1. **BDA-2025-04843**
   1216 Palo Alto Street
   Mexican War Streets Historic District
   Central Northside Neighborhood
   Rear alterations including construction of rooftop deck

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Designers+Architects+Engineers
2006 Noble Street
Pittsburgh, PA 15218
412.342.8338
eos-studioarc.com

DESIGN NARRATIVE

1216 PALO ALTO STREET, PITTSBURGH, PA 15212

JULY 21, 2025

City of Pittsburgh, Department of City Planning:

The following is written in conjunction with an application for a proposed rooftop deck in a city-designated historic district:

The scope of exterior work to 1216 Palo Alto is limited to the exterior and only visible from the rear right of way, Wolfrum Street. We are proposing a new rooftop deck on the rear of an existing masonry structure. The roof will not be altered except necessary structural upgrades to support the new load of the deck. The deck structure will be constructed of stained FRT joists with wood-tone Trex composite decking overtop. The railing will be either black and white aluminum or composite material and be approximately 3' high from the surface of the deck. There will be slight modification to the existing dormer at the rear of the property on the right-hand side. The current window and dormer height are too low to accommodate access to the new deck from the interior. We are proposing to raise the height of the dormer with a shallower roof slope to accommodate a new door. The roofing will be ashpalt shingles to match the color and style of the existing roof on the rear of the structure. The exterior finish will be brick to match the existing exterior brick as closely as possible. We are proposing a full-lite glass door in white to match the existing white windows at the rear of the property. All chimneys are to remain and the deck will be constructed around them.

Please contact me with any additional questions or comments.

Sincerely,

Nick Graef

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DESIGN NARRATIVE

1216 PALO ALTO STREET, PITTSBURGH, PA 15212

JULY 21, 2025

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DESIGN NARRATIVE

1216 PALO ALTO STREET, PITTSBURGH, PA 15212

JULY 21, 2025

EXISTING PHOTOS

1216 Palo Alto, front façade from sidewalk across looking Southeast

Palo Alto from sidewalk across looking South

Palo Alto from sidewalk across looking Northeast

Neighboring front facades south of 1216 from sidewalk across looking East

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DESIGN NARRATIVE

1216 PALO ALTO STREET, PITTSBURGH, PA 15212

JULY 21, 2025

1216 Palo Alto, rear façade from sidewalk looking West

1216 Palo Alto, rear/side façade from sidewalk looking Northwest from Wolfrum Street

1216 Palo Alto, rear/side façade from sidewalk looking Northwest from Wolfrum Street

1216 Palo Alto, rear façade from sidewalk looking West from Wolfrum Street

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DESIGN NARRATIVE

1216 PALO ALTO STREET, PITTSBURGH, PA 15212

JULY 21, 2025

Neighboring front facades south of 1216 from sidewalk across looking East

Neighboring rear facades from parking lot on Wolfrum Street looking Southwest

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DESIGN NARRATIVE

1216 PALO ALTO STREET, PITTSBURGH, PA 15212

JULY 21, 2025

Neighboring rear facades & 1216 Palo Alto rear façade from parking lot on Wolfrum Street looking Southwest

Neighboring rear facades & 1216 Palo Alto rear façade from parking lot on Wolfrum Street looking West

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DESIGN NARRATIVE

1216 PALO ALTO STREET, PITTSBURGH, PA 15212

JULY 21, 2025

Neighboring rear facades & 1216 Palo Alto rear façade from parking lot on Wolfrum Street looking West

Neighboring rear facades & 1216 Palo Alto rear façade from sidewalk on Greeves Way looking Southwest

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DESIGN NARRATIVE

1216 PALO ALTO STREET, PITTSBURGH, PA 15212

JULY 21, 2025

Existing third floor rear façade from existing roof facing West

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DESIGN NARRATIVE

1216 PALO ALTO STREET, PITTSBURGH, PA 15212

JULY 21, 2025

Existing third floor rear façade from existing roof facing West

1 / SD-1 PARTIAL THIRD FLOOR PLAN
SCALE: 1/4" = 1'-0"

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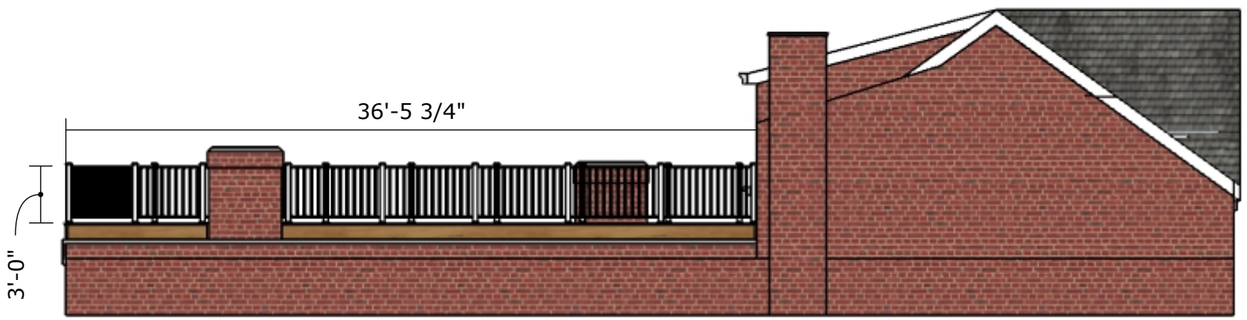
ROOFTOP DECK

1216 PALO ALTO STREET, PITTSBURGH, PA 15212

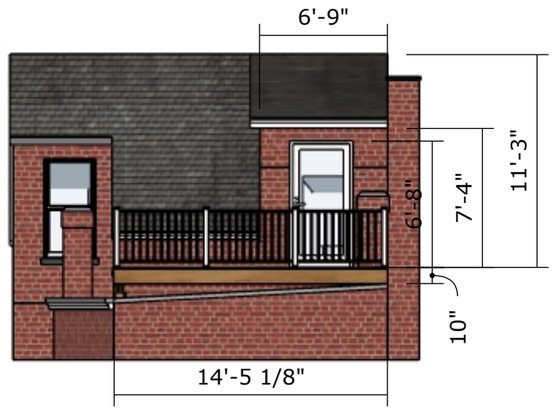
JULY 21, 2025

SD-1



1 SD-2 LEFT ELEVATION

SCALE: 1/8" = 1'-0"



2 SD-2 REAR ELEVATION

SCALE: 1/8" = 1'-0"

3 SD-2 RIGHT ELEVATION

SCALE: 1/8" = 1'-0"

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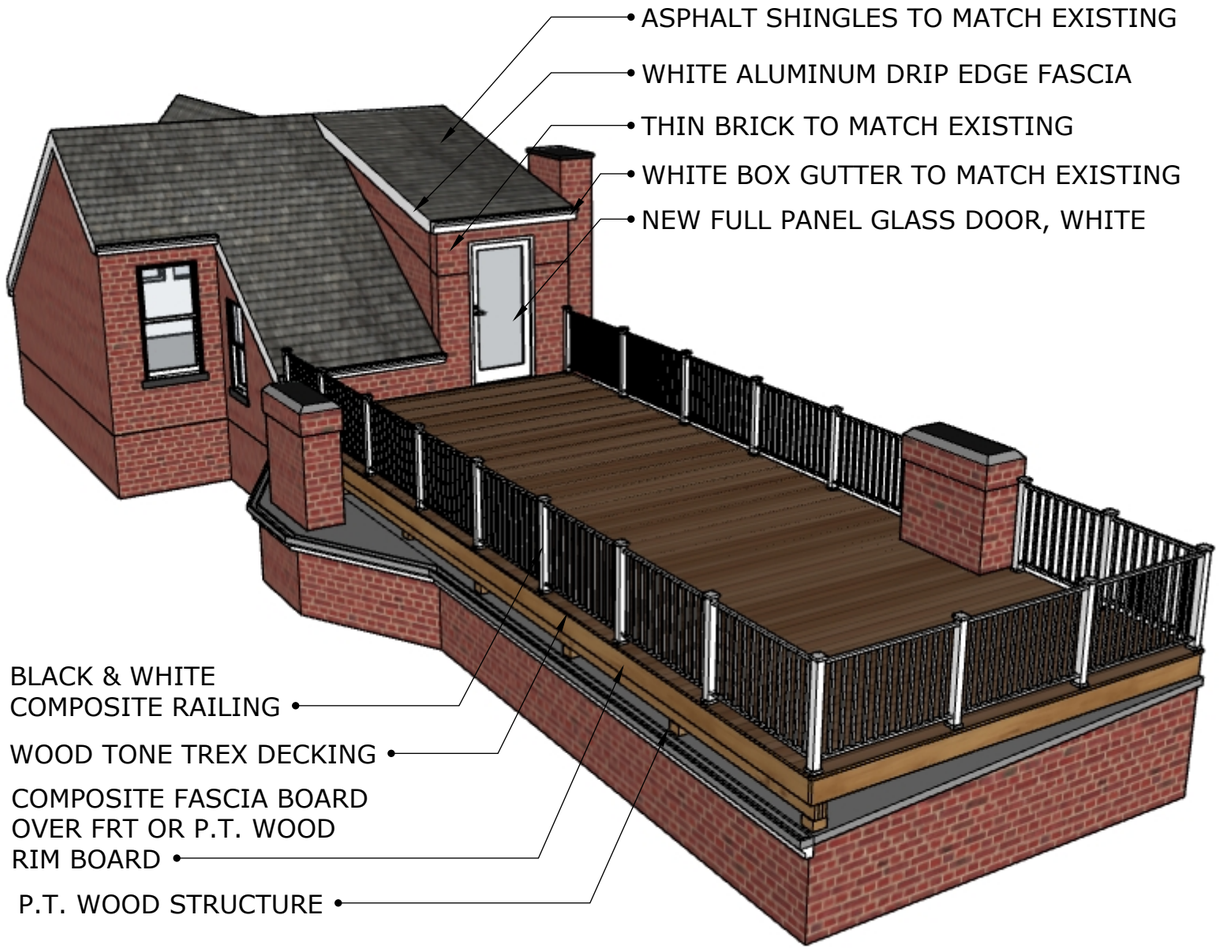
ROOFTOP DECK

1216 PALO ALTO STREET, PITTSBURGH, PA 15212

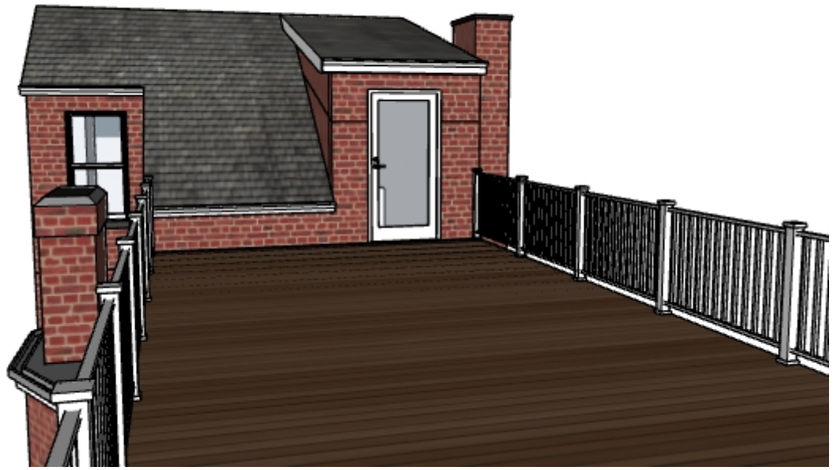
JULY 21, 2025

SD-2



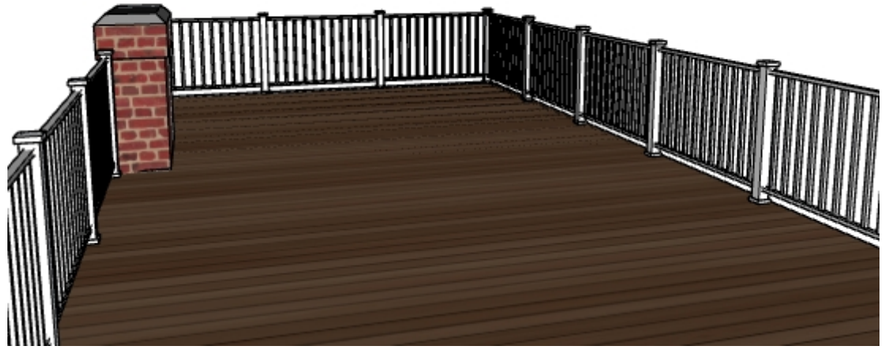
1 / SD-3 PERSPECTIVE 1

SCALE: NTS



2 / SD-3 PERSPECTIVE 2

SCALE: NTS



3 / SD-3 PERSPECTIVE 3

SCALE: NTS

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ROOFTOP DECK

1216 PALO ALTO STREET, PITTSBURGH, PA 15212

JULY 21, 2025

SD-3

1 / SD-4 PERSPECTIVE 2
SCALE: NTS

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ROOFTOP DECK

1216 PALO ALTO STREET, PITTSBURGH, PA 15212

JULY 21, 2025

SD-4

NOTE: ONLY RAILINGS, P.T. STRUCUTRE, & COMPOSITE WRAPPED
FRT/P.T. WOOD WILL BE VISIBLE FROM STREET LEVEL.

TruDefinition®

DURATION®

Shingles with Patented SureNail® Technology

Tejas con tecnología patentada SureNail®

TOTAL PROTECTION SIMPLIFIED®

It takes more than just shingles to protect a home. It takes an integrated system of components and layers designed to perform in three critical areas. The Owens Corning® Total Protection Roofing System®^ gives you the assurance that all of your Owens Corning roofing components are working together to help increase the performance of your roof.

PROTECCIÓN TOTAL SIMPLIFICADA®

Se necesita más que simplemente tejas para proteger su vivienda. Se necesita un sistema integral de componentes y capas diseñadas para desempeñarse en tres áreas críticas. El Total Protection Roofing System® de Owens Corning® le garantiza que todos sus componentes para cubiertas de Owens Corning funcionan en conjunto para mejorar el desempeño de su techo.

