



ALBERT KAHN ASSOCIATES, INC.

October 16, 2020

City of Detroit – Planning & Development Department
2 Woodward Avenue, Suite 808
Detroit, MI 48226

**Re: 208 Mack Avenue
Detroit, MI 48201**

PROJECT INFORMATION

The roof at the historic Albert Kahn Residence is at the end of its lifespan and requires replacement. This project will replace the failing roof with a historically appropriate terracotta tile. Existing areas of composite roof will be replaced with a membrane roof. Damaged and/or inoperable gutters and downspouts will also be replaced.

DESCRIPTION OF EXISTING CONDITIONS

This project site is located in the Brush Park Historic District listed on the US National Register of Historic Places. The house was designated a Michigan State Historic Site on December 7, 1971 and listed on the National Registry for Historic Places on October 18, 1972.

Originally built as the Albert Kahn residence, the house is approximately 5,900 square feet of space. The original house was designed and built in 1907 with minor modifications in 1921, which contains 1,650sf on the first floor and 1,650sf on the second floor. The 1928 addition was designed to house a library and gallery for art collection, as well as a six-car garage and servant's quarters accessed from the back alley. The addition contains 1,600sf on the first floor, 1,000sf on the second floor, and a 1,200sf attached garage.

Albert Kahn continued to live in his home with his wife and four children until his death in 1942. The Urban League of Detroit and South East Michigan (ULDSEM) currently uses the first floor of the building for offices, receptions and large gatherings, with additional offices occupying the second floor. Much of the original architecture remains, however the ULDSEM has subdivided some spaces to gain office space and additional support spaces.

The home is in the English Renaissance style, constructed with stone trim on the lower half and stucco above with a terracotta tile roof. It is a two-story home with an attic and dormer windows. The house is soundproof and fireproof, with each floor constructed of reinforced concrete with wooden sleepers over top, supporting finished wood floors.

The existing terracotta roof is original to the building. There are many missing, broken, and cracked roof tiles. Flashings are in need of repair or replacement. Exterior wood elements continue to deteriorate due to continued exposure to the elements. Missing areas of tile have been patched in spots with a membrane and in other areas are left bare. This has led to exterior and interior deterioration caused by water infiltration. The roof is at the end of its lifespan and is in need of replacement. The Detroit Urban League has been awarded a grant from the National Park Service to replace the roof in a manner complying with historic requirements.

The existing roof tile is a smooth red clay terracotta tile nailed to wood sleepers on a tongue-and-groove wood underlayment on wood rafters. Where the tiles have been exposed to the elements they have acquired a dark uneven patina. Portions of unexposed tile have an even red clay finish with little color variation.

The house's many dormers have a tile roof which matches the main roof field. The dormer's vertical faces are also clad in terracotta which has been painted pink in recent years (see A-201). The fascia, gutters and downspouts have also been painted pink.

DESCRIPTION OF PROJECT

This project includes the replacement of the tile roof and dormers with like material. The existing terracotta tile will be removed and replaced with new tile. The new roof and dormer tile will match the color of the original tile instead of the patina color. Associated roof trim, gutters, downspouts, and leader boxes will be painted to match the new roof tile. The resulting roof will appear uniform in color across the roof field, dormers and accessories. This matches the original color scheme of the building.

Existing gutters, downspouts and trim will be repaired and/ or replaced as existing conditions require. The replacement items are specified to match existing.

The areas of roof that were originally composite will be removed and replaced with an elastomeric roof membrane (EPDM). These areas are not visible from the street and this matches the original design.

DETAILED SCOPE OF WORK

Roof and Gutter Replacement

- Miscellaneous repairs to roof frame/structure
- Flashing replacement / repairs
- Ice & weather shield underlayment membrane
- New clay tile roof tile system (appropriate for Michigan climate)
- Replace copper valleys
- Replace flat / low slope roofs
- Miscellaneous roof accessories
- Horizontal gutters
- Vertical down spouts
- Accessories / collector boxes

ATTACHMENTS

Completed Building Permit Application

Architectural Drawings

Brochures and Cut Sheets

Ludowici Terracotta Tile

EPDM Roofing

Gutters and Downspouts

THIS IS A 3-PAGE FORM - ALL INFORMATION IS REQUIRED FOR PROJECT REVIEW

HISTORIC DISTRICT COMMISSION PROJECT REVIEW REQUEST

City of Detroit - Planning & Development Department
2 Woodward Avenue, Suite 808
Detroit, Michigan 48226

Date: _____

PROPERTY INFORMATION

ADDRESS: _____ AKA: _____

HISTORIC DISTRICT: _____

SCOPE OF WORK: (Check ALL that apply)

<input type="checkbox"/> Windows/ Doors	<input type="checkbox"/> Roof/Gutters/ Chimney	<input type="checkbox"/> Porch/ Deck	<input type="checkbox"/> Landscape/Fence/ Tree/Park	<input type="checkbox"/> General Rehab
<input type="checkbox"/> New Construction	<input type="checkbox"/> Demolition	<input type="checkbox"/> Addition	<input type="checkbox"/> Other: _____	

APPLICANT IDENTIFICATION

Property Owner/
Homeowner Contractor Tenant or
Business Occupant Architect/Engineer/
Consultant

NAME: _____ COMPANY NAME: _____

ADDRESS: _____ CITY: _____ STATE: _____ ZIP: _____

PHONE: _____ MOBILE: _____ EMAIL: _____

PROJECT REVIEW REQUEST CHECKLIST

Please attach the following documentation to your request:

PLEASE KEEP FILE SIZE OF ENTIRE SUBMISSION UNDER 30MB

- Completed Building Permit Application** (highlighted portions only)
- ePLANS Permit Number** (only applicable if you've already applied for permits through ePLANS)
- Photographs** of ALL sides of existing building or site
- Detailed photographs** of location of proposed work (photographs to show existing condition(s), design, color, & material)
- Description of existing conditions** (including materials and design)
- Description of project** (if replacing any existing material(s), include an explanation as to why replacement--rather than repair--of existing and/or construction of new is required)
- Detailed scope of work** (formatted as bulleted list)
- Brochure/cut sheets** for proposed replacement material(s) and/or product(s), as applicable

NOTE:

Based on the scope of work, additional documentation may be required.

See www.detroitmi.gov/hdc for scope-specific requirements.

Upon receipt of this documentation, staff will review and inform you of the next steps toward obtaining your building permit from the Buildings, Safety Engineering and Environmental Department (BSEED) to perform the work.

SUBMIT COMPLETED REQUESTS TO HDC@DETROITMI.GOV

P2 - BUILDING PERMIT APPLICATION

Date: _____

PROPERTY INFORMATION

Address: _____ Floor: _____ Suite#: _____ Stories: _____

AKA: _____ Lot(s): _____ Subdivision: _____

Parcel ID#(s): _____ Total Acres: _____ Lot Width: _____ Lot Depth: _____

Current Legal Use of Property: _____ Proposed Use: _____

Are there any existing buildings or structures on this parcel? Yes No

PROJECT INFORMATION

Permit Type: New Alteration Addition Demolition Correct Violations

Foundation Only Change of Use Temporary Use Other: _____

Revision to Original Permit #: _____ (Original permit has been issued and is active)

Description of Work (Describe in detail proposed work and use of property, attach work list)

MBC use change No MBC use change

Included Improvements (Check all applicable; these trade areas require separate permit applications)

HVAC/Mechanical Electrical Plumbing Fire Sprinkler System Fire Alarm

Structure Type

New Building Existing Structure Tenant Space Garage/Accessory Building

Other: _____ Size of Structure to be Demolished (LxWxH) _____ cubic ft.

Construction involves changes to the floor plan? Yes No

(e.g. interior demolition or construction to new walls)

Use Group: _____ Type of Construction (per current MI Bldg Code Table 601) _____

Estimated Cost of Construction \$ _____ By Contractor \$ _____ By Department

Structure Use

Residential-Number of Units: _____ Office-Gross Floor Area _____ Industrial-Gross Floor Area _____

Commercial-Gross Floor Area: _____ Institutional-Gross Floor Area _____ Other-Gross Floor Area _____

Proposed No. of Employees: _____ List materials to be stored in the building: _____

PLOT PLAN SHALL BE submitted on separate sheets and shall show all easements and measurements (must be correct and in detail). SHOW ALL streets abutting lot, indicate front of lot, show all buildings, existing and proposed distances to lot lines. (Building Permit Application Continues on Next Page)

For Building Department Use Only

Intake By: _____ Date: _____ Fees Due: _____ DngBld? No

Permit Description: _____

Permit #:

Current Legal Land Use: _____ Proposed Use: _____

Permit#: _____ Date Permit Issued: _____ Permit Cost: \$ _____

Zoning District: _____ Zoning Grant(s): _____

Lots Combined? Yes No (attach zoning clearance)

Revised Cost (revised permit applications only) Old \$ _____ New \$ _____

Structural: _____ Date: _____ Notes: _____

Zoning: _____ Date: _____ Notes: _____

Other: _____ Date: _____ Notes: _____



IDENTIFICATION (All Fields Required)

Property Owner/Homeowner

Property Owner/Homeowner is Permit Applicant

Name: _____ Company Name: _____

Address: _____ City: _____ State: _____ Zip: _____

Phone: _____ Mobile: _____

Driver's License #: _____ Email: _____

Contractor

Contractor is Permit Applicant

Representative Name: _____ Company Name: _____

Address: _____ City: _____ State: _____ Zip: _____

Phone: _____ Mobile: _____ Email: _____

City of Detroit License #: _____

TENANT OR BUSINESS OCCUPANT

Tenant is Permit Applicant

Name: _____ Phone: _____ Email: _____

ARCHITECT/ENGINEER/CONSULTANT

Architect/Engineer/Consultant is Permit Applicant

Name: _____ State Registration#: _____ Expiration Date: _____

Address: _____ City: _____ State: _____ Zip: _____

Phone: _____ Mobile: _____ Email: _____

HOMEOWNER AFFIDAVIT (Only required for residential permits obtained by homeowner.)

I hereby certify that I am the legal owner and occupant of the subject property and the work described on this permit application shall be completed by me. I am familiar with the applicable codes and requirements of the City of Detroit and take full responsibility for all code compliance, fees and inspections related to the installation/work herein described. I shall neither hire nor sub-contract to any other person, firm or corporation any portion of the work covered by this building permit.

Print Name: _____ Signature: _____ Date: _____
(Homeowner)

Subscribed and sworn to before me this _____ day of _____ 20 ____ A.D. _____ County, Michigan

Signature: _____ My Commission Expires: _____
(Notary Public)

PERMIT APPLICANT SIGNATURE

I hereby certify that the information on this application is true and correct. I have reviewed all deed restrictions that may apply to this construction and am aware of my responsibility thereunder. I certify that the proposed work is authorized by the owner of the record and I have been authorized to make this application as the property owner(s) authorized agent. Further I agree to conform to all applicable laws and ordinances of jurisdiction. **I am aware that a permit will expire when no inspections are requested and conducted within 180 days of the date of issuance or the date of the previous inspection and that expired permits cannot be**

Print Name: _____ Signature: _____ Date: _____
(Permit Applicant)

Driver's License #: _____ Expiration: _____

Subscribed and sworn to before me this _____ day of _____ 20 ____ A.D. _____ County, Michigan

