calcium hydroxide. A dry powder obtained by treating quicklime with water.

Limestone - Rock of sedimentary origin composed principally of calcite or dolomite or both.

Lintel - A beam placed or constructed over an opening in a wall to carry masonry above it.

Live Load - Any load added to a structure or element by building occupants or movable contents as specified by the building code.

Load-Bearing Wall - A wall that supports vertical load in addition to its own weight.

Loadbearing - A structural system or element designed to carry loads in addition to its own dead load.

Load Combination - A series of loads which cumulatively applied through tests or calculations to an element or structure for code compliance. The series of loads are a projection of loads anticipated to be applied to the structure for its prescribed usage in an effort to create the worst possible loading for any given element, connection or combination.

Major Arch - Arch with span greater than six feet.

Marble - (1) In geology, a metamorphic rock made up largely of calcite or dolomite. (2) In dimension stone, a rock that will polish and that is composed mainly of calcite or dolomite, or rarely, serpentine.

Masonry - (1) Strictly speaking, the art of building in stone. By extension, masonry has come to mean the practice of the mason's craft with brick, tile, concrete masonry units and other materials. (2) The work resulting from the practice of the mason's craft - structures built of stone, brick, or other materials set as units in patterns and amenable to assembly with mortar, whether or not mortar is actually used. (3) The type of construction made up of masonry units laid up with mortar or grout or other accepted method of jointing. (4) An assemblage of masonry units.

Masonry Bond - To connect wythes of masonry with overlapping header units.

Masonry Cement - A mill-mixed cementitious material to which sand and water is added to make mortar.

Masonry Prism - An assemblage of masonry units and mortar with or without grout used as a test specimen for determining properties of the masonry.

Masonry Unit - Natural or manufactured building units of burned clay, concrete, stone, glass, gypsum, etc.

Masonry Veneer - A non-loadbearing facing of masonry attached to its structural backing but not relied upon to strengthen the wall.

Mechanical Bond - Tying masonry units together with metal ties, reinforcing steel or keys.

Metal Tie Bond - To connect wythes of masonry together with metal ties or joint reinforcement.

Minor Arch - Arch with a span of less than 6 feet.

Mix Design - The proportions of ingredients to produce mortar, grout or concrete.

Mixer - A machine employed for blending constituents of concrete, grout, mortar or other mixtures.

Modular Coordination - A dimensional system affording more efficient assembly of buildings from standard building products by correlating the dimensions of a structure and the unit sizes of the materials going into it, through reference to a four inch cubical module. Efficient use eliminates extra work hours and waste of materials.

Modular Design - Constructed with standardized units or dimensions for flexibility and variety in use.

Modulus of Elasticity - Ratio of normal stress to corresponding strain for tensile or compressive stresses below proportional limit of material.

Modulus of Rigidity - Ratio of unit shear stress to unit shear strain for unit shear stress below the proportional limit of the material.

Moisture Meter - Electrical meter for determining the moisture content of masonry, which generally measures only the moisture content of the surface material.

Mold - A device containing a cavity into which neat cement, mortar, or concrete test specimens are cast. Also, form used in the fabrication of concrete and clay masonry units.

Mortar - A plastic mixture of cementitious materials, fine aggregate and water used to bond masonry or other structural units.

Mortar Bed - A thick layer of mortar used to seat a structural member.

Mortar Bond - Adhesion between mortar and masonry units or reinforcement.

Net Section - Minimum cross section of the member under consideration.

Net Cross-Sectional Area - Average gross cross-sectional area of the masonry unit minus the area of ungrouted cores or cells.

Nominal Dimension - A dimension which may vary from the actual dimension by the thickness of a mortar joint but not more than 1/2 inch. The actual dimension is usually 3/8 inch less than nominal in most concrete masonry units.

Noncombustible - Any material that will neither ignite nor actively support combustion in air at a temperature of 1200° F when exposed to fire.

Non-Loadbearing Wall - A wall that supports no vertical load other than its own weight.

