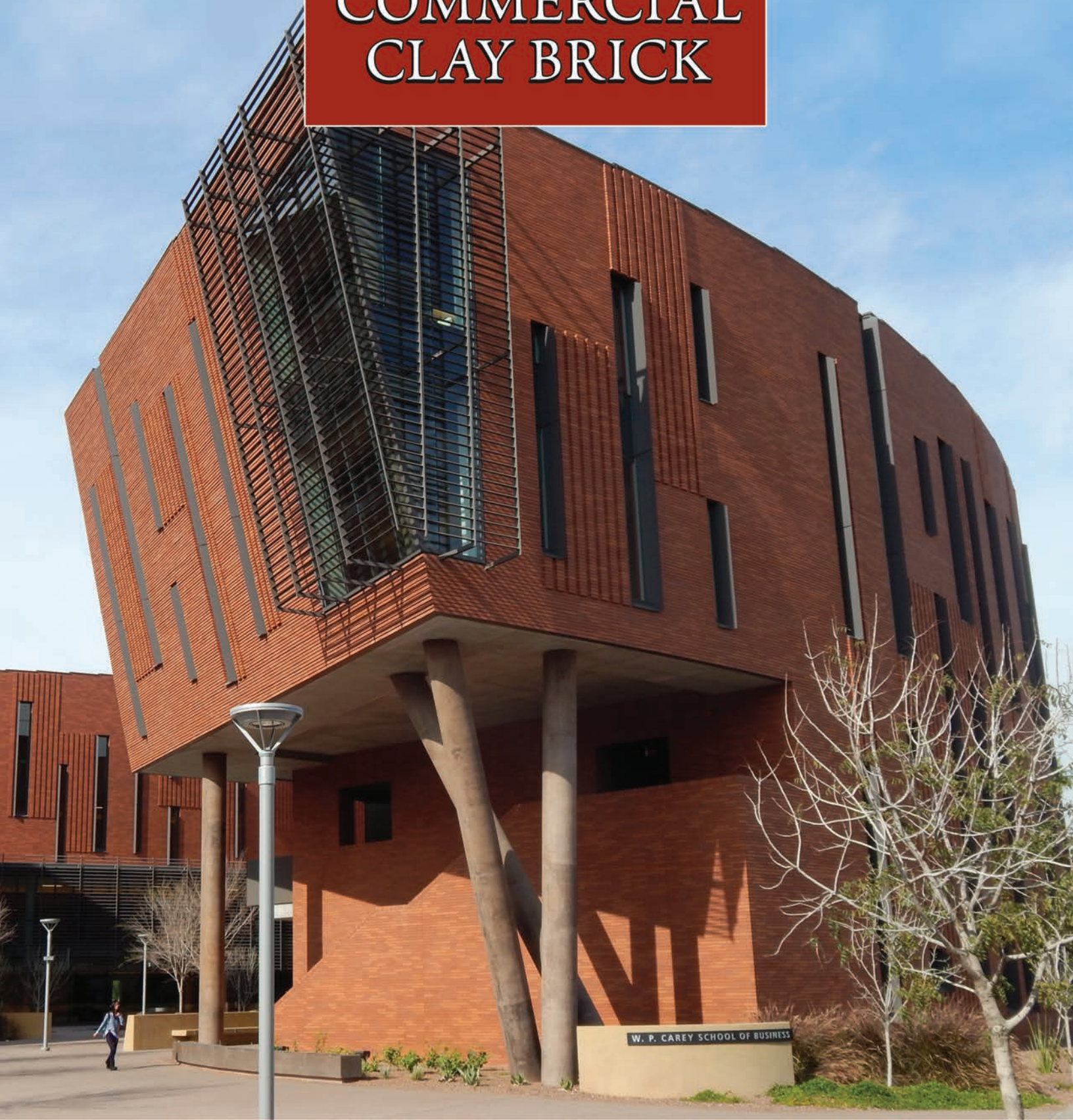




H.C. MUDDOX

Structural Brick | Face Brick | Thin Brick | Pavers

COMMERCIAL CLAY BRICK



W. P. CAREY SCHOOL OF BUSINESS

www.hcmuddox.com



Project: 7th & H Street Housing Community
Product: Jumbo Face Brick shown in Summer Wheat and Ebony



Founded in 1878, H.C. Muddox has taken its vast, rich clay reserves and created some of California’s most historic structures. This time-honored craftsmanship and expertise handed down from generations, combined with modern technology, has produced exceptional clay brick products that are durable, beautiful and timeless.

H.C. MUDDOX OUR APPROACH

SERVICE

Our long history and reputation is the result of working hand-in-hand with our customers every step of the way. If you have a question, we can answer it. If you need help, we can provide it. We are here to ensure a seamless and professional project from start to finish.

QUALITY

H.C. Muddox brick products are manufactured to exceptional aesthetic and physical qualities to withstand the forces of nature such as freeze-thaw, wind and earthquake. Our manufacturing process and quality control methods produce a beautiful and durable brick product that will enhance the beauty and appeal of any building.

PRODUCTS

Our product offerings include structural brick, face brick, thin brick, pavers, pool copings, flue liners and a variety of special shapes. The versatility of our product line and our expertise will guide you through the process of design, selection and application.

SUSTAINABILITY

H.C. Muddox brick products promote sustainable building practices through durability, low maintenance, better air quality, thermal comfort and energy efficiency. We practice responsible sourcing and manufacturing such as local sourcing, reclamation, recycling, use of natural gas, etc. just to name a few. When building with our brick you can be assured that you build for generations to come.

Cover Project: Arizona State University
Product: Norman Smooth Face Brick shown in 50% Mission,
30% California Rose and 20% Mountain Rose

CONTENTS

INTRODUCTION

Our Approach 2

FEATURED PROJECTS

Arizona State University 3
UOP Technology Center 4
Cosumnes River College 5
San Joaquin County Hospital 6
Lincoln Crossing 7
Butte County Court House 8
Vacaville Intermodal 9
CSU Chico 10

STRUCTURAL BRICK

Specifications 12

FACE BRICK

Specifications 14

THIN BRICK

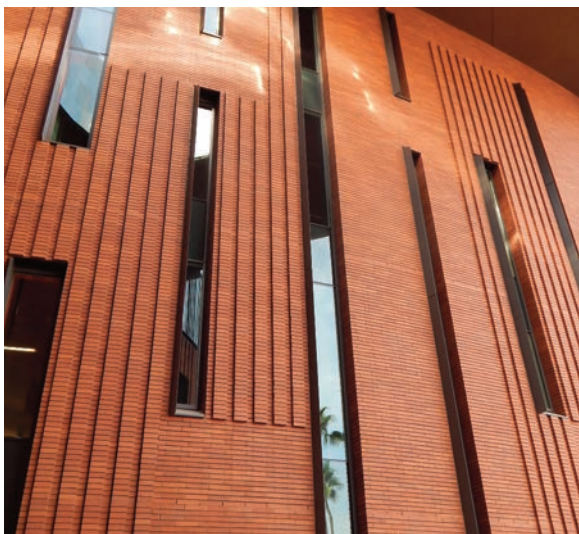
Specifications 16

COLORS

Structural, Face and Thin Brick 17

CLAY & BULLNOSE PAVERS

Specifications 20
Colors 21



ARIZONA STATE UNIVERSITY MCCORD HALL TEMPE, ARIZONA

Special shapes and large size brick from H.C. Muddox was critical to create the modern design through unique angles and curves while the color blend harmonizes the surroundings of the campus.