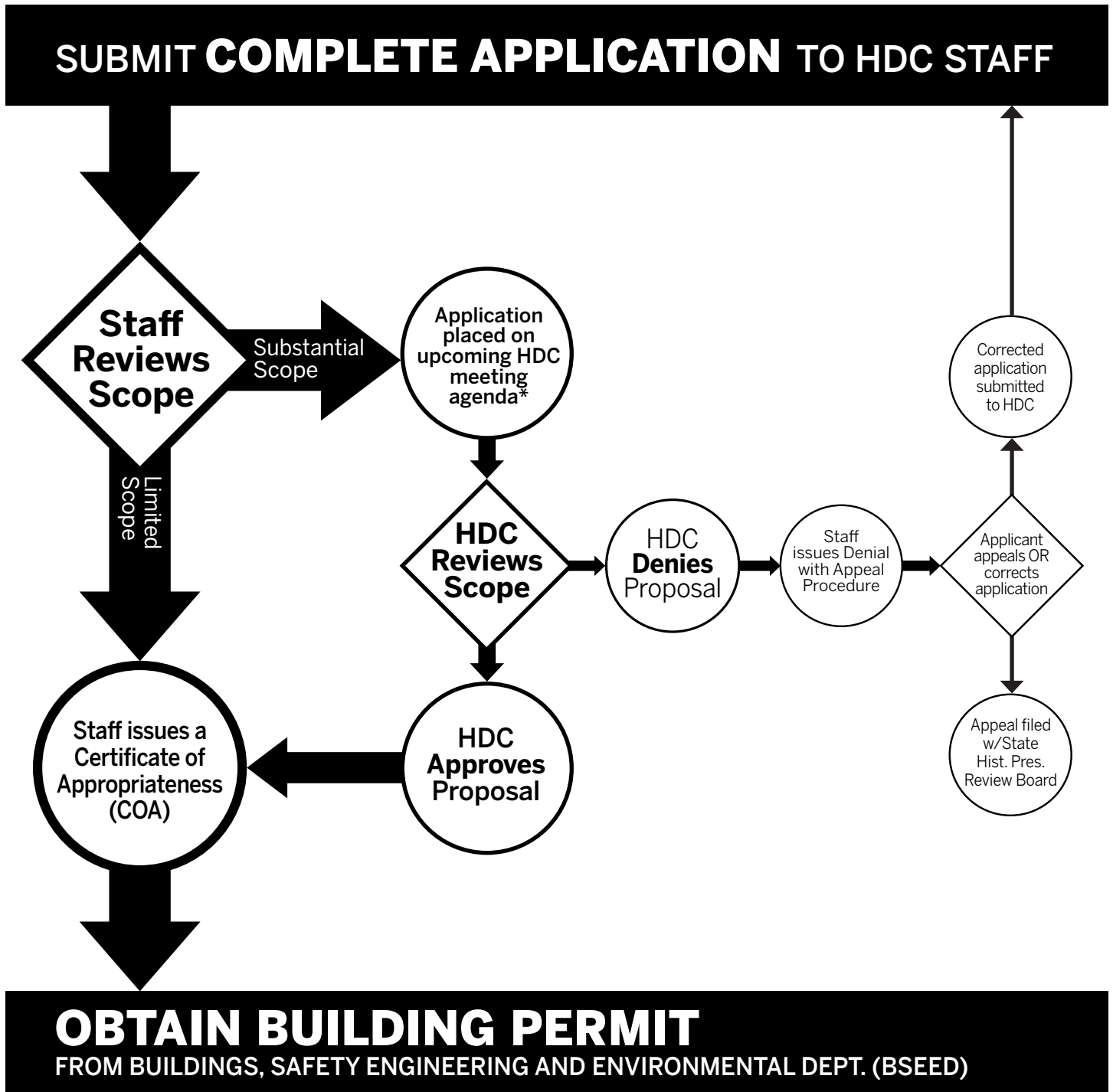
Signature: _____ My Commission Expires: _____
(Notary Public)

Section 23a of the state construction code act of 1972, 1972PA230, MCL 125.1523A, prohibits a person from conspiring to circumvent the licensing requirements of this state relating to persons who are to perform work on a residential building or a residential structure. Visitors of Section 23a are subject to civil fines.

This application can also be completed online. Visit detroitmi.gov/bseed/elaps for more information.



HISTORIC DISTRICT COMMISSION REVIEW & PERMIT PROCESS



* THE COMMISSION MEETS REGULARLY AT LEAST ONCE PER MONTH, TYPICALLY ON THE SECOND WEDNESDAY OF THE MONTH. (SEE WEBSITE FOR MEETING SCHEDULE/AGENDAS)

FIND OUT MORE AT www.detroitmi.gov/hdc




Albert Kahn Associates, Inc.
The Fisher Building
3011 W. Grand Blvd., Suite 1800
Detroit, Michigan 48202-3000

Issue History	
No.	Date
HDC REVIEW	10/16/20
No. Description	Date
Refer To Sheet Index For Complete Issue History	

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Registration Seal
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NOT FOR
CONSTRUCTION**

Key Plan


Urban League / Kahn Home Restoration
208 Mack Ave.
Detroit, MI 48201

In Charge R. KOWALCZYK
Designed RJK
Drawn By RJK
Checked
Approved Date 10/16/20
Sheet Title

COVER SHEET
Job No. 00293-J0
Sheet No. G-001



URBAN LEAGUE / KAHN HOME RESTORATION

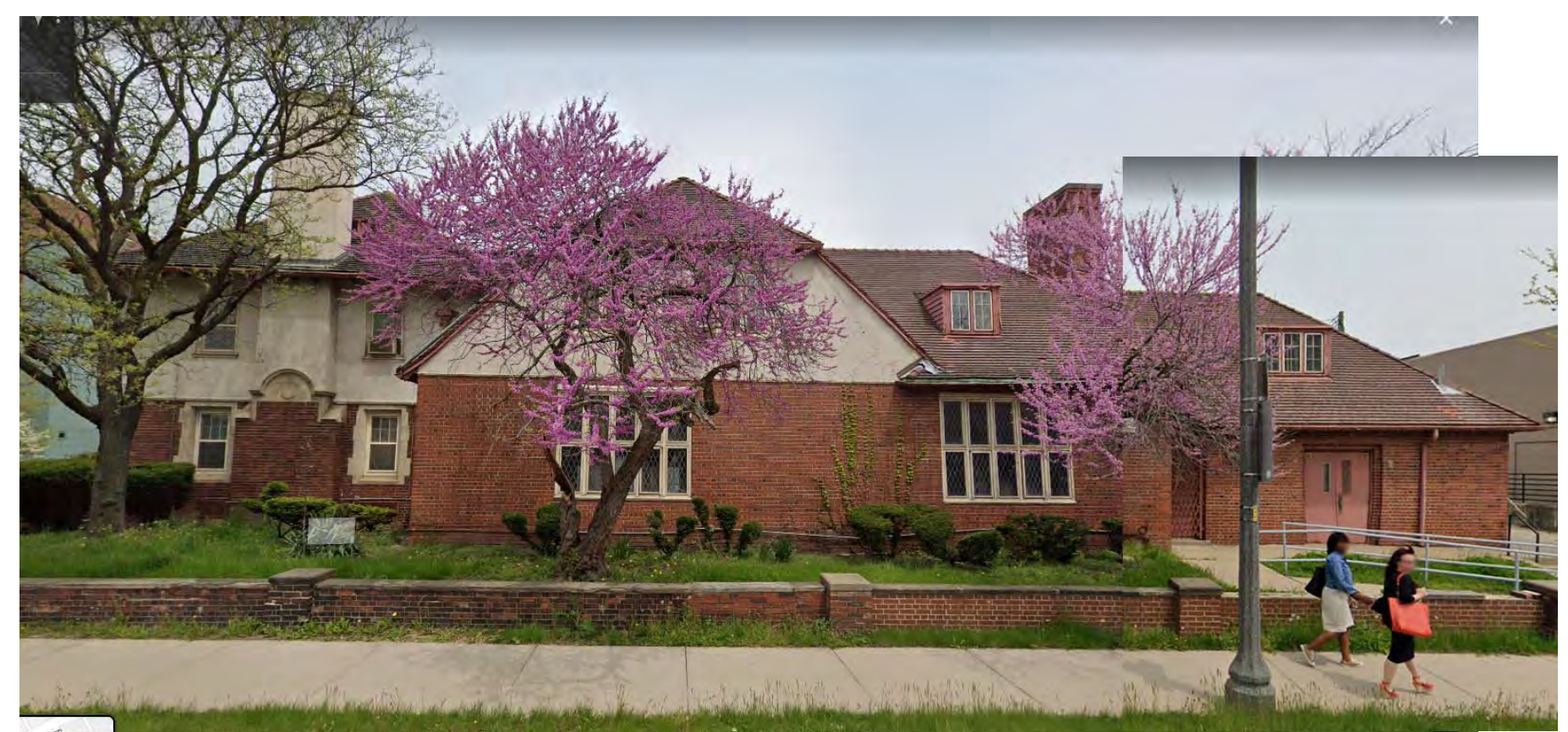
DETROIT, MI

COMPOSITE SHEET INDEX

SHEET #	SHEET NAME
GENERAL	
G-001	COVER SHEET
ARCHITECTURAL	
A-001	ABBREVIATIONS, SYMBOLS, & NOTES
A-101	EXISTING ROOF CONDITION
A-110	ROOF PLAN
A-201	ELEVATIONS
A-501	DETAILS

PROJECT TEAM

(CLIENT) KEY CONTACTS	ARCHITECT/ENGINEER
 URBAN LEAGUE OF DETROIT & SEM 208 MACK AVE. DETROIT, MI 48201 PROJECT MANAGER N. CHARLES ANDERSON (O) 313-831-5564	 ALBERT KAHN ASSOCIATES, INC. THE FISHER BUILDING 3011 W. GRAND BLVD., SUITE 1800 DETROIT, MI 48202-3000 PROJECT PRINCIPAL JEFF GAINES (O) 313-202-7556 PROJECT MANAGER CRAIG WOOD (O) 313-202-7771 PROJECT ARCHITECT RACHEL KOWALCZYK (O) 313-202-7644
PROJECT DESCRIPTION	
REPLACE ENTIRE ROOF PLUS DAMAGED/ INOPERABLE GUTTERS AND DOWNSPOUTS. ROOF REPLACEMENT TO MAINTAIN AESTHETIC AND CHARACTER OF THE HISTORIC RESIDENCE.	