SEAL. SELLAR.

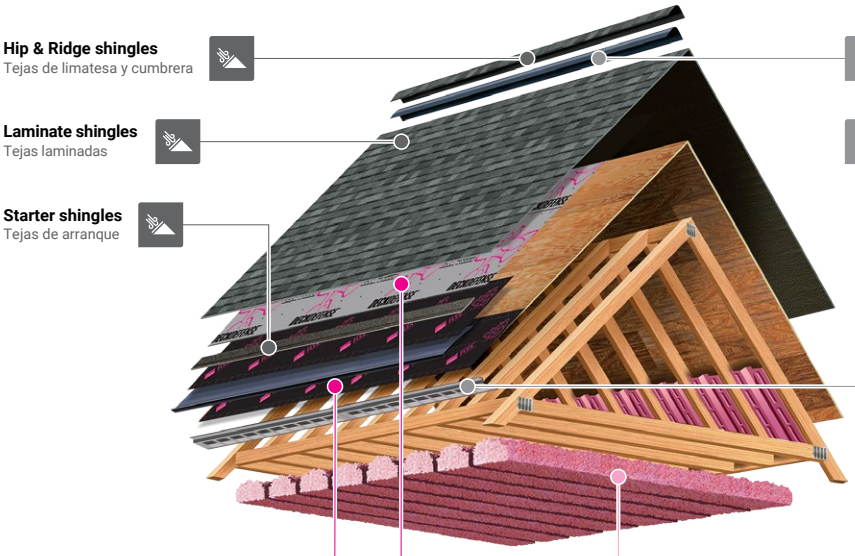
Helps create a waterproof barrier
Ayuda a crear una barrera impermeable

DEFEND. DEFENDER.

Helps protect against nature's elements
Protege contra los elementos climáticos

BREATHE. RESPIRAR.

For balanced attic ventilation
Para una ventilación equilibrada del ático



+ COMFORT. CONFORT.

Add comfort and energy performance
Más confort y desempeño energético

PINK® Fiberglas™ blown-in attic insulation
Aislamiento para áticos PINK® Fiberglas™ aplicado por impulsión

REGISTER YOUR WARRANTY

Registering your Owens Corning® warranty ensures it's easily referenced should you ever need to access it. The process is easy—just have your installation date, shingle type, shingle color and number of squares ready. Then go online to www.owenscorning.com/roofingstandardwarranty or call 1-800-ROOFING (1-800-766-3464) to finish the process.

SCAN TO REGISTER YOUR WARRANTY

Escanee para registrar su garantía

REGISTRE SU GARANTÍA

Al registrar su garantía de Owens Corning® la podrá consultar rápidamente si fuera necesario acceder a ella. El proceso es simple: tenga a mano la fecha de instalación, el tipo y color de tejas y la cantidad de cuadrados. Luego, visite www.owenscorning.com/roofingstandardwarranty o llame al 1-800-ROOFING (1-800-766-3464) para completar el proceso.

DEEP DIMENSION
OUTSTANDING PERFORMANCE

Duration® Shingles offer:

- The high-performance of SureNail® Technology
- A TruDefinition® Color Platform
- A Limited Lifetime Warranty*/‡ for as long as you own your home
- The protection of a 130-MPH* wind warranty
- StreakGuard® Protection with a 25-year Algae Resistance Limited Warranty[3/§]
- Rated Class 3 for Impact Resistance[6] and may qualify for a homeowner insurance discount[7]

UNA NUEVA DIMENSIÓN
DESEMPEÑO SOBRESALIENTE

Las tejas Duration® ofrecen:

- El gran desempeño de la tecnología SureNail®
- La gama de colores TruDefinition®
- Una garantía limitada de por vida*/‡ mientras sea propietario de la vivienda
- La protección de una garantía contra vientos de hasta 210 km/h (130 mph)*
- Protección StreakGuard® con una garantía limitada de 25 años de resistencia a las algas [3/§]
- Clasificación nominal 3 para resistencia a los impactos[6] y puede ser aplicable a descuento por seguro del propietario[7]

STREAKGUARD ALGAE PROTECTION

Don't let black streaks lower the value or curb appeal of your home.

Owens Corning blends specialized copper-lined granules, developed by 3M, a leading producer of roofing granules, into our colorful shingles. This helps resist blue-green algae growth.

No deje que las manchas de algas afecten al valor o aspecto de su vivienda.

En sus coloridas tejas, Owens Corning añade gránulos especiales con recubrimiento de cobre, desarrollados por 3M, un productor líder de gránulos para techos. Esto ayuda a prevenir la proliferación de algas azul-verdosas.

THE FINISHING TOUCH

OWENS CORNING® HIP & RIDGE SHINGLES

Owens Corning® Hip & Ridge Shingles are uniquely color matched to TruDefinition® Duration® Shingles. The multiple color blends are only available from Owens Corning Roofing and offer a finished look for the roof.

EL TOQUE FINAL

TEJAS DE LIMATESA Y CUMBRERA DE OWENS CORNING®

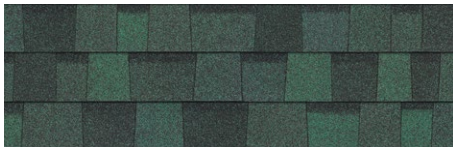
Las tejas de limatesa y cumbrera de Owens Corning® se ofrecen en una exclusiva gama de colores para combinar con las tejas Duration® TruDefinition®. Esta gran variedad de combinaciones de colores es una exclusividad de Owens Corning Roofing para lograr techos con un acabado único.

TruDefinition®

DURATION®

Shingles with Patented SureNail® Technology | Tejas con tecnología patentada SureNail®

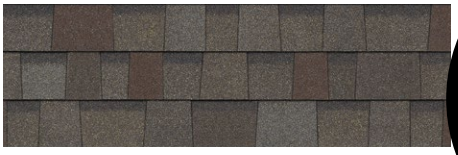
Brownwood[1]



Chateau Green[1]

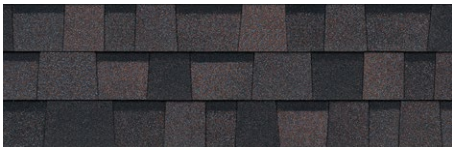
Colonial Slate[1]

Desert Rose[1]



Driftwood[1]

Estate Gray[1]



Midnight Plum[1/5]

Onyx Black[1]

Peppercorn[1]

Sand Castle[1]

Sierra Gray[1]

Slatestone Gray[1]

Teak[1]

Terra Cotta[1]

Williamsburg Gray[1]

COLOR DISCLAIMER

As color experts, we know getting the shingle color right is a big part of any roofing purchase. Due to printing color variations, in addition to viewing shingle literature, we suggest you request an actual shingle sample to see how it will appear on your home and with your home's exterior elements in various natural lighting conditions. Lastly, we recommend you verify your color choice by seeing it installed on an actual home; your roofing contractor or supplier can provide a sample and may be able to direct you to a local installation.

DESCARGO DE RESPONSABILIDAD SOBRE LOS COLORES

En tanto que especialistas en color, sabemos que obtener el color de teja perfecto es una parte importante en toda compra de techos. Debido a las variaciones en los colores impresos, además de mirar folletos de tejas, le sugerimos que solicite una muestra de la teja para ver como se verá en su hogar y con los elementos externos de la vivienda bajo distintas condiciones de luz natural. Finalmente, le recomendamos que para verificar su elección de colores, vea cómo lucen las tejas ya instaladas en una vivienda; su contratista de techos o su proveedor le pueden dar una muestra e incluso indicarle dónde ver un techo ya instalado.

THERE'S A LINE BETWEEN A GOOD SHINGLE AND A GREAT SHINGLE.®

It's the nailing line on your shingles. The difference between a good shingle and a great shingle is having Patented SureNail® Technology, only from Owens Corning.

HAY UNA GRAN DIFERENCIA ENTRE UNA BUENA TEJA Y UNA TEJA EXCELENTE™

Es la línea de clavado en su tejas. La diferencia entre una buena teja y una teja excelente es la tecnología patentada SureNail,® una exclusividad de Owens Corning.

SureNail® Technology

Breakthrough Design
Patented SureNail® Technology is the first and only reinforced nailing zone on the face of the shingle.

Diseño innovador
La tecnología patentada SureNail® es la primera y la única que provee un área de clavado reforzada en la cara de la teja.

Excellent Adhesive Power
Helps keep the shingle layers laminated.

Excelente poder adhesivo
Ayuda a conservar el laminado de las capas de las tejas.

"No Guess" Wide Nailing Zone
This tough, engineered woven-fabric strip is embedded in the shingle to create an easy-to-see, strong, durable fastener zone.

Área de clavado ancha, sin cálculos "a ojo"
Esta banda resistente de tela mecánica tejida está incrustada en la teja para proveer un área de sujeción resistente, duradera y fácil de detectar.

Outstanding Grip
The SureNail® strip enhances the already amazing grip of our proprietary Tru-Bond®** sealant for exceptional wind resistance of a 130-MPH wind warranty.

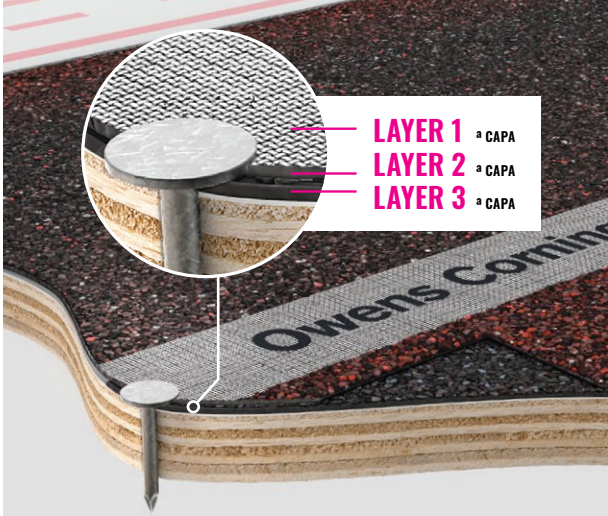
Agarre excepcional
La banda SureNail® mejora el excelente agarre de nuestro sellador patentado Tru-Bond®** con una garantía de resistencia al viento excepcional de 210 km/h (130 mph).

Triple Layer Protection®+
A unique "triple layer" of reinforcement occurs when the fabric overlays the two shingle layers, providing increased protection against "nail pull" from the wind.

Triple Layer Protection®+
Cuando la tela cubre las dos capas de la teja, se forma una "triple capa" de refuerzo excepcional que ofrece una mayor protección ante el "arranque de clavos" debido al viento.

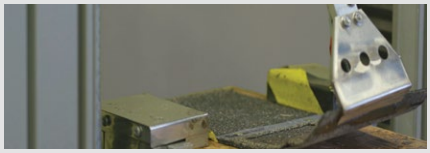
Double the Common Bond
SureNail® features up to a 200% wider bond between the shingle layers in the nailing zone over standard shingles.

Duplica la adherencia común
En comparación con las tejas comunes, SureNail® ofrece un área de unión hasta un 200 % más ancha entre las capas de la teja en el área de clavado.



THE PROOF IS IN THE PERFORMANCE

LA PRUEBA ESTÁ EN EL DESEMPEÑO



Up to **2.5X BETTER** NAIL PULL-THROUGH RESISTANCE

Hasta **2.5X MEJOR** RESISTENCIA A LA TRACCIÓN DE LOS CLAVOS

Up to **9X BETTER** NAIL BLOW-THROUGH RESISTANCE

Hasta **9X MEJOR** RESISTENCIA AL DESPRENDIMIENTO DE LOS CLAVOS

Up to **2X BETTER** DELAMINATION RESISTANCE

Hasta **2X MEJOR** RESISTENCIA A LA DELAMINACIÓN

Product Attributes

Warranty Length*/‡

Limited Lifetime
(for as long as you own your home)

Wind Resistance Limited Warranty*

130-MPH

Algae Resistance Limited Warranty*/§

25 Years

TRU PROtection® Non-Prorated Limited Warranty* Period

10 Years

TruDefinition® Duration® Shingles Product Specifications

Size	13¼" x 39⅜"
Application Exposure	5⅝"
Shingles per Bundle	Not less than 20
Average Shingle Count per 3 Bundles	64
Average Coverage per 3 Bundles	98.4 sq. ft.

Applicable Standards and Codes

- ASTM D3462
- ASTM D228
- ASTM D3018 (Type 1)
- ICC-ES AC438#
- ASTM D3161 (Class F Wind Resistance)
- ASTM D7158 (Class H Wind Resistance)
- ASTM E108/UL 790 (Class A Fire Resistance)
- UL 2218 (Class 3 Impact Resistance)6
- FM 4473 (Class 3 Impact Resistance)6
- PRI ER 1378E01
- Florida Product Approval
- Miami-Dade County Product Approval2

Características del producto

Período de garantía*/‡

Garantía limitada de por vida
(mientras sea propietario de la vivienda)

Garantía limitada de resistencia al viento*

210 km/h (130 mph)

Garantía limitada de resistencia a las algas*/§

25 años

Período no prorrateado de garantía limitada TRU PROtection®

10 años

Especificaciones de las tejas Duration® TruDefinition®

Tamaño	33.65 × 100 cm (13¼ × 39⅜ pulg)
Exposición de aplicación	14.3 cm (5⅝ pulg)
Tejas por paquete	20 como mínimo
Cantidad promedio de tejas por 3 paquetes	64
Cobertura promedio por 3 paquetes	9.14 m² (98.4 pies²)

Normas y códigos pertinentes

- ASTM D3462
- ASTM D228
- ASTM D3018 (Tipo 1)
- ICC-ES AC438#
- ASTM D3161 (Resistencia al viento, Clase F)
- ASTM D7158 (Resistencia al viento Clase H)
- ASTM E108/UL 790 (Resistencia al fuego Clase A)
- UL 2218 (Resistencia a impactos de clase 3)6
- FM 4473 (Resistencia a impactos de clase 3)6
- PRI ER 1378E01
- Aprobación del producto en el estado de Florida
- Producto aprobado por el condado de Miami-Dade2

* See actual warranty for complete details, limitations and requirements.