PRODUCT: 3 x 2-1/2 x 11-1/2 Norman Smooth Face Brick

COLOR: Blend of Mission, California Rose and Mountain Rose

ARCHITECT: Kohn, Pedersen, Fox Associates and RSP Architects

LEED CERTIFICATION: LEED New Construction Gold

AWARDS: 2014 Red Award For Best Public Project



UOP JOHN T. CHAMBERS TECHNOLOGY CENTER STOCKTON, CALIFORNIA

The use of H.C. Muddox brick at the University of Pacific attributes to the durability and longevity of our brick and its ability to retain the brick motif of the campus.

PRODUCT: 3-5/8 x 2-1/4 x 7-5/8 Modular Smooth Face Brick

COLOR: Blend of Mission, Old Town Red and Mission Hills

ARCHITECT: Perkins + Will

LEED CERTIFICATION: LEED New Construction Gold





MOUNTAIN VIEW FIRE STATION MOUNTAIN VIEW, CALIFORNIA

The use of H.C. Muddox brick with a tower element helped the architect to create a look traditional to fire stations and design a sustainable building, all while making the staff feel at home in this essential facility.

PRODUCT: 3-5/8 x 2-1/4 x 7-5/8 Modular Face Brick

COLOR: Blend of Old Town Red, Mission and Monterey Bay Flash

ARCHITECT: BSA Architects

LEED CERTIFICATION: LEED New Construction Gold

AWARDS: F.I.E.R.O Honor Award for Design Excellence





SAN JOAQUIN COUNTY HOSPITAL STOCKTON, CALIFORNIA

The earth tone colors from the H.C. Muddox color pallet harmonizes with the agricultural area where San Joaquin County Hospital is located and the brick design in argyle and accent band patterns introduce architectural distinctiveness to the building.

PRODUCT: 3-5/8 x 2-1/4 x 7-5/8 and 3-5/8 x 2-1/2 x 11-1/2 Face Brick

COLOR: Tumbleweed and Frosted Almond

ARCHITECT: Marraccini and Patterson





LINCOLN CROSSING LINCOLN, CALIFORNIA

Situated at the entry-way to Downtown Lincoln this mixed-use project celebrates the historic old town aspect of the city while using modern brick application with H.C. Muddox thin brick. The three color brick blend helps to attain the historic look for this urban development.

PRODUCT: 1/2 x 2-1/2 x 8 Thin Brick

COLOR: Blend of Frosted Almond, Summer Wheat and Dusty Rose

ARCHITECT: RRM design





BUTTE COUNTY COURT HOUSE CHICO, CALIFORNIA

H.C. Muddox brick colors used in the new Butte County Courthouse reflects the rich and distinctive culture of Chico. Our ability to manufacture structural and face brick in the same colors was critical to the design of this modern courthouse that would make lasting contribution to this community. This building also features Terra Cotta from our sister company Gladding McBean.

PRODUCT: 3 x 2-1/2 x 11-1/2 Face Brick and 8 x 4 x 12 Structural Brick

COLOR: Frosted Almond and Mountain Rose

ARCHITECT: Tate Snyder Kinsey Architects





VACAVILLE INTERMODAL TRANSIT CENTER VACAVILLE, CALIFORNIA

H.C. Muddox true pavers over a flexible sand setting bed are used for pedestrian traffic at Vacaville Intermodal Transit Facility. The paver blend offers a vibrant and timeless walking surface for transit users with minimum maintenance for many years to come.

PRODUCT: 2-1/2 x 2-1/2 x 8 Paver

COLOR: Blend of Mountain Rose, Dusty Rose and Spanish Moss

ARCHITECT: Indigo Architects and Hammond and Playa Associates





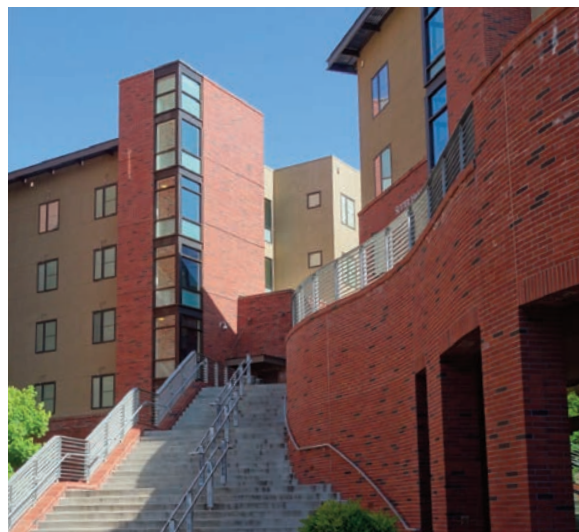
CSU CHICO CHICO, CALIFORNIA

The architect designed the Student Housing at CSU Chico with face brick for the walls and pavers for the plaza in similar color range to complement the existing buildings in the campus. The consistent and ageless colors from H.C. Muddox help to celebrate the architectural theme of the oldest California State University.

PRODUCT: 3-5/8 x 2-1/4 x 11-5/8 Face Brick and 4 x 2-1/4 x 8 True Paver

COLOR: Face Brick shown in blend of Old Town Red, Mountain Rose and Ebony. Paver shown in blend of Old Town Red and Mountain Rose.

ARCHITECT: A C Martin



FPO
For Placement Only



Project Name: Whole Foods - San Jose, CA
Product: Structural shown in color?



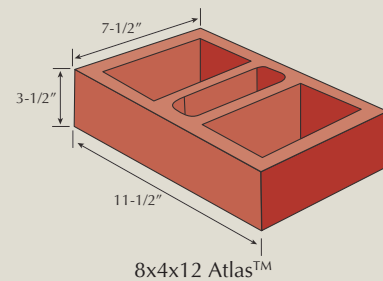
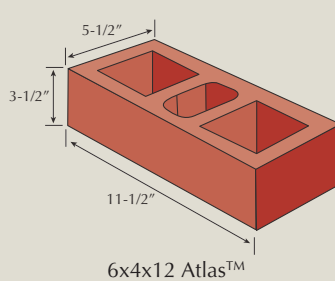
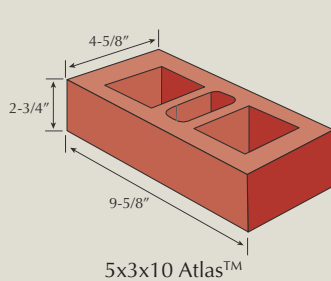
FPO
For Placement Only

STRUCTURAL BRICK

H.C. Muddox structural brick offer the natural aesthetics and load resisting capacities of brick walls. This brick is designed to be reinforced for excellent earthquake and wind resisting capacities and would help in achieving energy efficient buildings through thermal mass and resistance to water and air intrusion. Structural brick walls offer the highest fire ratings and sound transmission (STC) ratings along with low maintenance that is inherent to brick walls.