2 EXISTING WEST ELEVATION
12" = 1'-0"
G-001



1 EXISTING NORTH ELEVATION
12" = 1'-0"
G-001



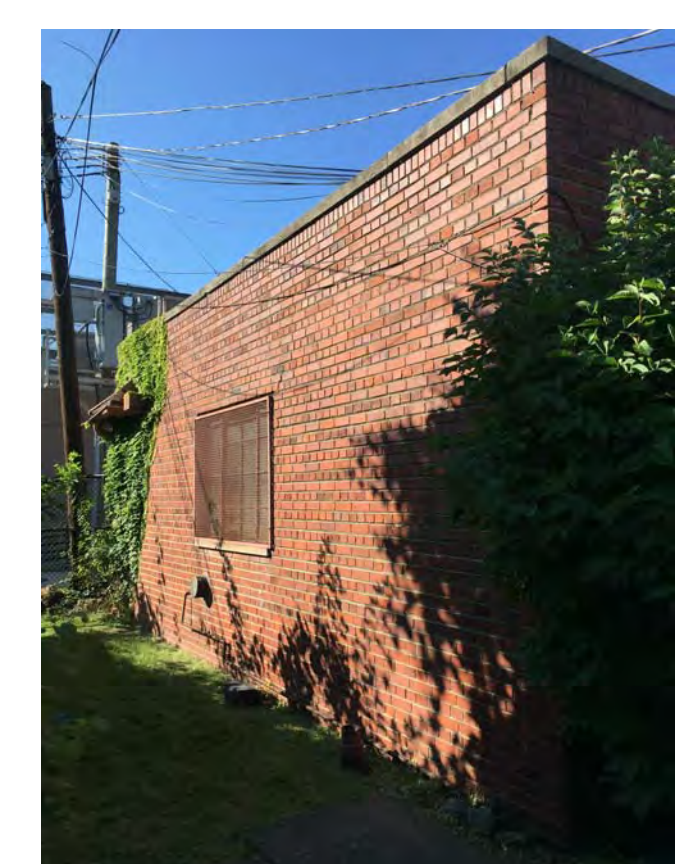
5 EXISTING COURTYARD NORTH ELEVATION
12" = 1'-0"
G-001



4 EXISTING COURTYARD WEST ELEVATION
12" = 1'-0"
G-001



3 EXISTING COURTYARD SOUTH ELEVATION
12" = 1'-0"
G-001



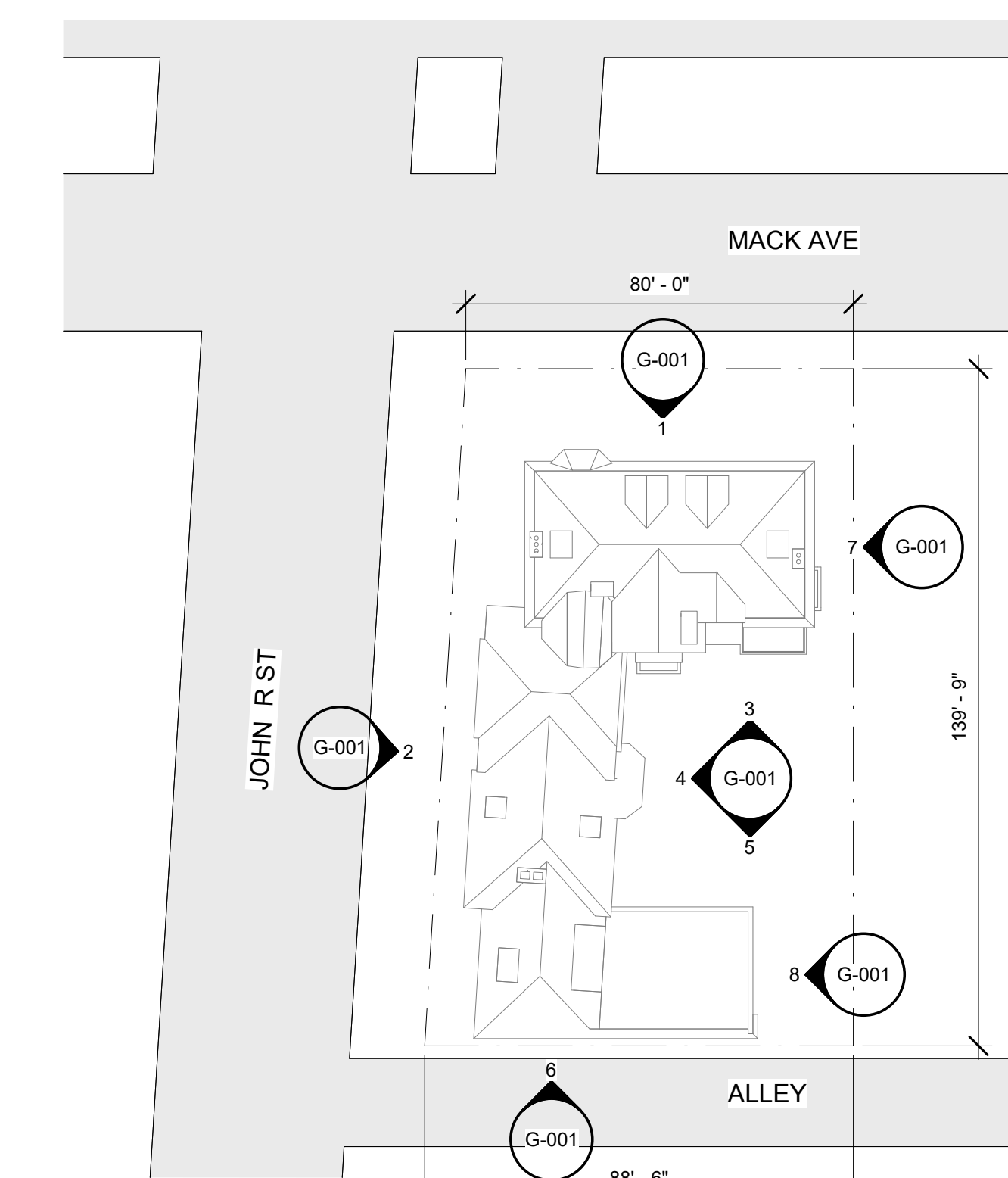
8 EXISTING EAST ELEVATION
12" = 1'-0"
G-001



7 EXISTING EAST ELEVATION
12" = 1'-0"
G-001



6 EXISTING SOUTH ELEVATION
12" = 1'-0"
G-001



LOCATION MAP
1" = 30'-0"
208 MACK AVE
DETROIT, MI 48201



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 Detroit, Michigan 48202-3000

MATERIAL LEGEND

TILE-A (07 3213)	<p>TERRACOTTA TILE - TYPE A MANUFACTURER: LUDOWICI ROOF TILE STYLE: MORANDO CLOSED SHINGLE TILE FINISH: STANDARD MATTE (SM) COLOR: BURGUNDY BLEND (M10) OVERALL SIZE: 3 3/4" x 11" x 1 3/16" PROFILE: VARIOUS PROFILES TO MATCH EXISTING WARRANTY: 20 YEAR CROWN WARRANTY</p> <p>MUST MEET ASTM C1167 GRADE 1 ROOF TILE WITH WATER ABSORPTION LESS THAN 2%, CLASS A FIRE RATED</p> <p>PROVIDE MOCK-UP FOR APPROVAL</p> <p>INSTALL PER MANUFACTURER'S INSTALLATION GUIDELINES</p> <p>ACCESSORIES MANUFACTURER TO PROVIDE ROOFING ACCESSORIES INCLUDING: WATERPROOF UNDERLAYMENT, FASTENERS, ICE & WATER MEMBRANE, COPPER FLASHING</p> <p>SNOW GUARDS TO BE PROVIDED BY TILE MANUFACTURER</p>
TILE-B (07 3213)	<p>TERRACOTTA TILE - TYPE B (DORMER FACE) MANUFACTURER: LUDOWICI ROOF TILE STYLE: FLAT SLAB SHINGLE TILE 5/8" FINISH: STANDARD MATTE (SM) COLOR: OVERALL SIZE: 6" x 12" x 5/8" PROFILE: VARIOUS PROFILES TO MATCH EXISTING WARRANTY: 20 YEAR CROWN WARRANTY</p> <p>MUST MEET ASTM C1167 GRADE 1 ROOF TILE WITH WATER ABSORPTION LESS THAN 2%, CLASS A FIRE RATED</p>
MR (07 5300)	<p>ELASTOMERIC MEMBRANE ROOF MANUFACTURER: CARLSLE ROOFING SYSTEMS STYLE: ELASTOMERIC MEMBRANE ROOFING: ONE PLY MEMBRANE, MECHANICALLY FASTENED OVER INSULATION PRODUCT: SUITE-SEAL EPDM THICKNESS: 0.060 INCH, MINIMUM SHEET WIDTH: 76 INCH, MINIMUM, FACTORY-FABRICATE INTO LARGEST SHEETS POSSIBLE COLOR: BLACK WARRANTY: PROVIDE 20 YEAR WARRANTY</p> <p>INSULATION MANUFACTURER: FIRESTONE BUILDING PRODUCTS CARLSLE ROOFING SYSTEM JOHNS MANVILLE THERMAL VALUE: R-MINIMUM: 30, MIN THICKNESS 2" SLOPE AS REQD TO PROVIDE POSITIVE DRAINAGE AWAY FROM BLDG</p> <p>COVER BOARD MATERIAL: GLASS MAT FACED GYPSUM PANELS, ASTM C1177/C1177M, FIRE RESISTANT TYPE MANUFACTURER: CARLSLE PRODUCT: DENSDUCK THICKNESS: 1/2"</p>
SHEET METAL FLASHINGS AND TRIM (07 6200)	<p>GUTTERS MANUFACTURER: K&M SHEET METAL MATERIAL: ALUMINUM FINISH: PAINT TO MATCH ROOF TILE PROFILE: HALF ROUND, TO MATCH EXISTING ACCESSORIES: HANGER, TO MATCH EXISTING</p> <p>DOWNSPOUTS MANUFACTURER: CLASSIC GUTTER SYSTEMS, LLC MATERIAL: ALUMINUM FINISH: PAINT TO MATCH ROOF TILE PROFILE: ROUND CORRUGATED, TO MATCH EXISTING ACCESSORIES: MOUNT BRACKET, TO MATCH EXISTING</p>
NOT USED	NOT USED

GENERAL NOTES


- EQUIVALENT PRODUCT/ MANUFACTURER WILL BE CONSIDERED. SUBMIT SUBSTITUTION REQUEST FOR ARCHITECTS APPROVAL. REQUEST TO INCLUDE A COMPARATIVE TABLE OF SPECIFIED PRODUCT AND SUBSTITUTION COMPARING ALL ASPECTS OF THE PRODUCTS.
- SUBMIT SHOP FABRICATION AND SETTING DRAWINGS TO THE CUSTOMER FOR APPROVAL BY BOTH THE ARCHITECT AND THE CONTRACTOR PRIOR TO PRODUCTION OF ANY MATERIAL. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD DIMENSION VERIFICATION.
- NOT USED

Issue History

No.	Description	Date
	HDC REVIEW	10/16/20

Refer To Sheet Index For Complete Issue History

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Registration Seal


Key Plan



Urban League / Kahn Home
 Restoration
 208 Mack Ave.
 Detroit, MI 48201

In Charge: R. KOWALCZYK
 Designed: RJK
 Drawn By: RJK
 Checked:
 Approved: _____ Date: 10/16/20
 Sheet Title

PRODUCT SPECIFICATIONS
 Job No. 00293-J0 Sheet No. G-002

File Path: C:\Users\jmorris\OneDrive\Documents\00293-J0\113_1\unshaded.rvt

ARCHITECTURAL ABBREVIATION LIST

Table with 4 columns: ABBREVIATION, DESCRIPTION, ABBREVIATION, DESCRIPTION. Lists various architectural terms and their abbreviations, such as AC/VENT, AB, ABRV, etc.

ARCHITECTURAL SYMBOLS

Architectural symbols section containing diagrams and lists of symbols. Includes 'TYPICAL EXPANSION ASSEMBLY' diagram, 'DETAIL NUMBER' and 'DETAIL REFERENCE' explanations, and a list of material symbols like BRICK, BLOCK (CMU), CONCRETE, etc.

ARCHITECTURAL GENERAL NOTES

- 1. DIMENSIONS - A. TAKE FIELD MEASUREMENTS TO VERIFY EXISTING CONDITIONS. B. RECEIVE CERTIFIED OR ACCEPTED EQUIPMENT DWGS PRIOR TO PROCEEDING W/ AFFECTED WORK. C. REVIEW DIMENSIONS SHOWN ON CONTRACT DRAWINGS, SHOP DRAWINGS & SUBMITTALS. REPORT INCONSISTENCIES TO A/E & RECEIVE CLARIFICATION PRIOR TO PROCEEDING. D. VERIFY SIZES OF OPENINGS, CURBS, BASES, RECESSES, ANCHOR BOLT SIZES & LOCATIONS. 2. DIMENSIONS FOR MASONRY CONSTRUCTION ARE NOMINAL & DO NOT INCLUDE SURFACE FINISHES. 3. LOCATE STL FRAMES A MIN OF 4" OFF CORNER TO BACK OF FRAME UNLESS OTHERWISE INDICATED. 4. SEQUENCING OF CONSTRUCTION SHALL BE COORDINATED WITH OWNER'S EQUIPMENT DELIVERY & INSTALLATION. SPECIAL ATTENTION TO LARGE, UNIQUE, AND UNUSUALLY HEAVY EQUIPMENT.

Albert Kahn Associates, Inc. logo and address: The Fisher Building, 3011 W. Grand Blvd., Suite 1800, Detroit, Michigan 48202-3000.

Issue History table with columns for No., Description, and Date. Includes entries for HDC REVIEW on 10/16/20.