‡ 40-Year Limited Warranty on commercial projects.

† Owens Corning testing against competing products with wide, single-layer nailing zones when following manufacturers' installation instructions and nailing in the middle of the allowable nailing zone.

** Tru-Bond® is a proprietary premium weathering-grade asphalt sealant that is blended by Owens Corning Roofing® and Asphalt, LLC.

\+ The amount of Triple Layer Protection® may vary on shingle-to-shingle basis.

\# International Code Council Evaluation Services Acceptance Criteria for Alternative Asphalt Shingles.

^ Excludes non-Owens Corning® roofing products such as flashing, fasteners, pipe boots and wood decking.

1 See Color Disclaimer information on page 3 for additional details.

2 Applies to all areas that recognize Miami-Dade Notice of Acceptance (NOA).

3 Shingles are algae resistant to control the growth of algae and discoloration.

§ Installation must include use of an Owens Corning® Hip & Ridge product. See actual warranty for details.

5 Owens Corning® Bourbon and Midnight Plum shingles include a patent pending design.

6 Qualifying Owens Corning Hip & Ridge Shingles may be required to complete a UL 2218 and/or FM 4473 Class 3 Impact-Resistant Roof System. Due to the variability in real storm conditions, a Class Rating on any product does not guarantee that it will withstand damage from hailstorms or other acts of God. Owens Corning shingles are not covered under a warranty for hail damage.

7 Homeowners should check with their insurance company to see if they qualify.
SureNail® Technology is not a guarantee of performance in all weather conditions.
For patent information, please visit owenscorning.com/patents.

* Consulte la garantía para obtener una lista completa de detalles, limitaciones y requisitos.

‡ Garantía limitada de 40 años para proyectos comerciales.

† Ensayos comparativos de Owens Corning con productos de la competencia con zonas de clavado ancho de una sola capa cuando se siguen las instrucciones de instalación del fabricante y se clava en el medio de la zona de clavado permitida.

** Tru-Bond® es un sellador asfáltico patentado de calidad premium formulado por Owens Corning Roofing® and Asphalt, LLC.

\+ La cantidad de Triple Layer Protection® puede variar entre una teja y otra.

\# Criterios de aceptación de los servicios de evaluación del Consejo Internacional de Códigos para tejas asfálticas alternativas.

^ Se excluyen productos para techos no fabricados por Owens Corning®, como tapajuntas, sujetadores, bases de tubos y estructuras de soporte de madera.

1 Para obtener más información, consulte el Descargo de responsabilidad sobre los colores, en la página 3.

2 Aplicable a todas las zonas que reconocen el Aviso de aceptación (NOA, Notice of Acceptance) del condado de Miami Dade.

3 Las tejas son resistentes a las algas para controlar su desarrollo y la decoloración.

§ La instalación debe incluir el uso de un producto para limatesa y cumbrera de Owens Corning®.

5 Las tejas de Owens Corning® Bourbon y Midnight Plum incluye un diseño con patente pendiente.

6 Es posible que se requiera el uso de tejas aptas para limatesa y cumbrera de Owens Corning para completar un sistema de techo resistente a impactos UL 2218 y/o FM 4473 Clase 3. Debido a la variación de las condiciones de tormenta real, una calificación de clase en cualquier producto no garantiza que soportará daños por tormentas de granizo u otros casos fortuitos. Las tejas de Owens Corning no están cubiertas por una garantía por daños de granizo.

7 Los propietarios deben verificar con su aseguradora para saber si califican.
La tecnología SureNail® no es una garantía de desempeño en todos los tipos de condiciones climáticas.
Para información sobre la patente, visite www.owenscorning.com/patents.

OWENS CORNING ROOFING AND ASPHALT, LLC
ONE OWENS CORNING PARKWAY
TOLEDO, OHIO, USA 43659

1-800-GET-PINK® | 1-800-438-7465
www.owenscorning.com

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(Brookville, Medina, Minneapolis, Summit)

Pub. N.º 10024200-A. Impreso en EE.UU. Febrero de 2024.

Glen-Gery

PRODUCT PROFILE

Revised 1/2019

Glen-Gery Clay Thin Brick

(1/2", 3/4" and 1" thick)

General

Glen-Gery provides clay thin brick in a multitude of shades and textures to accommodate the visual and application requirements of most projects. Sizes range from 8 to 16 inch and from extruded to handmade providing the widest range of thin brick available for any application.

The thickness of the thin brick available is based on the method of manufacture and the desired texture/uniformity.

Extruded thin brick available in 1/2" thickness are typically extruded as thin brick with unique surface textures and colors meeting Type TBS tolerances.

Glen-Gery's greatest variety of thin brick are available in molded and extruded 3/4" thickness. This thickness allows units to be cut from full units often specifically manufactured with larger coring and thinner webs to facilitate cutting while reducing the quantity of raw material required for manufacture. Material cut from the thin brick can be ground and reused to manufacture thin or full size units. In addition, Glen-Gery's unique large scale custom cutting operation allows thin brick to be cut from a specific lot of full brick to ensure color matching of both full and thin brick.

Handmade thin brick are available in 1" thickness to accommodate the inherent variation expected from handmade units.

Today's thin brick are installed in a wide variety of different wall systems including thickset, thinset, metal panel systems (such as Glen-Gery Thin Tech® Panels) as well as precast and tilt-up concrete wall systems. The appearance of thin brick, as well as the method of manufacture, affects the potential use of the thin brick in the various wall systems available. The thickness of the individual thin brick typically has minimal, if any, effect on any of the applications.

While each of the three categories of thin brick previously listed can be installed in most of thin brick wall systems, the precast and tilt-up concrete wall systems require thin brick with very rigid tolerances and surface textures limited to smooth or velour (wirecut) textures. In addition the cleaning techniques utilized by concrete panel manufacturers may also limit colors typical of full size units. See additional information at the end of this Profile regarding thin brick for use with precast and tilt-up concrete wall systems.

Additional information is available from your Glen-Gery representative for each thin brick wall system.

Unit Specifications

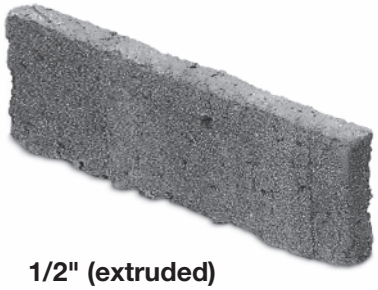
Glen-Gery thin brick are typically manufactured to conform to the requirements of American Society for Testing and Materials (ASTM) Standard Specification C 1088, Grade Exterior. Depending upon the particular product selected, Type TBA, TBS, or TBX may be available. These products also conform to the requirements of ASTM C 1088, Grade Interior. When specifying this product, the specifications should cite:

1) The product name and state "as manufactured by Glen-Gery Corporation."

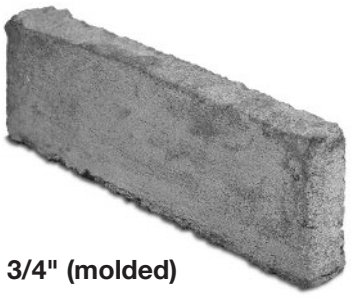
2) Conformance to the requirements ASTM C 1088, Grade Exterior.

3) The actual unit dimensions listed as thickness x height x length.

Example: Harding Blend thin brick as manufactured by Glen-Gery Corporation to conform to the requirements of ASTM C 1088, Grade Exterior, Type TBS. The units shall have dimensions of 3/4" X 2-1/4" X 7-5/8".



1/2" (extruded)



3/4" (molded)

3/4" (extruded)

1" (handmade)

Design Criteria

Size:

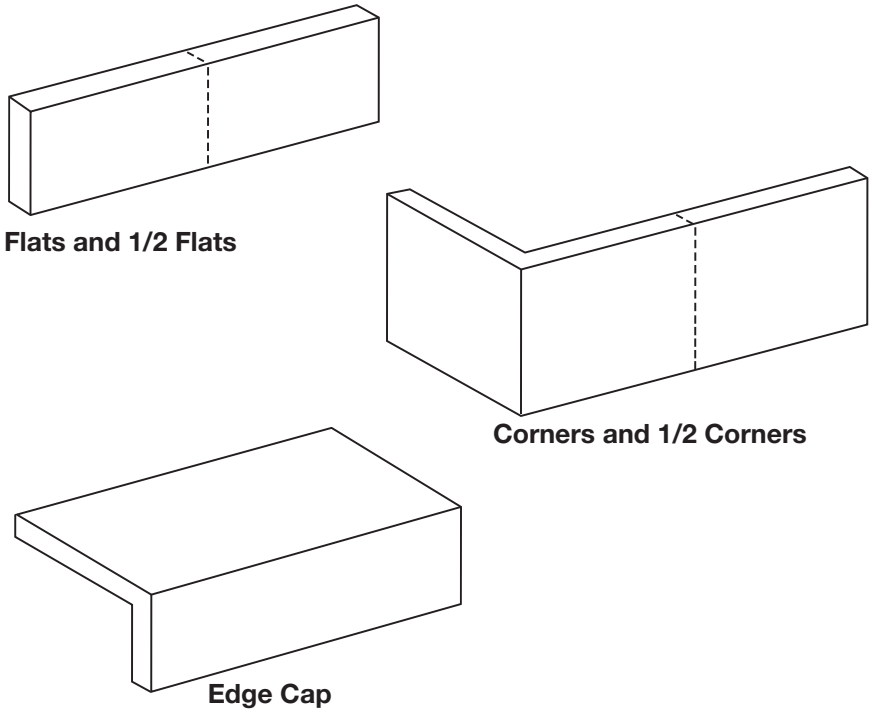
Table 1 provides the many sizes in which Glen-Gery manufactures thin brick.

Dimensional Tolerances:

Glen-Gery thin brick are manufactured to provide specific dimensional tolerances. The dimensional tolerances of the product are intended to be within the requirements of ASTM C 1088, Type TBS for general use. Some products (including but not limited to those manufactured at the Hanley Plant) are manufactured to meet Type TBX. Products with colors matching Handmade bricks are manufactured to meet Type TBA. The product ordered will generally contain a number of units which are over or under the specified dimensions.

CONTINUED ON PAGE 3

FIGURE A



Flats and 1/2 Flats

Corners and 1/2 Corners

Edge Cap

TABLE 1

Thin Brick Size, Coverage and Weight

Thin Brick Size	Specified Dimension						Thin Brick per square foot	Average Weight per unit	
	Thickness (inches)	(mm)	Height (inches)	(mm)	Length (inches)	(mm)			(kg)
Queen	3/4	20	2-3/4	70	7-5/8	194	5.63	1.6	0.7
Lightweight Modular	3/4	20	2-1/4	57	7-5/8	194	6.75	1.0	0.5
Lightweight Engineer Modular	3/4	20	2-3/4	70	7-5/8	194	5.63	1.0	0.5
1/2-Modular (extruded)	1/2	13	2-1/4	57	7-5/8	194	6.75	0.7	0.3
3/4-Modular (extruded/molded)	3/4	20	2-1/4	57	7-5/8	194	6.75	1.1	0.5
Modular (handmade)	1	25	2-1/4	57	7-5/8	194	6.75	1.1	0.5
1/2-Engineer Modular	1/2	13	2-3/4	70	7-5/8	194	5.63	0.8	0.4
3/4- Engineer Modular	3/4	20	2-3/4	70	7-5/8	194	5.63	1.6	0.7
Econo	3/4	20	3-5/8	92	7-5/8	194	4.50	1.5	0.7
Standard	3/4	20	2-1/4	57	8	203	6.55	1.1	0.5
Engineer Standard	3/4	20	2-3/4	70	8	203	5.39	1.7	0.8
Handmade Oversized	1	25	2-3/4	70	8-1/2	216	5.00	1.7	0.8
King Narrow-Bed	3/4	20	2-3/4	70	9-5/8	244	4.55	1.5	0.7
Engineer King	3/4	20	2-3/16	71	9-5/8	244	4.55	1.5	0.7
King	3/4	20	3-5/8	92	9-5/8	244	4.55	1.5	0.7
Roman	3/4	20	1-5/8	41	11-5/8	295	6.00	1.0	0.5
Norman	3/4	20	2-1/4	57	11-5/8	295	4.50	1.5	0.7
Utility	3/4	20	3-5/8	57	11-5/8	295	3.00	2.4	1.1
Kingston	3/4	20	2-3/4	70	11-5/8	295	3.75	1.9	0.9
Viking			1-5/8	41	15-5/8	397	4.50	5.9	2.7
Saxon	3/4	20	2-1/4	57	15-5/8	397	3.38	2.0	0.9
Titan	3/4	20	3-5/8	92	15-5/8	397	2.25	3.0	1.4

Continued from page 2

The dimensional variations are related to the raw materials, forming, drying and firing processes, and the desired finish and color. Thus, for some products, all the units may be slightly over or slightly under the specified dimensions.

Inquiries should be made regarding the dimensional variations which might be expected if project detailing requires precise coursing.

Specialty products or gauged products may be desirable when thin brick are incorporated into precast or tilt-up concrete wall systems. Many of Glen-Gery's extruded products include dimensional tolerances tighter than those required by ASTM and can be utilized for precast concrete wall systems. Glen-Gery also offers edge-grinding of units to create tighter tolerances if required.

Configurations:

These units are manufactured to conform to the requirements of ASTM C 1088.

Weight:

The weight of the brick units vary with the raw material, size, manufacturing processes. While actual weight of specific thin brick should be confirmed, average weight of each size thin brick manufactured by Glen-Gery is included in Table 1.