SPECIFICATIONS

H.C. Muddox Structural Brick meets or exceeds ASTM C-52 HBS SW or FBX.





Project: Sacred Heart Parish School - Sacramento, CA
Product: Smooth Norman Face Brick shown in Monterey Bay Flashed with 10% Clinker



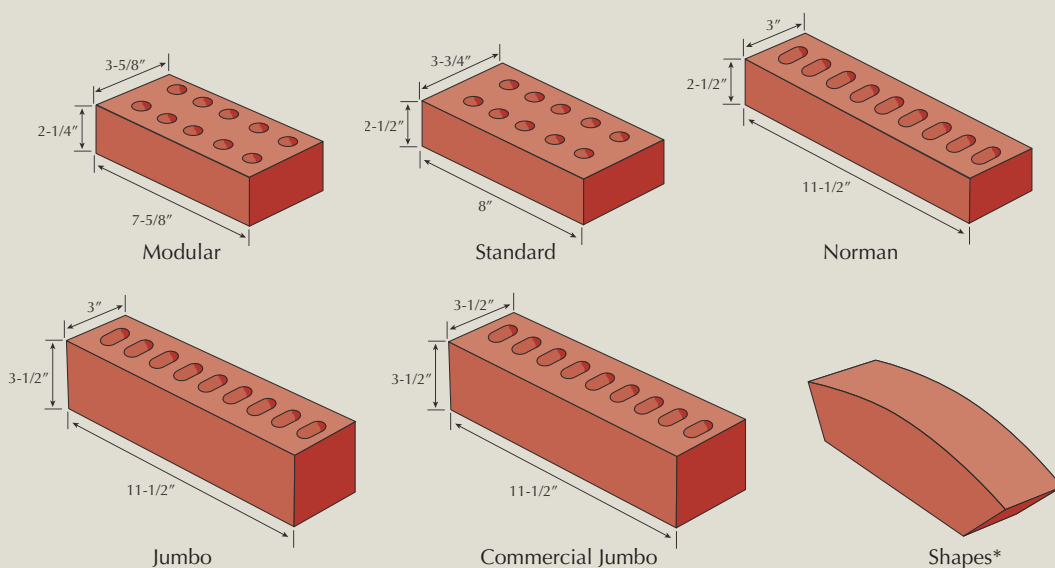
FACE BRICK

H.C. Muddox Face Brick offers a range of veneer brick options from modular to jumbo sizes in vibrant colors and textures. Buildings constructed with our face brick offer superior performance in energy efficiency, maintenance and moisture resistance. Proper design and detailing of rain screen brick veneer walls along with continuous insulation reduces thermal bridging and moisture infiltration to create long lasting energy efficient buildings.

SPECIFICATIONS

H.C. Muddox Face Brick meets or exceeds ASTM-216 FBS SW or FBX.

*A variety of shapes are available please contact your H.C. Muddox representative.





FPO

For Placement Only

Project: Shops at Tralee, Dublin, CA
Product: Thin Brick shown in Folsom Gold and Monterey Bay Flashed Smooth

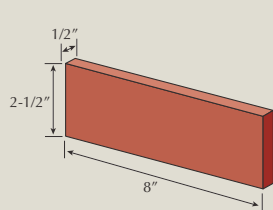


THIN BRICK

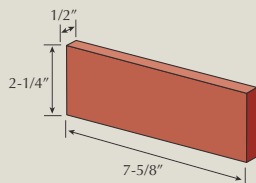
H.C. Muddox Thin Brick is a simplified and economical solution to designers and owners that want to achieve the aesthetics of brick, especially as a light weight brick option in high seismic areas. Thin brick offers qualities such as beauty, durability, and low maintenance that are inherent to the brick. Thin brick can be applied to many backup systems such as framed wall, GFRC, metal panels, CMU and concrete. Thin brick embedded in precast concrete is an effective solution for time sensitive project schedules. Thin brick is extensively used in a variety of interior applications such as stores, malls, restaurants and wine cellars.

SPECIFICATIONS

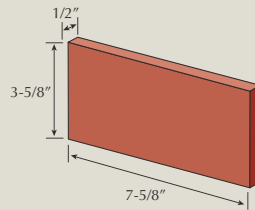
Thin brick thickness varies - 1/2" thickness for wirecut and 5/8" thickness for smooth textures.
 H.C. Muddox Thin Brick meets or exceeds ASTM-C1088 Type TBS or TBX.



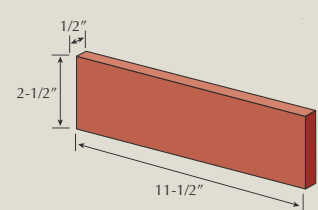
Thin Brick Standard



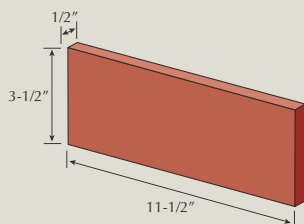
Thin Brick Mini Mod



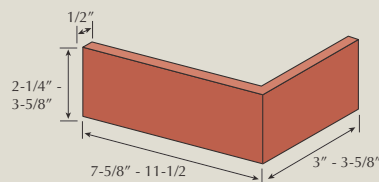
Thin Brick Modular



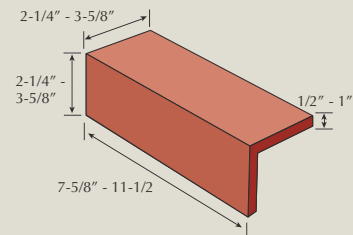
Thin Brick Norman



Jumbo Thin Brick



90° Corner Thin Brick



Lintel Corner Thin Brick

STRUCTURAL, FACE & THIN BRICK COLORS



Frosted Almond



Tule Fog



Dusty Rose



Sutter Gold



Tumbleweed



California Rose



Summer Wheat



Spanish Moss



Mission Hills



Autumn Wheat



Sierra Slate



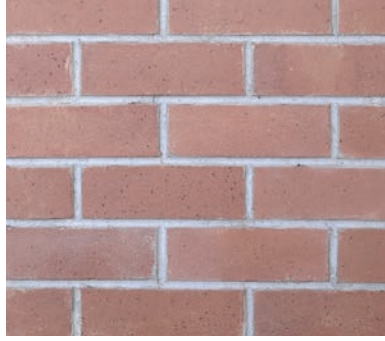
Ebony

NOTE: Printed colors shown in this brochure may vary from actual product colors. We recommend selecting colors from actual product samples. Custom colors are available by special order - please contact your local dealer.