Nonstaining Mortar - A mortar with low free alkali content to avoid efflorescence or staining of adjacent masonry units by migration of soluble materials.

Parapet - A low wall around the perimeter of a building at roof level or around balconies.

Parging - (1) Plastering a coating of mortar, which may contain damp-proofing ingredients, over the back of masonry veneer, the face of the backup, or on underground exterior masonry (sometimes referred to as pargeting).

Partition - An interior wall one story or less in height. It is generally non-loadbearing. In Canada a partition is never loadbearing.

Paving Brick - Vitrified brick especially suitable for use in pavements where resistance to abrasion is important.

Perlite - A volcanic glass having a perlitic structure, usually having a higher water content than obsidian; when expanded by heating, used as an insulating material and as a lightweight aggregate in concretes, mortars, and plasters.

Pick and Dip - A method of laying brick whereby the bricklayer simultaneously picks up a brick with one hand, and with the other hand, has enough mortar on a trowel to lay the brick. Sometimes called the Eastern or New England method.

Pier - An isolated column of masonry, not bonded to associated masonry.

Pierced Wall - A masonry wall in which an ornamental pierced effect is achieved by alternating rectangular or shaped blocks with open spaces.

Pilaster - (1) A bonded or keyed column of masonry built as part of a wall. It may be flush or projected from either or both surfaces and has uniform cross section throughout its height. It serves as either a vertical beam or a column or both. (2) A flat engaged pier, extending less than half its width from a wall.

Plain Masonry - Masonry constructed without steel reinforcement, except that which may be used for bonding or reducing the effects of dimensional changes due to variations in moisture content or temperature.

Plaster - Any mixture of fine aggregates with cementitious materials, such as lime or plaster of Paris, used to coat interior walls and produce a smooth or textured finish.

Plasticizer - An additive to mortar, grout, or concrete to increase its workability, flexibility or extensibility.

Plumb Bob - A shaped metal weight suspended from a line to determine vertical.

Pointing - (1) Troweling mortar into a joint after masonry units are laid. (2) Final treatment of joints in cut stonework. Mortar or a putty-like filler is forced into the joint after the stone is set. (3) In stone carving, creating points from a model and establishing their position on the stone that is to be carved.

Portland Cement - (1) Hydraulic cement produced by pulverizing clinkers consisting of hydraulic calcium silicates, usually containing one or more of the forms of calcium sulfate as an interground material. (2) Product obtained by pulverizing clinker consisting of hydraulic calcium silicates meeting the requirements of ASTM C 150.

Pozzolans - Siliceous or a siliceous and aluminum material, which in itself possesses little or no cementitious value but will, in finely divided form and in the presence of moisture, chemically react with calcium hydroxide at ordinary temperatures to form compounds possessing cementitious properties.

Prefabricated Masonry - Masonry fabricated in a location other than its final location in the structure. Also known as preassembled, panelized, and sectionalized masonry.

Pressure-Relieving Joint - An open joint left at stated horizontal intervals to allow for expansion and contraction, commonly below horizontal supporting elements. Such joints are sealed with flexible caulking to prevent moisture penetration.

Prestressed - Materials in which a significant controlled degree of compressive stress has been deliberately produced.

Prism - Any solid shape with only vertical and horizontal faces.

Prism Strength - Maximum compressive strength (force) resisted per unit of net cross-sectional area of masonry, determined by testing masonry prisms.

Prism Testing - Testing of at least 3 masonry prisms in accordance with ASTM E 447 to determine the compressive strength of the masonry.

Progressive Collapse - Spread of an initial local failure from one building element to another resulting in the collapse of an entire structure or a disproportionately large part of it. Usually the result of gross misuse of design of an element, abnormal loading or impact loads.

Quality Assurance - Planned system of activities whose purpose is to provide assurance that the overall quality control program is in fact being effectively implemented. This system also involves the evaluation of corrective action initiated where necessary.

