

 **INTERSTATE® BRICK**
More Sizes, More Shapes, More Possibilities



Architectural Series

Interstate Brick: Beautiful, Durable, Sustainable!

The founders of Interstate Brick established one simple goal in 1891: To be the best brick manufacturer in North America. Today, that goal has been transformed into thousands of notable buildings from coast to coast.

We provide brick veneer, paving brick, and thin brick for a wide range of projects from single family residential to 20-story sky scrapers. What sets Interstate Brick's products apart is our 16 inch Emperor™ face brick and our 16" Atlas™ structural brick in sizes from modular to 8x8x16 and 10x4x16. What sets Interstate Brick's service apart is our experienced sales team with technical leadership.

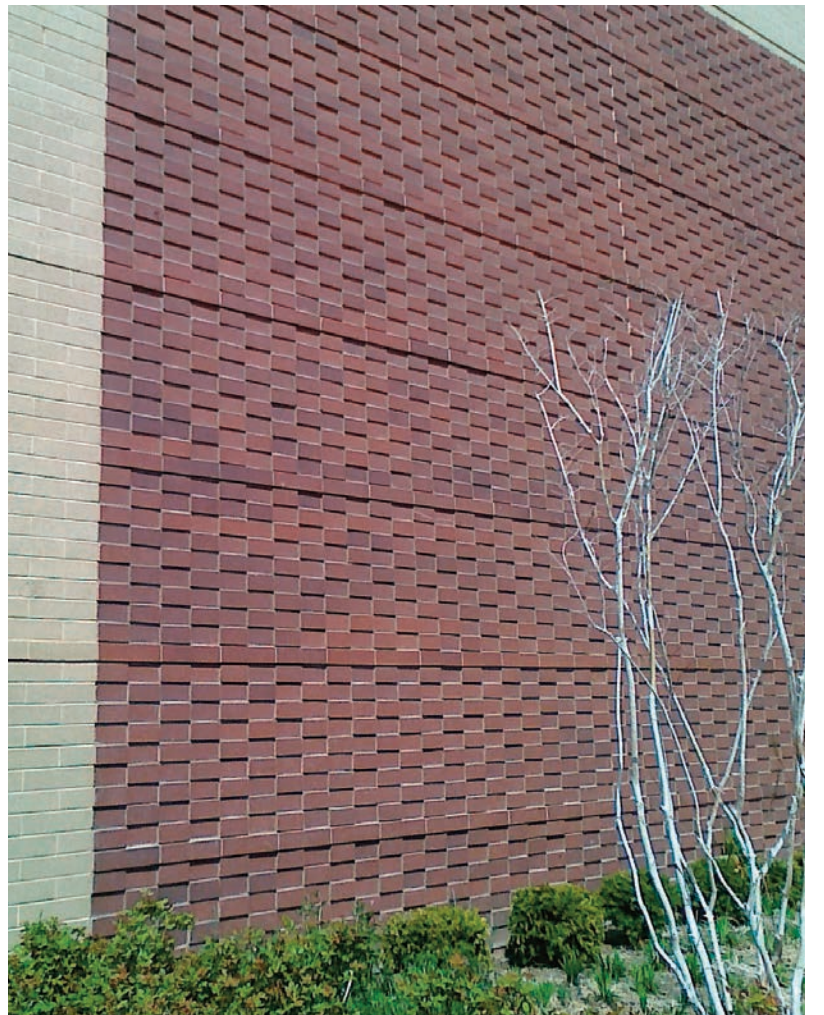
Our focus is on systems analysis and design. We assist architects and engineers with design ideas and details for a variety of building envelope solutions. We understand codes and specification guidelines. Our brick can be utilized to meet design parameters for any climate zone and natural disaster potential in North America, even bomb blast and ballistics considerations. Interstate Brick is the industry benchmark!

Fired clay brick have low embodied energy, one of the lowest life cycle costs, and the durability of stone. Interstate's brick are made from blends of natural clays, post industrial, and post consumer recycled brick. For these properties and thermal performance Interstate's bricks have contributed to many LEED certified projects across the country.

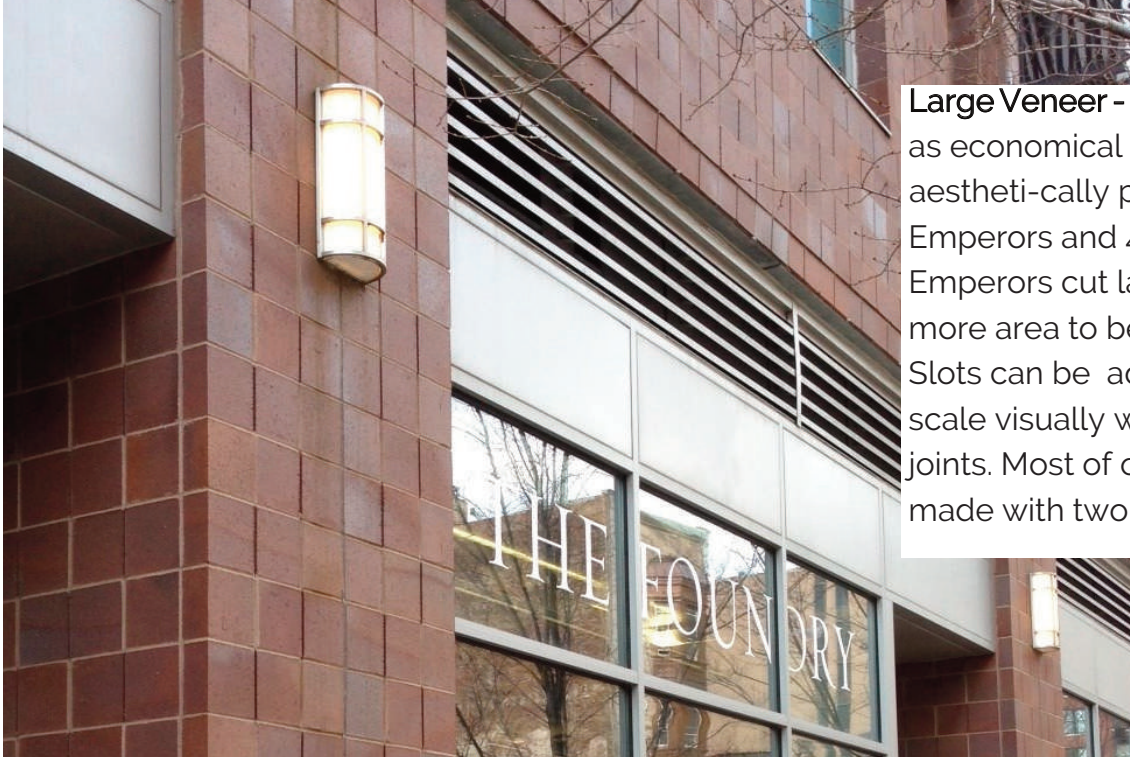
Our production process has set the industry EPA MACT standard for clean air, and our waste water is reclaimed on site to tertiary standards.

Interstate Brick is your sustainable solution!

Interstate Brick: Imagine the Options!



Interstate Brick: Bigger, Faster, Better!

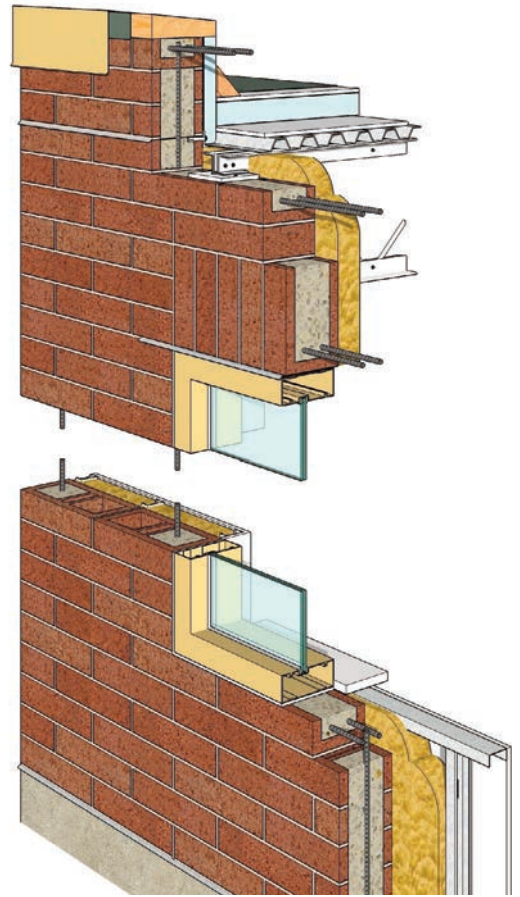


Large Veneer - makes large projects as economical as they are aesthetically pleasing. Our 4x4x16 Emperors and 4x8x16 Super Emperors cut labor costs by allowing more area to be laid with each brick. Slots can be added to reduce the scale visually while eliminating head joints. Most of our Emperor brick are made with two finished faces.



Interstate Brick: Secure, Safe, Supportive!

Atlas™ Structural Brick - combines the beauty and strength of face brick with the economy of larger sizes and through-the-wall capabilities. Atlas brick are ideally suited for load-bearing walls, columns, beams, prefabricated panels, curtain walls, and structural brick ve-neer. Stronger than CMU, Atlas™ systems are often thinner and smaller and occupy less building space. Compared to multi-wythe brick walls, Atlas walls are usually less complicated, more efficient and less costly. They can be designed for earthquakes, hurricanes and tornadoes. Our Atlas Armor brick are ballistics rated.



Interstate Brick: Your Lightweight Option!



Thin Brick - is the industry solution for a light weight building facing material. Interstate Thin brick are available in almost every size, color and texture offered in a face brick and are suitable for every type of installation. We recently invested in a new extrusion line for thin brick. We are serious about it.



Arctic White



Almond



Ash



Pewter



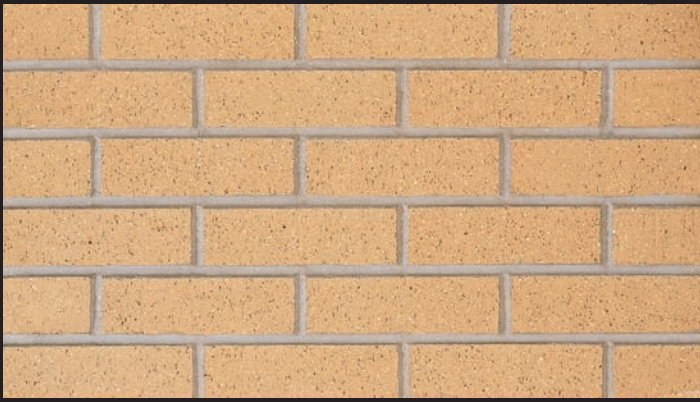
Platinum



Midnight Black

The printed colors shown in this brochure may vary from actual brick samples.
We recommend color selection be made from actual brick samples.