STRUCTURAL, FACE & THIN BRICK COLORS



Mountain Rose



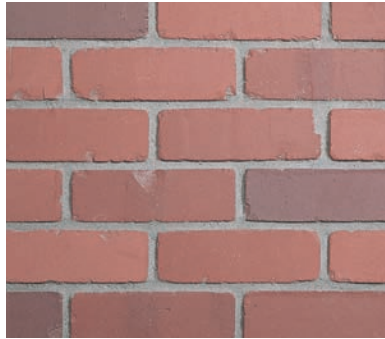
Bronze Ridge



Monterey Bay Flashed



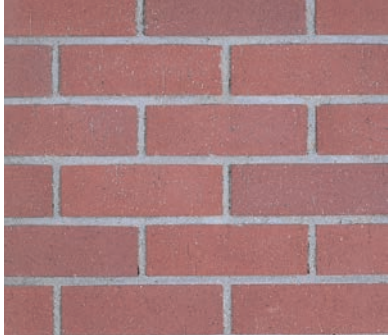
Mission Common



Old Sacramento Blend



Iron Spot



Old Town Red



Burnt Rose



Iron Mountain



Common Select



Railroad Blend



Carob



Project:
Product:

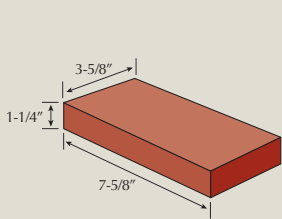


CLAY & BULLNOSE PAVERS

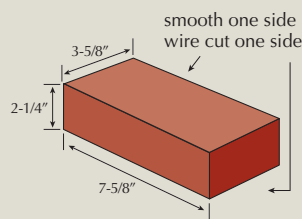
H.C. Muddox brick pavers offers a wide range of vibrant colors and sizes for pedestrian and vehicular traffic in both rigid and flexible base applications. No other paving material can match the durability and beauty of our pavers in driveways, patios, plazas and other landscaping applications. We offer bullnose pavers for pool edges, courtyard walls and stair treads.

SPECIFICATIONS

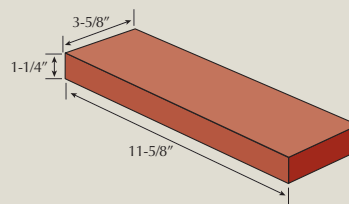
All of our pavers meet ASTM C902 MX Type I.



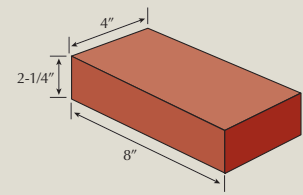
Wire Cut Split Paver



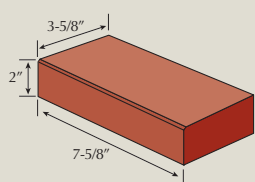
Smooth Backup Paver



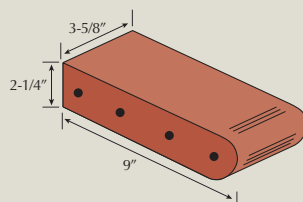
Wire Cut Roman Paver



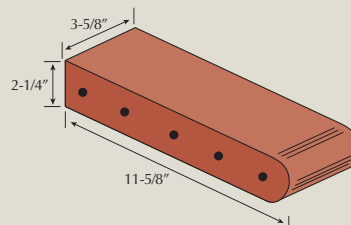
Wire Cut True Paver



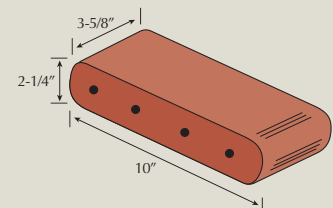
Smooth Radius Paver



Smooth 9 Inch Bullnose Paver



Smooth 11-1/2 Inch Bullnose Paver



Smooth 10 inch Double Bullnose Paver

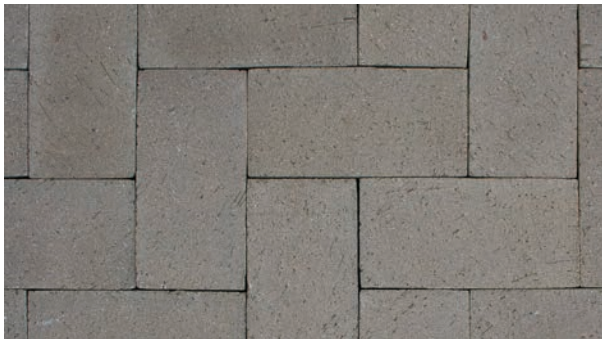
CLAY & BULLNOSE PAVER COLORS



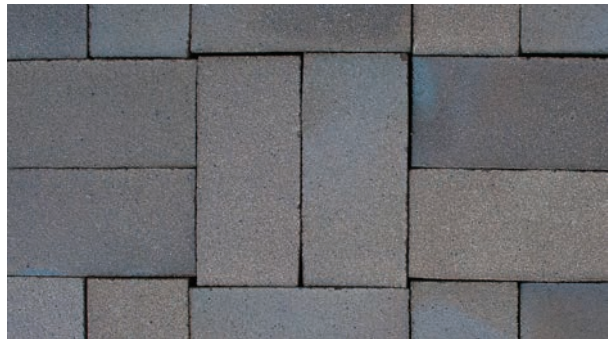
Tumbleweed



Dusty Rose



Spanish Moss



Iron Mountain



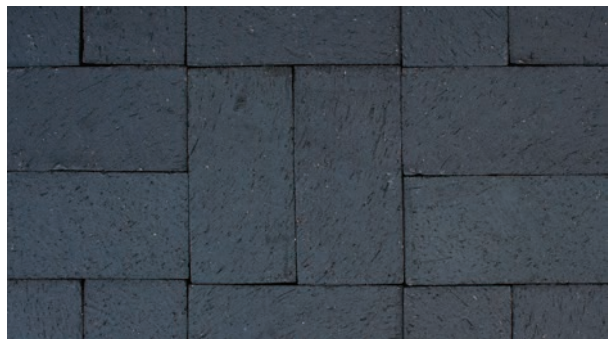
Summer Wheat



Bronze Ridge



Carob



Ebony

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CLAY & BULLNOSE PAVER COLORS



Burnt Rose



Mission



Monterey Bay Flashed



Old Town Red



Mission Antique



Mountain Rose



Placer Antique

Visit Us Online

For more information about clay pavers, face brick, thin brick, fireplace products or installation instructions, visit us online at hcmuddox.com.

Offered by:



**H.C. MUDDOX
INTERSTATE® BRICK**

H.C. MUDDOX
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Sacramento, CA 95827
800-776-1244

INTERSTATE BRICK
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www.hcmuddox.com
www.interstatebrick.com