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Key Plan

Urban League / Kahn Home Restoration, 208 Mack Ave., Detroit, MI 48201

In Charge R. KOWALCZYK, Designed RJK, Drawn By RJK, Checked, Approved, Date 10/16/20, Sheet Title

ABBREVIATIONS, SYMBOLS, & NOTES

Job No. 00293-J0, Sheet No. A-001



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Detroit, Michigan 48202-3000

GENERAL DEMOLITION NOTES

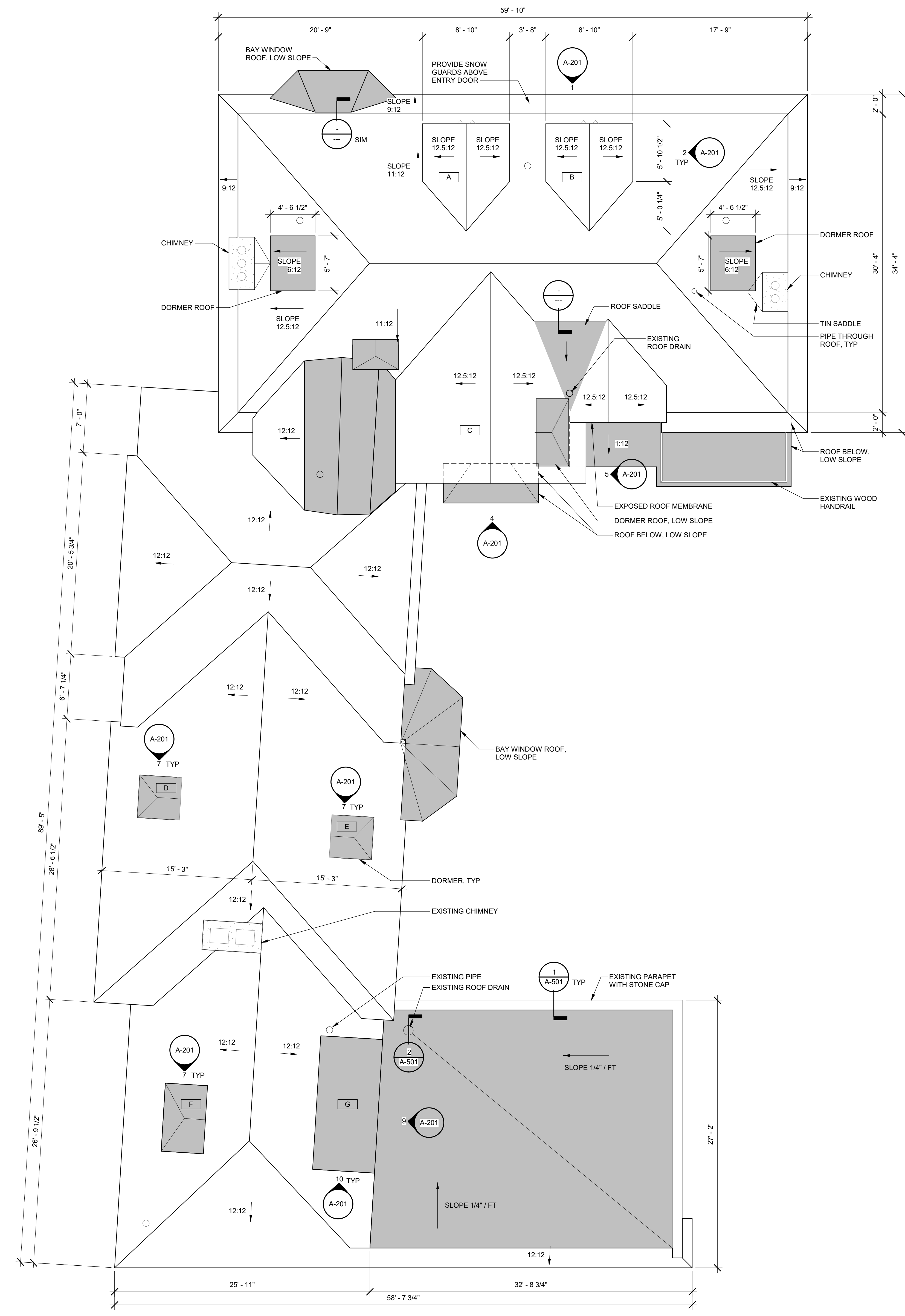
1. REMOVE AND SLAVAGE EXISTING ROOF TILE AND RETURN TO OWNER
2. REMOVE VEGETATION WHERE REQUIRED TO PERFORM WORK
3. NOT USED
4. NOT USED

GENERAL ROOF PLAN NOTES

1. REPAIR GUTTERS AND DOWNSPOUTS WHERE DAMAGED OR INOPERABLE
2. REFER TO A-001 FOR SPECIFICATION INFORMATION
3. REPAIR DAMAGED WOOD ROOF DECK WITH LIKE MATERIAL
4. CONTRACTOR TO FIELD VERIFY EXISTING DIMENSIONS AND ROOF SLOPES
5. PROVIDE COPPER FLASHING AT VALLEYS

ROOF PLAN LEGEND

- MEMBRANE ROOF ASSEMBLY (MR)
 - ELASTOMERIC MEMBRANE ROOF - MECHANICALLY FASTENED
 - 1/2" COVER BOARD
 - SLOPED INSULATION
 - WEATHER BARRIER
 - EXISTING CONCRETE ROOF DECK
- TILE ROOF ASSEMBLY (TILE-A)
 - TERRACOTTA ROOF TILE
 - FURRING STRIPS
 - UNDERLAYMENT
 - EXISTING 2x6 T&G WOOD ROOF DECK
- DORMER TAG



1 EXISTING ROOF PLAN
3/16" = 1'-0"

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HDC REVIEW		10/16/20

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Restoration
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Detroit, MI 48201

In Charge R. KOWALCZYK
Designed RJK
Drawn By RJK
Checked
Approved Date 10/16/20
Sheet Title

ROOF PLAN

Job No. 00293-J0 Sheet No. A-110



Albert Kahn Associates, Inc.
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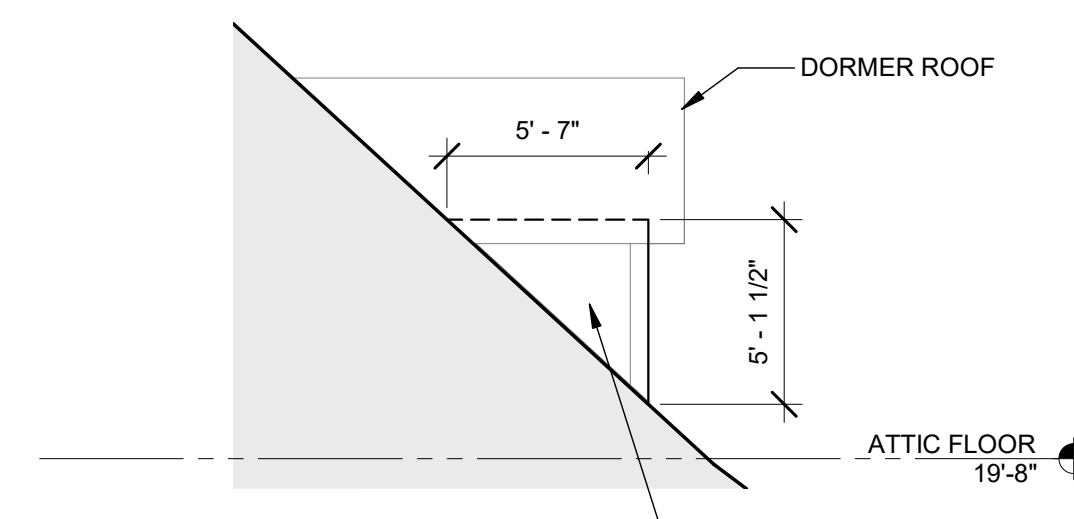
In Charge R. KOWALCZYK
Designed RJK
Drawn By RJK
Checked
Approved Date 07/20/20
Sheet Title

ELEVATIONS

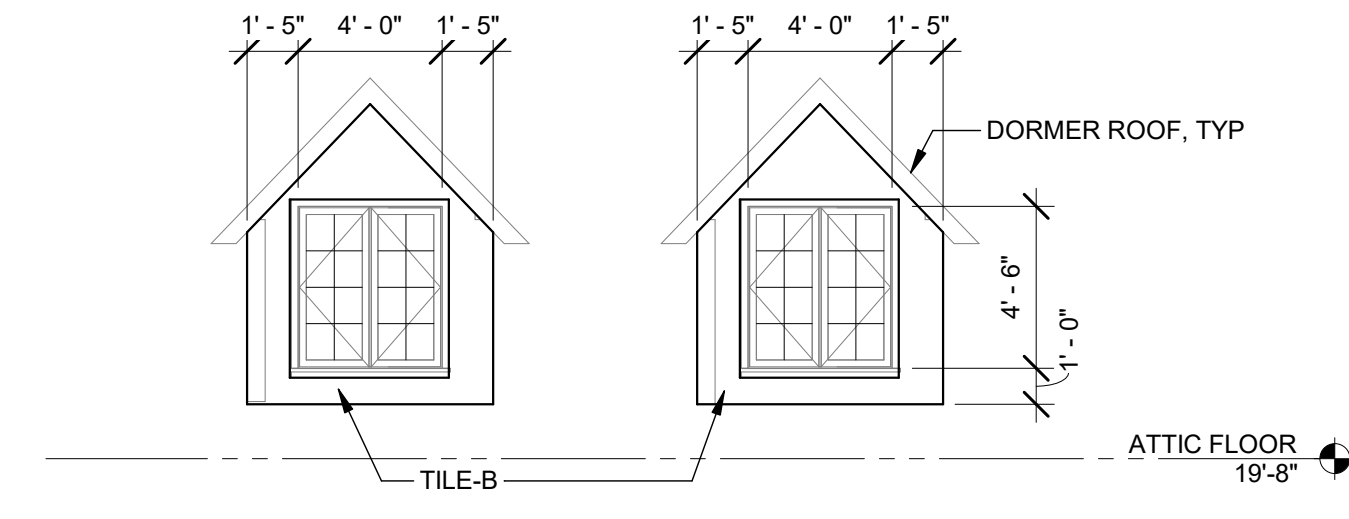
Job No. 00293-J0 Sheet No. A-201



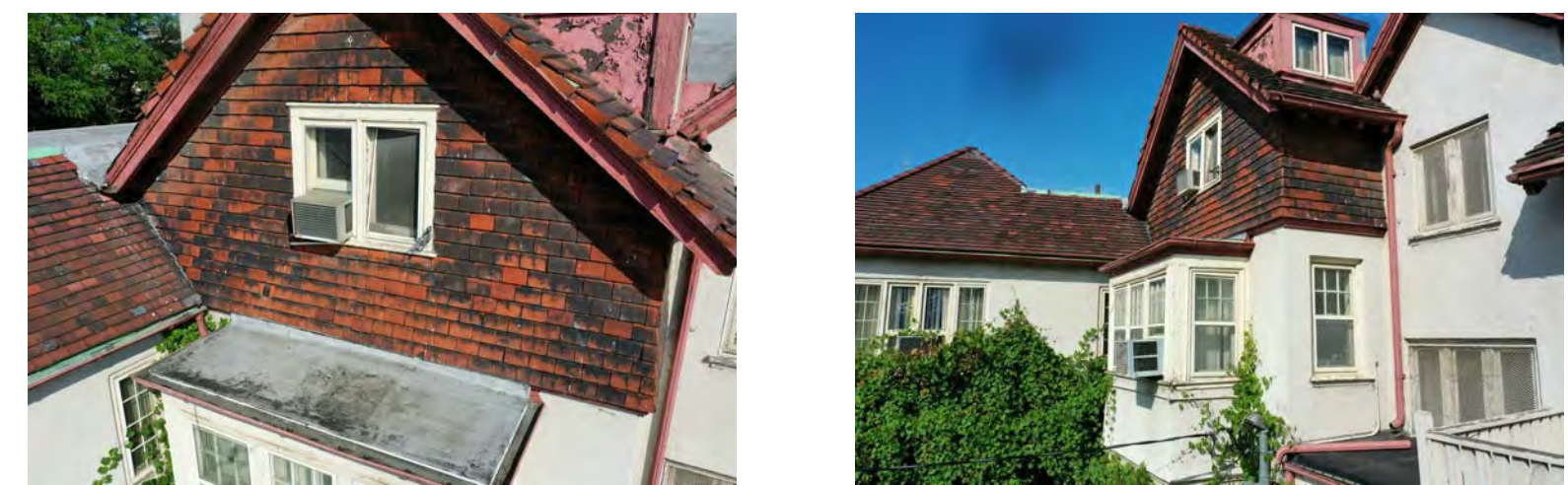
3 DORMER A & B IMAGES
12" = 1'-0"



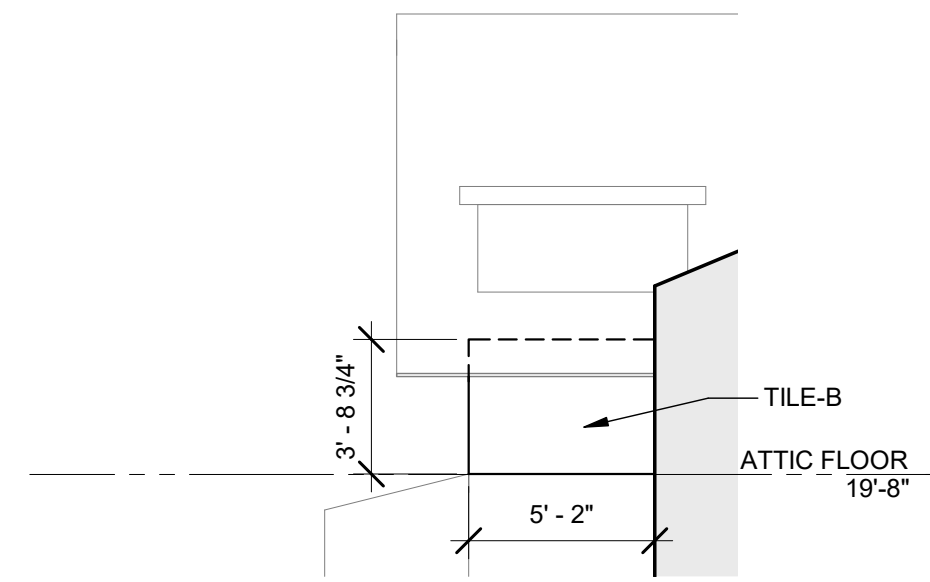
2 DORMER A & B ELEVATION
3/16" = 1'-0"
A-110