Desert Sand



Tumbleweed



Cedar



Mocha

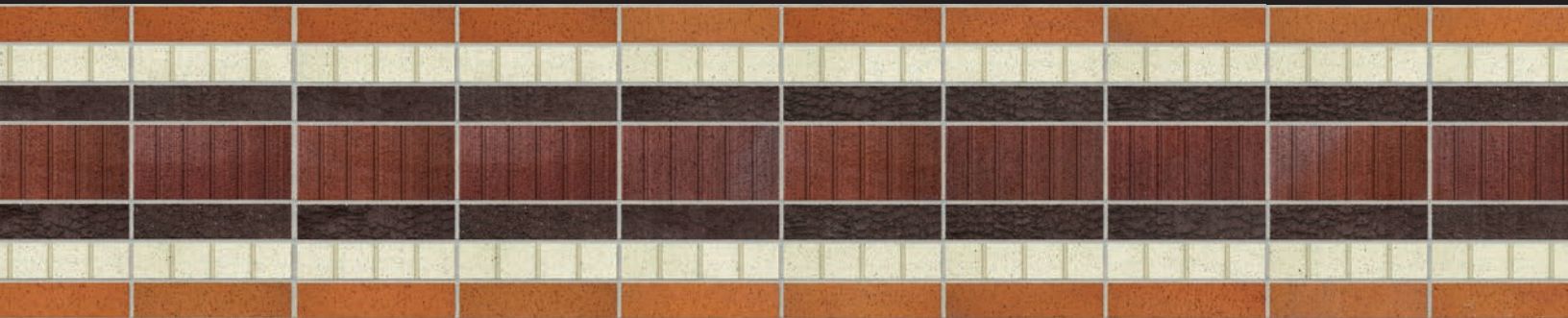


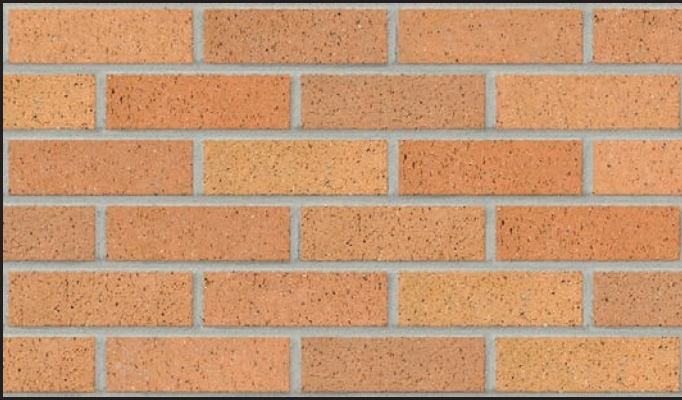
Smokey Mountain



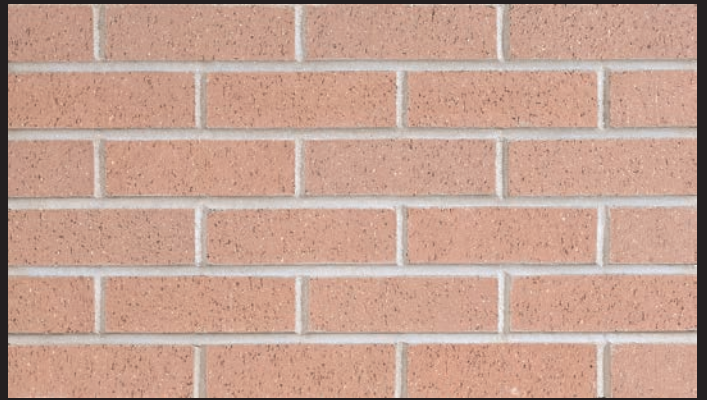
Ochre Buff

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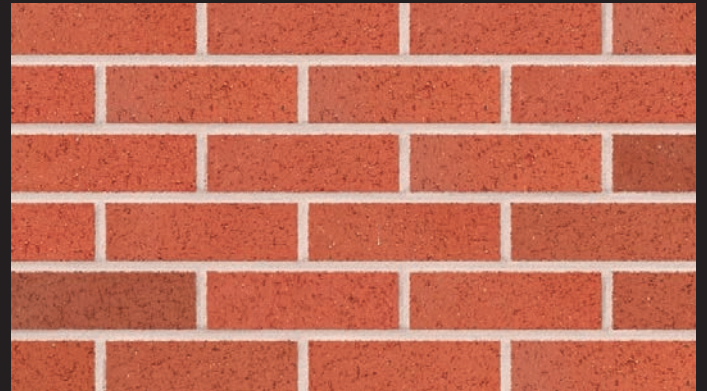
Golden Buff



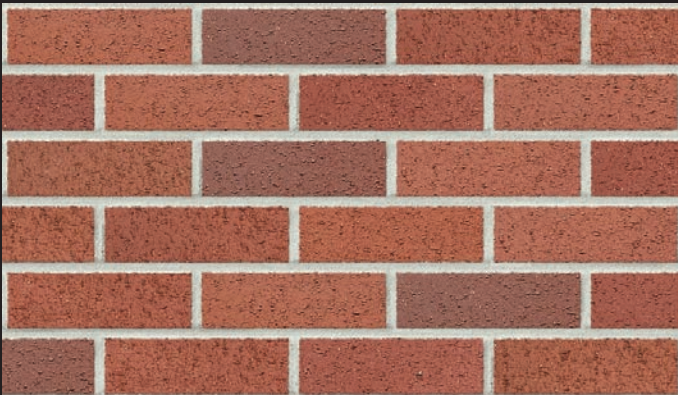
Canyon Rose



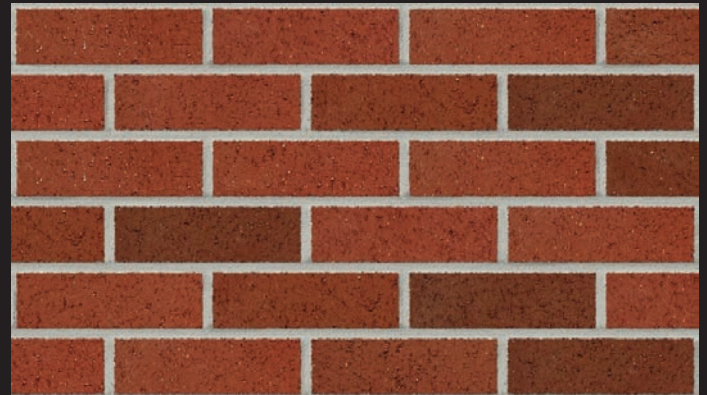
Park Rose



Terra Cotta

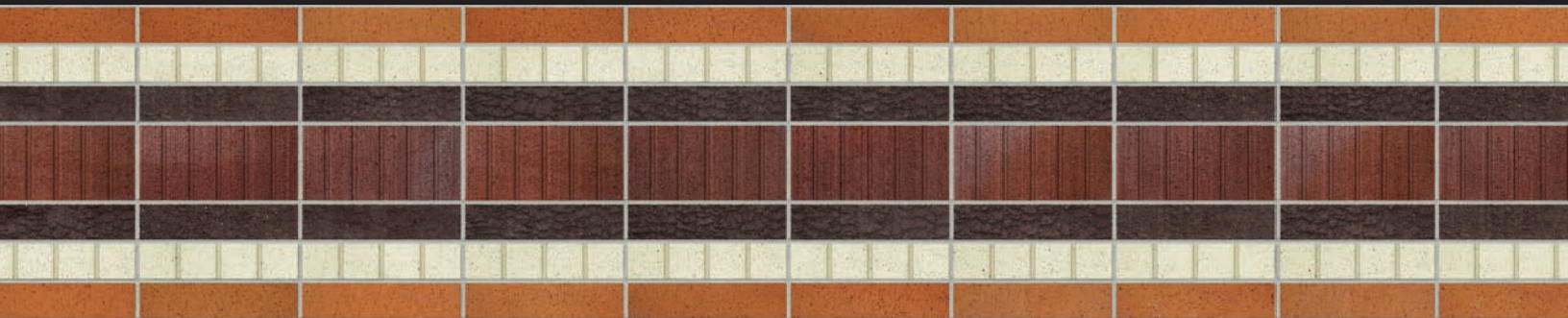


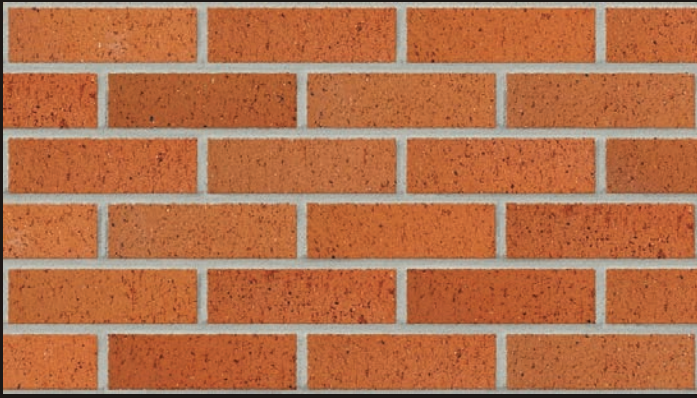
Monterey



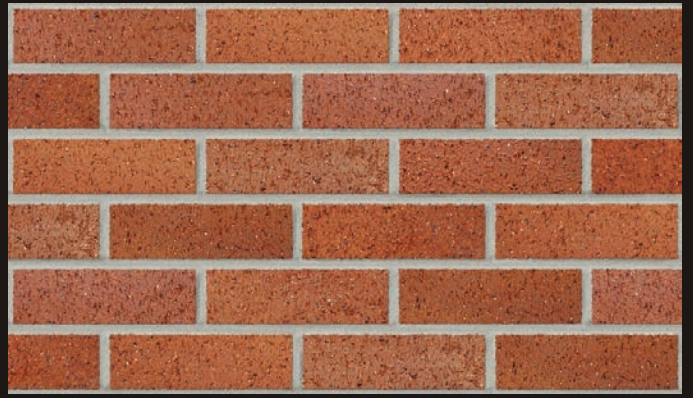
Mountain Red

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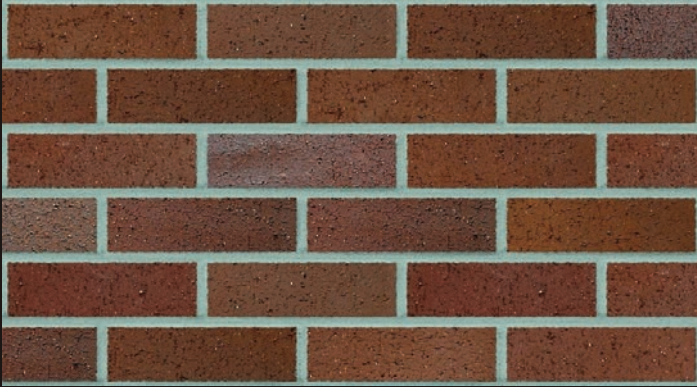




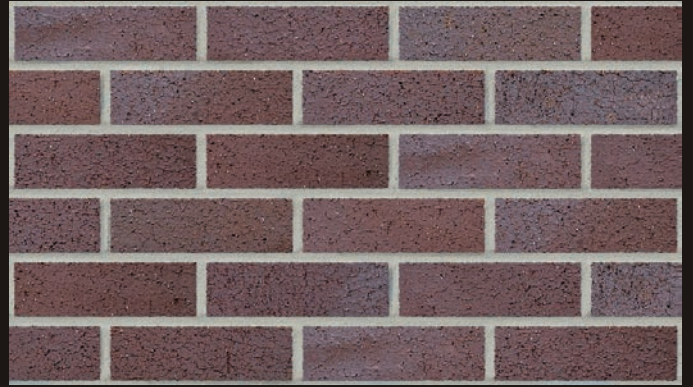
Copperstone



Bronzestone



Walnut



Ironstone



Obsidian



Black Ice

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We recommend color selection be made from actual brick samples.





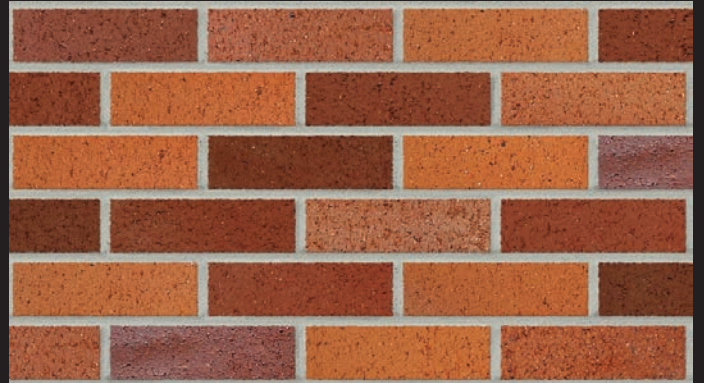
Desert Sand, Tumbleweed, Golden Buff



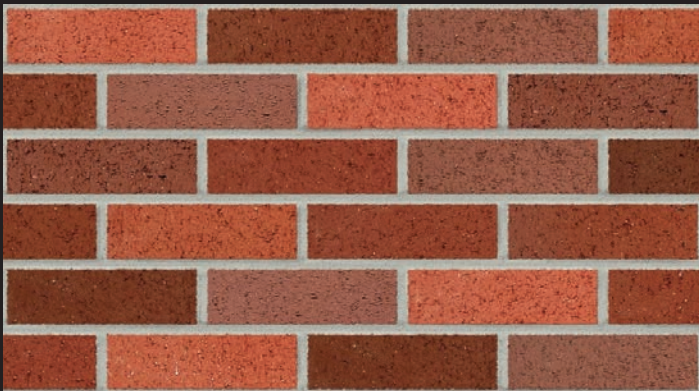
Platinum, Smokey Mountain, Tumbleweed



Arctic White, Ash, Pewter



Copperstone, Ironstone, Bronzestone



Mtn Red, Monterey, Terracotta



Mountain Red, Midnight Black

The blends shown are a representation of the many possible color options there are with Interstate Brick. Actual patterns are subject to actual runs, percentages of each color and installation procedures. We recommend color selection be made from actual brick samples in a mock-up panel installed prior to construction.