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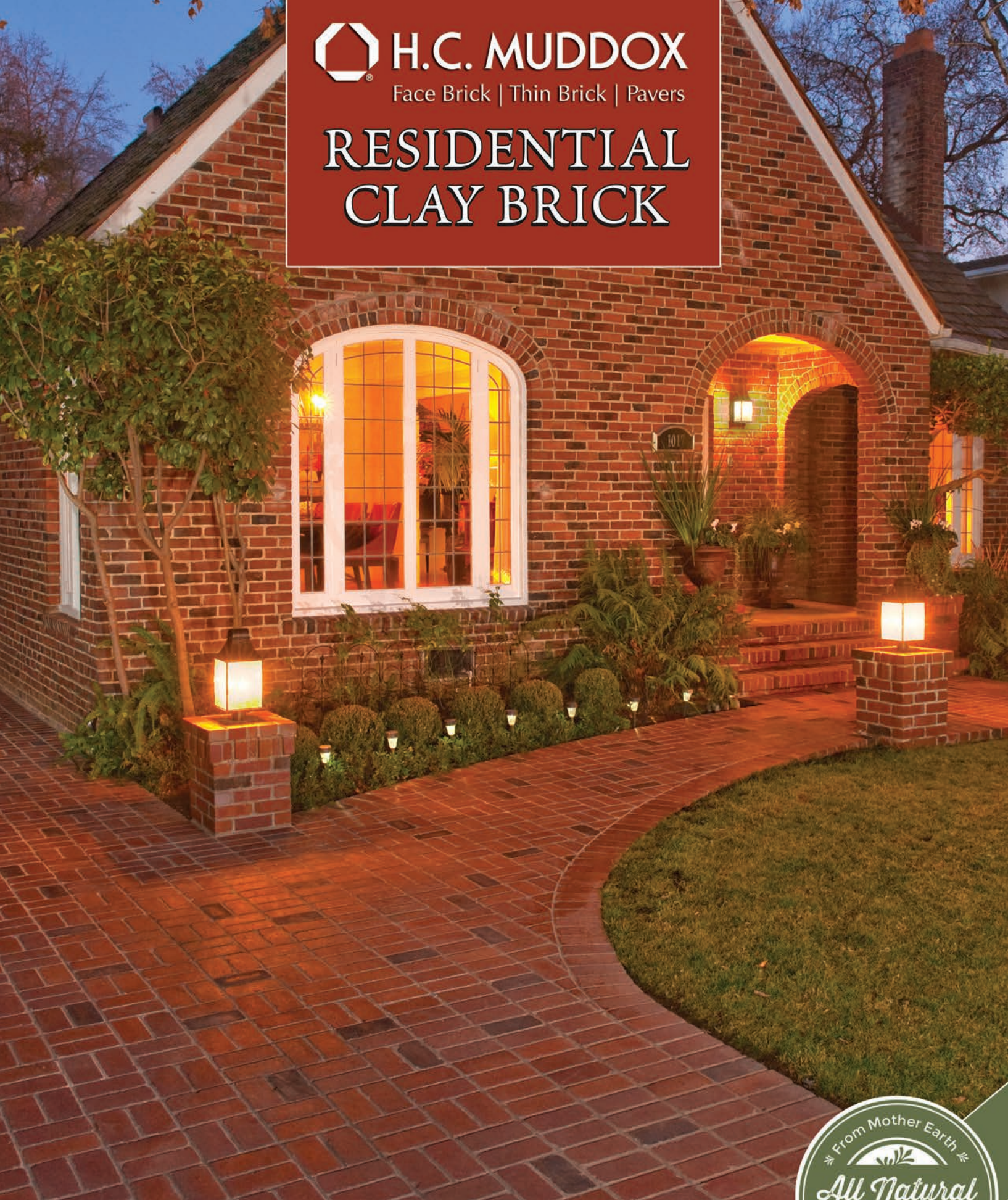
HC002 OP 10,000 2/25/14



H.C. MUDDOX

Face Brick | Thin Brick | Pavers

RESIDENTIAL CLAY BRICK



www.hcmuddox.com





Photo shown. Face Brick in Common Select



CLAY BRICK THE NATURAL CHOICE

ALL NATURAL

Incorporating elements as natural as the Earth itself. H.C. Muddox brick is made from 100% genuine clay, manufactured using a highly sustainable process.

DESIGN FLEXIBILITY

Create unique details and architectural effects in patios, driveways, walkways, walls, fireplaces, entryways and windows.

ENERGY-EFFICIENT

Not only is clay brick a green material, but brick structures have a greater energy efficiency than structures built with other materials, providing long-term energy conservation and savings.

NEVER FADES

H.C. Muddox brick is 100% genuine fired clay. Because they are all natural their true colors will never fade.

LONG LIFE

Clay brick has a long lifecycle, is fire proof, pest resistant and offers timeless beauty with virtually no maintenance.



Founded in 1878, H.C. Muddox has taken its vast, rich clay reserves and created some of California's most historic structures. This time-honored craftsmanship and expertise handed down from generations, combined with modern technology, has produced exceptional clay brick products that are durable, beautiful and timeless.

CONTENTS

INTRODUCTION

The Natural Choice 2

THIN & FACE BRICK VENEER

Specifications 3

Colors 4

CLAY & BULLNOSE PAVERS

Specifications 5

Colors 6

CRAFTSMAN LANDSCAPE SERIES

Specifications 7

Colors 8

FIREPLACE PRODUCTS

Specifications 9

Colors 10

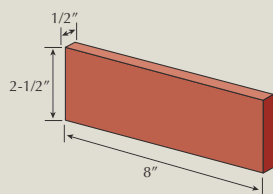


THIN & FACE BRICK VEENER

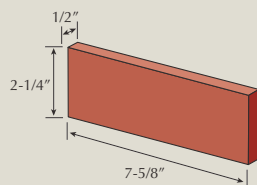
No masonry product compares to the romance, warmth and authenticity of brick. From old world glamour to modern sophisticated flair, H.C. Muddox Thin & Face Brick Veener is versatile, durable and complements limitless design styles. Our brick is available in a variety of beautiful color blends and textures, perfect for any indoor or outdoor application.

SPECIFICATIONS

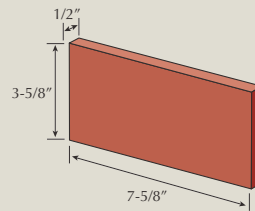
Please contact your local authorized H.C. Muddox distributor for size and color availability. Thin brick thickness varies - 1/2" thickness for wirecut and 5/8" thickness for smooth textures. Muddox Thin Brick meets or exceeds ASTM-C1088 Type TBS or TBX.



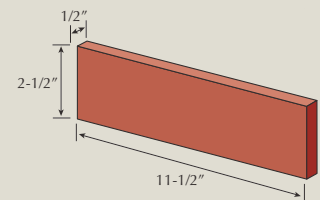
Thin Brick Standard



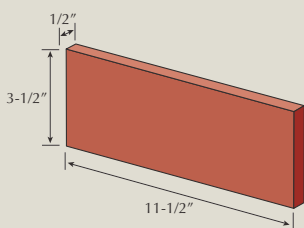
Thin Brick Mini Mod



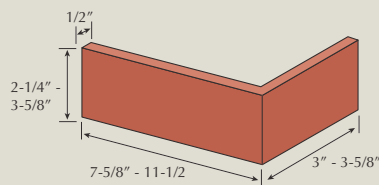
Thin Brick Modular



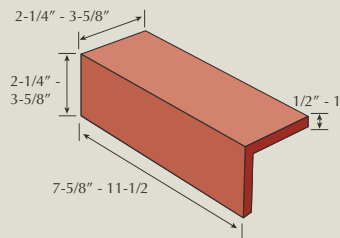
Thin Brick Norman



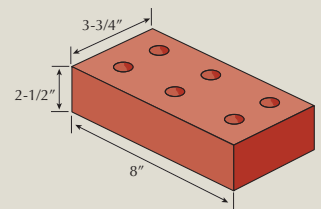
Jumbo Thin Brick



90° Corner Thin Brick



Lintel Corner Thin Brick



Face Brick Standard

Photo above: Thin Brick and Face Brick in Redwood

COLORS



California Handmold



Canterbury



Coventry



English Rose



French Oak



Stonehenge



Mission Common



Eldorado



Mendocino



Old Sacramento Blend



Placer Antique



Sacramentan



Redwood



Klinker



Monterey Bay Flashed



Folsom Gold



Northwest Used



Carquinez Antique



Mission Antique



Chardel Blend



Railroad Blend



Common Select

NOTE: Not all colors and sizes are in stock. Please call your H.C. Muddox representative or distributor for pricing and availability. Printed colors shown in this brochure may vary from actual product colors. We recommend selecting colors from actual product samples. Custom colors are available by special order - please contact your local dealer.