Quality Control - Planned system of activities whose purpose is to provide a level of quality that meets the needs of the users and the use of such a system. The objective of quality control is to provide quality that is safe, adequate, dependable and economic. The overall system involves integrating the factors of several related steps including: the proper specification, production to meet the full intent of the specification, inspection to determine whether the resulting material, product, or service is in accordance with the specifications and review of usage to determine necessary revision to the specifications.

Quoin - (1) One of a series of masonry corner blocks, differing in size, finish, or material from the adjacent walling. (2) A wedge-shaped piece of stone. May be used in either the corner treatment described above (although most quoin stones are not wedge-shaped) or as a chock, a shim, or a device for leveling or aligning.

R-Value - The thermal resistance which is an indication of the heat flow through a material.

Racking - Stepping back successive courses of masonry.

Radon - A heavy, gaseous element resembling argon, but radioactive.

Raggle - Slot or groove cut in masonry to receive mortared-in flashing.

Raked Joint - A mortar joint where ¼" to ½" of mortar is removed from the outside of the joint.

Reglet - A recess to receive and secure metal flashing.

Reinforced Beams - Horizontal structural members designed to carry floor loads and composed of concrete or masonry with reinforcement to support tensile and shear stresses.

Reinforced Column - A vertical structural member in which both the steel and masonry resist the imposed load.

Reinforced Masonry - (1) Masonry containing reinforcement in the grouted joints or grouted cores to resist shearing and tensile stresses. (2) Unit masonry in which reinforcement is embedded in such a manner that the component materials act together in resisting shearing and tensile forces.

Relieving Arch - An arch, usually blind, built into the wall above a lintel or flat arch to carry the load to walls or other supporting members.

Repointing - Replacing mortar in masonry.

Retarding Agent - A chemical additive in mortar that slows setting or hardening.

Retempering - To moisten mortar and re-mix, after original mixing, to the proper consistency for use.

Reveal - In the side of a door or window opening that is rebated for a frame, the surface extending from the slot (or frame) to the outer surface of the wall.

Roman Arch - A semicircular arch. If built of stone, all units are wedge-shaped.

Rowlock - A brick laid on its face edge with the end surface visible in the wall face. Frequently spelled rolok.

Running Bond - Units in successive courses are placed so that the vertical mortar joints centered over the unit below is called a center or half bond, while lapping one-third of the way is called a third bond and one-fourth of the way is called a quarter bond.

Rustic - (1) A term describing masonry, generally of local stone, that is roughly hand dressed, and intentionally laid with high relief in relatively modest structures of rural character. (2) A grade of building limestone, characterized by coarse texture.

Rustic Joint - A deeply sunk mortar joint that has been emphasized by having the edges of the adjacent stones chamfered or recessed below the surface of the face.

Salmon Brick - Generic term for underburned brick that is more porous and lighter colored than hard-burned brick. Usually pinkish-orange in color.

Salt Glaze - A gloss finish obtained by a thermochemical reaction between silicates of clay and vapors of salt or chemicals.

Sand Blasting - A system of cutting or abrading a surface of masonry by a stream of sand ejected from a nozzle at high speed by compressed air; often used for cleanup of horizontal construction joints or for exposure of aggregate in architectural concrete.

Sand-Size - Grains between 1/16 millimeter (0.002 inch) and 2 millimeters (0.125 inch) in largest cross section.

Saturation Coefficient - The ratio of the weight of water absorbed by a masonry unit following immersion in cold water for 24 hours to weight absorbed following immersion in boiling water for five hours.

Score - (1) To rout a channel or groove in stone finishing with hand tools or a circular saw to interrupt the visual effect of a surface or to otherwise decorate. (2) To roughen the surface of stone or concrete with straight gouges so that stucco or plaster will adhere.

Sealants - A fluid of plastic consistency laid at the outside of a joint to exclude water.

Service Load - Load expected in the life of a structure as specified by the building code.

Sewer Brick - Low absorption, abrasive-resistant brick intended for use in drainage structures.

Shale - Clay that has been subjected to high pressures until it has hardened rock-like.

Shelf Angles - Structural angles bolted to the structure to support masonry.