LINE 4 - ARCHITECTURAL SERIES

Color	2-1/4 Modular	2-1/2 Modular	2-3/4 Modular	3-9/16 Modular	7-9/16 Modular	2-1/4 Norman	2-1/2 Norman	2-3/4 Norman	3-9/16 Norman	2-1/4 Emperor	2-1/2 Emperor	2-3/4 Emperor	3-9/16 Emperor	7-9/16 Emperor	6x4x12 Atlas	8x4x12 Atlas	4x4x16 Atlas	6x4x16 Atlas	6x8x16 Atlas	8x4x16 Atlas	8x8x16 Atlas	10x4x16 Atlas
Almond	S								S				S						NA	S	NA	
Arctic White	S								S				S						NA	S	NA	
Ash	S								S				S						NA	S	NA	
Black Ice	S								S				S								S	
Bronzestone	S								S				S								S	
Canyon Rose	S								S				S								S	
Cedar	S								S				S						NA	S	NA	
Copperstone	S								S				S								S	
Desert Sand	S								S				S						NA	S	NA	
Golden Buff	S								S				S						NA	S	NA	
Ironstone	S								S				S						NA	S	NA	
Midnight Black	S								S				S								S	
Mocha	S								S				S								S	
Monterey	S								S				S								S	
Mountain Red	S								S				S								S	
Obsidian	S								S				S								S	
Ochre Buff	S								S				S						NA	S	NA	
Park Rose	S								S				S								S	
Pewter	S								S				S						NA	S	NA	
Platinum	S								S				S						NA	S	NA	
Smokey Mountain	S								S				S						NA	S	NA	
Terra Cotta	S								S				S								S	
Tumbleweed	S								S				S						NA	S	NA	
Walnut	S								S				S								S	

Notes

All Brick are available in **Matte, Smooth, Antique, Ruff and Scratch** textures unless noted.

Colors and Sizes highlighted in **Yellow** are not available in **Smooth** texture.

NA - indicates colors are not available in Super Atlas.

S - indicates brick are **available** in **Matte** texture in limited stocking quantities.

Contact Interstate Brick for other colors not listed in matrix above.



9780 South 5200 West
West Jordan, Utah 84081-5625
(801) 280-5200

interstatebrick.com

F.20

Water Repellent Coatings

Brick

These recommendations are applicable to all face brick and Atlas® brick manufactured by Interstate® Brick or H.C. Muddox, conforming to ASTM C-216 or ASTM C-652.

Water Repellents

Water repellents react with the brick and the humidity to transform the surface into a highly water repellent membrane to provide protection against moisture intrusion, efflorescence, leaching, mildew, freeze/thaw spalling and atmospheric staining. The water repellents specified are clear, penetrating, VOC compliant (environmentally safe) and have high vapor transmission rates thus allowing moisture trapped within a wall to pass through the repellent surface.

1. **Sure Klean® Weather Seal Siloxane WB** is water based and **Weather Seal Siloxane** is a solvent-based water repellent. Both have a 10 – 12 year service life, are not affected by high alkaline substances, chemically bond to the masonry, and have a vapor transmission rate in excess of 95 percent.
2. **Hydrozo Enviroseal™ Double 7 For Brick** is water-based, silane with a vapor transmission rate in excess of 85 percent.
3. **Protectosil® CHEM-TRETE® BSM 350** and **Aqua-Trete® Concentrate** are, silane water repellents. **Chem-Trete® BSM 350** is solvent based and will not leave a residue on glass, metal, or other non-porous surfaces. **Aqua-Trete® Concentrate** is water based water repellent.

Application

1. Mortars and grout shall have been allowed to cure a minimum of 28 days.
2. Remove and repoint any damaged mortar or cracks in the mortar joints exceeding .02” (approximate thickness of a business card).
3. Allow repointed mortar to cure 7 days prior to application.
4. All caulking and sealant work must be done and allowed to cure completely before application of water repellents. (Refer to manufacturer’s recommendations.)
5. Assure that all surfaces are clean and dry.
6. All materials, along with the surrounding air, must be maintained above 45° F during application.
7. Test a small area of surface to insure compatibility with existing conditions, and to establish proper coverage rates.
8. Do not dilute or alter water repellents.
9. Apply water repellent from the bottom of the wall up.

10. Initially fog the wall down with a fine mist, followed by flooding the wall with a minimum 8” rundown using a manual-pump low-pressure sprayer. Roll or brush out excessive drip areas.

Coverage

Normal coverage of both products is recommended between 100 to 200 square feet per gallon dependent on density and absorption of brick. The test panel will help to identify actual coverage rate required.

Precautions

1. Brick surface shall be clean and surface dry prior to application.
2. Neutralize alkalis and remove efflorescence salts prior to application.
3. Protect surfaces to remain uncoated.
4. Provide adequate ventilation.
5. Avoid prolonged inhalation of vapors and contact with skin or eyes.
6. Weather shall be clear and no precipitation expected before or following application for at least 24 hours.
7. Keep materials away from fire or flames.
8. The suggested sealers perform very well in preventing moisture from entering a wall through the brick face provided that application procedures are followed. As there are other means for water to enter a wall, the designer must properly detail all potential avenues of water penetration. Proper flashing, expansion joint, window, parapet and other details must be considered.
9. Water repellents should not be applied to walls undergoing efflorescence. Efflorescence is a sign of moisture trapped within a wall. Application of water repellents to efflorescing walls may trap these salts behind the coating resulting in salt concentrations which may cause spalling.

Specifications

1. The above products comply with the following:
2. ASTM C-67 for Water Repellent.
3. ASTM D-1653 and E-96 Moisture Vapor Transmission Rate.
4. Accelerated Weathering (Q.U.V.) Test — 2500 hours.
5. Efflorescence NBS-883 Highly Resistant.
6. Dry time 24 Hours.
7. Surface appearance after application unchanged to slightly darken.

 INTERSTATE® BRICK

 H.C. MUDDOX

INTERSTATE® BRICK 9780 South 5200 West, West Jordan, UT 84081-5625
Phone: (801) 280-5200 Toll Free (800) 233-8654 www.interstatebrick.com

H.C. MUDDOX 4875 Bradshaw Road Sacramento, CA 95827-9727
Phone: (916) 859-6320 Toll Free (800) 776-1244 www.hcmuddox.com

Specification for Face Brick

Part 1 Quality Assurance

Brick Tests

1. All tests shall be performed by an independent certified testing laboratory.
2. All tests shall be in accordance with ASTM C-67.

Submittals

1. Submit test report and certificate of conformance document for each type and color of brick specified on contract documents for architect's approval.
2. Test reports shall include:
 - a. Compressive strength
 - b. 24 hour cold water absorption
 - c. 5 hour boil absorption (if required)
 - d. Saturation Coefficient (if required)
 - e. Initial Rate of Absorption (I.R.A.)
 - f. Efflorescence
 - g. Weather classification
3. Certificate of conformance shall state that brick meets or exceeds applicable ASTM specifications.

Sample Panels

1. Sample panel size shall be 4'x4' showing the proposed color range, texture, bond, mortar, workmanship, cleaning, and water repellents where applicable.
2. Final brick selection shall be made only following architect's review of sample panel.
3. Brick from manufactured material for project shall be shipped to site and sample panel erected.
4. No brick shall be shipped from manufacturer to site until architect's acceptance of job panel constructed from actual material for project. This panel shall replace all other sample panels and shall remain on site throughout construction, and become the project standard for bond, mortar, workmanship, and appearance.

Part II Products

Face Brick

1. Manufacturer: **Interstate Brick Company**, 9780 S 5200 W, West Jordan UT 84081-5625 or **H.C. Muddox**, 4875 Bradshaw Road, Sacramento CA 95827-9793
2. ASTM C-216, Grade SW, Type FBX or better.
3. Color and texture
4. Dimensions (*width*) x (*height*) x (*length*).
5. Minimum compressive strength 9,000 psi.
6. Maximum Saturation Coefficient 0.78 (if required).
7. Minimum IRA 6 g/ min/30 in².
8. Maximum IRA 30 g/min/30 in². Where IRA exceeds 30 g/ min/30 in², pre-wetting brick is recommended.

9. Shapes; where special shapes are shown on architectural drawings, manufacturer shall provide shop drawings for architect's approval prior to manufacturing shapes.

Mortar

Mortar shall conform to ASTM C 270 Type N

Proportion Specification:

1 part Portland cement (ASTM C 150 Types I, IA, II, IIA, III, IIIA or V) less than 6 months old
 1 part hydrated lime (ASTM C-207)
 6 parts sand (ASTM C-144)

OR

Property Specification:

Portland cement - lime mortar
 Compressive strength 750 psi
 Water retention 75% minimum
 Air content 14% maximum
 Sand: 2 ¼ -3 ½ the sum of the separate volumes of cementitious materials sand (ASTM C-144)

Part III Execution

Bond

Bond shall be running bond unless otherwise shown on contract documents.

Jointing

Mortar joints shall be concave unless otherwise shown on contract documents.

Construction

All construction strictly adheres to International Building Code (IBC) or TMS 402/ACI530/ASCE5.

Cleaning

Cleaning shall conform to Interstate Brick Technical Bulletin 4 Brick Cleaning Recommendations, Section 040120 and BIA Technical Note #20 Cleaning Brickwork. Do not use muriatic acid or sand blasting. Contact manufacturer for recommendations.

Water Repellent & Coatings

Where water repellents are required, consult Interstate Brick Technical Bulletin 1 Water Repellent Coatings and Section 071900.

Specification for Atlas™ Hollow Brick

Part 1 Quality Assurance

Brick Tests

1. All tests shall be performed by an independent certified testing laboratory.
2. All tests shall be in accordance with ASTM C-67.

Submittals

1. Submit test report and certificate of conformance document for each type and color of brick specified on contract documents for architect's approval.
2. Test reports shall include:
 - a. Compressive strength
 - b. 24 hour cold water absorption
 - c. 5 hour boil absorption (if required)
 - d. Saturation Coefficient (if required)
 - e. Initial Rate of Absorption (I.R.A.)
 - f. Efflorescence
 - g. Weather classification
3. Certificate of conformance shall state that brick meets or exceeds applicable ASTM specifications.

Sample Panels

1. Sample panel size shall be 4'x4' showing the proposed color range, texture, bond, mortar, workmanship, cleaning, and water repellents where applicable.
2. Final brick selection shall be made only following architect's review of sample panel.
3. Brick from manufactured material for project shall be shipped to site and sample panel erected.
4. No brick shall be shipped from manufacturer to site until architect's acceptance of job panel constructed from actual material for project. This panel shall replace all other sample panels and shall remain on site throughout construction, and become the project standard for bond, mortar, workmanship, and appearance.

Part II Products

Hollow Brick

1. Manufacturer: **Interstate Brick Company** or **H.C. Muddox**
2. ASTM C-652, Grade SW, Type HBX or better.
3. Color and texture
4. Dimensions (*width*) x (*height*) x (*length*).
5. Minimum compressive strength 9,000 psi.
6. Maximum Saturation Coefficient 0.78 (if required).
7. Minimum IRA 6 g/ min/30 in².
8. Maximum IRA 30 g/min/30 in². Where IRA exceeds 30 g/min/30 in², pre-wetting brick is recommended.
9. Shapes; where special shapes are shown on architectural drawings, manufacturer shall provide shop drawings for

architect's approval prior to manufacturing shapes.

Mortar

Mortar shall conform to ASTM C 270 Type S

Proportion Specification:

1 part Portland cement (ASTM C 150 Types I, IA, II, IIA, III, IIIA or V) less than 6 months old
 ½ part hydrated lime (ASTM C-207)
 3-½ to 4-½ parts sand (ASTM C-144)

OR

Property Specification:

Portland cement - lime mortar
 Compressive strength 1800 psi
 Water retention 75% minimum
 Air content 12% maximum
 Sand: 2 ¼ -3 ½ the sum of the separate volumes of cementitious materials sand (ASTM C-144)

Grout

Grout shall conform to ASTM C 476
 Grout strength shall be greater than or equal to f'_m

Part III Execution

Bond

Bond shall be running bond unless otherwise shown on contract documents.

Jointing

Mortar joints shall be concave unless otherwise shown on contract documents.

Construction

All construction strictly adheres to International Building Code (IBC) or TMS 402/ACI530/ASCE5.

Cleaning

Cleaning shall conform to Interstate Brick Technical Bulletin 4 Brick Cleaning Recommendations, Section 040120 and BIA Technical Note #20 Cleaning Brickwork Do not use muriatic acid or sand blasting.
 Contact manufacturer for recommendations.

Water Repellent & Coatings

Where water repellents are required, consult Interstate Brick Technical Bulletin 1 Water Repellent Coatings and Section 071900.

Brick Cleaning Recommendations

General

An important phase of constructing a masonry wall is cleaning. Sometimes walls are determined unacceptable because of poor cleaning. Failure to properly clean the brick after construction or use of aggressive cleaning products and/or methods can cause many problems. Mortar smear, white scum, efflorescence, green stain, etched bricks and mortar joints, removal of brick coatings, discolored masonry, acid burn, corrosion of reinforcing, pitting of window frames, and metal staining of the masonry are a few of the common problems associated with poor and/or improper cleaning.

The intent of this bulletin is to provide general brick cleaning guidelines that, when followed, will reduce or eliminate the problems mentioned above. Although **EaCo Chem** and **Prosoco Prosoco Sure Klean®** products are identified in this bulletin; it does not preclude the use of other acceptable brick cleaning products. For additional information refer to BIA Technical Note # 20. (www.gobrick.com)

All information presented in this document is for general information only, representing what is deemed 'best practice'. This information should not under any circumstances be relied upon for any specific project cleaning applications of brick installations without independent evaluation by an experienced brick cleaning professional familiar with the products, means, and methods noted. Anyone making use of this information does so at their own risk and assumes any and all liability resulting from such use.