Finishes:

Glen-Gery thin brick are available in a variety of textures. The textures include smooth, velour, bar, rug, matt, paper cut, scored, rockface, slurry and sand finishes. The availability of a particular finish is usually dependent on the specific product.

Glazed thin brick meeting ASTM C126 surface requirements are also available.

Color:

Glen-Gery thin brick are available in a multitude of color blends. The colors

TABLE 2

Thin Brick and Mortar Quantities[1]

Nominal 3/8 Inch Mortar Joints

Thin Brick Size	Vertical Coursing in courses per inch	Thin Brick units per square foot	*Mortar Quantities	
			Cubic Foot per 100 square foot	Cubic Foot per 1000 units
Queen	5 Courses per 16"	5.63	0.99	1.76
Lightweight Modular	3 Courses per 8"	6.75	1.13	1.68
Lightweight Engineer Modular	5 Courses per 16"	5.63	0.99	1.76
1/2-Modular (extruded)	3 Courses per 8"	6.75	0.75	1.12
3/4-Modular (extruded/molded)	3 Courses per 8"	6.75	1.13	1.68
Modular (handmade)	4 Courses per 8"	6.75	1.51	2.23
1/2-Engineer Modular	5 Courses per 16"	5.63	0.66	1.17
3/4- Engineer Modular	3 Courses per 8"	5.63	0.99	1.76
Econo	1 Course per 4"	4.50	0.85	1.89
Standard	3 Courses per 8"	6.55	0.85	1.30
Engineer Standard	5 Courses per 16"	5.39	0.98	1.82
Handmade Oversized	5 Courses per 16"	5.00	1.23	2.46
King Narrow-Bed	5 Courses per 16"	4.55	0.95	2.09
Engineer King	5 Courses per 16"	4.55	0.71	1.57
King	5 Courses per 16"	4.55	0.95	2.09
Roman	4 Courses per 8"	6.00	1.33	2.22
Norman	3 Courses per 8"	4.50	1.05	2.33
Utility	1 Course per 4"	3.00	0.76	2.54
Kingston	5 Courses per 16"	3.75	0.90	2.41
Viking	4 Courses per 8"	4.50	5.9	2.7
Saxon	3 Courses per 8"	3.38	1.01	2.98
Titan	1 Course per 4"	2.25	0.72	3.19

[1] *These values are actual quantities and must be increased for waste and any possible construction requirements which may necessitate additional quantities.*

** Mortar estimate includes mortar needed for concave, vee or grapevine joints only; for Thin Tech® or Thinset Applications. Thickset applications will require additional material for scratch coat/mortar bed.*

available include various shades of red, brown, gray, buff, and white. Some colors are the natural colors of the fired raw materials, while others are produced by fusing a surface treatment onto the surface of the brick during firing or adding minerals to the bodies of the brick. If through body colors are desired, inquiries should be made regarding the availability of the desired colors. The color selection may also be limited by the product selected and the desired finish. Consult with your Glen-Gery representative for products acceptable in specific applications.

Shapes:

Common thin brick shapes are shown in Figure A.

Shapes dimensioned for coursing with other brick sizes, and custom shapes having configurations to fit specific project requirements are also available. These nonstandard shapes require detailed dimension drawings which must be submitted to and approved by Glen-Gery.

All shapes should be identified early in the project design because certain shape configurations may require special forming, drying, or firing processes. These processes may require more time or different scheduling than standard thin brick.

Physical Properties of Units

Compressive Strength:

Because thin brick are individually attached to substrates, compressive strength is not a relevant quality of thin bricks. ASTM C 1088 does not require reporting of compressive strength because testing tall, thin sections of brick for compressive strength are not indicative of performance.

Water Absorption:

Glen-Gery's extruded products: The average maximum hot-water absorption by submersion in boiling water for five hours is less than 17% and will typically be less than 9%. The average saturation coefficient is generally less than 0.78. In instances where the saturation coefficient exceeds 0.78, the cold water absorption for Glen-Gery brick is less than 8% and the units meet the requirements of ASTM C1088, Grade Exterior.

Glen-Gery's molded and Handmade products: The average maximum hot-water absorption by submersion in boiling water for five hours is less than 17% and will typically be less than 15%. The average saturation coefficient is generally less than 0.65.

Initial Rate of Absorption (IRA):

Glen-Gery's extruded products: The initial rate of absorption (suction) normally does not exceed 30 grams per 30 square inches per minute under laboratory conditions.

Glen-Gery's molded and Handmade products: The initial rate of absorption (suction) normally may exceed 30 grams per 30 square inches per minute under laboratory conditions.

Properties of Walls

Compressive Strength:

Compressive strength of a thin brick wall system is not typically affected by the thin brick units provided.

TABLE 3

Units Per Linear Foot in Various Positions

Nominal 3/8 Inch Mortar Joints

Thin Brick Size	FLATS		SHAPES	
	Stretcher	Soldier	Corner (Vertically)	Header (Horizontally)
Queen	1.50	3.75	3.75	1.57
Lightweight Modular	1.50	4.50	4.50	1.57
Lightweight Engineer Modular	1.50	3.75	3.75	1.57
Modular	1.50	4.50	4.50	1.57
Engineer Modular	1.50	3.75	3.75	1.57
Econo	1.50	3.00	3.00	1.57
Standard	1.43	4.50	4.50	1.50
Engineer Standard	1.43	3.75	3.75	1.50
Handmade Oversized	1.33	3.75	3.75	1.41
King Narrow-Bed	1.20	3.75	3.75	1.25
Engineer King	1.20	4.26	3.75	1.25
King	1.20	3.75	3.75	1.25
Roman	1.00	6.00	1.50	1.03
Norman	1.00	4.50	4.50	1.03
Utility	1.00	3.00	3.00	1.03
Kingston	1.00	3.75	3.75	1.03
Viking	0.75	6.00		
Saxon	0.75	4.50	*	0.77
Titan	0.75	3.00	*	0.77

**12-inch units could be used at corner to allow proper 1/2-bond coursing.*

Thermal Performances:

The thermal resistance of Glen-Gery thin brick is approximately 0.11 (hr • sq. ft.• deg f)/(Btu• in.). Therefore thin brick thermal performance is as follows:

Thin Brick Thickness (inch)	Thermal Resistance (hr • sq. ft.• deg f)/(Btu• in.)
1/2	0.05
3/4	0.08
1	0.11

The thermal resistance is used to predict the thermal performance of wall elements under steady-state conditions. The mass and specific heat of this product provide additional benefit when subjected to the dynamic conditions of the natural environment. As described in the American Society of Heating Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 90.1, the effects of mass, specific heat, and the color of the brick should be considered. Reference: BIA Technical Notes on Brick Construction 4 Revised, "Heat Transmission Coefficients of Brick Masonry Walls", 4B Revised, "Energy Code Compliance of Brick Masonry Walls" and 43D, "Brick Passive Solar Heating Systems, Part IV – Material Properties."

Sound Transmission:

The sound transmission of thin brick has not been measured and is typically dependent upon the overal wall system.

Fire Resistance:

Fire resistance ratings for thin brick are dependent upon the entire wall system utilized. Prescriptive one-hour and two-hour fire-resistance-rated exterior walls constructed with adhered thin veneer brick units on steel or wood studs are included in the International Code Council (ICC) International Building Code (IBC). These designs can be used by architects/engineers/designers of building construction projects in those jurisdictions that adopt and enforce the IBC where the nonbearing exterior walls of a building are required to have a one-hour or two-hour fire-resistance rating.

Coefficient of Thermal Expansion:

Glen-Gery thin brick have a coefficient of thermal expansion of approximately 0.000004 in. (in.•°F) as listed in The Building Code Requirements for Masonry Structures (TMS 402/ACI 530/ASCE 5) .

Coefficient of Moisture Expansion:

Glen-Gery thin brick veneer have a coefficient of moisture expansion which is less than 0.0005 in./in. Most of the moisture expansion of Glen-Gery thin brick occurs immediately after the bricks are fired, before the brick arrive at the job site.

Construction

Storage and Protection:

Store brick in their packaging off ground to avoid contamination by water, mud, dust or materials likely to cause staining or other defects. Do not use packages of thin brick as supports or work surfaces. Cover packages with a weather resistant membrane held securely in place or otherwise protect packages from the elements.

Wetting:

As deemed necessary (see IRA), wet units prior to contact with mortar. Wetting procedures vary by thin brick application and environment. Contact your Glen-Gery representative for specific information.

Weather Extremes:

When using Portland cement mortars, follow the procedures required by The International Building Code (IBC). The IBC references cold and hot weather construction provisions for masonry that are based on those found in Specification for Masonry Structures (TMS 602/ACI 530.1/ASCE 6) and required by Building Code Requirements for Masonry Structures (TMS 402/ACI 530/ASCE 5). While specific cold and hot weather provisions are not included within the International Residential Code (IRC) the IRC states that mortar for use in masonry construction shall comply with ASTM C 270, which requires mortar for other than masonry veneer to be prepared in accordance with the Masonry Industry Council's "Hot and Cold Weather Masonry Construction Manual." Further information is also available in the BIA Technical Notes on Brick Construction 1, "Cold and Hot Weather Construction."

When using proprietary attachment systems, adhesives or preblended cements, consult the manufacturer's written instructions for cold and hot weather requirements.

Installation:

When using Portland cement mortars in thickset applications butter the backs of the units and set units in full mortar joints. Use a Portland cement lime mortar conforming to ASTM C 270. A prepackaged mortar mix conforming to these specifications is Glen-Gery Color Mortar Blend. Reference: Glen-Gery Product Profile "Glen-Gery Color Mortar Blend." Joints must be completely filled to ensure performance.

When using proprietary attachment systems or preblended adhesives or cements, consult the manufacturer's written instructions for installation.

Tooling:

When thumbprint hard, tool all joints to produce a concave, grapevine, or vee joint finish.

Protection of Work:

At the end of each day and before each shut down period, cover work with a strong weather resistant membrane which is held in place securely. Scaffold boards closest to the wall should be tilted up at days end to prevent splatter during rain. Care should also be taken to protect brickwork located near the ground from mud and dirt.

Cleaning:

When the attachment system uses Portland cement mortars, remove excess mortar with a stiff bristle brush at the end of each shift. Clean with wooden paddles and stiff fiber brushes using clean water. If a cleaning agent is necessary, presoak the wall with clean water prior to applying the cleaning agent and thoroughly rinse the wall with clean water after cleaning. Prior to determining a final cleaning solution, test the procedure and cleaning agent on a small sample area to observe the effectiveness of the overall cleaning solution and, most importantly, to detect any possible deleterious effects

or changes in appearance of the brick. Additional information is available in the Glen-Gery Technical Profile "Cleaning New Brickwork." Check with your Glen-Gery Distributor or District Sales Manager prior to making a final selection of a cleaning procedure and solution. When using Type N mortars, clean down should never occur prior to 7 days after work is completed to assure appropriate curing of the mortar. Reference: BIA Technical Notes on Brick Construction 20, "Cleaning Brickwork."

When using proprietary attachment systems, adhesives or preblended cements, consult the manufacturer's written instructions for cleaning.

Estimating:

The quantities of brick and mortar required for a project vary with the size of the brick unit, the wall construction, the number of field cuts necessary, and the workmanship. Table 2 provides the quantities of brick and mortar quantities per 1,000 brick units. The figures are based on the units being placed in the wall as stretchers in stack or running bond. The values provided are estimates of the quantities in the finished wall and do not account for waste. These values represent the actual number of units per linear foot for the various brick sizes placed on the four most frequently used positions in the wall. The values are based on a nominal three-eight inch mortar joint. Reference: BIA Technical Notes on Brick Construction 10,"Dimensioning and Estimating Brick Masonry."

PRECAST AND TILT-UP CONCRETE WALL PANEL APPLICATIONS

Concrete panel manufacturers, including precast and tilt-up wall systems, offer a unique and well performing walls for a variety of applications that typically involve relatively repetitive wall panels. Such systems allow the use of thin brick in wall systems that previously did not include thin brick. With the advent of various thin brick liners that hold the brick in place, as well as advancements in concrete technology, thin brick can be placed face down in the concrete liner. The liner holds the thin brick in place as concrete is poured and the brick form the finished surface. In such systems the thin brick must be uniform enough to reduce potential leakage between the liner and the edge of the brick.

In addition, the finished faces of the thin brick are typically required to be waxed in order to prevent concrete, which passes between the liner and the edge of the clay unit, from sticking to the finished surface of the brick. The wax and concrete is removed after the panel is removed from the liner utilizing a hot water pressure washer.

While Glen-Gery produces a wide variety of colors, textures and sizes available in thin brick, precast and tilt-up concrete panels typically require very uniform products that are often tighter than grade TBX, with textures limited to smooth or wirecut to reduce concrete leakage between the thin brick and the liner. Cleaning procedures typically limit surface coatings to very light sand or spray coatings that are not removed by the high pressure cleaning techniques.

Glen-Gery is capable of providing a wide variety of thin brick meet such requirements, including many thru-body and surface coated brick, as well as smooth and wirecut textures capable of withstanding concrete panel cleaning techniques.

In addition, Glen-Gery offers edge-grinding of thin brick to ensure such uniformity and waxing of finished faces often required by concrete panel manufacturers; as well as standard thin brick shapes and many custom shapes for unique thin brick possibilities.

Be sure to contact your local Glen-Gery representative to determine available thin brick for such applications.

For further information contact:
Glen-Gery Technical Services
433 South Pottsville Pike
Shoemakersville, PA 19555
(610) 562-3076

Glen-Gery

info@glengery.com
www.glengery.com

THIN BRICK COLLECTION
2025

Glen-Gery

Bayhill Thin Brick with white mortar
(installation method adhesive)

Thin Brick Collection

A compelling alternative.

Product Overview

Glen-Gery brick veneer is the pinnacle of form and function. With a striking appearance, its style is just as convincing as its strength. Whether you take it inside or outside, thin brick has the pull to be the centerpiece. Glen-Gery thin brick is a compelling alternative developed to give architects, engineers, builders and homeowners a choice that expands their design potential.