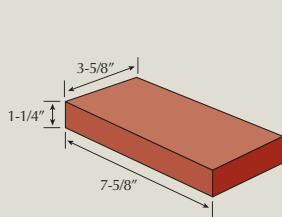


CLAY & BULLNOSE PAVERS

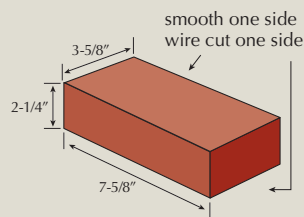
Create a graceful, curving pathway, stately driveway or relaxing patio with unique Clay Pavers; or surround a pool, cap a garden wall or grace a staircase with elegant Bullnose Pavers. With a range of colors, patterns and textures for you to choose from, H.C. Muddox offers you durable and stylish pavers to complement any outdoor landscape.

SPECIFICATIONS

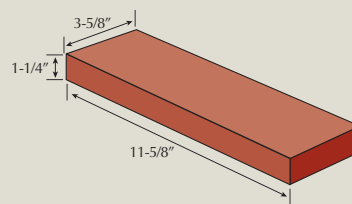
All of our pavers meet ASTM C902 MX Type I.



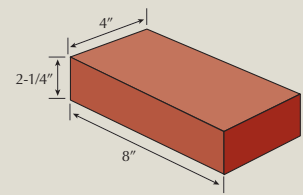
Wire Cut Split Paver



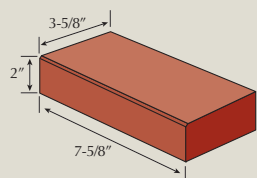
Smooth Backup Paver



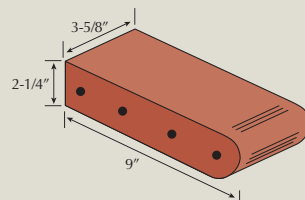
Wire Cut Roman Paver



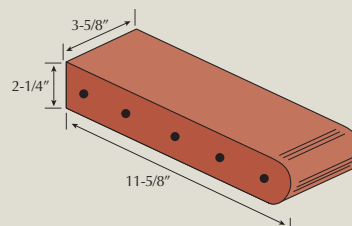
Wire Cut True Paver



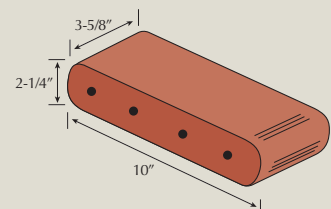
Smooth Radius Paver



Smooth 9 Inch Bullnose Paver



Smooth 11-1/2 Inch Bullnose Paver



Smooth 10 inch Double Bullnose Paver

Photo above: Clay and Bullnose Pavers in Old Town Red Smooth

COLORS



Iron Mountain



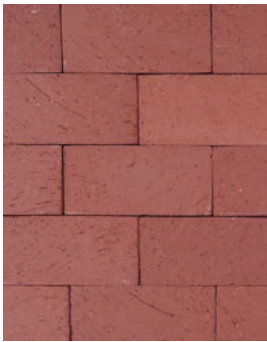
Bronze Ridge



Dusty Rose



Mountain Rose



Mission Common



Old Town Red



Spanish Moss



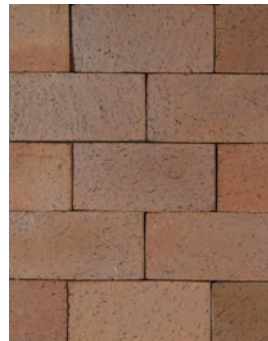
Carob



Ebony



Monterey Bay Flashed



Iron Spot



Tumbleweed



Mission Antique



Placer Antique



Summer Wheat

NOTE: Printed colors shown in this brochure may vary from actual product colors. We recommend selecting colors from actual product samples. Custom colors are available by special order - please contact your local dealer.

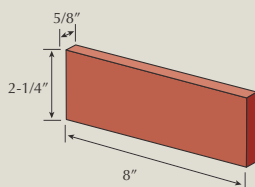




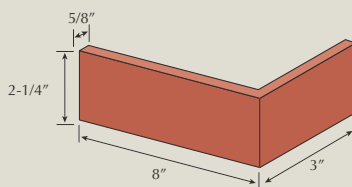
CRAFTSMAN LANDSCAPE SERIES

Create your own outdoor oasis with the Craftsman Landscape Series from H.C. Muddox. Each Craftsman brick is green tumbled, capturing the old world charm of European cobblestone. This versatile brick collection can be built vertically as a wall, or used as a paver to create elegant walkways or patios.

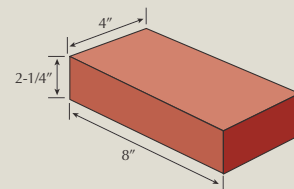
SPECIFICATIONS



Thin Brick
(for use as adhered veneer
on walls only.)



90° Corner Thin Brick
(for use as adhered veneer
on walls only.)



Paver/Face Brick
(for use as paver or as
face brick on walls.)

Photo above: Craftsman Paver/Face Brick in Aztec with Midnight Smoke accents

COLORS



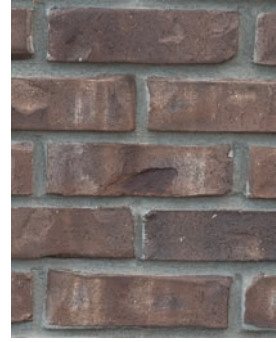
Aztec
(shown in Paver Brick)



Aztec
(shown in Wall Brick)



Midnight Smoke
(shown in Paver Brick)



Midnight Smoke
(shown in Wall Brick)



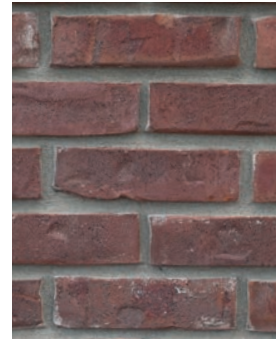
Tucson
(shown in Paver Brick)



Tucson
(shown in Wall Brick)



Meritage
(shown in Paver Brick)



Meritage
(shown in Wall Brick)



Copper Hill
(shown in Paver Brick)



Copper Hill
(shown in Wall Brick)



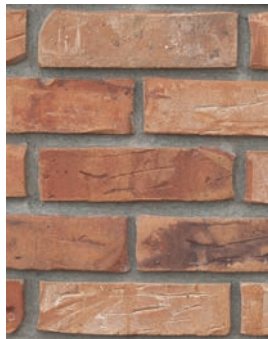
Ember
(shown in Paver Brick)



Ember
(shown in Wall Brick)



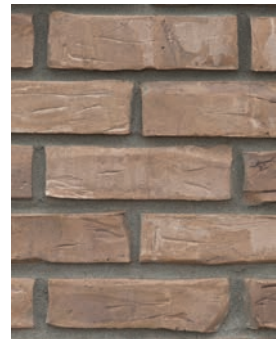
Cappuccino
(shown in Paver Brick)



Cappuccino
(shown in Wall Brick)



Aspen Grove
(shown in Paver Brick)



Aspen Grove
(shown in Wall Brick)

NOTE: Printed colors shown in this brochure may vary from actual product colors. We recommend selecting colors from actual product samples. Custom colors are available by special order - please contact your local dealer.