Methods

There are three acceptable methods for cleaning brick recommended by the Brick Industries Association (BIA). These are: (1) 'Bucket and Brush' hand cleaning, and/or Low-Pressure water/detergent spray; (2) High- Pressure water spray; and, (3) Abrasive Blasting. **Interstate Brick®** and **H.C. Muddox** strongly recommend that options (2) and (3) be reserved for only those projects in which the other methods have failed to properly clean the masonry, and the owner accept the condition of the brick after such cleaning.

Products

Pre-mixed commercial cleaners are recommended over job blended mixtures of acids and detergents. Pre-blended cleaners reduce the risk of acid burn, metal staining, scum, corrosion, and etching.

Not all cleaning agents react the same on all brick and mortar. Some products are formulated to control manganese, iron, vanadium, and other metals found in brick. Use caution when specifying commercial cleaners to insure compatibility with the brick, mortar, and surrounding materials.

EaCo Chem NMD 80 is a buffered detergent-based solution designed for the cleaning of new masonry structures. **EaCo Chem SOS 50** is a buffered detergent-based solution in which hydrochloric acid has been substituted with an organic salt and can be used for cleaning new masonry structures where uses of acidic solutions are precluded.

NMD 80 and SOS 50 can be used on any type of brick, block, stone, cast stone, and pre-cast. No scrubbing is necessary. Both products help prevent efflorescence, manganese and vanadium stains and are safe for glass and anodized aluminum when used as directed.

Prosoco Sure Klean® 600 is a safe, effective general-purpose cleaner formulated of surface acting acids, chelating and wetting agents to clean excess mortar grout and job dirt. When properly applied, this product will not discolor or damage the surface. **Prosoco Sure Klean® Vana Trol®** is a blend of organic and inorganic acids with special inhibitors which control oxidation of vanadium, manganese, molybdenum and other metallic salts common in most light colored brick. **Vana Trol®** removes mortar and grout stains, and other new construction stains and controls efflorescence. **Vana Trol®** is also recommended for colored mortars as it will not bleach the mortar.

Use **EaCo Chem** or **Prosoco Sure Klean®** products as defined in the following table titled "Recommended Cleaners" or an approved equivalent.

Limitations

1. High-pressure spray application of the cleaning solution is not recommended.
2. High-pressure spray is not recommended for all brick surfaces and may cause damage.
3. Brick cleaning should not be performed on wall surfaces in which the ambient air temperature falls below 40°F (Fahrenheit degrees).
4. Where a pressure sprayer is used, the masonry wall shall be allowed to cure for 7 days for **EaCo Chem** products and 14 days for **Prosoco Sure Klean®** before cleaning.
5. Surface coated brick:
EaCo Chem: Use EC Jet or low pressure (50 psi or lower) application and low-pressure rinsing.
Prosoco Sure Klean®: Use low-pressure (50 psi or lower) or the bucket and brush method application and low-pressure rinsing. Post-fired coatings on brick may wash off with aggressive cleaning means and methods, and over time.
6. Do not use unbuffered or non-buffered acidic solutions to clean brick.

During Construction

1. Proper care should be taken during construction to keep the wall free of mortar and grout smears. Grout left on

the wall for even short periods of time become difficult to remove. Use a soft bristle brush immediately after tooling to remove excessive mortar. Avoid cleaning motions that press the mortar and grout into the face.

2. Cover the wall at the end of each working day. Failure to prevent moisture from entering the wall may result in efflorescence and other leaching problems.
3. Protect the wall from dirt and mortar splatter.
4. Store brick above the ground to protect from soil contamination.

Application

Follow the manufacturers' instruction for application and cleaning (www.eacoChem.com, www.prosoco.com) . The following steps are only guidelines.

1. The cleaning operation should be undertaken within 7 to 28 days when using **EaCo Chem** products; and 14 to 28 days when using **Prosoco Sure Klean®** Products, after the masonry construction. Cleaning before the wall has properly cured may weaken the masonry. Prolonged curing prior to cleaning may create more permanent stains which may become difficult to remove.
2. Test panel: Test proposed cleaning means and methods to ensure acceptable results. Test a small area of wall in an inconspicuous location using the cleaning mixture specified. A 16 sq. foot area may be sufficient. Where field panels are required, they should be cleaned using the product and procedures specified for the project. This can alert the owner's representative and contractor of any adverse reactions prior to cleaning the wall. Allow the test area to dry for one week prior to evaluating the effectiveness of the solution. The architect or owners' representative shall evaluate and approve the test area prior to cleaning the remainder of the wall. If the cleaning procedure is not effective, contact the manufacturer of the cleaner for further recommendations.
3. Mask or protect metal, glass, wood and other materials that may be adversely affected by the cleaning solution.
4. Pre-wet the area of wall to be cleaned and the area directly below. This will prevent absorption of the dissolved particles into the brick.
5. Use EC Jet or low pressure (50 psi or lower) spray to apply **EaCo Chem** products. Use a soft-fibered brush or a low-pressure spray to apply **Prosoco Sure Klean®** products. **DO NOT USE HIGH-PRESSURE SPRAY.**
6. **EaCo Chem:** Allow the solution to remain on the wall for 5 minutes and reapply. Allow solution to remain on the wall for additional 5 minutes after reapplication. **DO NOT ALLOW THE CLEANING SOLUTION TO DRY ON THE BRICK.**
Note: Depending on the mortar type or age a third application of **NMD 80** and **SOS 50** may be required.

Prosoco Sure Klean®: Allow the solution to remain on the wall for 1 to 3 minutes. Immediately reapply cleaning solution and remove heavy buildups of mortar and grout. **DO NOT ALLOW THE CLEANING SOLUTION TO DRY ON THE BRICK.**

7. Rinse thoroughly with clean water. Remove all cleaning solution from the area cleaned and any rundown. Failure to remove all cleaning solution may result in streaking, staining, and scumming.

Coverage

NMD 80: Dilute 1 part concentrate to 4 parts water

SOS 50: Dilute 1 part concentrate to 4 parts water

600: Dilute 1 part concentrate to 4 to 12 parts water

Vana Trol®: Dilute 1 part concentrate to 4 to 8 parts water

The test panel will help to identify the actual coverage rate required.

Precautions

Masonry cleaners are acidic and should be handled with caution. Applicators should wear goggles, rubber gloves, suits, etc. to avoid contact with the skin. To remove special stains refer to the BIA Technical Note # 20 for additional brick cleaning recommendations.

Recommended Cleaners

INTERSTATE® BRICK

H.C. MUDDOX PLANT

All brick colors can be cleaned using EaCo Chem NMD80 or PROSOCO Sure Klean® Vana Trol.

INTERSTATE® BRICK

WEST JORDAN, UT PLANT

All brick colors can be cleaned using EaCoChem NMD80 or PROSOCO Sure Klean® Vana Trol. In addition, the following brick colors may also be cleaned with PROSOCO Sure Klean® 600:

Brick Color	EaCo Chem	Prosoco Sure Klean®
Copperstone	NMD 80	600
Ironstone	NMD 80	600
Mojave Brown	NMD 80	600
Monterey	NMD 80	600
Mountain Red	NMD 80	600
Ochre Buff	NMD 80	600
Terra Cotta	NMD 80	600
Walnut	NMD 80	600

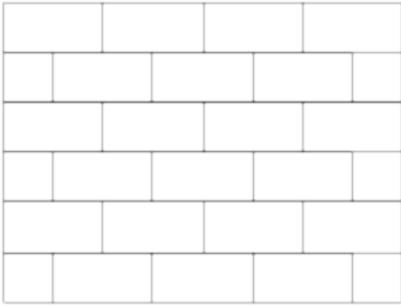
 INTERSTATE® BRICK

INTERSTATE® BRICK 9780 South 5200 West, West Jordan, UT 84081-5625
Phone: (801) 280-5200 Toll Free (800) 233-8654 www.interstatebrick.com

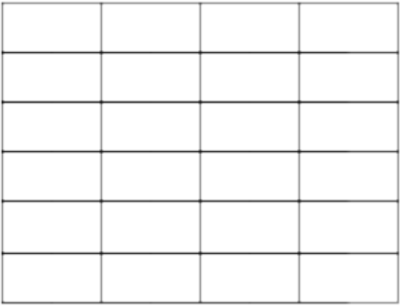
 H.C. MUDDOX

H.C. MUDDOX 4875 Bradshaw Road Sacramento, CA 95827-9727
Phone: (916) 859-6320 Toll Free (800) 776-1244 www.hcmuddox.com

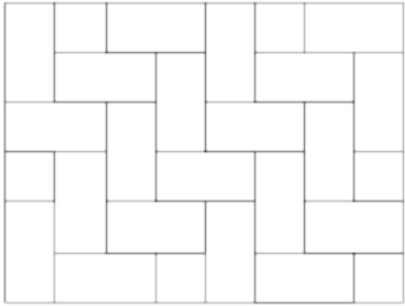
Bond Pattern



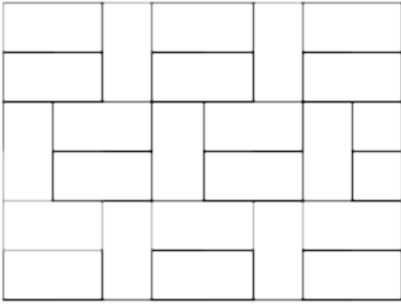
Running Bond



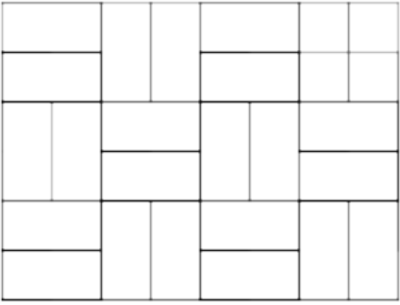
Stack Bond



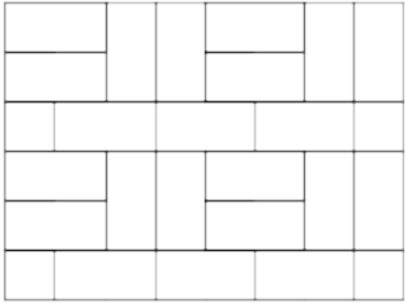
Herringbone



Single Basket Weave



Double Basket Weave



Running Weave

Specification for Residential Brick

Part 1 Quality Assurance

Sample Panels

1. Sample panel size shall be 4'x4' showing the proposed color range texture, bond, mortar, workmanship, cleaning, and water repellents where applicable.
2. Final brick selection shall be made only following architect's or owner's review of sample panel.
3. Brick from manufactured material for project shall be shipped to site and sample panel erected.
4. No brick shall be shipped from manufacturer to site until architect's or owner's acceptance of job panel constructed from actual material for project. This panel shall replace all other sample panels and shall remain on site throughout construction, and become the project standard for bond, mortar, workmanship, and appearance.

Part II Products

Face Brick

1. Manufacturer: **Interstate Brick Company**, 9780 S 5200 W, West Jordan UT 84081-5625 or **H.C. Muddox**, 4875 Bradshaw Road, Sacramento CA 95827-9793
2. ASTM C-216, Grade SW, Type FBA (Type FBA brick include sand or slurry coated, tumbled, and heavily textured brick that is selected for characteristic architectural effects due to non-uniform size and texture. These units and may have a wider permitted variation in dimensional tolerances than Type FBS, and have no specified criteria for chippage, out-of-square, or warpage. The acceptance or rejection should be based on an approved sample panel) or better.
3. Color and texture
4. Dimensions (*width*) x (*height*) x (*length*).
5. Minimum compressive strength 9,000 psi.
6. Maximum Saturation Coefficient 0.78 (if required).
7. Minimum IRA 6 g/ min/30 in².
8. Maximum IRA 30 g/min/30 in². Where IRA exceeds 30 g/min/30 in², pre-wetting brick is recommended.
9. Shapes; where special shapes are shown on architectural drawings, manufacturer shall provide shop drawings for architect's approval prior to manufacturing shapes.

Mortar

Mortar shall conform to ASTM C 270 Type N

Proportion Specification:

1 part Portland cement (ASTM C 150 Types I, IA, II, IIA, III, IIIA or V) less than 6 months old
 1 part hydrated lime (ASTM C-207)
 6 parts sand (ASTM C-144)
 OR

Property Specification:

Portland cement - lime mortar
 Compressive strength 750 psi
 Water retention 75% minimum
 Air content 14% maximum
 Sand: 2 ¼ -3 ½ the sum of the separate volumes of cementitious materials sand (ASTM C-144)

Part III Execution

Bond

Bond shall be running bond unless otherwise shown on contract documents.

Jointing

Mortar joints shall be concave unless otherwise shown on contract documents.

Construction

All construction strictly adheres to International Building Code (IBC) or TMS 402/ACI530/ASCE5.

Cleaning

Cleaning shall conform to Interstate Brick Technical Bulletin 4 Brick Cleaning Recommendations, Section 040120 and BIA Technical Note #20 Cleaning Brickwork Do not use muriatic acid or san blasting.
 Contact manufacturer for recommendations.