Details

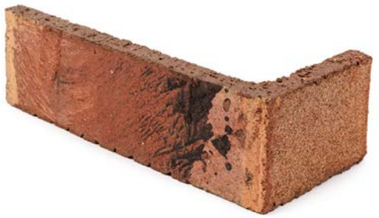
Suggested use: interior and exterior applications including accent walls, kitchens, bar surround, backsplashes, archways, fireplaces and more!

See the next few pages for color options, or visit **www.glengery.com**

Sizes

Brick veneer come in a variety of lengths and thicknesses. The following pages showcase our current thin brick offering. Virtually any of our full size facebrick can be cut into thin brick to meet project needs. Please refer to the actual dimensions listed above the products on each page. Contact your Glen-Gery sales representative for more information.

Flats



Corners

Designer Klaycoat | M TB

HANLEY • Catalog size: Modular Thin Brick (1/2" x 2-1/4" x 7-5/8" I 6.86 brick per sqft)

Khaki Stone

Stone Grey

Urban Grey

Charcoal

La Paloma | M TB

INTERNATIONAL • Catalog size: Modular Thin Brick (3/4" x 2-1/4" x 7-5/8" I 6.86 brick per sqft)

Castellana

Azul

Burlesque Glazed | M TB

HANLEY • Catalog size: Modular Thin Brick (1" x 2-1/4" x 7-5/8" I 6.86 brick per sqft)

White

White with Speck

Cloud Grey

Cardinal Red

Bermuda Blue

Black

Feldhaus | TB

INTERNATIONAL • Catalog size: Modular Thin Brick (9/16" x 2-1/4" x 7-5/8" I 6.86 brick per sqft)

100 Classic Cream Smooth

757 Cream Waterstruck

773 Rustic Gray Waterstruck

387 Rustic Red Flashed

567 Coal Brindle Smooth

511 Onyx Smooth

700 Anthracite Smooth

Cushwa | M ES TB

MID-ATLANTIC • Catalog size: Modular Thin Brick (3/4" x 2-1/4" x 7-5/8" l 6.86 brick per sqft),
* Engineer Standard Thin Brick (3/4" x 2-3/4" x 8" l 5.36 brick per sqft)

47-HB

56-DD

Georgian

52-DD

53-DD

53-DD "1776" *

Shenandoah

Shenandoah "1776" *

51-DDX

MID-ATLANTIC • Catalog size: Modular Thin Brick (3/4" x 2-1/4" x 7-5/8" l 6.86 brick per sqft),
* Engineer Standard Thin Brick (3/4" x 2-3/4" x 8" l 5.36 brick per sqft)

Provincial

Provincial "1776" *

Danish

Danish "1776" *

Rose Red Range

Rose Full Range

Rose Full Range "1776" *

4-HB

Antique Red

50-DD

Cosmopolitan | M TB

SERGEANT BLUFF • Catalog size: Modular Thin Brick (1/2" x 2-1/4" x 7-5/8" l 6.86 brick per sqft)

Toasted Fine Art Velour

Toasted Fine Art Smooth

Badlands Velour

Badlands Smooth

Coppertone Velour

Coppertone Smooth

Midtown Ironspot Velour

Midtown Ironspot Smooth

Mountain Shadow Velour

Mountain Shadow Smooth

Fine Art Velour

Fine Art Smooth

Black Hills Velour

Black Hills Smooth

Vintage Black Velour

Vintage Black Smooth

Ebonite Velour

Ebonite Smooth

M EM TB | Commonwealth

LAWRENCEVILLE • Catalog size: Modular Thin Brick (3/4" x 2-1/4" x 7-5/8" l 6.86 brick per sqft)
* Engineer Modular Thin Brick (3/4" x 2-3/4" x 7-5/8" l 5.76 brick per sqft)

Oxford Rose *

Midlothian

Old Richmond *

Colonial *

Vertical Red Scratch

Bark Flashed

Henrico *

Farmington *

Roseneath

Vertical Flash Scratch

Bark Red

Emporium+ | M TB

HANLEY • Catalog size: Modular Thin Brick (1/2" x 2-1/4" x 7-5/8" I 6.86 brick per sqft)

Aspen White
Wirecut

Aspen White
Smooth

2025 COLOR OF THE YEAR
Silver City Smooth

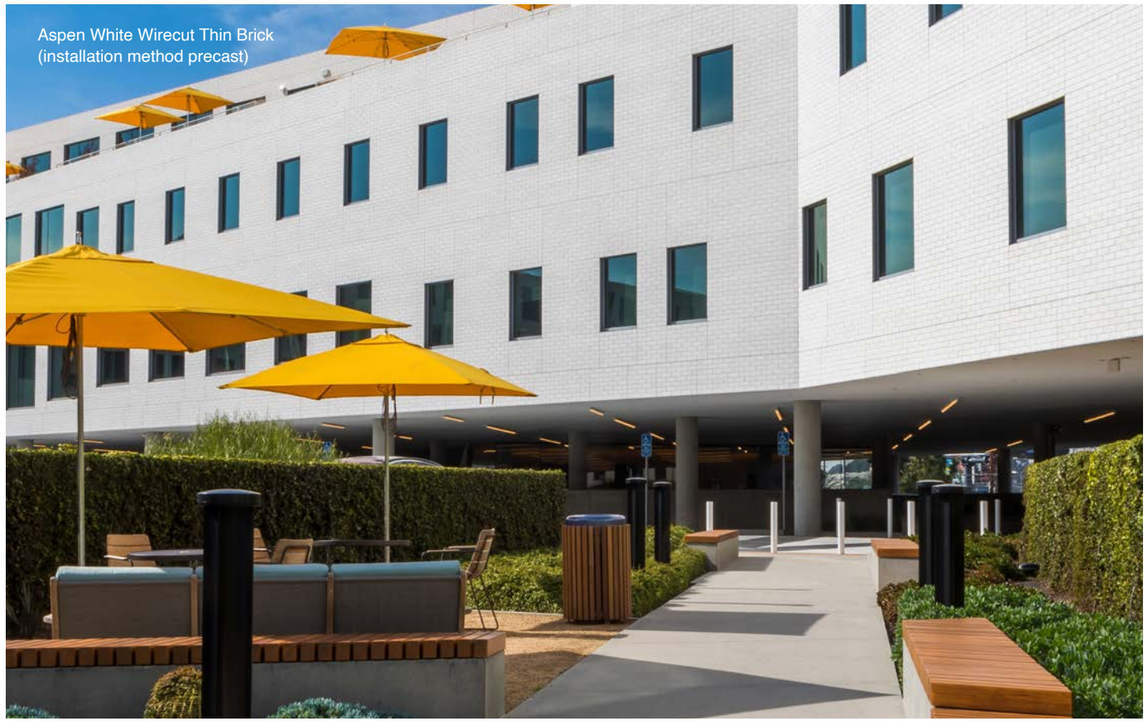
2025 COLOR OF THE YEAR
Silver City Wirecut

Belgian Grey
Smooth

Belgian Grey
Wirecut

Black Pearl
Wirecut

Black Pearl
Smooth



Aspen White Wirecut Thin Brick
(installation method precast)

M TB | Hanley Classics

HANLEY • Catalog size: Modular Thin Brick (1/2" x 2-1/4" x 7-5/8" I 6.86 brick per sqft)

Oyster Grey
Wirecut

Oyster Grey
Smooth

Rome Grey
Wirecut

Rome Grey
Smooth

Burnt Almond
Wirecut

Burnt Almond
Smooth

Port Liberte
Wirecut

Port Liberte
Smooth

Smoky Quartz
Wirecut

Smoky Quartz
Smooth

Toledo Grey
Wirecut

Toledo Grey
Smooth

Baxter
Wirecut

Baxter
Smooth

Emporium | M TB

HANLEY • Catalog size: Modular Thin Brick (1/2" x 2-1/4" x 7-5/8" I 6.86 brick per sqft)

Cream White
Wirecut

Cream White
Smooth

Cream White
Smooth Ironspot

Tawny Beige
Wirecut

Tawny Beige
Smooth

Tawny Beige
Smooth Ironspot

Golden Dawn
Wirecut

Golden Dawn
Smooth

Golden Dawn
Smooth Ironspot

Dolomite Grey
Wirecut

Dolomite Grey
Smooth

Dolomite Grey
Smooth Ironspot

Pearl River
Wirecut

Pearl River
Smooth

Pearl River
Smooth Ironspot

Mink Grey
Wirecut

Mink Grey
Smooth

Mink Grey
Smooth Ironspot

Brazilwood
Wirecut

Brazilwood
Smooth

Brazilwood
Smooth Ironspot

Sunset
Wirecut

Sunset
Smooth

Sunset
Smooth Ironspot

Sunset Flashed
Wirecut

Sunset Flashed
Smooth

Sunset Flashed
Smooth Ironspot

KF | M TB

MID-ATLANTIC • Catalog size: Modular Thin Brick (3/4" x 2-1/4" x 7-5/8" I 6.86 brick per sqft)

Heritage S

Heritage SWB

Old Mystic

Rocky Mountain

Antique

Mohawk

Sandford

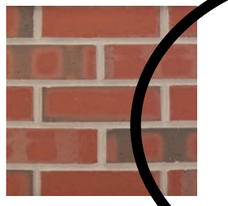
Shrewsbury

M EM TB | Red Essentials

LAWRENCEVILLE • Catalog size: Modular Thin Brick (3/4" x 2-1/4" x 7-5/8" I 6.86 brick per sqft)
* Engineer Modular Thin Brick (3/4" x 2-3/4" x 7-5/8" I 5.76 brick per sqft)

Smooth Red

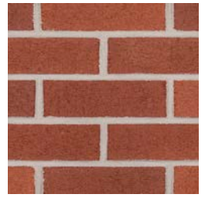
Wirecut Red *



Smooth Flashed Red

Wirecut Flashed Red *

MID-ATLANTIC • Catalog size: Modular Thin Brick (3/4" x 2-1/4" x 7-5/8" I 6.86 brick per sqft)



Red Matt

Red Flashed Matt

Metallix®

HANLEY • Catalog size: Modular Thin Brick (1/2" x 2-1/4" x 7-5/8" I 6.86 brick per sqft)

Cuprum Metallix

Platinum Metallix

Titanium Metallix

M TB | Sioux City Blues

SERGEANT BLUFF • Catalog size: Modular Thin Brick (1/2" x 2-1/4" x 7-5/8" I 6.86 brick per sqft)

Blue Smooth Ironspot

Blue Velour Ironspot

Couture | M TB

PITTSBURGH • Catalog size: Modular Thin Brick (1/2" x 2-1/4" x 7-5/8" l 6.86 brick per sqft)

Mt. Rushmore

Rosewood

Milwaukee

Flagstaff

Stratford

Rustic Burgundy

Element | M TB

PITTSBURGH • Catalog size: Modular Thin Brick (1/2" x 2-1/4" x 7-5/8" l 6.86 brick per sqft)

Bayhill

Nob Hill

Cloudscape

Glacier Stone

Aberdeen

Cedar Lake

Olde Detroit

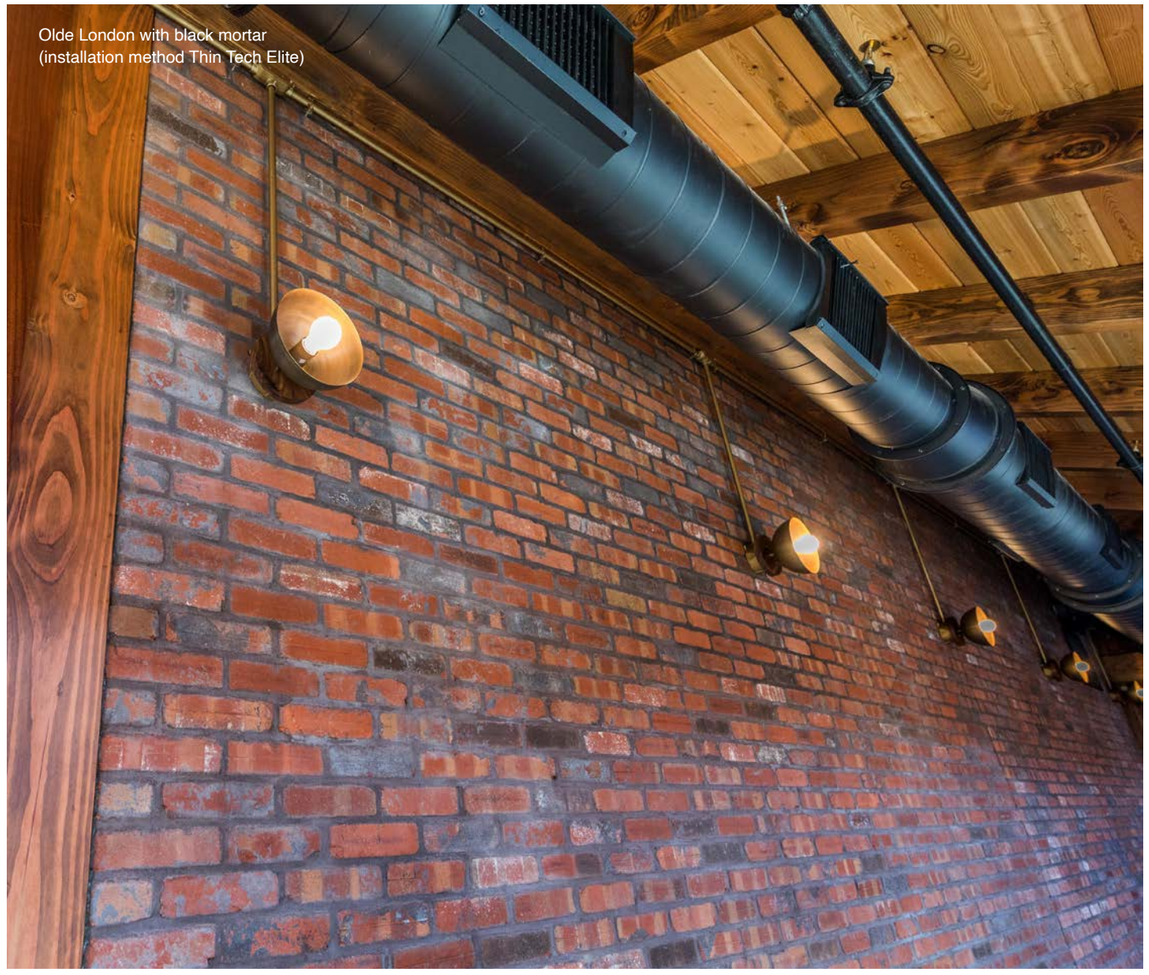
S TB | Industrial Rustic

MID-ATLANTIC • Catalog size: Standard Thin Brick (3/4" x 2-1/4" x 8" l 6.55 brick per sqft)