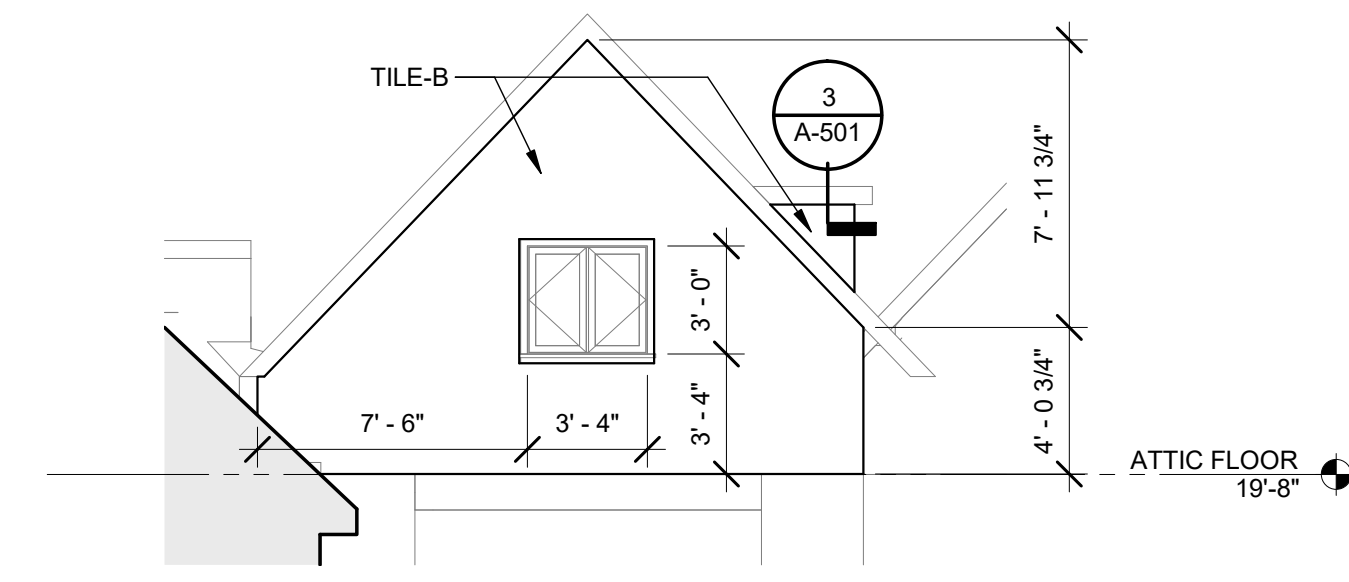
1 DORMER A & B ELEVATION
3/16" = 1'-0"
A-110



6 DORMER C IMAGES
12" = 1'-0"



5 DORMER C ELEVATION
3/16" = 1'-0"
A-110



4 DORMER C ELEVATION
3/16" = 1'-0"
A-110



DORMER F

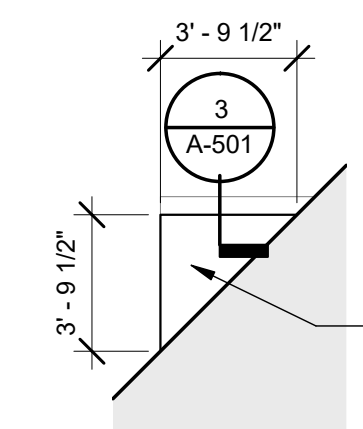


DORMER E



DORMER D

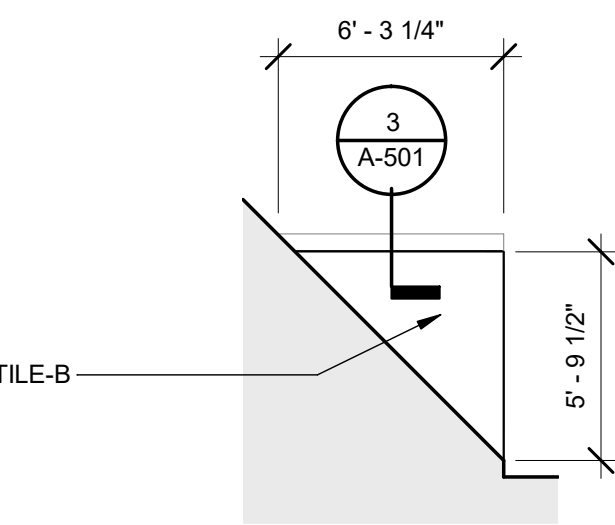
8 DORMER D, E & F IMAGES
12" = 1'-0"



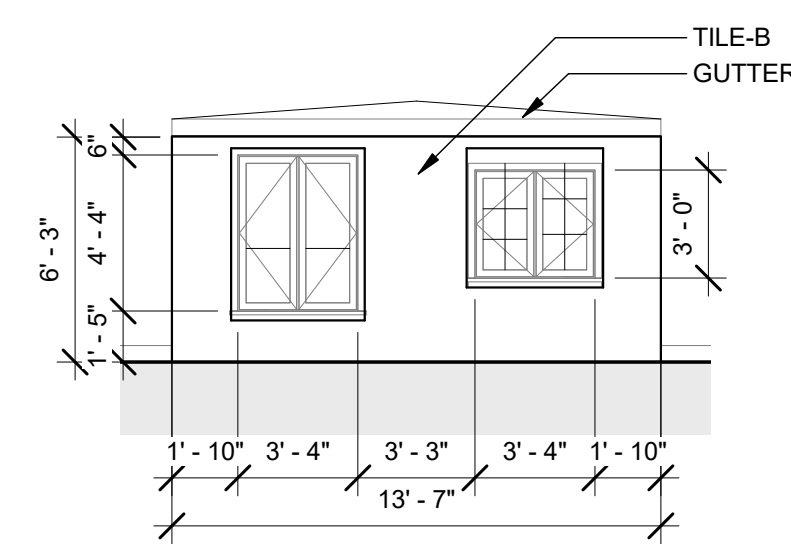
7 DORMER D, E & F ELEVATION
3/16" = 1'-0"
A-110



11 DORMER G IMAGES
12" = 1'-0"



10 DORMER G ELEVATION
3/16" = 1'-0"
A-110



9 DORMER G ELEVATION
3/16" = 1'-0"
A-110



Albert Kahn Associates, Inc.
The Fisher Building
3011 W. Grand Blvd., Suite 1800
Detroit, Michigan 48202-3000