Shoring - Props or posts used for temporary support of members during construction.

Shoved Joints - Head joints filled by shoving the unit against the next unit when it is being laid in a bed of mortar.

Shrinkage - Volume change due to loss of moisture or decrease in temperature.

Sill - A flat or slightly beveled stone set horizontally at the base of an opening in a wall.

Skew Back - The incline surface on which the arch joins the supporting wall.

Slenderness Ratio - The ratio of the effective height of a wall or column to its effective thickness. Used as a means of assessing the stability of a masonry wall or column.

Slump - The drop in the height of a wet cementitious material when its mold is removed. Slump test is a test used to measure the workability of cementitious materials.

Slump Block - Concrete masonry units produced so that they "slump" or sag in irregular fashion before they harden.

Slushed Joints - Head or collar joints filled after units are laid by "throwing" mortar in with the edge of a trowel.

Soap - A masonry unit of normal face dimension, having a nominal two-inch thickness.

Soffit - The exposed lower surface of any overhead component of a building such as a lintel, vault, or cornice, or an arch or entablature.

Soft-Burned - Clay products that have been fired at low temperature ranges, producing units of relatively high absorptions and low compressive strengths.

Soft Mud Brick - Brick produced by molding (often by a hand process) with relatively wet clay (20 to 30 percent moisture). When the insides of the molds are sanded to prevent the clay from sticking, the product is sand-struck brick. When the molds are wetted to prevent sticking, the product is water-struck brick.

Solar Screens - Perforated walls used as a sunshade.

Soldier - A brick set on end with its face showing on the wall surface.

Solid Masonry Unit - A masonry unit whose net cross-sectional area in every plane parallel to the bearing surface is 75 percent or more of its gross cross-sectional area.

Spall - To flake or split away from a surface.

Specified Compressive Strength of Masonry - Minimum compressive strength expressed as force per unit of net cross-sectional area required of the masonry used in construction by the project documents, and upon which the project design is based. Whenever the quantity f'm is under the radical sign, the square root of numerical value only is intended and the result has units of pounds per square inch.

Spring Line - The lowest point of an arch or dome, where it intersects an abutment or wall.

Stack - Any structure or part thereof that contains a flue or flues for the discharge of gases. Also called a chimney.

Standard - An accepted measure of comparison for a quantitative or qualitative value.

Story Pole - A marked pole used for marking masonry coursing during construction.

Stretcher - A masonry unit laid with its greatest dimension horizontal and its face parallel to the wall face.

Strike - To finish a mortar joint with a stroke of the trowel, simultaneously removing extruding mortar and smoothing the surface of the mortar remaining in the joint.

Stringing Mortar - Spreading enough mortar on a bed to lay several masonry units.

Stucco - A cement plaster used for coating exterior walls and other exterior surfaces of buildings.

Suction - Initial Rate of Absorption.

Temper - To moisten and mix mortar to a proper consistency.

Terra Cotta - A hard, semi-fired, waterproof ceramic clay used in pottery and building construction.

Terrazzo - Marble-aggregate concrete that is cast in place or precast and ground smooth; used as a decorative surfacing on floors and walls.

Texture - The pattern or configuration apparent in an exposed surface, as in concrete and mortar, including roughness, streaking, striation, or departure from flatness.

Thermal Conductivity - The amount of heat that flows through a flat material when its opposing surfaces differ in temperature by one degree.

Thermal Expansion - Expansion of a material due to the increase in temperature.

Thermal Inertia - Resistance of materials to temperature change.

Thermal Mass - The heat capacity of a building material (ability to store or accumulate heat).

Thermal Resistance - The reciprocal of thermal conductivity expressed by the symbol R.

Thinsets - Tile systems that can be applied in a thin cross-section, 3/4 of an inch or less.

Tie - Any unit of material that connects masonry to masonry or other materials.

Tile, Structural Clay - Hollow clay masonry units composed of burned clay, shale, fire clay, or mixtures thereof with parallel cells, cores, or both.