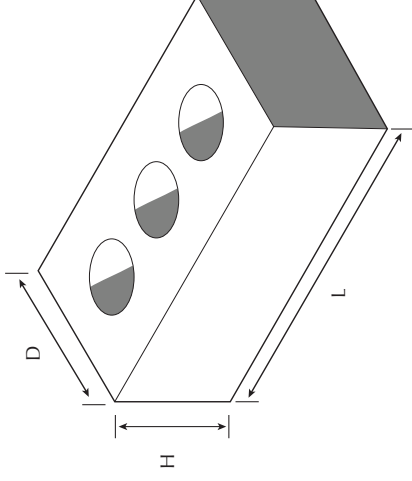
Water Repellent & Coatings

Where water repellents are required, consult Interstate Brick Technical Bulletin 1 Water Repellent Coatings and Section 071900.

Structural Brick Compressive Strength Data Table

Selected Brick Colors	Average Net Area Unit Compressive Strength		Assumed Wall Assembly Design Strength (f'_m)	
	psi	(MPa)	psi	(MPa)
Arctic White	11,000	(75.84)	3,844	(26.50)
Autumn Red	12,000	(82.74)	4,000	(27.58)
Bronzestone	11,900	(82.05)	4,000	(27.58)
Canyon Rose	13,600	(93.77)	4,000	(27.58)
Cedar	13,200	(91.01)	4,000	(27.58)
Copperstone	14,000	(96.53)	4,000	(27.58)
Desert Sand	14,000	(96.53)	4,000	(27.58)
Golden Buff	15,400	(106.18)	4,000	(27.58)
Ironstone	14,600	(100.66)	4,000	(27.58)
Midnight Black	15,000	(103.42)	4,000	(27.58)
Monterey	14,400	(99.28)	4,000	(27.58)
Mountain Red	15,600	(107.56)	4,000	(27.58)
Ochre Buff	14,700	(101.35)	4,000	(27.58)
Park Rose	13,600	(93.77)	4,000	(27.58)
Platinum	11,000	(75.84)	3,844	(26.50)
Smokey Mountain	15,500	(106.87)	4,000	(27.58)
Tumbleweed	15,400	(106.18)	4,000	(27.58)
Walnut	12,800	(88.25)	4,000	(27.58)

1. Clay and shales are naturally occurring materials that vary, to some degree, throughout the deposits and strata layers. Consequently, various physical properties of the brick units, including the unit compressive strength values noted above are variable. The data above is based on historic data, not future projections. The data for the noted colors, and other colors, is kept on file, available upon request.
2. Assumed Wall Assembly Design Strengths f'_m , are based on TMS 602-22, Section 1.4-B-2(a), Table 1, and represent the design strength of wall assemblies comprised of masonry units, mortar, and grout. Mortar is assumed to be ASTM C270 compliant Type M, or Type S mortar. Grout is assumed to be ASTM C476 compliant grout with 28-day minimum compressive strength (f'_c) equal to or greater than f'_m .
3. Wall Assembly Design Strengths (f'_m) in excess of 4,000 psi can be achieved based on job specific prism testing.



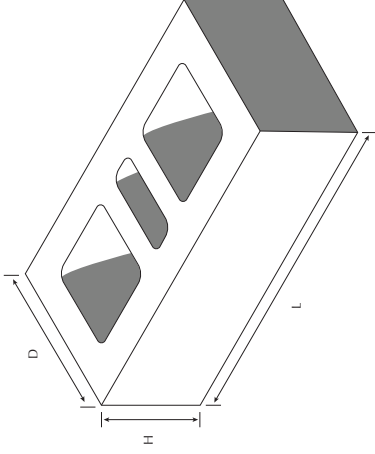
Commercial/Residential Brick - Dimensions, Weights and Coverage

Description	Depth (D)		Height (H)		Length (L)		Weights		Units/Ft2		Packaging	
	in	mm	in	mm	in	mm	lbs.	kg.	Units/ft2	Units/Ft2	Type	QTY
King	3	76	2 5/8	67	9 5/8	244	4.7	2.1	4.80	51.7	Cube	424
2 1/4" Modular	3 5/8	92	2 1/4	57	7 5/8	194	3.8	1.7	6.86	73.8	Cube	500
2 3/4" Modular	3 5/8	92	2 3/4	70	7 5/8	194	5.1	2.3	5.60	60.3	Cube	380
4" Modular	3 5/8	92	3 9/16	90	7 5/8	194	6.1	2.8	4.50	48.4	Cube	305
8" Modular	3 5/8	92	7 9/16	192	7 5/8	194	12.5	5.7	2.25	24.2	Pallet	128
2 1/4" Norman	3 5/8	92	2 1/4	57	11 5/8	295	5.5	2.5	4.47	48.1	Cube	300
4" Norman	3 5/8	92	3 9/16	90	11 5/8	295	8.7	4.0	3.00	32.3	Cube	183
2 1/4" Emperor®	3 5/8	92	2 1/4	57	15 5/8	397	8.9	4.0	2.76	29.7	Pallet	240
4" Emperor®	3 5/8	92	3 9/16	90	15 5/8	397	11.5	5.2	2.25	24.2	Pallet	160
8" Emperor®	3 5/8	92	7 9/16	192	15 5/8	397	23.0	10.5	1.13	12.1	Pallet	64

The Above Brick Manufactured by Interstate Brick comply with the following Specifications:

ASTM C216: Grade SW; Type FBA, FBS or FBX as specified in Purchase Order

CSA A82: Grade EG; Type A, S or X as specified in Purchase Order



Atlas® Brick Dimensions, Weights and Coverage

Description	Depth (D)		Height (H)		Length (L)		Weights		Units/Ft2		Packaging	
	in	mm	in	mm	in	mm	lbs.	kg.	Units/ft2	Units/ft2	Type	QTY
4 x 4 x 12 Atlas®	3 5/8	92	3 9/16	90	11 5/8	295	7.5	3.4	3	32.3	Pallet	207
4 x 2 1/4 x 16 Atlas®	3 5/8	92	2 1/4	57	15 5/8	397	7	3.2	3.4	36.6	Pallet	240
4 x 4 x 16 Atlas®	3 5/8	92	3 9/16	90	15 5/8	397	11	5.0	2.25	24.2	Pallet	160
4 x 8 x 16 Atlas®	3 5/8	92	7 9/16	192	15 5/8	397	21.5	9.8	1.125	12.1	Pallet	64
6 x 4 x 12 Atlas®	5 5/8	143	3 9/16	90	11 5/8	295	10	4.5	3	32.3	Pallet	120
6 x 2 1/4 x 16 Atlas®	5 5/8	143	2 1/4	57	15 5/8	397	10	4.5	3.4	36.6	Pallet	120
6 x 4 x 16 Atlas®	5 5/8	143	3 9/16	90	15 5/8	397	14.5	6.6	2.25	24.2	Pallet	100
6 x 8 x 16 Atlas®	5 5/8	143	7 9/16	192	15 5/8	397	34	15.5	1.125	12.1	Pallet	50
8 x 4 x 12 Atlas®	7 5/8	194	3 9/16	90	11 5/8	295	14	6.4	3	32.3	Pallet	100
8 x 2 1/4 x 16 Atlas®	7 5/8	194	2 1/4	57	15 5/8	397	12.7	5.8	3.4	36.6	Pallet	96
8 x 4 x 16 Atlas®	7 5/8	194	3 9/16	90	15 5/8	397	17.2	7.8	2.25	24.2	Pallet	80
8 x 8 x 16 Atlas®	7 5/8	194	7 9/16	192	15 5/8	397	39.2	17.8	1.125	12.1	Pallet	40
10 x 2 1/4 x 16 Atlas®	9 5/8	244	2 1/4	57	15 5/8	397	16.1	7.3	3.4	36.6	Pallet	72
10 x 4 x 16 Atlas®	9 5/8	244	3 9/16	90	15 5/8	397	22.3	10.1	2.25	24.2	Cube	60

The Above Brick Manufactured by Interstate Brick comply with the following Specifications:

ASTM C652: Grade SW; Type HBA, HBS or HBX as specified in Purchase Order
CSA A82: Grade EG; Type A, S or X as specified in Purchase Order

INTERSTATE BRICK COMPANY

SECTION 042100
STRUCTURAL BRICK MASONRY UNITS

SECTION 042100

STRUCTURAL BRICK MASONRY UNITS

NOTE TO SPECIFIER:

Editing Conventions:

Coordinate requirements in the Specifications containing **indicated on the Drawings** with the Drawings.

Verify that items in **red** are used on the project or are referred to the right section of the code.

Work info contained herein into a broader masonry section 042000 Unit Masonry, or supplement this section with sections which include mortars and grouts

The information presented in this document is for general information only. It should not under any circumstances be relied upon for specific without independent review and evaluation by a licensed design professional familiar with its specific use and application. Anyone making use of this information does so at their own risk and assumes any and all liability resulting from such use.

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Hollow Brick Masonry Units.
- B. Related Sections:
 - 1. Section 013119 - Project Meetings.
 - 2. Section 014000 - Quality Requirements
 - 3. Section 040513 – Masonry Mortaring [information may be combined in one broader scope masonry section]
 - 4. Section 040516 – Masonry Grouting [information may be combined in one broader scope masonry section]
 - 5. Section 040519 – Masonry Anchorage and Reinforcing [information may be combined in one broader scope masonry section]
 - 6. Section 071900 - Water Repellents.
 - 7. Section 079200 - Joint Sealants.

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. C 33 - Specification for Concrete Aggregates.
 - 2. C 67 - Test Methods of Sampling and Testing Brick and Structural Clay Tile.
 - 3. C 126 - Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units.
 - 4. C 216 - Specification for Facing Brick.
 - 5. C 270 - Specification for Mortar for Unit Masonry.
 - 6. C 476 – Grout for Masonry
 - 7. C 652 - Specification for Hollow Brick.
 - 8. C 1019 - Method of Sampling and Testing Grout.
- B. International Building Code (ICC) adopted addition

- C. Building Code Requirements (IBC/IRC/TMS 402) and Specification for Masonry Structures (TMS 602) current adopted addition.
- D. Most current editions of ASTM standards as cited herein.

1.03 SUBMITTALS

- A. Product Data, and Evaluation Reports as required for installation.
- B. Shop Drawings: Include elevations of each wall indicating type and layout of units.
- C. Samples: Include samples of stretcher units in sufficient quantity to illustrate color range.
- D. Test Reports from an independent testing laboratory showing compliance with applicable specifications.

1.04 QUALITY ASSURANCE

- A. Continuous Inspection:
 - 1. Employ a qualified masonry inspector for continuous inspection of the masonry work. Acceptance by a State or municipality having a program of examining and certifying masonry inspectors will be considered adequate qualifications. The masonry inspector shall be at the site during all masonry construction and perform the following duties:
 - a. Review Drawings and Specifications and meet with the CONTRACTOR to discuss requirements before work commences.
 - b. Before masonry work commences, CONTRACTOR and the Contractor's Quality Control Representative shall attend meeting with ENGINEER to review the requirements for surveillance and quality control of the masonry work.
 - c. Check brand and type of cement, lime (if used), and source of sand.
 - d. Ensure that foundation is clean, rough, and ready to receive units.
 - e. Check reinforcing steel dowels for straightness, proper alignment, spacing, size, and length.
 - f. Observe field proportioning of mortar. Visually check aggregate to determine uniformity of grading, cleanliness, and moisture.
 - g. Ensure that joints are full of mortar and kept tight during work. Inspect grout cells to assure that fins will not interfere with grouting. Ensure that masons keep grout cells clean of mortar droppings and inspect to determine compliance.
 - h. Continuously observe placing of grout.
 - i. Perform or supervise performance of required sampling and testing.
 - 2. Keep complete record of inspections. Report daily to the Contractor's Quality Control Representative the progress of the masonry inspection.
- B. Mock-up:
 - 1. Prior to starting construction of masonry, construct minimum 4-foot square mock-up.
 - 2. Use accepted materials, containing each different kind and color of brick masonry units to illustrate wall design.

3. Show color range, texture range, bond, mortar color, joint tooling, critical design details and quality of workmanship.
 4. Masonry construction may not proceed until the Architect/Engineer approves mock-up.
 5. When not accepted, construct another mock-up.
 6. When accepted, mock-up will be standard of comparison for remainder of masonry work.
 7. Upon completion and acceptance of Project, dispose of mock-ups in legal manner at offsite location.
- C. Pre-installation Conference: Conduct as specified in Section 013119.
- D. Masonry Prism Testing: Perform masonry prism testing in accordance with ASTM C1314 Standard Test Method for Compressive Strength of Masonry Prisms.
- E. Certification: Furnish manufacturer's certification that clay brick units provided meet or exceed the requirements of this specification.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units above ground to prevent contamination by mud, dust or other materials likely to cause staining or other defects.
- B. Cover and protect masonry units from inclement weather to maintain quality control and physical requirements.
- C. Transport and handle brick masonry units as required to prevent discoloration, chipping, and breakage.
- D. Locate storage piles, stacks, and bins to protect materials from heavy traffic.
- E. Remove chipped, cracked, and otherwise defective units from jobsite upon discovery.