Issue History

No.	Description	Date
HDC REVIEW		10/16/20

Refer To Sheet Index For Complete Issue History

DISCLAIMER:
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CONSTRUCTION**

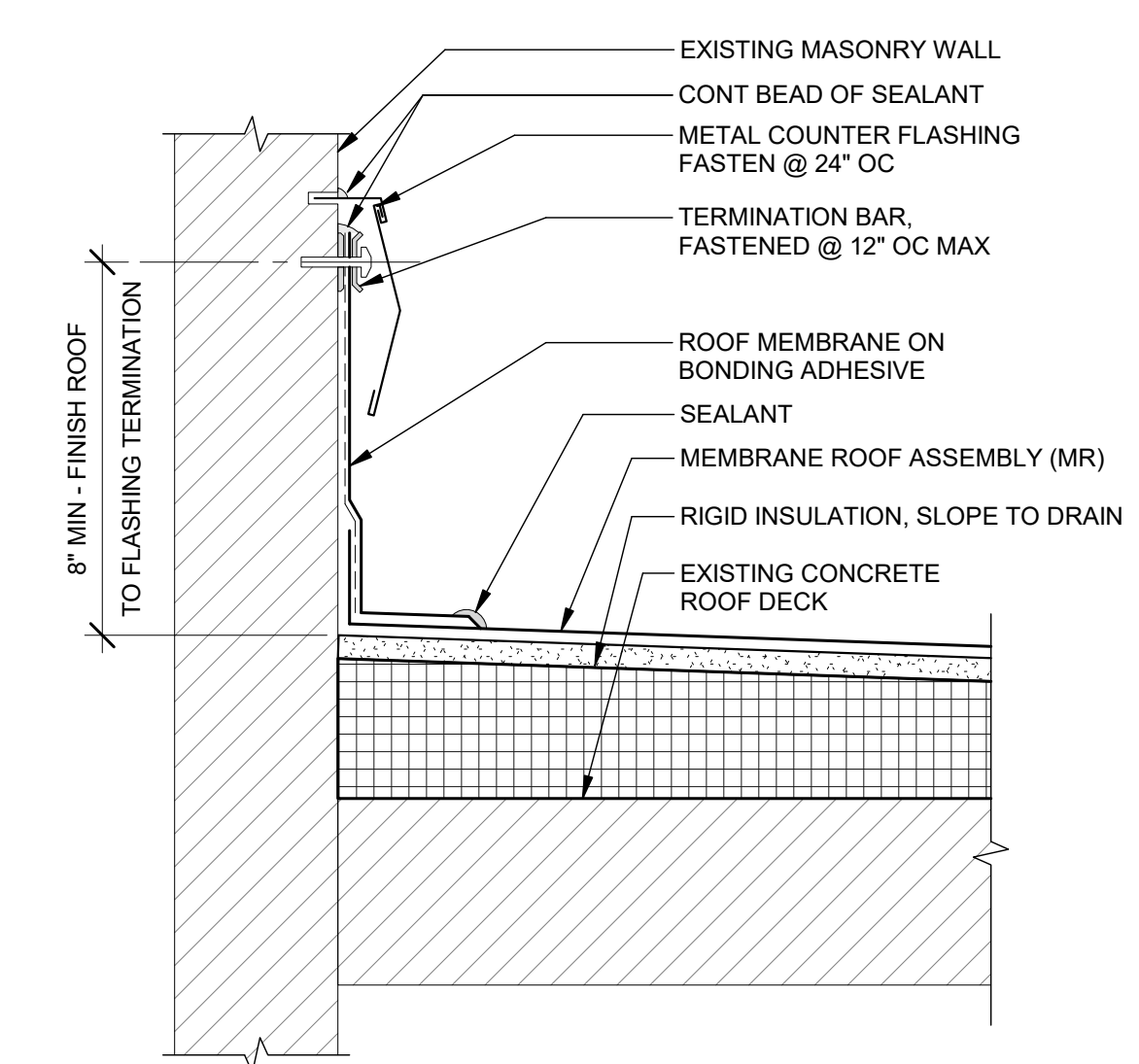
Key Plan



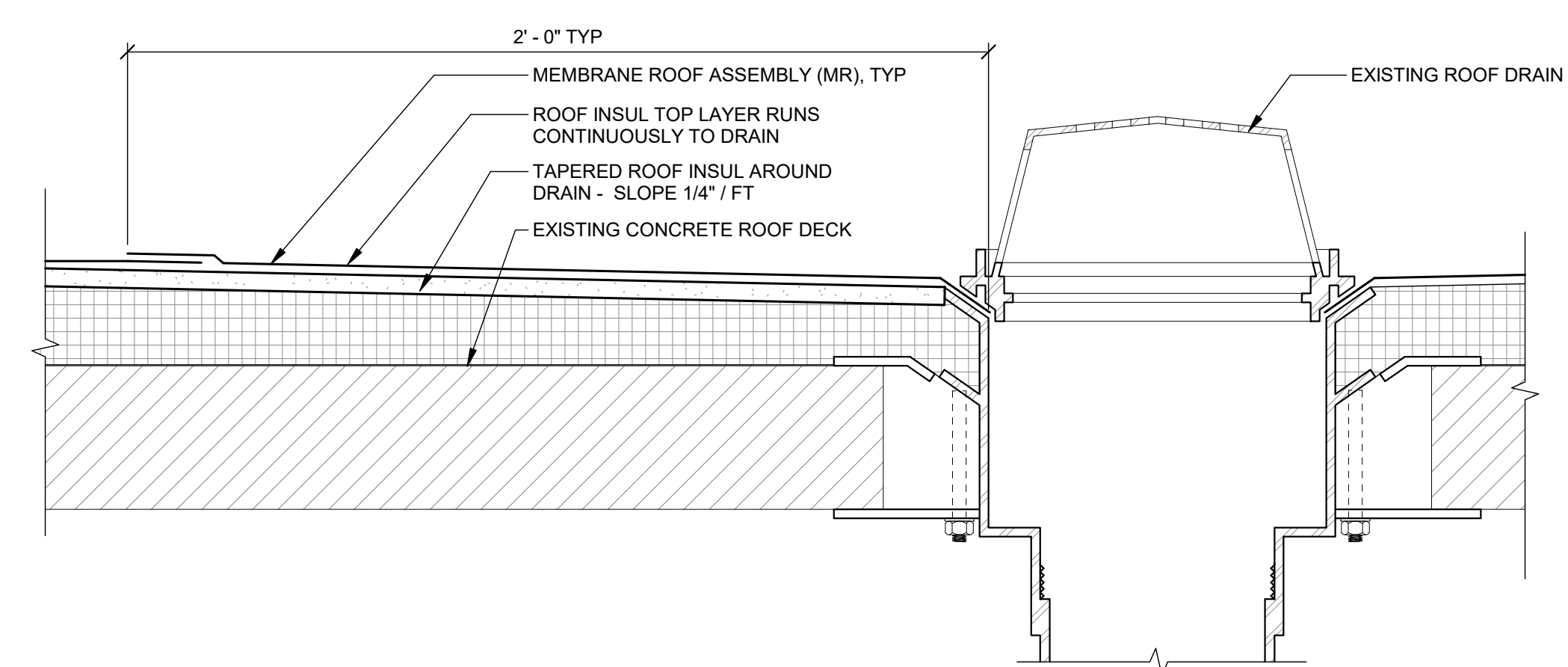
Urban League / Kahn Home
Restoration
208 Mack Ave.
Detroit, MI 48201

In Charge R. KOWALCZYK
Designed RJK
Drawn By RJK
Checked
Approved Date 10/16/20
Sheet Title

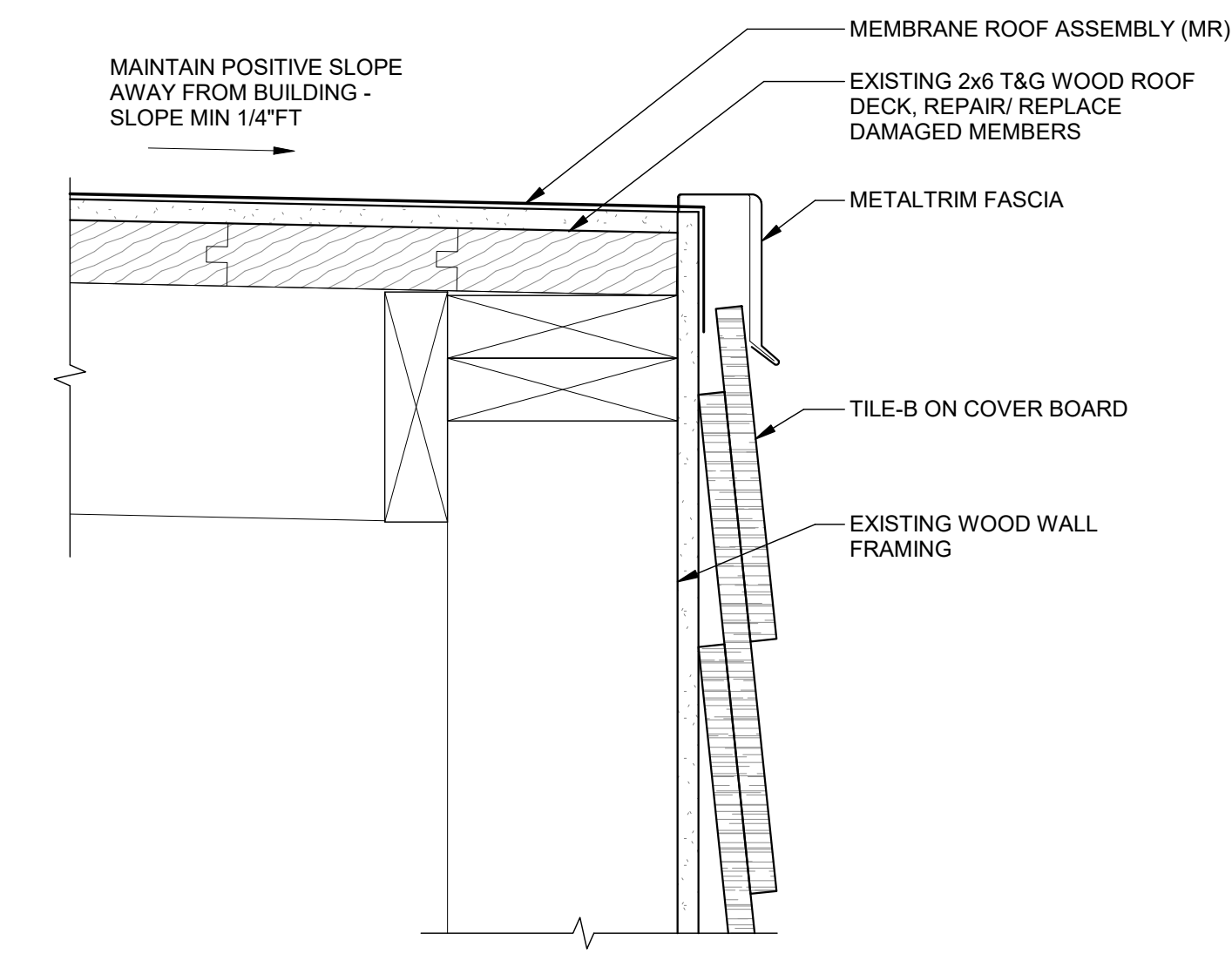
DETAILS
Job No. 00293-J0 Sheet No. A-501



1 FLASHING AT BEARING WALL
3" = 1'-0"
A-110



2 ROOF DRAIN - FLAT CONCRETE SLAB
3" = 1'-0"
A-110



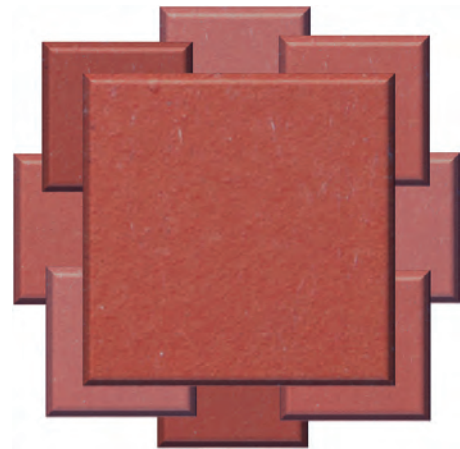
3 ROOF DETAIL AT DORMER
3" = 1'-0"
A-201



BURGUNDY BLEND M10

Ludowici colors are not painted on the surface, but fired in under extreme temperatures to ensure they retain their original tones and hues for many years to come. Color is included in our 75-year material warranty.

For more information on Ludowici colors, please see the *Art and Science of Ludowici Color* on the back of this card.



Partial representation of expected color range shown.

Creating the color of a terra cotta roof tile is part science and part art. There is always a range of tones within any given color. It is impossible to produce a monochromatic terra cotta roof tile.

In most cases, color is applied by spraying the surface of wet tile with glaze (a mixture of glass frit, silicas and pigments) prior to firing. At kiln temperatures over 2000 degrees Fahrenheit, the spray components fuse onto the surface, becoming an integral part of the tile itself.

Some colors are made from a two-step process involving a base coat and overspray. These colors will naturally display a broader range in tones as the overspray varies in its coverage of the base coat. A broad range will also be produced with colors utilizing high iron content.

The variation of tones within a selected color is affected by many production factors including:

- Temperature variations in the kiln;
- Position of each tile in the kiln;
- Spray patterns and resulting coverage; and
- Subtle natural differences in clay, pigment and frit composition.

The range of tones that arise from the manufacturing process is a normal and very desirable feature of natural clay tile, imparting richness, character and a more dimensional appearance to the roof. Variation in tones should never be considered a defect or flaw. The range of colors produced may vary with each firing process.

Leaded Glazes

Recognizing that leaded glazes represent a serious and real threat to the safety of workers and the environment, Ludowici discontinued their use many years ago. Clay tile roofs found on historic buildings often used leaded glazes and matching those colors using today's non-leaded glazes is virtually impossible as the tile color is profoundly impacted by glaze chemistry. While exact color match is not possible, rest assured that Ludowici's custom color development team will make the closest match possible.

Blending Colors

Color blending, wherein several different colors of terra cotta roof tile are mixed on a roof (such as red, brown and gold), provides the designer or architect an opportunity to create a subtle or dramatic, one-of-a-kind design statement. Diamond or other geometric patterns can also be created.

Ludowici technical service specialists can assist in estimating the amounts of tile needed from design renderings. In addition, we can provide information on blends from previous orders for comparative purposes or for artistic inspiration. When working with blends pay careful attention to fittings. They can be produced entirely in one color or reflect the percentages of colors in the blend.

In addition, Ludowici design specialists highly recommend constructing a test patch of no less than 50 tiles as a final check prior to ordering. As with all shipments of Ludowici tile, contractors must take care when loading the roof with a blend of colors so that mix and percentages of color are uniformly maintained.

Enduring Color

As our color is fired in and chemically bonded with the tile substrate, Ludowici terra cotta roof tiles will not lose their original intensity or color under normal environmental conditions. Natural clay red (unglazed) tile ages minimally too. And unlike some hard roofing products, the surface of Ludowici tile will never become marred by unsightly white salt deposits (efflorescence).

However, in areas subject to pollution, especially those with acid rain, the surface of the tiles may become weathered or subject to deposits that can slightly alter color over time. Matte finishes are more susceptible than high-gloss finishes.

Ludowici color is so durable that colorfastness is included in our 75-year material warranty. *See warranty documents for specific details and limitations.*

FLAT SLAB SHINGLE TILE



Ludowici's flat slab shingle tile has a smooth surface and square butt creating a clean look suitable to any architectural style. Flat slab tiles are available in $\frac{3}{8}$ " and $\frac{5}{8}$ " thicknesses and standard and custom matte colors, mists and blends. See the *Colors of Ludowici* brochure for more information about our extensive color program.

PHYSICAL CHARACTERISTICS

CHARACTERISTIC	FLAT SLAB SHINGLE TILE $\frac{3}{8}$ "	FLAT SLAB SHINGLE TILE $\frac{5}{8}$ "	PROFILE
Weight Per Square	1300 lbs.	2000 lbs.	
Pieces Per Square	480 pcs.	480 pcs.	
Overall Size	6" x 12" x $\frac{3}{8}$ "	6" x 12" x $\frac{5}{8}$ "	
Exposure	6" x 5"	6" x 5"	
Minimum Slope	5:12	5:12	
Color Blends	Available in all standard and custom matte colors. For more information about Ludowici's color program, please see the <i>Colors of Ludowici</i> brochure.		
Base Texture	Smooth Also available in custom textures. Please see the <i>Terra Cotta Textures</i> brochure for more information.		

APPROVALS & CERTIFICATIONS

- ◆ Miami-Dade NOA No: 12-0904.14
- ◆ State of Florida Approval No: FL 13777
- ◆ ASTM C1167 Grade 1 Roof Tile With Water Absorption Less Than 2%
- ◆ Class A Fire Rated

LUDOWICI WARRANTY

All Ludowici tiles are manufactured in the United States and carry a 75-year warranty against color fading and manufacturing defects. For complete warranty details, please visit www.ludowici.com.