Tolerance - Specified allowance of variation from a size specification.

Tooling - Compressing and shaping the face of a mortar joint with a special tool other than a trowel.

Toothing - Constructing the temporary end of a wall with the end stretcher of every alternate course projecting. Projecting units are called toothers.

Transformed Section - An assumed section of one material having the same elastic properties as the section of two or more materials.

Trig - The bricks laid in the middle of a course for a guide to eliminate sag in the line and to reduce the effect of wind blowing the line out of plane.

Trimmer Arch - An arch, usually a low-rise arch of brick, used for supporting a fireplace hearth.

Trombe Wall - (1978) A masonry wall that is usually behind glazing is designed to absorb solar heat and release it into the interior of a building.

Tuck Pointing - Tightly filling cut out or defective mortar joints with fresh mortar.

U Factor - A measurement of thermal conductivity (Btu/SF/hr/°F).

Veneer - A single facing wythe of masonry units or similar materials securely attached to a wall for the purpose of providing ornamentation, protection, insulation, etc., but not adding strength to the wall.

Veneer Tie - A strip or piece of metal used to tie a facing veneer to the backing.

Vermiculite - A natural mica expanded by heat to form a lightweight aggregate, used in the expanded state as a heat insulating material or an aggregate.

Virtual Eccentricity - The eccentricity of a resultant axial load required to produce axial and bending stresses equivalent to those produced by applied axial loads and moments. It is normally found by dividing the moment at a section by the summation of axial loads occurring at that section.

Vitrification - The condition resulting when kiln temperatures are so high as to fuse grains and close pores of a clay product, making the mass impervious.

Wall - A vertical planar member of a structure, enclosing or dividing space.

Wall Plate - A horizontal member anchored to a masonry wall to which other structural elements may be attached. Also called a head plate.

Wall, Prestressed - Reinforced concrete or masonry walls in which internal stresses have been introduced to reduce potential tensile stresses in the wall resulting from imposed loads.

Wall, Reinforced - A masonry wall reinforced with embedded steel so that the two materials act together in resisting forces on the wall.

Wall, Retaining - A wall designed to prevent the movement of soils and structures placed on one side of it.

Wall, Screen - A masonry solar shading wall usually made of decorative bricks or tile.

Wall, Serpentine - A single-wythe wall built with curves in plan to strengthen it.

Wall, Shear - A wall which carries shear loads in its own plane.

Wall, Single Wythe - A wall of only one masonry unit in thickness.

Wall, Spandrel - That portion of a panel or curtain wall above the head of a window or door in one story and below the sill of the window in the story above.

Wall Tie - A bonder or metal piece that connects wythes of masonry to each other or to other materials.

Water Permeance - The ability of water to permeate through a wall.

Water Retentivity - That property of mortar which prevents the rapid loss of water to masonry units of high suction. It also prevents bleeding or water gain when mortar is in contact with relatively impervious units.

Water Table - A projection of lower masonry on the outside of the wall slightly above the ground. Often a damp course is placed at the level of the water table to prevent upward penetration of ground water. Generally near grade and having a beveled top and a drip cut in the projecting underside to deflect water.

Waterproofing - Prevention of moisture flow through masonry.

Watertightness - Of such tight construction as to be impermeable to water except when under sufficient pressure to produce structural discontinuity.

Weathering - The action of elements in altering the color, texture, composition or form of exposed objects. The effects of nature physically and chemically upon masonry construction.

Web - The cross wall connecting the face shells of a hollow concrete masonry unit.

Weep Hole - Opening in mortar joint or face of masonry units to permit escape of moisture, usually located immediately above flashing.

Wind Loads - Load on a building caused by wind pressure and/or suction.

Workability - The ability of mortar to be easily placed and spread.

Workmanship - The art or skill of a workman. Craftsmanship. Quality imparted to a masonry wall or floor in the process of building it.

Wythe - Each continuous vertical section of a wall, one masonry unit in thickness, and tied to its adjacent vertical section or sections by bonders, metal ties, or grout.

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