Olde City

Olde England

Olde London



Olde London with black mortar
(installation method Thin Tech Elite)

Family Estate | M EM TB

LAWRENCEVILLE • Catalog size: Modular Thin Brick (3/4" x 2-1/4" x 7-5/8" I 6.86 brick per sqft)
Engineer Modular Thin Brick (3/4" x 2-3/4" x 7-5/8" I 5.76 brick per sqft)


Cape Charles


Charleston


Santa Fe


Ashcroft Rose


Carters Grove


Old Salem


Monticello


Plymouth


Brandywine


Burnt Chimney


Cranberry


Shenandoah


Ashfield


Black Accent

M EM TB | Manor House

LAWRENCEVILLE • Catalog size: Modular Thin Brick (3/4" x 2-1/4" x 7-5/8" I 6.86 brick per sqft)
Engineer Modular Thin Brick (3/4" x 2-3/4" x 7-5/8" I 5.76 brick per sqft)


Chesapeake


Silverview


Minuteman


Logan


Driftwood


Old Moss


Lake Braddock


Statesman


Lafayette


Camden


Patriot


Rockbridge


Welford Road


Olde Liberty

Mortar Matters

COLOR
Choosing the right mortar color and technique can make all the difference when building your vision. Whether you're going for contrast or a more even-toned aesthetic, our range of mortar colors can help bring your ideal look to life. Choose from a standard concave joint, over mortar or grapevine joint to further customize your project.

JOINT
Add a tasteful touch with an unexpected mortar technique. Different mortar treatments, such as standard concave, over mortared joints, grapevine, or recessed significantly impact the overall aesthetic of brickwork, influencing the appearance of texture, depth, and architectural style.

Standard Concave

Over Mortar

Grapevine

Installation Methods

ADHESIVE
This method is often used for interior applications or on substrates where traditional mortar might not be suitable.

THICKSET (LATH + SCRATCH)
Involves a thick mortar bed, ideal for uneven surfaces or when additional leveling is needed, often used in interior or limited height exterior installations.

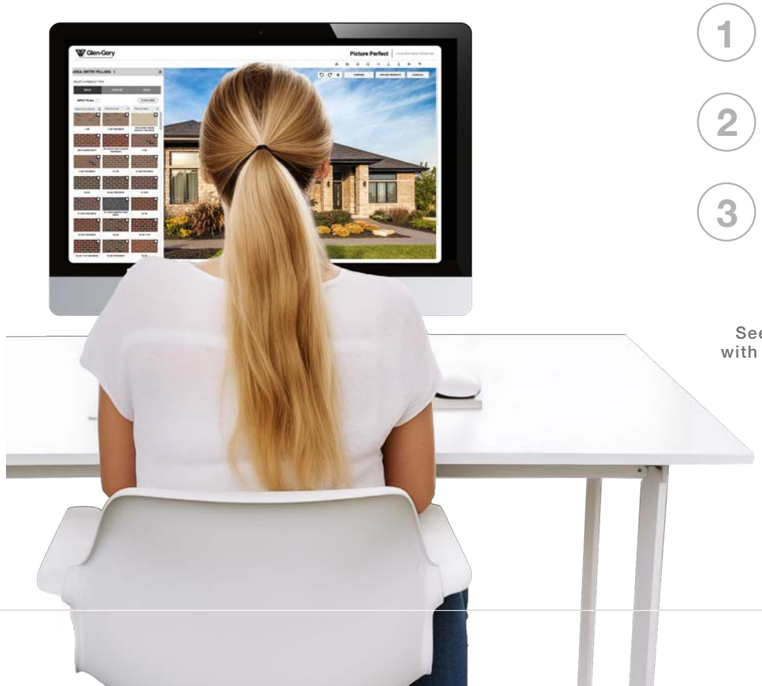
THINSET (MODIFIED MORTAR + CEMENT BOARD)
Utilizes a thin layer of adhesive mortar with improved characteristics, suitable for flat and even substrates, commonly used in commercial or multi-story installations.

SUPPORT SYSTEM BY GLEN-GERY: THIN TECH® AND TRU BRIX®
Panel are Pre-engineered metal support solutions that can speed up installation, enhance performance and ensure uniformity.

EMBEDDED: PRECAST AND TILT-UP
These are factory-made or site-poured panels with thin bricks embedded in concrete.

Picture Perfect Virtual Home Design Tool

Personalize your home design before you begin building. Use the Picture Perfect virtual home design tool from Glen-Gery. It gives you style after style of brick, trim, and roofing to create the exact style of home you want.



1. Use an extensive selection of tools to virtually create the perfect home style.
2. Choose from trending brick and mortar options to a full range of accessory colors.
3. Upload an image of your own home or work with an array of pre-loaded images.

See what transformation looks like with Picture Perfect from Glen-Gery.
glengery.com/visualizer

Glen-Gery

Discover the possibilities at glengery.com

Cover Image: 52-DD Thin Brick

A BRAND OF

BRICKWORKS

Not all thin bricks are recommended for use in interior paving applications. Please consult a masonry professional to ensure proper design/installation.

Part 1: GENERAL

1.1 **Scope**: Subject to local building codes, this product is intended for use in:

1.1.1 One and two family dwellings.

1.1.2 Low-rise multifamily dwellings, low-rise professional offices, libraries and low-rise motels.

1.1.3 Lighter use industrial buildings and factories, hotels, and retail sales buildings.

1.2 **Product Description**: Side-hinged door systems manufactured by MASONITE or meeting MASONITE specifications.

1.2.1 Door system components include: door panel(s), sidelite panel(s), glass inserts, transom, door frame, hinges, weather seals.

Part 2: BASIC MATERIALS

2.1 **Door Panel**: Smooth Flush-Glazed fiberglass doors shall be fabricated using 7-piece construction that includes fiberglass reinforced facings, laminated lock stile, laminated wood hinge stile, wood top rail, rot resistant composite bottom rail and integral glazing frame. Door facings are to be bonded to stiles and rails forming a structural attachment. Insulated core to be poured-in-place polyurethane foam forming a secure attachment to all door components.

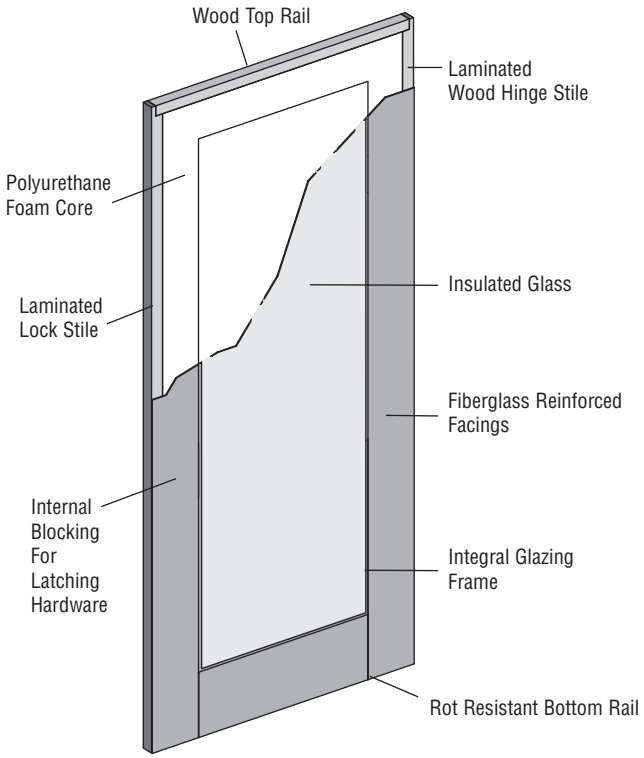
2.1.1 Bottom rail may be machined to accept weather seal. Mounting surface for latching hardware to be reinforced with solid internal blocking. Hinge preparations are to be placed at MASONITE specifications and are to be machined for standard weight full mortise 4” butt hinges. Latch preparations are to be placed at MASONITE specifications. Face bore(s) for cylindrical lock and deadbolt are to be 2-1/8” diameter at 2-3/4” or 2-3/8” backset and 5-1/2” on center (5-1/2” or 10-1/2” on 8’0” panels).

2.2 **Sidelite Panel**:

2.2.1 Smooth Flush-Glazed fiberglass sidelites shall be fabricated using 7-piece construction that includes fiberglass reinforced facings, wood stiles, wood top rail, rot resistant composite bottom rail and integral glazing frame. Door facings are to be bonded to stiles and rails forming a structural attachment. Insulated core to be poured-in-place polyurethane foam forming a secure attachment to all door components.

2.3 **Glass Insert**: Insulated glass shall be fabricated 1” double pane construction. Glass frame “flush glazed” design in cellular vinyl.

2.4 **Transom**: Specialty insulated transoms shall be fabricated with 1/2” double pane or 1” triple pane glass mounted to the framing system as a non-operable panel.



2.5 **Door Frame**: Wood frames shall be fabricated as a single rabbet jamb design. Hinge jamb(s), strike jamb, head jamb, and mullion(s) shall be machined to accept a kerf applied weather seal. Hinge jamb preparations are to be placed at MASONITE specifications and are to be machined for standard weight full mortise 4" butt hinges. Strike jamb preparations are to be placed at MASONITE specifications and are to be machined for full lip cylindrical strike plate. Inswing or bumper outswing threshold shall be high-dam design. Low profile threshold shall be required for handicap accessible openings. Double door units shall include a t-astragal attached to the “passive” panel with top and bottom flush bolts that securely strike into the head jamb and threshold.

2.6 **Hinges**: (3) standard weight full mortise 4” butt hinges are required on doors 7’0” height or smaller & (4) on doors greater than 7’0”.

2.7 **Weather Seal**: Door frame shall be fabricated featuring a vinyl wrapped foam filled compression design that is kerf installed. Corner seals shall be installed to the rabbet section of the door frame at the bottom of the hinge and lock jamb. Door bottom sweep shall be sealed and securely attached to the operable door panel(s).

Part 3: DELIVERY, STORAGE & HANDLING

3.1 **Delivery**: Reasonable care shall be exercised during shipping and handling in keeping with the decorative nature of product.

3.2 **Storage & Protection**: Store upright in a dry, well ventilated building or shelter at a constant temperature. Do not store in damp areas or freshly plastered buildings. Place units on wood blocks at least 2" high to prevent moisture at threshold and/or possible damage. Do not place in non-vented plastic or canvas shelters.

Part 4: EXECUTION

4.1 **Examination**: Site verification of substrate conditions, which have been previously completed, are acceptable for the product installation instructions in accordance with manufacturer's specifications. Verify that door frame openings are constructed plumb, true and level before beginning installation process. Select fasteners of adequate type, number and quality to perform the intended functions.

4.2 **Installation**: Remove protective packaging just prior to installation. Installer shall be experienced in performing work required and shall be specialized in the installation of work similar to that required for this project. Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product packaging instructions for installation.

4.3 **Flashing, Insulating & Trimming**: Exterior of installed unit shall be flashed, trimmed & sealed to prevent air infiltration and/or water penetration. Interior of installed unit shall be insulated & trimmed to prevent thermal and/or acoustical transmission.

4.4 **Finishes**: Various types of materials are used in the construction of the door system; each shall be sealed in accordance with manufacturer's specifications to protect against various environmental conditions. Make sure to seal and inspect all 5-surfaces (top, hinge side, lock side, exterior face and interior face) of the active door panel(s). Finishing and/or re-finishing must be completed within 45-days from the time the protective packaging was removed and/or the installation was performed. Conduct periodic inspections of all coated surfaces to insure that door components are not exposed. Inspections should occur at least once a year. Reseal the surface as needed.

Part 5: BUILDING CODE & REGULATORY COMPLIANCE

5.1 **Structural Performance & Impact Rating**: Unit scheduled for installation in openings requiring compliance with national, state or local wind load and/or missile impact resistance shall be clearly noted when product is ordered. Design pressure (DP) ratings are available for a wide selection of door styles and configurations are listed under the National Accreditation & Management Institute (NAMI). Smooth Flush-Glazed fiberglass door unit at +55.0 / -55.0 maximum rating. (See structural performance data for unit specific DP information).

5.2 **Thermal Performance**: Unit Scheduled for installations in openings requiring compliance with national, state, or local thermal resistance and/or solar heat gain shall be clearly noted when product is ordered. U-Value & SHGC ratings in accordance with the International Energy Conservation Code (IECC) and/or the National Fenestration Rating Council (NFRC) are available for a wide selection of door styles. ENERGY STAR compliance / labeling is available for various door styles. Smooth Flush-Glazed fiberglass at U-value of 0.38 & SHGC of 0.36 minimum rating. (See thermal performance data for unit specific thermal information).

5.3 **Acoustical Performance**: Unit scheduled for installation in openings requiring a specified noise control rating shall be clearly noted when product is ordered. Smooth Flush-Glazed fiberglass sound transmission classification (STC) rating is 28 for a (operable) door with a full lite glass insert. (See acoustical performance data for unit specific acoustical information).