MADE IN AMERICA FOR OVER 125 YEARS

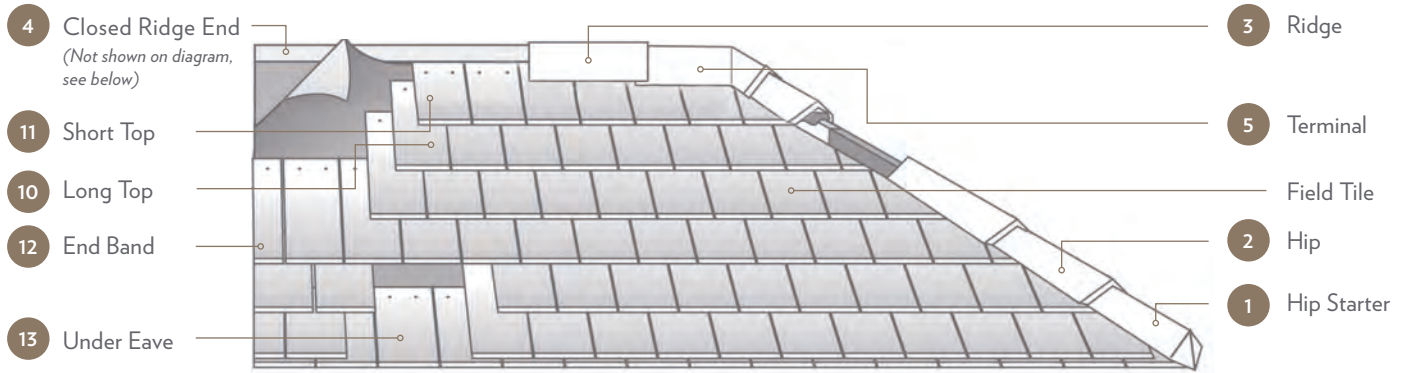
GREEN ATTRIBUTES

Ludowici terra cotta is an energy-efficient, sustainable choice for your new roof. Learn more about our green story in the Ludowici *Green Promise* brochure.



Photos are for representation purposes only and should not be used for final product selection. Tiles ordered should be chosen from actual samples available at the time of order. Ludowici reserves the right to alter and adjust products, colors and finishes at any time. Please contact a sales representative for more information.

FLAT SLAB SHINGLE TILE



HIP & RIDGE		Visit www.ludowici.com to download a detailed product sheet on Hip, Ridge and Decorative Hip Starters.					
PROFILE	1 HIP STARTER	2 HIP	3 RIDGE	4 CLOSED RIDGE END	5 TERMINAL		
V-Hip & Ridge Trim Group	V-Hip Starter	V-Hip	V-Ridge	V-Closed Ridge End	V- 2 Hip 1 Ridge Terminal		
#118/#211 Hip & Ridge Trim Group	#168 Hip Starter	#118 Hip Roll	#211 Ridge	#211 Closed Ridge End	#118/#211 2 Hip 1 Ridge Terminal		
Circular Cover Hip & Ridge Trim Group	CC-Hip Starter	CC-Hip	CC-Ridge	CC-Closed Ridge End	CC- 2 Hip 1 Ridge Terminal	CC-Low Bump 2 Hip 1 Ridge Terminal	
#102/#206 Hip & Ridge Trim Group	#152 Hip Starter	#102 Hip Roll	#206 Ridge	#206 Closed Ridge End	#102/#206 2 Hip 1 Ridge Terminal	#405 High Bump 2 Hip 1 Ridge Terminal	#406 High Bump Gable Terminal
Old Style Trim Group	Bonnet Hip Starter*	Bonnet Hip Roll*	Interlocking Ridge				
		Aries Hip Plate*					

* Roof slope on each intersecting roof plane needs to be identical to use these pieces.

FITTINGS					
PROFILE	10 LONG TOP	11 SHORT TOP	12 END BAND	13 UNDER EAVE	HEADER COURSE
Actual Size	6" x 9"	6" x 5"	3" x 12"	6" x 7"	6" x 12"
Exposure	6" x 5"	6" x 2"	3" x 5"	6"	6" x 9"
Weight	2.1/2.8 lbs./pc.	1.2/1.6 lbs./pc.	1.4/1.9 lbs./pc.	2.0/2.7 lbs./pc.	3.7 lbs./pc.

MORANDO CLOSED SHINGLE TILE



Morando Closed Shingle is Ludowici’s smallest interlocking tile. It has a smooth surface and thicker butt than our original Heritage Closed Shingle, but may be customized with a number of custom textures. Its clean look is suitable for a full range of architectural styles. Morando Closed Shingle tiles are available in all standard and custom matte colors, mists and blends offered by Ludowici. See the *Colors of Ludowici* brochure for more information about our extensive color program.

PHYSICAL CHARACTERISTICS

CHARACTERISTIC	MORANDO CLOSED SHINGLE INTERLOCKING TILE	PROFILE
Weight Per Square	1160 lbs.	
Pieces Per Square	225 pcs.	
Overall Size	8 3/4" x 11" x 1 3/16"	
Exposure	8" x 8" x 1 3/16"	
Minimum Slope	3:12	
Color Blends	Available in all standard and custom matte colors. For more information about Ludowici’s color program, please see the <i>Colors of Ludowici</i> brochure.	
Base Texture	Smooth Also available in custom textures.* Please see the <i>Terra Cotta Textures</i> brochure for more information.	

APPROVALS & CERTIFICATIONS

- ◆ ASTM C1167 Grade 1 Roof Tile With Water Absorption Less Than 2%
- ◆ Class A Fire Rated

LUDOWICI WARRANTY

All Ludowici tiles are manufactured in the United States and carry a 75-year warranty against color fading and manufacturing defects. For complete warranty details, please visit www.ludowici.com.



GREEN ATTRIBUTES

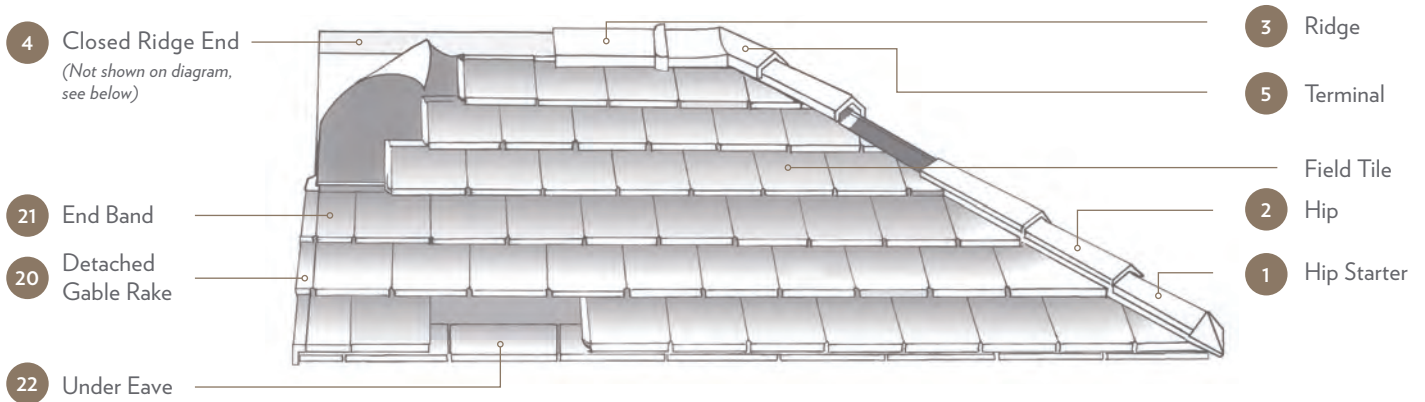
Ludowici terra cotta is an energy-efficient, sustainable choice for your new roof. Learn more about our green story in the Ludowici *Green Promise* brochure.



* Textures available include brushed butt, battered butt, hand roughed, weathered and top sand. Please see a sales representative for more details.

Photos are for representation purposes only and should not be used for final product selection. Tiles ordered should be chosen from actual samples available at the time of order. Ludowici reserves the right to alter and adjust products, colors and finishes at any time. Please contact a sales representative for more information.

MORANDO CLOSED SHINGLE TILE

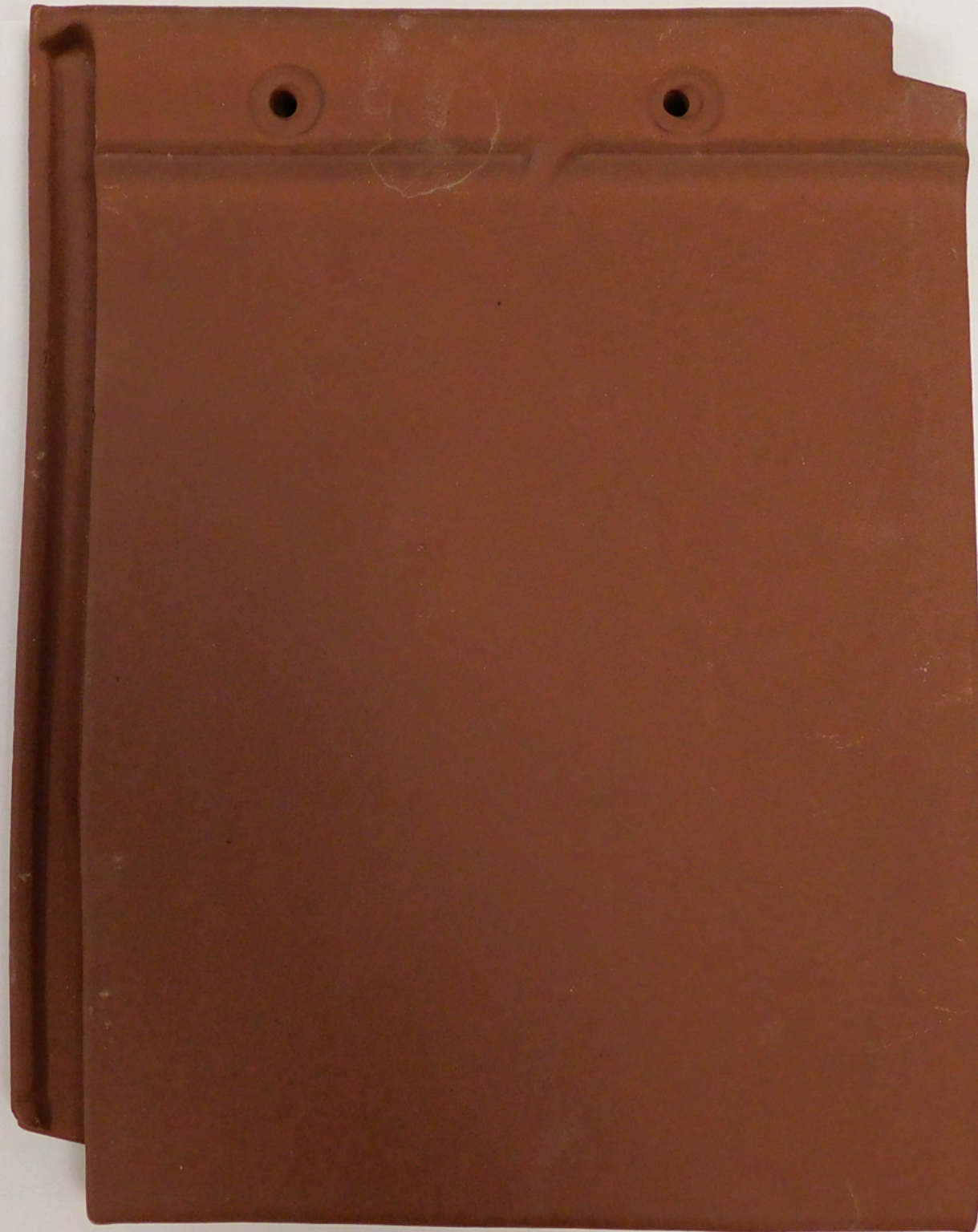


HIP & RIDGE							
Visit www.ludowici.com to download a detailed product sheet on Hip, Ridge and Decorative Hip Starters.							
PROFILE	1 HIP STARTER	2 HIP	3 RIDGE	4 CLOSED RIDGE END	5 TERMINAL		
V-Hip & Ridge Trim Group	V-Hip Starter	V-Hip	V-Ridge	V-Closed Ridge End	V- 2 Hip 1 Ridge Terminal		
#118/#211 Hip & Ridge Trim Group	#168 Hip Starter	#118 Hip Roll	#211 Ridge	#211 Closed Ridge End	#118/#211 2 Hip 1 Ridge Terminal		
Circular Cover Hip & Ridge Trim Group	CC-Hip Starter	CC-Hip	CC-Ridge	CC-Closed Ridge End	CC- 2 Hip 1 Ridge Terminal	CC-Low Bump 2 Hip 1 Ridge Terminal	
#102/#206 Hip & Ridge Trim Group	#152 Hip Starter	#102 Hip Roll	#206 Ridge	#206 Closed Ridge End	#102/#206 2 Hip 1 Ridge Terminal	#405 High Bump 2 Hip 1 Ridge Terminal	#406 High Bump Gable Terminal