1.06 PROJECT CONDITIONS

- A. Cold Weather Requirements:
 1. In accordance TMS 602 Section 1.8 C.
 2. Provide adequate equipment for heating masonry materials when air temperature is below 40 degrees Fahrenheit.
- B. Hot Weather Requirements:
 1. In accordance with TMS 602 Section 1.8 D.
 2. When ambient air temperature exceeds 100 degrees Fahrenheit, or when ambient air temperature exceeds 90 degrees Fahrenheit and wind velocity is greater than 8 miles per hour, implement hot weather protection procedures.
 3. Wet mortar board before loading and cover mortar to retard drying when not being used.
 4. Do not spread mortar beds more than 48 inches ahead of placing masonry units.
 5. Place masonry units within one minute of spreading mortar.
- C. Wetting of Brick: shall be required at the time of laying if the unit's initial rate of absorption (IRA) exceeds 30 grams per 30 square inches per minute or 1 g/ 645mm².

1.07 SEQUENCING AND SCHEDULING

- A. Because structural brick may impact the critical path of construction, the General Contractor should contact the brick supplier for availability and scheduling prior to selecting a mason contractor to assure adequate time for manufacturing.

PART 2 PRODUCTS

2.01 HOLLOW LOAD BEARING BRICK MASONRY UNITS

- A. Manufacturers:
 - 1. Interstate Brick/HC Muddox: www.interstatebrick.com; www.hcmuddox.com
 - a. Sales Representative:
 - 1) Salesman
 - 2) Phone
 - 3) Email
- B. Type: ASTM C 652, Grade SW, Type HBX [HBS] with minimum gross compressive strength of 6000 psi.
- C. Surface Texture: **Matte** unless otherwise noted on drawings: (To be selected by Architect/Engineer from manufacturer's full range of available textures.)
- D. Colors:
 - 1. Color as selected by Architect/Engineer from standard colors.
- E. Size: Nominal **8 inches wide x 4 inches high x 16 inches long**, unless otherwise **indicated on the Drawings**.
- F. Special Sizes and Shapes: As required for window and door soldier coursing and custom sills where indicated, corners, bond beams, piers, lintels, control joints, and other special applications to minimize cutting.

PART 3 EXECUTION

3.01 PREPARATION

- A. Protect adjacent construction with appropriate means from mortar droppings and other effects of laying of brick masonry units.
- B. Thoroughly clean foundations of laitance, grease, oil, mud, dirt, mortar droppings, and other objectionable matter.
- C. Review brick material prior to installation and report any unsatisfactory units to the manufacturer. Set aside all units deemed unsatisfactory for further review by testing agency and/or brick manufacturer's representative.

- D. Prepare mock-up wall utilizing materials, craftsmanship, and details intended to be representative of the project installation. Include interfacing elements and materials (windows, louvers, flashings, special detailing, weeps, vents, etc.) as directed. LSelect brick from multiple pallets or cubes to provide a uniform random pattern to the brick hues provided or to a specified blend pattern specified, when occurs. Lay brick in a pattern acceptable to the Architect. Seek and obtain approval of mock-up prior to project installation. Remove and replace mock-up material or craftsmanship identified as unacceptable until installation is approved, prior to main project installation.

3.02 BRICK MASONRY UNITS

- A. Provide Level of Quality in accordance with ASTM C652 and C216.
- B. Review brick material prior to installation and report any unsatisfactory units to the manufacturer. Set aside all units deemed unsatisfactory for further review by testing agency and/or brick manufacturer's authorized representative. Installation or units placed in service constitutes mason's acceptance of brick quality.
- C. Lay units in uniform and true courses, level, plumb, and without projections or offset of adjacent units.
- D. Select units from multiple pallets or cubes to blend hues to create a uniform ransdome pattern avoiding patches of light and dark brick unless a specific blend of colors is specified. Lay brick in a pattern acceptable to the Architect.
- E. Lay units to preserve unobstructed vertical continuity of cells to be filled with grout or insulation.
- F. Protect cells intended to remain free of grout using grout stops, mortar dams, or by other means.
- G. Align vertical cells to be filled with grout to maintain clear, unobstructed continuous vertical cell measuring not less than 2 by 3 inches.
- H. Butter vertical head joints for thickness equal to face shell thickness of units, and shove joints tightly together so that mortar bonds to both masonry units in the head joints.
- I. Solidly fill joints from face of units to inside face of cells.
- J. Lay units to desired height with joints of uniform thickness within tolerances listed in TMS 602 Section 3.3 F.
- K. Bond shall be plumb throughout.
- L. Lay units to avoid formation of cracks when units are placed. Keep cells of units as free of mortar as possible as masonry wall height increases.
- M. Lay masonry plumb, true to line, planar, with courses level. Keep bond pattern plumb throughout. Lay masonry within the tolerances of TMS 602 Section 3.3 F.
- N. When positions of units shift after mortar has stiffened, bond is broken, or cracks are formed, relay units in new mortar.

- O. Remove mortar, mortar droppings, debris, and other obstructions and materials from inside of cell walls.
- P. Seal cleanouts after inspection and before grouting or placing insulation.

3.03 LOOSE FILL INSULATION

- A. Lay brick masonry units protecting cells to receive grout from filling into those not intended to be grouted.
- B. Pour insulation into cells not intended to be grouted.
- C. Ensure that no insulation gets into cells which are to be filled with grout.
- D. Do not lay units more than 4 feet vertically ahead of units filled with loose insulation.

3.04 MORTAR JOINTS

- A. Make joints straight, clean, smooth, and uniform in thickness.
- B. Pointing: Tool exposed joints, slightly concave, unless detailed otherwise. Strike concealed joints flush.
- C. Joint Thickness: Make vertical and horizontal joints as required to achieve nominal dimensions on drawings and within tolerances listed in TMS 602 Section 3.3 F.
- D. Where fresh masonry joins totally or partially set masonry, clean and roughen set masonry before laying new units.

3.05 BOND PATTERN

- A. Lay brick masonry units in running bond pattern, unless otherwise **indicated on the Drawings.**

3.06 GROUTING AND REINFORCEMENT

- A. Provide splices in vertical and horizontal reinforcing as outlined in TMS 402 Section 6.1.6. Hold vertical reinforcing bars in position at top and bottom and at intervals not exceeding 200 bar diameters. Use steel wire bar positioners to position bars and tie reinforcing bars to dowels with wire ties.
- B. Obtain acceptance of reinforcement placement before grouting.
- C. Fill all spaces and cells containing reinforcing or intended to be grouted solidly with grout.
- D. Low-lift Grouting:
 - 1. Grout pours of 12 in. or less
 - a. Consolidate grout pours of 12 in. or less in height by mechanical vibration or puddling.

2. Grout pours of 12 in. to 5 ft. 4 in.
 - a. Construct the masonry wall up to 5 ft. 4 in.
 - b. For partially grouted walls, use expanded metal mesh or other grout stop materials that would not interfere with the bond to confine grout to the cells to be grouted.
 - c. Grout the wall 1½ in. below of the top of the constructed section of the wall, where wall continues in subsequent sequences. Fill with grout to top of units at the top of wall unless otherwise shown or detailed.
 - d. Consolidate the grout using mechanical vibration and reconsolidate after initial water loss and settlement.
 - e. Top off grout after reconsolidation at top of wall, to fill to top of units unless shown or detailed otherwise.
- E. High-lift Grouting:
 1. If grouting is accomplished by the high-lift method the masonry shall be allowed to cure for at least 4 hours before grouting.
 2. In double wythe construction, vertical grout barriers shall be built across the grout space to the height of the grout lift.
 3. Grout barriers shall not be spaced more than 30 feet apart. Grout shall be placed in lifts not to exceed 12 ft. 8 in. If bond beams occur within the grout pour, limit the grout lift to the bottom of the lowest bond beam that is more than 5 ft. 4 in. above the bottom of the lift.
 4. Each lift shall be allowed to set for 10 minutes after initial consolidation of grout before successive lift is placed.
 5. The full height of each section of wall shall be grouted in one day.
- F. Grout in cells shall have full contact with surface of concrete footings.
- G. When grouting stops for one hour or longer, form horizontal construction joints by stopping grout placement 1½ inches below top of uppermost unit containing grout.
- H. After placement, consolidate grout using mechanical immersion vibrators designed for consolidating grout.
- I. Placement:
 1. Use a hand bucket, concrete hopper, or grout pump.
 2. Place grout in final position within 1½ hours after mixing.
 3. Place grout so as to completely fill the grout spaces without segregation of the aggregates.
 4. Do not insert vibrators into lower grout placements that are in a semi-solidified state.

3.07 BOND BEAMS

- A. Place horizontal reinforcement and solidly grout bond beam units in place.
- B. Provide wire mesh at openings in bottom of bond beams to support grout where walls are not grouted solid.

3.08 CUTTING BRICK MASONRY UNITS

When possible, use full units of the proper size in lieu of cut units. Cut units as required to form chases, openings, for anchorage, and for other appurtenances.

- A. Cut and fit units with power-driven carborundum or diamond disc blade saw.
- B. Avoid using units that are cut to less than half of a full unit by adjusting layout or combining with partial length units without impacting the reinforcing layout. Reinforcing should be placed in full size sells, not truncated cells due to cutting units.

3.09 CONTROL JOINTS / EXPANSION JOINTS

- A. Provide in masonry walls where **indicated on the Drawings**.
- B. Make full height and continuous in appearance.
- C. Run bond beams and bond beam reinforcing bars continuously through control joints. Stop horizontal reinforcing at expansion joints
- D. Insert control joint filler in joints as wall is constructed.
- E. Insert 50% (or higher) compressible neoprene expansion joint material in expansion joints.
- F. Apply sealant as specified in Section 079000.

3.10 OPENINGS AND LINTELS

- A. Place horizontal reinforcement in fully grouted bond beam units.
- B. Use lintel units where underside of lintel will be exposed.
- C. Provide minimum of 8-inch bearing at each end of lintel.
- D. Embed reinforcing bars minimum 24 inches or 40 bar diameters, whichever is longer, into wall past edges of openings or as **indicated on the Drawings**.
 - 1. At corners, provide 90-degree bend with equivalent total embedment.

3.11 STEEL DOOR FRAMES

- A. Anchor and fully grout jambs and head of steel door frames connected to brick unit masonry.
- B. Fill frames with grout as each 2 feet of brick unit masonry is laid.

3.12 BEARING PLATES

- A. Provide minimum of 12 inches of grouted brick unit masonry below steel bearing plates and beams bearing on masonry walls.

3.13 ANCHOR BOLTS

- A. Hold anchor bolts in place with template during grouting to assure precise alignment.

- B. Do not cut or ream members being anchored or use other means to accommodate misaligned anchor bolts in roof deck support angles.
- C. Provide minimum 6-inch-wide grouted brick unit masonry entirely around anchor bolts and other attachment devices.

3.14 ENCLOSURES

- A. Where brick masonry units enclose conduit, pipes, stacks, ducts, and similar items, construct chases, cavities, and similar spaces as required, whether or not such spaces are **indicated on the Drawings**.
- B. Point openings around flush mounted electrical outlet boxes with mortar, including flush joints above boxes.
- C. Do not cover enclosures until inspected and when appropriate, tested.

3.15 OTHER EMBEDDED ITEMS

- A. Build in wall plugs, accessories, flashings, pipe sleeves, and other items required to be built-in as the masonry work progresses.

3.16 PATCHING

- A. Patch exposed brick masonry units at completion of the Work and in such manner that patching will be indistinguishable from similar surroundings and adjoining construction.

3.17 MISCELLANEOUS

- A. Build in required items, such as anchors, flashings, sleeves, frames, structural steel, lintels, anchor bolts, and metal fabrications, as required for complete installation.

3.18 WATER REPELLENT - BREATHABLE

- A. Apply water repellent as specified in Section 071900.

3.19 FIELD QUALITY CONTROL

- A. Have minimum 3 masonry units of each type proposed for Project tested in accordance with ASTM C 67 to verify conformance with Specifications.
- B. Tests shall include gross compressive strength, severe weather water absorption requirements (24-hour cold water absorption, 5-hour boiling water absorption, **and Saturation Coefficient (if required)**), Initial Rate of Absorption and Unit Weight.
- C. Perform compressive strengths on structural units by cutting the units in half lengthwise and into rectangular unit without any flanges and cap according to ASTM C67 prior to testing.
- D. Employ and pay acceptable independent testing laboratory to perform testing.