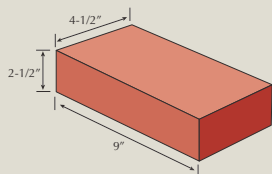


FIREPLACE PRODUCTS

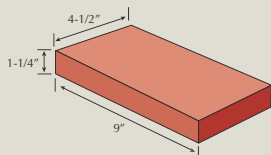
H.C. Muddox offers a selection of flue liners and fire brick products for masonry fireplaces, barbeques and outdoor firepits. Complete your look with our beautiful Face or Thin Brick for the ultimate dramatic appeal.

SPECIFICATIONS

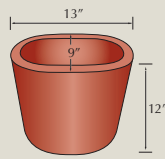
Our Fire Brick conforms to ASTM C1261. All measurements shown are outside diameter. Flue liners are available in natural buff color only.



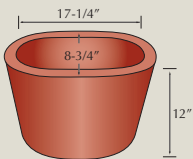
Fire Brick



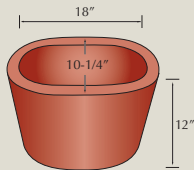
Fire Brick Split



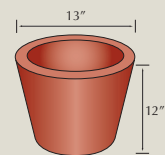
8 x 13 Oval Flue Liner



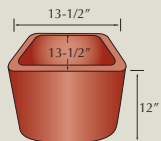
8 x 17 Oval Flue Liner



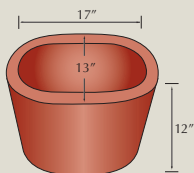
10 x 17 Oval Flue Liner



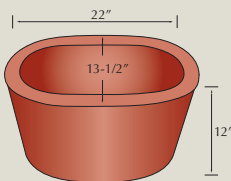
12-3/4" Round Flue Liner



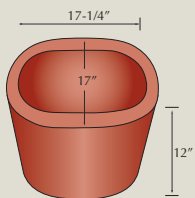
13 x 13 Square Flue Liner



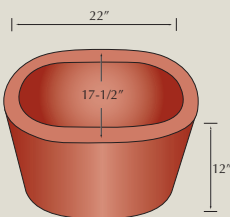
13 x 17 Oval Flue Liner



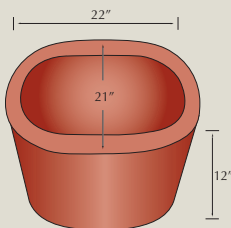
13 x 21 Oval Flue Liner



17 x 17 Oval Flue Liner



17 x 21 Oval Flue Liner



21 x 21 Oval Flue Liner

FIRE BRICK COLORS



Ebony



Mountain Rose



Tumble Weed



Sutter Gold

NOTE: Printed colors shown in this brochure may vary from actual product colors. We recommend selecting colors from actual product samples. Custom colors are available by special order - please contact your local dealer.

Visit Us Online

For more information about clay pavers, face brick, thin brick, fireplace products or installation instructions, visit us online at hcmuddox.com.

Offered by:



H.C. MUDDOX
4875 Bradshaw Road
Sacramento, CA 95827
800-776-1244

INTERSTATE BRICK
9780 South 5200 West
West Jordan, UT 84088
800-233-8654

www.hcmuddox.com
www.interstatebrick.com

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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:

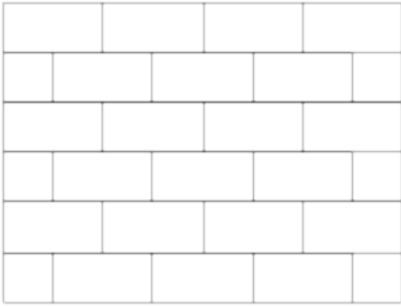
Brick Color	EaCo Chem	Prosoco Sure Klean®
Copperstone	NMD 80	600
Ironstone	NMD 80	600
Mojave Brown	NMD 80	600
Monterey	NMD 80	600
Mountain Red	NMD 80	600
Ochre Buff	NMD 80	600
Terra Cotta	NMD 80	600
Walnut	NMD 80	600



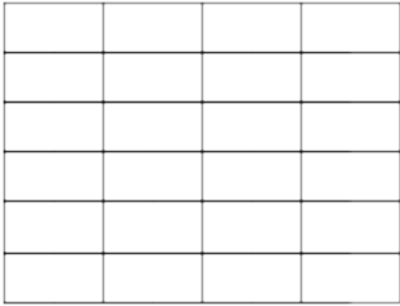
INTERSTATE® BRICK 9780 South 5200 West, West Jordan, UT 84081-5625
Phone: (801) 280-5200 Toll Free (800) 233-8654 www.interstatebrick.com

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Phone: (916) 859-6320 Toll Free (800) 776-1244 www.hcmuddox.com

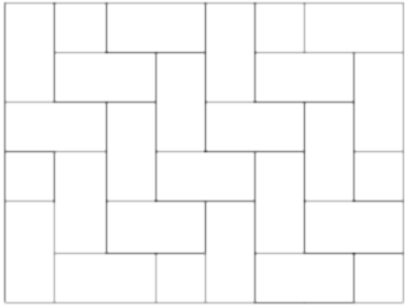
Bond Pattern



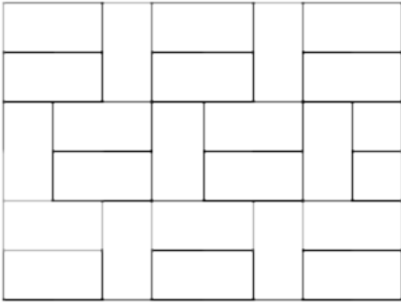
Running Bond



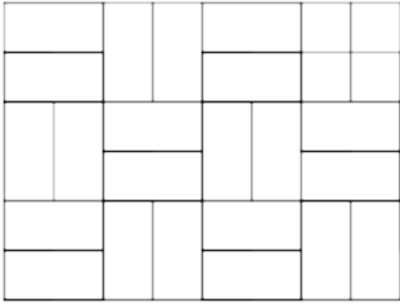
Stack Bond



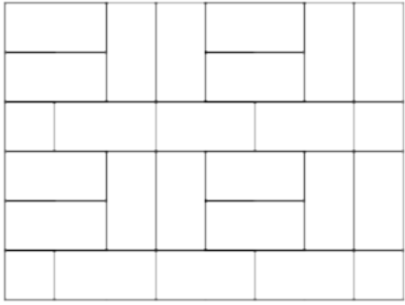
Herringbone



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.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : HC Muddox Brick
Product code : Not available

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Building and Construction

1.3. Details of the supplier of the safety data sheet

HC Muddox
4875 Bradshaw Road
Sacramento, CA 95827
T 916-859-6320

1.4. Emergency telephone number

Emergency number : CHEMTREC 1 (800) 424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The classification given below pertains to the product during processing:

GHS-US classification

Eye Irritation 2A
Skin Sensitization 1
Carcinogenicity 1A
Specific target Organ Toxicity - Repeated Exposure 1

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

GHS08

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

Causes serious eye irritation. May cause an allergic skin reaction. May cause cancer. Causes damage to organs through prolonged or repeated exposure.