5.4 **General Performance**: All door systems are designed to comply with water penetration guidelines in accordance with ASTM E331 and/or Florida Building Code TAS202; air infiltration guidelines in accordance with ASTM E283 and/or Florida Building Code TAS202; forced entry resistance guidelines in accordance with Florida Building Code TAS202.

Part 6: WARRANTY

6.1 Manufacturer warrants the panel to be free of manufacturing defects in material and workmanship for 25-years. Please check with manufacturer or distributor for current warranty terms and conditions.

COMPOSITE DECKING
TREX TRANSCEND® TROPICALS AND EARTH TONES,
TREX TRANSCEND® LINEAGE™

Part 1 General

1.1 Section Includes

A. Composite Decking - Trex Transcend Tropicals and Earth Tones & Trex Transcend Lineage

1.2 Related Sections

A. Section 06-1100 – Wood Framing

1.3 References

A. ASTM D7032: Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite Deck Boards and Guardrail Systems (Guards or Handrails), ASTM International.
B. ASTM D7031: Standard Guide for Evaluating Mechanical and Physical Properties of Wood-Plastic Composite Products, ASTM International
C. ASTM E84: Test Method for Surface Burning Characteristics of Building Materials, ASTM International.
D. ASTM D570: Water Absorption of Plastics
E. ASTM D1761: Mechanical Fasteners in Wood
F. ASTM D1413: Test method for Wood Preservatives by Laboratory Soil-block Cultures
G. ASTM C177: Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus

1.4 Design/Performance Requirements

A. Structural Performance:
    a. 1x and 2x Deck Board: Uniform Load – An allowable span of 16 in. on-center and 100 lbf/sq.ft.
    b. Tread of Stairs 1x: Concentrated Load: An allowable span of 12 in. on-center, and 750 lbf-, and 1/8” max. deflection, with a concentrated load of 300 lbf on area of 4 sq. in.
    c. Tread of Stairs 2x: Concentrated Load: An allowable span of 16 in. on-center, and 750 lbf-, and 1/8” max. deflection, with a concentrated load of 300 lbf on area of 4 sq. in.
B. Fire-Test Response Characteristics per ASTM E84.
    a. Flame Spread Index– Class B.

1.5 Submittals

A. Product Data Indicate sizes, profiles, surface style, and performance characteristics.
B. Samples: For each product specified, one sample representing actual product color, size, and finish.

1.6 Delivery, Storage, and Handling

A. Store Trex products on a flat and level surface. Support bundles on supplied dunnage.
B. Keep material covered using the provided bundle cover until time of installation.
C. For detailed storage recommendations: Trex Literature

1.7 Warranty

A. Specific terms for warranties can be found at: Trex Literature

Part 2 Products

2.1 Manufacturers

A. Contract Documents are based on products supplied by; Trex Company, Inc., 2500 Trex Way, Winchester, VA 22601.
B. Substitutions: Not permitted under Division 01

2.2 Applications/Scope

A. Wood-Plastic Composite Lumber:
    a. Material Description: Composite Decking consisting of recycled Linear Low-Density Polyethylene (LLDPE) and recycled wood. The product is extruded into shapes and sizes as follows:
        i. Trex Transcend Decking Boards (nominal dimensions); 1" x 5.5", 2" x 5.5".
        ii. Lengths – 12, 16, and 20 feet
        iii. Color – To be specified by owner from Trex' standard list of colors.
    b. Physical and Mechanical Properties as follows:

Test	Test Method	Value
Flame Spread Index	ASTM E84	Class B
Thermal Expansion	ASTM D1037	1.9 x 10^{-5} inch/inch/degreeF
Moisture Absorption	ASTM D1037	< 1%
Screw Head Pull-Through	ASTM D1761	161 lbf per screw**
Fungus Resistance	ASTM D1413	Rating - no decay
Termite Resistance	AWPA E1-72	Rating = 9.6

** Fastener used in testing: #8 x 2.5 in. approved Stainless Steel Screw

2.2 Accessories

A. Fasteners:
    a. Trex Universal Hideaway Hidden Fasteners
    b. Other recommended fasteners: Trex Literature

Part 3 Execution

3.1 Installation

A. Install according to Trex installation guidelines: Trex Literature
B. Cut, drill, and rout using carbide tipped blades.
C. Do not use composite wood material for structural applications.

3.2 Cleaning

A. Following cleaning recommendations as found in Trex installation guide at: Trex Literature

Trex Transcend®

LINEAGE™, TROPICALS & EARTH TONES

PREMIUM HIGH-PERFORMANCE DECKING & FASCIA

Trex Transcend® decking and Trex® Fascia are wood thermoplastic composite lumber (WTCL) boards with an integrated shell that covers the boards on the top surface and sides. The integrated shell consists of a proprietary surface formulation that produces a natural, wood-like grain pattern finish. An alternative to naturally durable hardwood lumber, Transcend Decking and Fascia are ICC-ES SAVE-certified to be a minimum of 95.4% recycled content by weight.

Shell: impact-, scratch- and fade-resistant

Core: 95% recycled materials

DECKING

1" Grooved edge | 1" Square edge | 2" Square edge

FASCIA

8" or 12" Widths

FEATURES	DECKING BOARDS			FASCIA BOARDS	
	1" x 6" Square edge	1" x 6" Grooved edge	2" x 6" Square edge	8" Square edge	12" Square edge
Actual Dimensions - Standard	.94" x 5.5"	.94" x 5.5"	1.3" x 5.5"	.56" x 7.25"	.56" x 11.375"
Actual Dimensions - Metric	24 mm x 140 mm	24 mm x 140 mm	33 mm x 140 mm	14 mm x 184 mm	14 mm x 288 mm
Available Lengths - Standard	16', 20'	12', 16', 20'	16', 20'	12'	12'
Available Lengths - Metric	487 cm, 609 cm	365 cm, 487 cm, 609 cm	487 cm, 609 cm	365 cm	365 cm
Transcend Lineage	X	X		X	X
Transcend Tropicals	X	X	X	X	X
Transcend Earth Tones	X	X		X	X
Weight per Lineal Foot	2.4 lbs	2.4 lbs	3.6 lbs	2.0 lbs	3.3 lbs

PHYSICAL & MECHANICAL PROPERTIES

TEST	TEST METHOD	VALUE
Flame Spread	ASTM E 84	Class B
Thermal Expansion	ASTM D 1037	1.9×10^{-5} in/in/°F
Moisture Absorption	ASTM D 1037	< 1%
Screw Head Pull-Through	ASTM D1761	161 lbf/screw*
Fungus Resistance	ASTM D1413	Rating – no decay
Termite Resistance	AWPAE1-72	Rating = 9.6

*Fastener used in testing: #8 x 2.5" approved Stainless Steel Screw

COLORS

Lineage (neutral multi-tonal)

Tropicals (vibrant multi-tonal)

Earth Tones (monochromatic)

Trex Transcend®

RAILING

MIX-AND-MATCH RAILING COMPONENTS & KITS

Trex Transcend® railing is a wood thermoplastic composite railing lineal with an integrated shell (made from either acrylic or PVC) that covers all exposed surfaces. The thermoplastic core is different from that used in Trex® decking products, and has a unique set of properties designed to fit the guardrail application. The integrated shell utilizes PVC (for Classic White) and acrylic (all other colors) to provide a long-lasting natural aesthetic. An alternative to both metal and wood guardrails, Trex composite railing products are a minimum of 40% recycled content of wood fiber and recycled polymeric content by weight.

RAILING COMPONENTS

Post components: post sleeve, cap, skirt

Crown top rail and Universal top/bottom rail

Square composite baluster

Round aluminum baluster

Infill kits: baluster spacers, foot block, mounting hardware

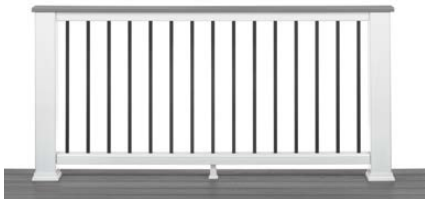
COMPONENT	HEIGHTS	LENGTHS	WIDTHS	COLORS
Post Sleeve	40" (101 cm) 108" (274 cm)	—	4.45" x 4.45" (113 mm x 113 mm)	WT, BK, RS, VL
	39" (990 mm) 108" (274 cm)	—	5.5" x 5.5" (139 mm x 139 mm)	WT
Post Cap & Skirt	—	—	4.55" x 4.55" (115 mm x 115 mm)	WT, BK, RS, VL
	—	—	5.55" x 5.55" (140 mm x 140 mm)	WT
Crown Top Rail & Universal Top/Bottom Rail	—	72" (183 cm) 96" (244 cm)	—	WT, BK, RS, VL
Square Composite Baluster	30.375" (771 mm) 36.375" (923 mm)	—	1.418" (36 mm)	WT, BK, RS, VL
Round Aluminum Baluster	30.25" (768 mm) 36.25" (920 mm)	—	.75" (19 mm)	WT, BZ, BK
Infill Kits*	—	72" (183 cm) 96" (244 cm)	—	WT, BK, RS, VL

*Glass panel infill kits available in 72" lengths in horizontal applications. Infill panel sold separately. To complete your rail section, visit **glass.trex.com**

RAIL KITS

Rail & Square Composite Baluster Kit

Rail & Round Aluminum Baluster Kit



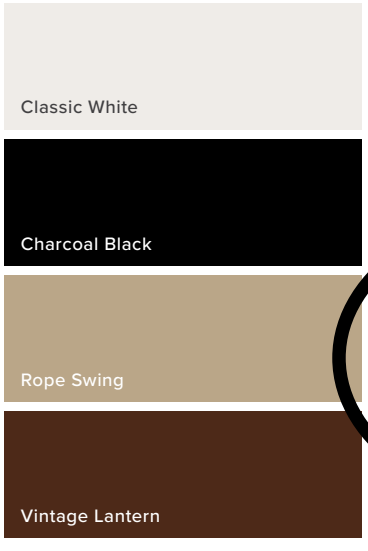
Cocktail Rail & Round Aluminum Baluster Kit

COMPONENT	RAIL & SQUARE COMPOSITE BALUSTER KIT	RAIL & ROUND ALUMINUM BALUSTER KIT	COCKTAIL RAIL & ROUND ALUMINUM BALUSTER KIT*
Top Rail	Crown	Crown	Universal
Bottom Rail	Universal	Universal	Universal
Heights	36" (914 mm) 42" (106 cm)	36" (914 mm) 42" (106 cm)	36" (914 mm)
Lengths	72" (183 cm) 96" (244 cm)	72" (183 cm) 96" (244 cm)	72" (183 cm) 96" (244 cm)
Applications	Horizontal, Stair	Horizontal, Stair	Horizontal, Stair
Colors	WT, BK, VL	WT, BK, VL (round aluminum balusters come in BK)	WT (round aluminum balusters come in BK)

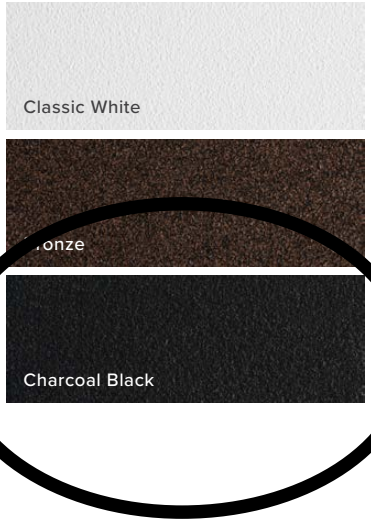
*A cocktail rail allows for a Trex Transcend® or Trex Select® deck board to be installed on top of a Universal top/bottom rail. All deck boards sold separately.

COLORS

Composite



Aluminum



CODE REQUIREMENTS

Trex Transcend Railing meets both IRC and IBC designated requirements in accordance with ASTM D7032. Refer to Code Compliance Report CCRR-0132 for specific details.

HARDWARE

Mounting Hardware for Cut Rails

The perfect solution for any installation that requires making two railing sections from one kit.

Includes 2 Crown top rail gaskets, 4 Universal top/bottom rail gaskets, 4 RSB rail brackets, 8 rail-to-bracket fasteners and 8 rail-to-post fasteners.

QUESTIONS?

Connect with our pro services team at
1-800-BUY-TREX or customercare@trex.com

Scan to learn more about Trex Transcend Railing.

FlamePRO®

FIRE RETARDANT TREATED WOOD

FlamePRO®
FIRE RETARDANT TREATED WOOD

FlamePRO® brand fire retardant treated wood (FRTW) is lumber and plywood pressure impregnated with FlamePRO Interior Type A High Temperature (HT) fire retardant chemicals. FlamePRO brand fire retardant is a proven successful formulation based on the American Wood Protection Association P50 Standard for Fire Retardants. FlamePro fire retardant lumber and plywood meets the requirements for FRTW listed in the International Code Council Acceptance Criteria ICC AC66 conforming with the International Residential and the International Building Codes (IRC & IBC).

FlamePro FRTW products comply with AWPA UC-1 and UCFA use category systems, FlamePro treatment process meets the AWPA T1 standard and FlamePro chemical has been analyzed to confirm the formulation meets AWPA P50 standard.

FlamePRO FRTW is available nationwide through a network of independently owned and operated wood treatment facilities licensed by Koppers Performance Chemicals Inc. A 50-Year Limited Warranty against structural failure due to heat or humidity is available. See the FlamePRO 50-Year Limited Warranty for details. Available at *Koppers Performance Chemicals Inc., Attn: Consumer Affairs, P. O. Drawer O, Griffin, Georgia 30224-0249 or visit www.kopperspc.com*

FlamePRO brand fire retardant treated wood is typically specified for use in interior areas not exposed to the weather or wetting and where the adopted building code permits the use of wood or fire retardant treated wood.