3.20 CLEANING

- A. Use the least aggressive cleaning methods and products that will produce the desired result starting with 'bucket and brush' using the least caustic commercially prepared cleaning solutions as per the masonry unit manufacturer's recommendations
 - 1. Select an inconspicuous location to perform a test cleaning, and seek approval prior to mass cleaning .
- B. Exercise extreme care to prevent mortar splashes.
- C. Do not attach construction supports to masonry walls.
- D. Wash off brick scum, mortar spills, and grout spills before scum, mortar, and grout set.
- E. Remove grout stains from walls.
- F. Clean exposed masonry. Remove scaffolding and equipment. Dispose of debris, refuse, and surplus material offsite legally.
- G. Correct efflorescence on exposed surfaces with commercially prepared cleaning solution acceptable to masonry unit manufacturer.
 - 1. Apply only commercially produced and packaged cleaning solution from new unopened containers in accordance with cleaning solution manufacturer's printed instructions.
 - 2. Do not use unbuffered acids as cleaning solution.
 - 3. Do not use abrasive blast cleaning equipment.
 - 4. Do not use high pressure water – pressure in excess of 400 psi

3.21 FORMS AND SHORES

- A. Where required, construct forms to the shapes **indicated on the Drawings**.
 - 1. Construct forms sufficiently rigid to prevent deflection which may result in cracking or other damage to supported masonry and sufficiently tight to prevent leakage of mortar and grout.
 - 2. Do not remove supporting forms or shores until the supported masonry has acquired sufficient strength to support safely its weight and any construction loads to which it may be subjected.
 - a. Wait at least 16 hours after grouting masonry columns or walls before applying uniform loads.
 - b. Wait at least 72 hours before applying concentrated loads.

3.22 PROTECTION

- A. Provide temporary protection for exposed masonry corners subject to damage.
- B. Bracing:
 - 1. Adequately brace masonry walls over 8 feet in height to prevent overturning and to prevent collapse unless wall is adequately supported by permanent supporting elements, so wall will not overturn or collapse.
 - 2. Keep bracing in place until permanent supporting elements of structure are in place.
- C. Limited Access Zone:

1. Establish limited access zone prior to start of masonry wall construction.
2. Zone shall be immediately adjacent to wall and equal to height of wall to be constructed plus 4 feet by entire length of wall on non-scaffolded side of wall.
3. Limit access to zone to workers actively engaged in constructing wall. Do not permit other persons to enter zone.
4. Keep zone in place until wall is adequately supported or braced by permanent supporting elements to prevent overturning and collapse.

3.23 GROUTING EQUIPMENT

A. Grout Pumps:

1. Do not pump grout through aluminum tubes.
2. Operate pumps to produce a continuous stream of grout without air pockets.
3. Upon completion of each days pumping, eject grout from pipeline without contamination or segregation of the grout.
 - a. Remove waste materials and debris from the equipment.
 - b. Dispose of waste materials, debris, and all flushing water outside the masonry.

B. Vibrators:

1. Internal vibrators shall maintain a speed of not less than 5,000 impulses per minute when submerged in the grout.
2. Maintain at least one spare vibrator, at the site at all times.
3. Apply vibrators at uniformly spaced points not further apart than the visible effectiveness of the machine.
4. Limit duration of vibration to time necessary to produce satisfactory consolidation without causing segregation.

END OF SECTION

SECTION 042113
ANCHORED BRICK VENEER UNITS

INTERSTATE BRICK COMPANY

SECTION 042113

ANCHORED BRICK VENEER UNITS

NOTE TO SPECIFIER:

Editing Conventions:

Coordinate requirements in the Specifications containing **indicated on the Drawings** with the Drawings.

Verify that items in **red** are used on the project or are referred to the right section of the code.

This information should be blended into a larger specification section that includes specs for mortar, lintels, and other miscellaneous veneer related items, or supplemented by other specifications sections that cover those items.

The information presented in this document is for general information only. It should not under any circumstances be relied upon for specific without independent review and evaluation by a licensed design professional familiar with its specific use and application. Anyone making use of this information does so at their own risk and assumes any and all liability resulting from such use.

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Brick masonry units.
- B. Related Sections:
 - 1. Section 013119 - Project Meetings.
 - 2. Section 071900 - Water Repellents.
 - 3. Section 079000 - Joint Sealers.

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. C 33 - Specification for Concrete Aggregates.
 - 2. C 67 - Test Methods of Sampling and Testing Brick and Structural Clay Tile.
 - 3. C 126 - Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units.
 - 4. C 216 - Specification for Facing Brick.
 - 5. C 270 - Specification for Mortar for Unit Masonry.
- B. International Building Code (IBC) adopted addition
- C. Building Code Requirements and Specification for Masonry Structures (TMS 402/602) adopted addition
- D. Most current editions of ASTM standards as cited herein.

1.03 SUBMITTALS

- A. Product Data, and Evaluation Reports as required for installation.
- B. Shop Drawings: Include elevations of each wall indicating type and layout of units.

Date

Section 042113

Anchored Brick Veneer Units

- C. Samples: Include samples of stretcher units in sufficient quantity to illustrate color range.
- D. Test Reports from an independent testing laboratory showing compliance with applicable specifications.

1.04 QUALITY ASSURANCE

- A. Inspection: Periodic inspection of mortar, connector and installation should be performed as per International Building Code or Specification for masonry Structures (TMS 602) (The designer may choose not to require special inspection for masonry veneer in occupancy category I, II, or III structures)
 - 1. Employ a qualified masonry inspector for periodic inspection of the masonry work. Acceptance by a State or municipality having a program of examining and certifying masonry inspectors will be considered adequate qualifications. The masonry inspector shall visit site periodically during all masonry construction and perform the following duties:
 - a. Review Drawings and Specifications and meet with the CONTRACTOR to discuss requirements before work commences.
 - b. Before masonry work commences, CONTRACTOR and the Contractor's Quality Control Representative shall attend meeting with ENGINEER to review the requirements for surveillance and quality control of the masonry work.
 - c. Check brand and type of cement, lime (if used), and source of sand.
 - d. Ensure that foundation is clean, rough, and ready to receive units.
 - e. Observe field proportioning of mortar. Visually check aggregate to determine uniformity of grading, cleanliness, and moisture.
 - f. Ensure that joints are full of mortar and kept tight during work.
 - g. Ensure that masons keep the cavity between the brick veneer and the back-up material clean of mortar droppings and inspect to determine compliance.
 - h. Perform or supervise performance of required sampling and testing.
 - 2. Keep complete record of inspections. Report to the Contractor's Quality Control Representative the progress of the masonry inspection.
- B. Mock-up:
 - 1. Prior to starting construction of masonry, construct minimum 4-foot square mock-up.
 - 2. Use accepted materials, containing each different kind and color of brick masonry units to illustrate wall design.
 - 3. Show color range, texture range, bond, mortar color, joint tooling, critical design details and quality of workmanship.
 - 4. Masonry construction may not proceed until the Architect/Engineer approves mock-up.
 - 5. When not accepted, construct another mock-up.
 - 6. When accepted, mock-up will be standard of comparison for remainder of masonry work.
 - 7. Upon completion and acceptance of Project, dispose of mock-ups in legal manner at offsite location.
- C. Pre-installation Conference: Conduct as specified in Section [013119](#).

- D. Certification: Furnish manufacturer's certification that clay brick units provided meet or exceed the requirements of this specification.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units above ground to prevent contamination by mud, dust or other materials likely to cause staining or other defects.
- B. Cover and protect masonry units from inclement weather to maintain quality control and physical requirements.
- C. Transport and handle brick masonry units as required to prevent discoloration, chipping, and breakage.
- D. Locate storage piles, stacks, and bins to protect materials from heavy traffic.
- E. Remove chipped, cracked, and otherwise defective units from jobsite upon discovery.

1.06 PROJECT CONDITIONS

- A. Cold Weather Requirements:
 - 1. In accordance TMS 602 Section 1.8 C.
 - 2. Provide adequate equipment for heating masonry materials when air temperature is below 40 degrees Fahrenheit.
- B. Hot Weather Requirements:
 - 1. In accordance with TMS 602 Section 1.8 D.
 - 2. When ambient air temperature exceeds 100 degrees Fahrenheit, or when ambient air temperature exceeds 90 degrees Fahrenheit and wind velocity is greater than 8 miles per hour, implement hot weather protection procedures.
 - 3. Wet mortar board before loading and cover mortar to retard drying when not being used.
 - 4. Do not spread mortar beds more than 48 inches ahead of placing masonry units.
 - 5. Place masonry units within one minute of spreading mortar.
- C. Wetting of Brick: shall be required at the time of laying if the unit's initial rate of absorption (IRA) exceeds 30 grams per 30 square inches per minute or 1 g/ 645mm².

PART 2 PRODUCTS

2.01 FACE BRICK VENEER UNITS

- A. Manufacturers:
 - 1. Interstate Brick/HC Muddox: www.interstatebrick.com; www.hcmuddox.com
 - a. Sales Representative:
 - 1) Name
 - 2) Phone
 - 3) Email
- B. Type: ASTM C 216, Grade SW, Type FBX [FBS], with minimum gross compressive strength of 6000 psi. [Textured/tumbled brick: Type FBA]

- C. Surface Texture: **Matte** unless otherwise noted on drawings: (To be selected by Architect/**Engineer** from manufacturer's full range of available textures.)
- D. Colors:
 - 1. Color as selected by Architect/**Engineer** from available colors.
- E. Size: **__ inches wide by __ inches high by __ inches long**, unless otherwise **indicated on the Drawings.**
- F. Special Sizes and Shapes: As required for window and door soldier coursing and custom sills where indicated, corners, piers, lintels, control joints, and other special applications to minimize cutting.

2.02 MORTAR

Mortar shall comply ASTM C 270 and/or requirements of Section 04101

2.03 TIES AND ANCHORS

All ties and anchors shall be non-corrodible, or corrosion protected, and shall comply with the applicable local building codes. In the absence of local building codes comply with current adopted IBC or TMS 402.

PART 3 EXECUTION

3.01 PREPARATION

- A. Protect adjacent construction with appropriate means from mortar droppings and other effects of laying of brick masonry units.
- B. Thoroughly clean foundations of laitance, grease, oil, mud, dirt, mortar droppings, and other objectionable matter.

3.02 BRICK MASONRY UNITS

- A. Provide Custom Level of Quality in accordance with ASTM **C216**.
- B. Lay units in uniform and true courses, level, plumb, and without projections or offset of adjacent units, unless indicated in the drawings.
- C. Install units with full bed mortar joints. Install full vertical head joints for the thickness of units, and shove joints tightly together so that mortar bonds to both masonry units.
- D. Embed veneer ties for a minimum of 1½ in. into the mortar joints with at least 5/8 in. exterior cover. Ties shall be mill galvanized, hot dip galvanized or stainless steel.
- E. Maintain cavity space between the brick veneer and the backing clear of mortar droppings, debris, and other obstructions and materials.
- F. When positions of units shift after mortar has stiffened, bond is broken, or cracks are formed, relay units in new mortar.

3.03 MORTAR JOINTS

- A. Make joints straight, clean, smooth, and uniform in thickness.
- B. Tooling: Tool exposed joints when thumb print hard, slightly concave. Strike concealed joints flush.
- C. Joint Thickness: Make vertical and horizontal joints as required to achieve nominal dimensions on drawings and within tolerances listed in TMS 602 Section 3.3 F.
- D. Where fresh masonry joins totally or partially set masonry, clean and roughen set masonry before laying new units.

3.04 BOND PATTERN

- A. Lay brick masonry units in running bond pattern, unless otherwise **indicated on the Drawings**.

3.05 CUTTING BRICK MASONRY UNITS

- A. When possible, use full units of the proper size in lieu of cut units. Cut units as required to form chases, openings, for anchorage, and for other appurtenances.
- B. Cut and fit units with power-driven carborundum or diamond disc blade saw.

3.06 CONTROL JOINTS / EXPANSION JOINTS

- A. Provide in masonry joints where **indicated on the Drawings**.
- B. Make full height and continuous in appearance.
- C. Stop horizontal reinforcing at expansion joints
- D. Insert control joint filler in joints as wall is constructed.
- E. Insert 50% (minimum) compressible neoprene expansion joint material in expansion joints.
- F. Apply sealant as specified in Section 079000

3.07 OTHER EMBEDDED ITEMS

- A. Build in wall plugs, accessories, flashings, pipe sleeves, and other items required to be built-in as the masonry work progresses.

3.08 PATCHING

- A. Patch exposed brick masonry units at completion of the Work and in such manner that patching will be indistinguishable from similar surroundings and adjoining construction.

3.09 MISCELLANEOUS

- A. Build in required items, such as anchors, flashings, sleeves, frames, structural steel, lintels, anchor bolts, and metal fabrications, as required for complete installation.

3.10 WATER REPELLENT

- A. Apply water repellent as specified in Section 071900.

3.11 FIELD QUALITY CONTROL

- A. Employ and pay acceptable independent testing laboratory to perform installation inspections.
- B. Do not attach construction supports to masonry walls.