Precautionary statements (GHS-US) :

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. If exposed or concerned: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If on skin: Wash with plenty of water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention. Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

No additional information available.

2.4. Unknown acute toxicity (GHS US)

6 percent of the mixture consists of ingredient(s) of unknown acute toxicity.

HC Muddox Brick

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable.

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Kaolin	(CAS No) 1332-58-7	60 - 100	Not classified
Cement, portland, chemicals	(CAS No) 65997-15-1	≤ 5	Skin Irrit. 2 Eye Dam. 1 Skin Sens. 1 STOT SE 3
Manganese dioxide	(CAS No) 1313-13-9	≤ 5	Acute Tox. 4 (Oral) Acute Tox. 4 (Inhalation) STOT RE 2
Barium carbonate	(CAS No) 513-77-9	≤ 1	Acute Tox. 4 (Oral)
Gypsum	(CAS No) 13397-24-5	≤ 1	Not classified
Quartz	(CAS No) 14808-60-7	≤ 1	Carc. 1A ¹ STOT RE 1 ¹
Residues, petroleum, vacuum	(CAS No) 64741-56-6	≤ 1	Not classified

¹ Only applies to airborne particles of respirable size.

* The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.
- First-aid measures after ingestion : Not a normal route of exposure. If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : Dust may cause respiratory tract irritation.
- Symptoms/injuries after skin contact : May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. May cause sensitization by skin contact.
- Symptoms/injuries after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
- Symptoms/injuries after ingestion : Not a normal route of exposure. May result in obstruction and temporary irritation of the digestive tract.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon.

5.3. Advice for firefighters

- Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

HC Muddox Brick

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and material for containment and cleaning up

For containment : Pick up large pieces, then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for cleaning up : Vacuum or sweep material and place in a disposal container. Use wet methods, if appropriate, to reduce the generation of dust. Provide ventilation.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Good housekeeping is important to prevent accumulation of dust. Avoid generating and breathing dust. Use wet methods, if appropriate, to reduce the generation of dust. The use of compressed air for cleaning clothing, equipment, etc, is not recommended. Handle with care. When using do not eat, drink or smoke.

Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Avoid any dust buildup by frequent cleaning and suitable construction of the storage area.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Kaolin (1332-58-7)		
ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³ (particulate matter containing no asbestos and <1% crystalline silica, respirable fraction)
OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
Cement, portland, chemicals (65997-15-1)		
ACGIH	ACGIH TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no asbestos and <1% crystalline silica, respirable fraction)
OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction) 50 mppcf (<1% Crystalline silica)
Manganese dioxide (1313-13-9)		
ACGIH	ACGIH TWA (mg/m ³)	0.02 mg/m ³ (respirable fraction) 0.1 mg/m ³ (inhalable fraction)
OSHA	OSHA PEL (Ceiling) (mg/m ³)	5 mg/m ³ (fume)
Barium carbonate (513-77-9)		
ACGIH	Not applicable	
OSHA	Not applicable	
Gypsum (13397-24-5)		
ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
Quartz (14808-60-7)		
ACGIH	ACGIH TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)

HC Muddox Brick

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

Quartz (14808-60-7)		
OSHA	OSHA PEL (TWA)	(30)/(%SiO ₂ + 2) mg/m ³ (total dust) (250)/(%SiO ₂ + 5) mppcf (respirable fraction) (10)/(%SiO ₂ + 2) mg/m ³ (respirable fraction)
Residues, petroleum, vacuum (64741-56-6)		
ACGIH	Not applicable	
OSHA	Not applicable	

8.2. Exposure controls

Appropriate engineering controls	: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits. Use wet methods, if appropriate, to reduce the generation of dust.
Hand protection	: Wear suitable gloves.
Eye protection	: Wear eye protection.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Environmental exposure controls	: Maintain levels below Community environmental protection thresholds.
Other information	: Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Fully cured and hydrated concrete
Color	: Various
Odor	: Odorless
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Not flammable
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available.

HC Muddox Brick

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

None known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified.

HC Muddox Brick	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat	> 5 mg/l/4h

Barium carbonate (513-77-9)	
LD50 oral rat	418 mg/kg

Residues, petroleum, vacuum (64741-56-6)	
LD50 oral rat	4320 mg/kg
LD50 dermal rabbit	> 2000 mg/kg

Skin corrosion/irritation : Based on available data, the classification criteria are not met.
Serious eye damage/irritation : Causes serious eye irritation. The hydration process has already occurred in this product and corrosive effects that would normally result from wet Portland Cement should no longer occur.
Respiratory or skin sensitization : May cause an allergic skin reaction.
Germ cell mutagenicity : Based on available data, the classification criteria are not met.
Carcinogenicity : May cause cancer. Cutting, crushing or grinding product will release respirable crystalline silica.

Quartz (14808-60-7)	
IARC group	1 - Carcinogenic to humans (airborne particles of respirable size)
National Toxicology Program (NTP) Status	2 - Known Human Carcinogens (airborne particles of respirable size)

Reproductive toxicity : Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure) : Based on available data, the classification criteria are not met.
Specific target organ toxicity (repeated exposure) : Causes damage to organs through prolonged or repeated exposure. Respirable crystalline silica in the form of quartz or cristobalite from occupational sources is listed by the International Agency for Research on Cancer (IARC) and National Toxicology Program (NTP) as a lung carcinogen. Prolonged exposure to respirable crystalline silica has been known to cause silicosis, a lung disease, which may be disabling. While there may be a factor of individual susceptibility to a given exposure to respirable silica dust, the risk of contracting silicosis and the severity of the disease is clearly related to the amount of dust exposure and the length of time (usually years) of exposure.
Aspiration hazard : Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation : Dust may cause respiratory tract irritation.
Symptoms/injuries after skin contact : May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. May cause sensitization by skin contact.
Symptoms/injuries after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Symptoms/injuries after ingestion : Not a normal route of exposure. May result in obstruction and temporary irritation of the digestive tract.

HC Muddox Brick

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No ecological consideration when used according to directions.

12.2. Persistence and degradability

HC Muddox Brick

Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

HC Muddox Brick

Bioaccumulative potential	Not established.
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12.4. Mobility in soil

No additional information available.

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport.

Additional information

Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

Gypsum	CAS No 13397-24-5
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15.2. US State regulations

HC Muddox Brick

State or local regulations	This product contains chemicals known to the State of California to cause cancer.
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SECTION 16: Other information

Date of issue : 04/22/2015

Other information : None.

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

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.