KEY PRODUCT VALUES

- Independently Tested
- Highly Cost Effective
- Quality Monitored by Independent Inspection Agency
- Limited Warranty
- Pressure Treated (Not a Paint or Coating)
- Low Corrosion to Metal, Hardware and Fasteners
- Low Hygroscopicity
- Low Smoke Development Values
- Low Flamespread Index Values
- UL GREENGUARD GOLD, Low VOC
- ICC-ESR Report-4244
- Superior Strength Durability
- ASTM E84 Extended 30-minute Test
- ASTM E119 1 & 2 Hour Wall Assemblies
- Optional Color Indicator for Building Site Recognition

FIRE PERFORMANCE

All FlamePro brand fire retardant treated wood has been tested at Underwriters Laboratories resulting in flame spread and smoke development ratings of 25 or less when subjected to ASTM E84 surface burning characteristics in tests of 30 minute duration without evidence of significant progressive combustion. Consequently, wood treated with FlamePro fire retardant has qualified for the UL "FR-S", Class A, "Class 1" classification for surface burning characteristics.

UL CLASSIFIED

UL Classified with an FR-S Rating for flame spread and smoke development values of 25 or less.

UL GREENGUARD GOLD CERTIFICATION

The FlamePRO Fire Retardant has undergone rigorous testing and met stringent standards for low volatile organic compound (VOC) emissions. Products certified to this criteria are suitable for use in schools, offices, and other sensitive environments.

ESR REPORT

FlamePRO Fire Retardant products, as described in the ICC Evaluation Services, Inc. ESR-4244, meet all major model building code requirements.

SCS INDOOR ADVANTAGE™ GOLD CERTIFIED

SCS Global Services has completed the evaluation of Koppers's FlamePRO Treated Lumber products. Koppers FlamePRO Fire Retardant Treated Wood products meet all the necessary requirements to be certified Indoor Advantage™ Gold.

CAL FIRE LISTED

FlamePRO Fire Retardant products are CAL FIRE listed. CAL FIRE is responsible for providing wildland fire protection and resource management on over 31 million acres of State Responsibility Area (SRA) lands throughout California.

BSD SPECLINK LISTED

Master Specification Content for Architectures, Engineers, and Construction Markets.

APPLICATIONS

FlamePRO brand fire retardant treated wood is typically permitted for interior, above ground applications such as: roof systems, studs, flooring, joists, sill plates (when not in direct contact with the ground), blocking and furring, and other interior applications. The specifier and/or end user is responsible to review the test data on FlamePRO brand fire retardant treated wood to determine if it is acceptable for the intended end use.*

Typical applications include:

- Roof Trusses
- Rafters
- Plywood Roof Sheathing
- Floor & Roof Joists
- Mezzanines
- Sill Plates
- Steps
- Stairways
- Studs
- Interior Partitions (Non-load)
- Floor Sheathing
- Plywood
- Subflooring
- Partition Walls
- Beams & Purlins
- Blocking & furring
- Platforms
- Stages
- Wall Sheathing & Paneling
- Architectural
- Millwork & Trim
- Backing for Electrical Panels
- 1 & 2 Hour Wall Assemblies

* When designing any structure it is the responsibility of the design professional to take into account environmental, duration of load and other factors as set forth in the NDS and all other applicable design standards, codes, etc. This brochure should be regarded as an adjunct to, and not a substitute for these mandatory and historical references.

STRUCTURAL DURABILITY

The structural durability of FlamePRO brand fire retardant treated lumber and plywood has been verified by the certified engineers according to the latest and most stringent versions of ASTM strength durability standards. FlamePRO brand fire retardant treated lumber and plywood has been tested by independent accredited laboratories, following industry standards ASTM D5564 & ASTM D5516 to develop strength design factors for various use conditions.

The National Design Specifications (NDS), Wood Handbook, and other publications have cautioned against the use of any wood product in environments exceeding 150˚F. Based on the strength data generated when tested per industry protocol at an accredited third party laboratory, professional engineers have calculated design values and span adjustments to modify the untreated design values for lumber and span ratings for plywood. These design values are applicable at temperatures up to 150˚F for lumber (see Tables 1 and 2) and 170˚F for plywood (see Table 3).

TABLE 1—STRENGTH DESIGN FACTORS FOR FlamePRO® FIRE RETARDANT TREATED LUMBER COMPARED TO UNTREATED LUMBER APPLICABLE AT SERVICE TEMPERATURES UP TO 100°F (38°C)

STRENGTH DESIGN FACTORS	Southern Pine	Douglas Fir	Spruce-Pine-Fir	Other Species
Modulus of Rupture (MOR)	0.82	1.00	0.95	0.82
Modulus of Elasticity (MOE)	0.87	1.00	0.94	0.87
Work to Maximum Load (WML)	0.72	0.93	0.90	0.72
Ultimate Tensile Strength (UTS)	0.99	1.00	0.98	0.98
Maximum Compressive Strength (MCS)	0.96	0.96	1.00	0.96
Ultimate Shear Strength (USS)	0.95	1.00	0.99	0.95
Fasteners/Connectors	0.90	0.90	0.90	0.90

TABLE 2—STRENGTH DESIGN FACTORS FOR FlamePRO® FIRE RETARDANT TREATED LUMBER COMPARED TO UNTREATED LUMBER APPLICABLE AT SERVICE TEMPERATURES UP TO 150°F (66°C) [1, 2]

STRENGTH DESIGN FACTORS	Southern Pine			Douglas Fir			Spruce-Pine-Fir			Other Species		
	Climate Zone			Climate Zone			Climate Zone			Climate Zone		
	1A	1B	2	1A	1B	2	1A	1B	2	1A	1B	2
Modulus of Rupture (MOR)	0.82	0.82	0.82	0.88	0.93	0.96	0.81	0.87	0.93	0.81	0.82	0.82
Modulus of Elasticity (MOE)	0.87	0.87	0.87	1.00	1.00	1.00	0.94	0.94	0.94	0.87	0.87	0.87
Work to Maximum Load (WML)	0.69	0.70	0.71	0.92	0.93	0.93	0.69	0.77	0.87	0.69	0.70	0.71
Ultimate Tensile Strength (UTS)	0.70	0.84	0.96	1.00	1.00	1.00	0.81	0.90	0.97	0.70	0.84	0.96
Maximum Compressive Strength (MCS)	0.66	0.81	0.93	0.84	0.89	0.94	0.83	0.91	0.98	0.66	0.81	0.93
Ultimate Shear Strength (USS)	0.66	0.80	0.93	0.88	0.93	0.98	0.82	0.91	0.97	0.66	0.80	0.93
Fasteners/Connectors	0.66	0.81	0.90	0.84	0.89	0.90	0.83	0.90	0.90	0.66	0.81	0.90

[1] Climate Zone definition:
Zone 1 – Minimum design roof live load or maximum ground snow load ≤ 20 psf (960 Pa)
Zone 1A – Southwest Arizona, Southeast Nevada (area Bounded by Las Vegas-Yuma-Phoenix-Tucson)
Zone 1B – All other qualifying areas of the United States
Zone 2 – Maximum ground snow load > 20 psf (960 Pa)

[2] Duration of load adjustments for snow load, 7-day (construction) loads, and wind loads as given in the National Design Specification for Wood Construction® (NDS) also apply.

TABLE 3— MAXIMUM LOADS AND SPANS FOR FlamePRO® FIRE RETARDANT TREATED PLYWOOD AT SERVICE TEMPERATURES FROM > 100°F (38°C) UP TO 170°F (77°C) [1, 2, 3, 4, 5]

Panel/Sheathing Thickness	Span Rating for Untreated Roof/Sub-floor Sheathing	FlamePro Roof Sheathing Maximum Total Load (psf)				FlamePro Wall or Subfloor
		SPAN (INCHES)	CLIMATE ZONE			SPAN (INCHES)
			1A	1B	2	
15/32, 1/2	32/16	24	31	47	68	16
19/32, 5/8	40/20	24 32	48 27	74 42	107 60	20 20
23/32, 3/4	48/24	32 48	34 15	52 23	76 34	24 24
7/8		32 48	43 19	66 29	95 42	24 24
1		32 48	58 26	88 39	127 57	24 24
1-1/8		32 48	73 32	111 49	161 71	24 24

[1] For Surface Temperatures < 100°F, use Untreated Span Ratings.

[2] Allowable total loads are for unsanded, Structural 1 & 2 Grade plywood, manufactured with Group 1 Species, stress grade S-2 (Fb=1650 psi), one-and-two span conditions.

[3] For allowable live loads, subtract dead load (assumed to be 8 psf) from total loads listed above.

[4] Climate Zone definition:
Zone 1 – Minimum design roof live load or maximum ground snow load ≤ 20 psf (960 Pa)
Zone 1A – Southwest Arizona, Southeast Nevada (area Bounded by Las Vegas-Yuma-Phoenix-Tucson)
Zone 1B – All other qualifying areas of the United States
Zone 2 – Maximum ground snow load > 20 psf (960 Pa)

[5] For other load conditions, contact manufacturer.

AVAILABLE SPECIES

FlamePRO brand fire retardant treated lumber is available in a wide range of softwood species including:

- Southern Pine
- Western Hemlock
- Lodgepole Pine
- Spruce-Pine-Fir
- Red Pine
- White Fir
- Balsam Fir
- Engelmann Spruce
- Douglas Fir
- Alpine Fir
- White Spruce
- Red Spruce
- Ponderosa Pine
- Hem Fir
- Jack Pine
- Black Spruce

FlamePRO fire retardant treated plywood is available in Southern Pine and Douglas-Fir.

CORROSIVITY

The corrosivity of FlamePRO brand fire retardant treated wood has been evaluated in accordance with AWPA Standard E12 for a variety of metals. The corrosion rates for carbon steel, galvanized steel, aluminum, red brass, and copper are not significantly increased by FlamePRO brand fire retardant chemicals when the treated wood products are used as recommended by the manufacturer and properly sized for the materials selected.

The following metal fasteners are recommended for use in contact with FlamePRO brand fire retardant treated wood: 2024-T3 aluminum, SAE 1010 steel, hot-dip zinc galvanized steel, copper, or red brass.

HYGROSCOPICITY

Hygroscopicity testing conducted by a third party independent laboratory has confirmed that compared to untreated wood, FlamePro brand fire retardant treated wood does not pick up excessive moisture under ASTM D3201 test conditions.

INSTALLATION

Structural systems, which include FlamePRO brand fire retardant treated lumber or plywood, should be designed and installed in accordance with the adopted building code using the appropriate lumber design adjustment factors and plywood spans from Tables 1 and 2. Ventilation should be provided in compliance with the applicable codes in force at time of construction.

FlamePRO brand fire retardant treated wood is not permitted for applications where the material may be exposed to precipitation, direct wetting, regular condensation, and should never be used in contact with the ground.

If the wood is to be used in an interior application and becomes wet during construction, it should be allowed to dry before being covered or enclosed.

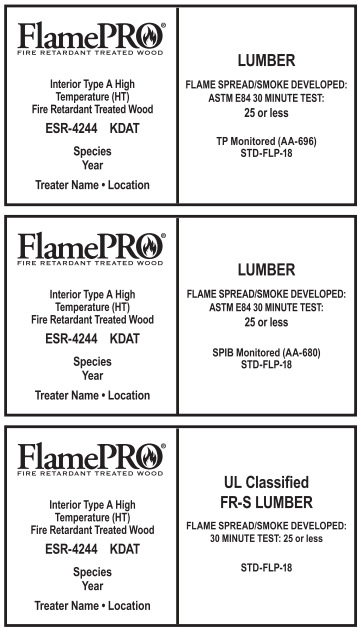
FINISHING AND WORKABILITY

Under normal temperature and humidity conditions, latex and oil-based paints, as well as water- and solvent-based stains, can be used with FlamePRO brand fire retardant treated wood. If prolonged exposure to high humidity conditions is expected, special surface preparation procedures including the use of an appropriate primer are recommended. Before application of any finish, the wood surface should be lightly sanded, cleaned and dry. For best results, always follow the coating manufacturer's label instructions.

Typical joining cuts, end cuts, and drilled holes will not adversely affect the fire performance of FlamePRO brand fire retardant treated wood and no field treatment is required to maintain flame spread ratings. However, ripping or milling of FlamePRO FRT lumber is not permitted, as these operations could adversely affect the surface burning characteristics. FlamePRO fire retardant treated plywood can be ripped as required.

IDENTIFICATION

Lumber and plywood treated with FlamePRO fire retardant formulation must be identified by the structural grade mark of an approved agency. In addition, all treated stamps must list name of the inspection agency Underwriters Laboratories (FR-S); Timber Products Inspection, Inc. (AC-66); Southern Pine Inspection Bureau (AA-680); the production plant identification; labeling information in accordance with Section 2303.2.4 of the 2018, 2015, 2012 and 2009 IBC and Section 2303.2.1 of the 2006 IBC or Section R802.1.5.4 of the 2018 and 2015 IRC or Section R802.1.3.4 of the 2012 and 2009 IRC or Section R802.1.3.1 of the 2006 IRC; and the evaluation report number (ESR-4244).



TESTING AND STANDARDS

UL 723 - Surface Burning Characteristics
ASTM E84 - Surface Burning Characteristics
ASTM 2768 – Extended 30-minute Test
ASTM E119 - Fire Tests of Building Construction
ASTM D3201 - Hygroscopic Properties
ASTM D5516 - Flexural Properties Plywood
ASTMM D5664 – Flexural Properties Lumber
ASTM D6305 - Strength Design
ASTM D6841 - Treatment Adjustment Factors
AWPA E12 – Determining Corrosion of Metal
AWPA M4 – Care of Treated Wood
AWPA P50 – Standard for Fire Retardants
AWPA T1 – Treatment Standard

WARRANTY

FlamePRO Fire Retardant pressure treated wood products are backed by a 50 Year Limited Warranty Program from Koppers Performance Chemicals Inc. (KPC). The Limited Warranty provides protection against a reduction in strength below the strength properties published in ESR-4244 caused by the FlamePRO fire retardant chemical. See Warranty for details. Available at Koppers Performance Chemicals Inc., Attn: Consumer Affairs, P. O. Drawer O, Griffin, Georgia 30224-0249 or visit www.kopperspc.com