3.12 CLEANING

- A. Exercise extreme care to avoid damaging the brick and to prevent mortar spills and splotches.
- B. Wash off brick scum and mortar spills before they set, using least aggressive means and methods that produce acceptable results, and using products, equipment, materials, and methods, recommended by the brick manufacturer.
- C. Remove mortar stains from walls and clean installed masonry using the least aggressive products, equipment, means and/or methods that produce acceptable results by using products, materials, and methods, recommended by the brick manufacturer.
 - 1. Test proposed cleaning products, means, and methods in an inconspicuous area and receive approval prior to extending cleaning operations to the entire project.
- D. Remove scaffolding and equipment. Dispose of debris, refuse, and surplus material offsite legally.
- E. Remove efflorescence that occurs on exposed surfaces during construction activities with commercially prepared cleaning solution, from new unopened containers, using means and methods as recommended by the masonry unit manufacturer.
 - 1. Apply cleaning solution in strict accordance with cleaning solution manufacturer's printed instructions.
- F. Do not use straight muriatic acid or any other acid, diluted or undiluted, as a cleaning solution.
- G. Do not use abrasive blast cleaning equipment, materials, and/or methods to clean the brick.

3.13 PROTECTION

- A. Provide temporary protection for exposed masonry corners subject to damage.
- B. Bracing:
 - 1. Adequately brace masonry walls over 8 feet in height to prevent overturning and to prevent collapse unless wall is adequately supported by permanent supporting elements, so wall will not overturn or collapse.
 - 2. Keep bracing in place until permanent supporting elements of structure are in place.
- C. Limited Access Zone:

1. Establish limited access zone prior to start of masonry wall construction.
2. Zone shall be immediately adjacent to wall and equal to height of wall to be constructed plus 4 feet by entire length of wall on non-scaffolded side of wall.
3. Limit access to zone to workers actively engaged in constructing wall. Do not permit other persons to enter zone.
4. Keep zone in place until wall is adequately supported or braced by permanent supporting elements to prevent overturning and collapse.
5. Limit duration of vibration to time necessary to produce satisfactory consolidation without causing segregation.

END OF SECTION

INTERSTATE BRICK COMPANY

CLASSIFICATION: 04 21 00.00 Masonry (Facing Brick, Structural Brick, thin Brick): Clay Unit Masonry

created via: HPDC Online Builder

PRODUCT DESCRIPTION: THIS HEALTH PRODUCT DECLARATION COVERS ALL BRICK MANUFACTURED BY HC MUDDOX INCLUDING FACE BRICK, ATLAS™ STRUCTURAL BRICK, THIN BRICK AND PAVING BRICK. ALL PRODUCTS NOTED ARE MANUFACTURED USING THE SAME MATERIALS, MEANS AND METHODS FROM EXTRACTION TO PACKAGING.

Section 1: Summary

Nested Method / Material Threshold

CONTENT INVENTORY

Inventory Reporting Format

- Nested Materials Method
- Basic Method

Threshold Disclosed Per

- Material
- Product

Threshold level

- 100 ppm
- 1,000 ppm
- Per GHS SDS
- Per OSHA MSDS
- Other

Residuals/Impurities

Residuals/Impurities Considered in 1 of 1 Materials

Explanation(s) provided for Residuals/Impurities?

- Yes
- No

Are All Substances Above the Threshold Indicated:

Characterized
Percent Weight and Role Provided? Yes No

Screened
Using Priority Hazard Lists with Results Disclosed? Yes No

Identified
Name and Identifier Provided? Yes No

CONTENT IN DESCENDING ORDER OF QUANTITY

Summary of product contents and results from screening individual chemical substances against HPD Priority Hazard Lists and the GreenScreen for Safer Chemicals®. The HPD does not assess whether using or handling this product will expose individuals to its chemical substances or any health risk. Refer to Section 2 for further details.

MATERIAL | **SUBSTANCE** | *RESIDUAL OR IMPURITY*
GREENSCREEN SCORE | HAZARD TYPE

CLAY/SHALE ALUMINUM SILICATE [CHROMITE (CHROMITE) NoGS
MANGANESE DIOXIDE (MANGANESE DIOXIDE) LT-P1 | MAM BARIUM
CARBONATE (BARIUM CARBONATE) LT-P1 | MAM]

Number of Greenscreen BM-4/BM3 contents..... 0
Contents highest concern GreenScreen
Benchmark or List translator Score..... LT-P1
Nanomaterial..... No

INVENTORY AND SCREENING NOTES:

Residuals/Impurities Considered in 2 of 5 Materials

VOLATILE ORGANIC COMPOUND (VOC) CONTENT

VOC Content data is not applicable for this product category.

CERTIFICATIONS AND COMPLIANCE See Section 3 for additional listings.

VOC emissions: Emission Classification of Building Materials - M1

CONSISTENCY WITH OTHER PROGRAMS

No pre-checks completed or disclosed

Third Party Verified?

- Yes
- No

PREPARER: Self-Prepared

VERIFIER:

VERIFICATION #:

SCREENING DATE: 2017-11-02

PUBLISHED DATE: 2017-11-02

EXPIRY DATE: 2020-11-02

Section 2: Content in Descending Order of Quantity

This section lists contents in a product based on specific threshold(s) and reports detailed health information including hazards. This HPD uses the inventory method indicated above, which is one of three possible methods:

- Basic Inventory method with Product-level threshold.
- Nested Material Inventory method with Product-level threshold
- Nested Material Inventory method with individual Material-level thresholds

Definitions and requirements for the three inventory methods and requirements for each data field can be found in the HPD Open Standard version 2.1, available on the HPDC website at: www.hpd-collaborative.org/hpd-2-1-standard

CLAY/SHALE ALUMINUM SILICATE

%: 95.0000 - 100.0000

HPD URL:

MATERIAL THRESHOLD: 1000 ppm

RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Brick made from Clay or Shale is extracted from the ground and is fired to become a solid mass that does not offgas or leach out materials harmful to the environment or to people.

OTHER MATERIAL NOTES: Clay/Shale Aluminum Silicate is the main ingredient in manufacturing clay brick products and is one of the most readily available soil types on earth. The product is recyclable by grinding, reforming, firing and repackaging. Clay bricks used as facing material and paving materials are often removed and reused on new buildings. Crushed brick can be used as decorative landscaping materials.

CHROMITE (CHROMITE)

ID: 1308-31-2

%: 0.0000 - 3.0000

GS: NoGS

RC: None

NANO: No

ROLE: Chromite turns white brick to various ranges of grays.

HAZARDS:

AGENCY(IES) WITH WARNINGS:

None Found

No warnings found on HPD Priority lists

SUBSTANCE NOTES: Chromite turns white brick to various ranges of grays.

MANGANESE DIOXIDE (MANGANESE DIOXIDE)

ID: 1313-13-9

%: 0.0000 - 3.0000

GS: LT-P1

RC:

None

NANO:

No

ROLE: Used as Manganese Dioxide is a pigment added to the clay to make white brick transition to browns and blacks.

HAZARDS:

AGENCY(IES) WITH WARNINGS:

MAMMALIAN

EU - R-phrases

R20 - Harmful by Inhalation (gas or vapor or dust/mist)

MAMMALIAN

EU - R-phrases

R22 - Harmful if Swallowed

SUBSTANCE NOTES: Used as Manganese Dioxide is a pigment added to the clay to make white brick transition to browns and blacks.

BARIUM CARBONATE (BARIUM CARBONATE)

ID: 513-77-9

%: 0.0000 - 3.0000

GS: LT-P1

RC:

None

NANO:

No

ROLE: Barium Carbonate is used to tie up soluble salts inherent in clays that create efflorescence and scum.

HAZARDS:

AGENCY(IES) WITH WARNINGS:

SUBSTANCE NOTES: Barium Carbonate is used to tie up soluble salts inherent in clays that create efflorescence and scum.

Section 3: Certifications and Compliance

This section lists applicable certification and standards compliance information for VOC emissions and VOC content. Other types of health or environmental performance testing or certifications completed for the product may be provided.

VOC EMISSIONS

Emission Classification of Building Materials - M1

CERTIFYING PARTY: Self-declared	ISSUE DATE: 2017-11-	EXPIRY DATE:	CERTIFIER OR LAB: Jeff Elder
APPLICABLE FACILITIES: It is generally recognized that brick gives off no voc emissions.	02		
CERTIFICATE URL:			
CERTIFICATION AND COMPLIANCE NOTES:			

Section 4: Accessories

This section lists related products or materials that the manufacturer requires or recommends for installation (such as adhesives or fasteners), maintenance, cleaning, or operations. For information relating to the contents of these related products, refer to their applicable Health Product Declarations, if available.

MORTAR

HPD URL: **NO HPD AVAILABLE**

CONDITION WHEN RECOMMENDED OR REQUIRED AND/OR OTHER NOTES:

Mortars comprised of cementitious materials, and/or lime and fine aggregates are blended with water to create a bonding material which holds the brick apart and together, transfers loads from gravity, and dynamic forces such as wind, earthquake, fire and also helps prevents water migration through the envelop.

Section 5: General Notes

HC Muddox Brick do not contain Volatile Organic Compounds (VOC's). HC Muddox Brick's beautiful exterior finish make them the perfect replacement for painted interior finishes thus eliminating off gases commonly associated with paints and other coatings. In addition, brick's durability, and dense surface resist the abuse commonly associated with other materials which eliminates the need to reapply VOC containing paints and coatings multiple times over the course of a building life. Brick are easily cleaned using compliant detergents and water.

Section 6: References

MANUFACTURER INFORMATION

MANUFACTURER: **Interstate Brick**
ADDRESS: **H.C. Muddox Toll Free (800) 776-1244 Main**
(916) 859-6320
4875 Bradshaw Road
Sacramento CA 95827, United States
WEBSITE: **www.hcmuddox.com**

CONTACT NAME: **Jeffrey L Elder**
TITLE: **General Sales Manager**
PHONE: **8012805200**
EMAIL: **jeff.elder@interstatebrick.com**

KEY

OSHA MSDS Occupational Safety and Health Administration Material Safety Data Sheet
GHS SDS Globally Harmonized System of Classification and Labeling of Chemicals Safety Data Sheet

Hazard Types

AQU Aquatic toxicity	GLO Global warming	PHY Physical Hazard (reactive)
CAN Cancer	MAM Mammalian/systemic/organ toxicity	REP Reproductive toxicity
DEV Developmental toxicity	MUL Multiple hazards	RES Respiratory sensitization
END Endocrine activity	NEU Neurotoxicity	SKI Skin sensitization/irritation/corrosivity
EYE Eye irritation/corrosivity	OZO Ozone depletion	LAN Land Toxicity
GEN Gene mutation	PBT Persistent Bioaccumulative Toxic	NF Not found on Priority Hazard Lists

GreenScreen (GS)

BM-4 Benchmark 4 (prefer-safer chemical)	LT-P1 List Translator Possible Benchmark 1
BM-3 Benchmark 3 (use but still opportunity for improvement)	LT-1 List Translator Likely Benchmark 1
BM-2 Benchmark 2 (use but search for safer substitutes)	LT-UNK List Translator Benchmark Unknown (insufficient information from List Translator lists to benchmark)
BM-1 Benchmark 1 (avoid - chemical of high concern)	NoGS Unknown (no data on List Translator Lists)
BM-U Benchmark Unspecified (insufficient data to benchmark)	

Recycled Types

PreC Preconsumer (Post-Industrial)
PostC Postconsumer
Both Both Preconsumer and Postconsumer
Unk Inclusion of recycled content is unknown
None Does not include recycled content

Other Terms

Inventory Methods:

Nested Method / Material Threshold Substances listed within each material per threshold indicated per material
Nested Method / Product Threshold Substances listed within each material per threshold indicated per product
Basic Method / Product Threshold Substances listed individually per threshold indicated per product

Nano Composed of nano scale particles or nanotechnology
Third Party Verified Verification by independent certifier approved by HPDC
Preparer Third party preparer, if not self-prepared by manufacturer
Applicable facilities Manufacturing sites to which testing applies

The Health Product Declaration (HPD) Open Standard provides for the disclosure of product contents and potential associated human and environmental health hazards. Hazard associations are based on the HPD Priority Hazard Lists, the GreenScreen List Translator™, and when available, full GreenScreen® assessments. The HPD Open Standard v2.1 is not:

- a method for the assessment of exposure or risk associated with product handling or use,
- a method for assessing potential health impacts of: (i) substances used or created during the manufacturing process or (ii) substances created

after the product is delivered for end use.

Information about life cycle, exposure and/or risk assessments performed on the product may be reported by the manufacturer in appropriate Notes sections, and/or, where applicable, in the Certifications section.

The HPD Open Standard was created and is supported by the Health Product Declaration Collaborative (the HPD Collaborative), a customer-led organization composed of stakeholders throughout the building industry that is committed to the continuous improvement of building products through transparency, openness, and innovation throughout the product supply chain.

The product manufacturer and any applicable independent verifier are solely responsible for the accuracy of statements and claims made in this HPD and for compliance with the HPD standard noted.