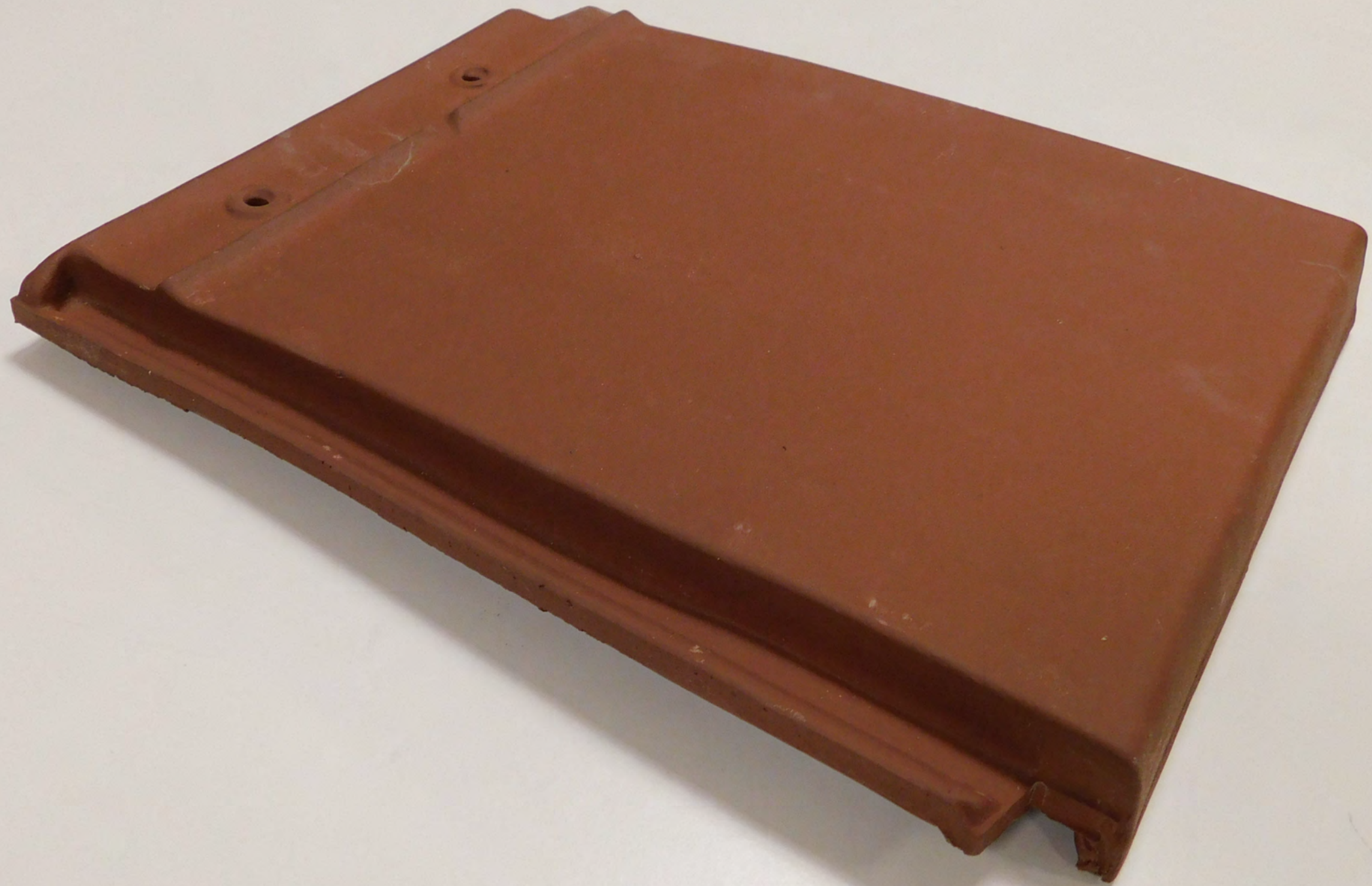
FITTINGS				
PROFILE	20 DETACHED GABLE RAKE		21 END BAND	22 UNDER EAVE
	Left Rake	Right Rake	End Band	Under Eave
Length	11"		11"	12"
Exposure	8"		8"	12"
Weight	2.8 lbs./pc.		3.3 lbs./pc.	2.3 lbs./pc.



LUDOWICI
FLAT SLAB TILE SAMPLE
AT DORMER FACE



LUDOWICI
MORANDO TILE SAMPLE
ROOF TILE



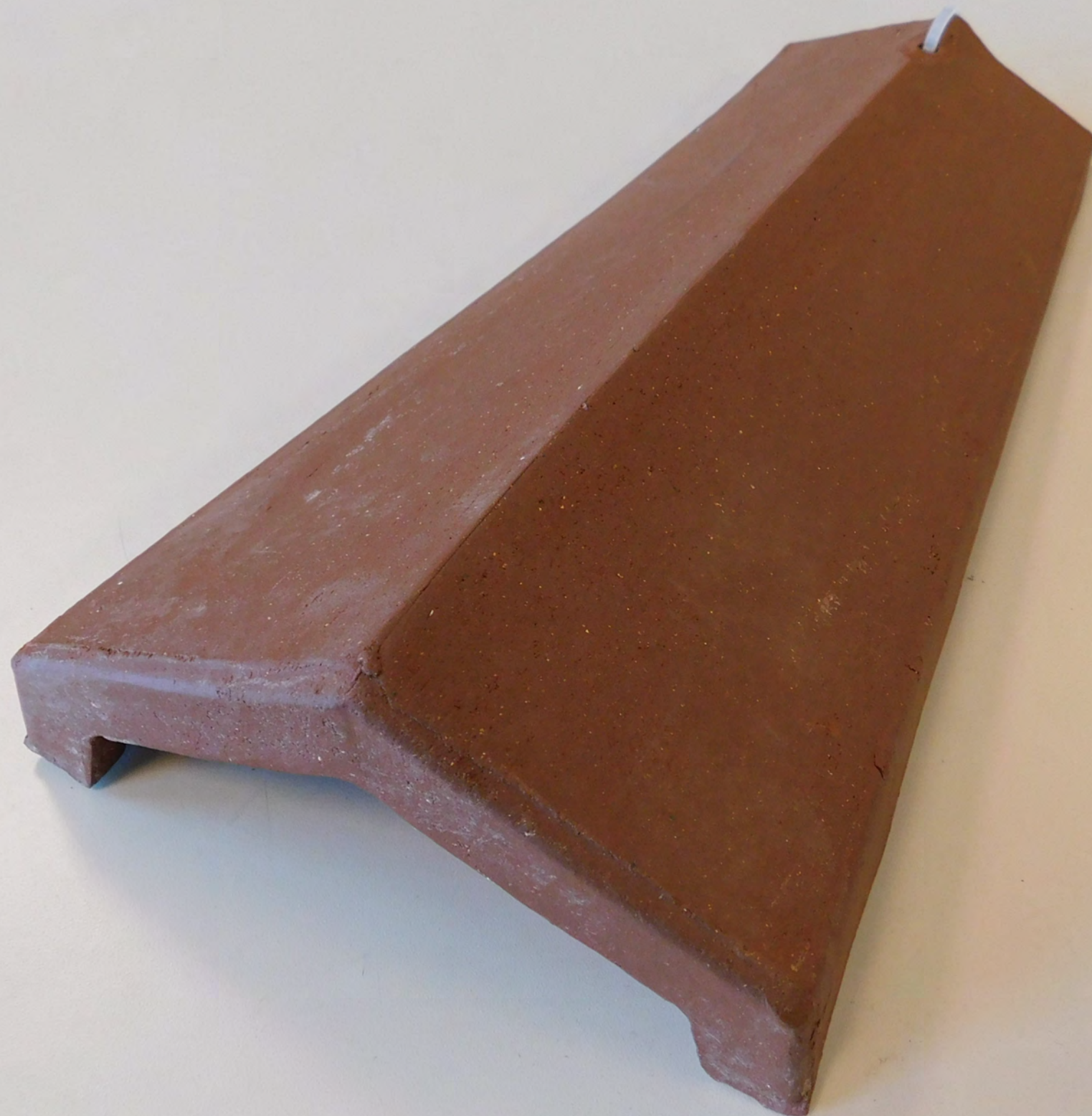
LUDOWICI
MORANDO TILE SAMPLE
ROOF TILE



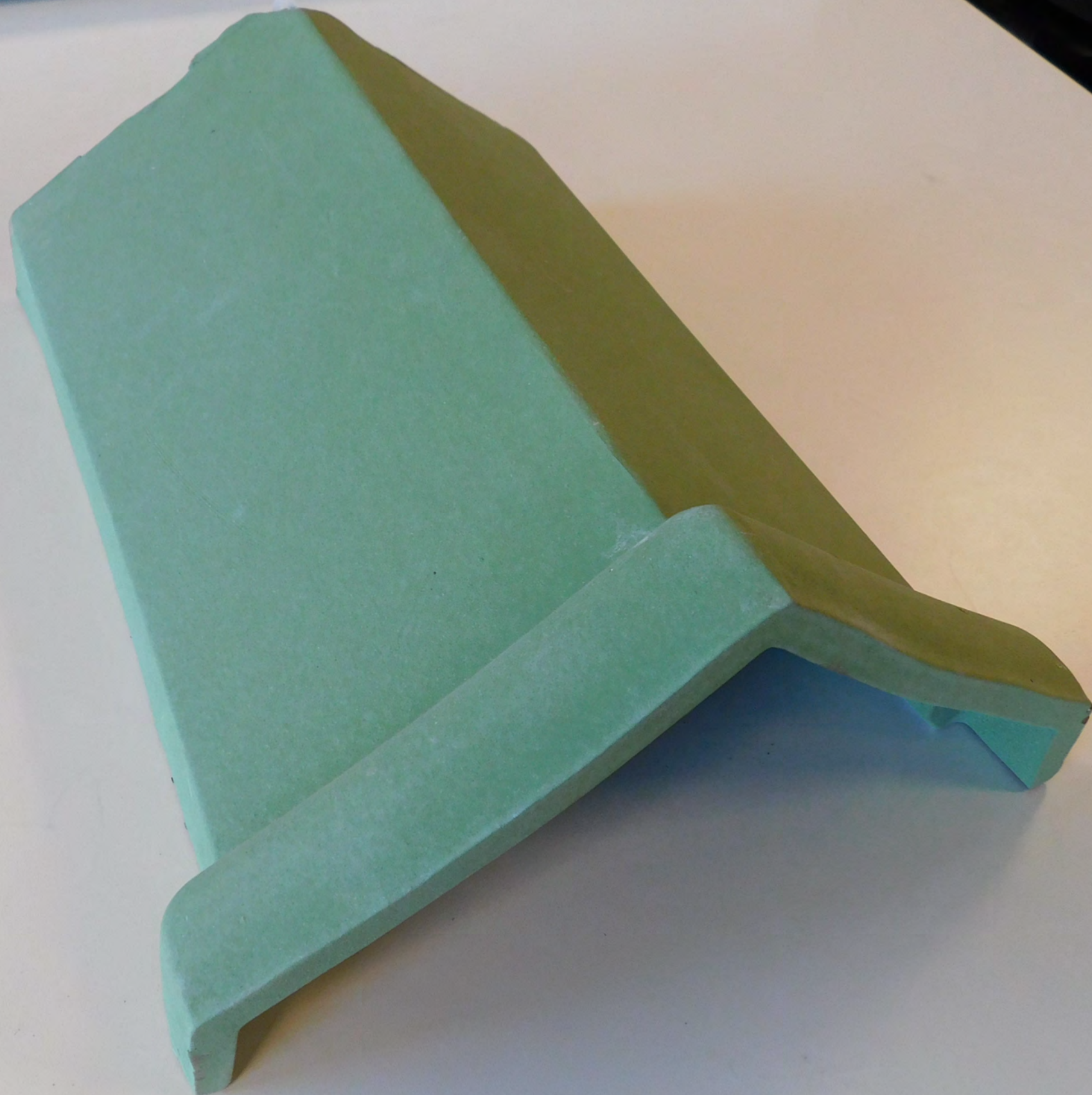
LUDOWICI
BURGUNDY BLEND
MATTE FINISH



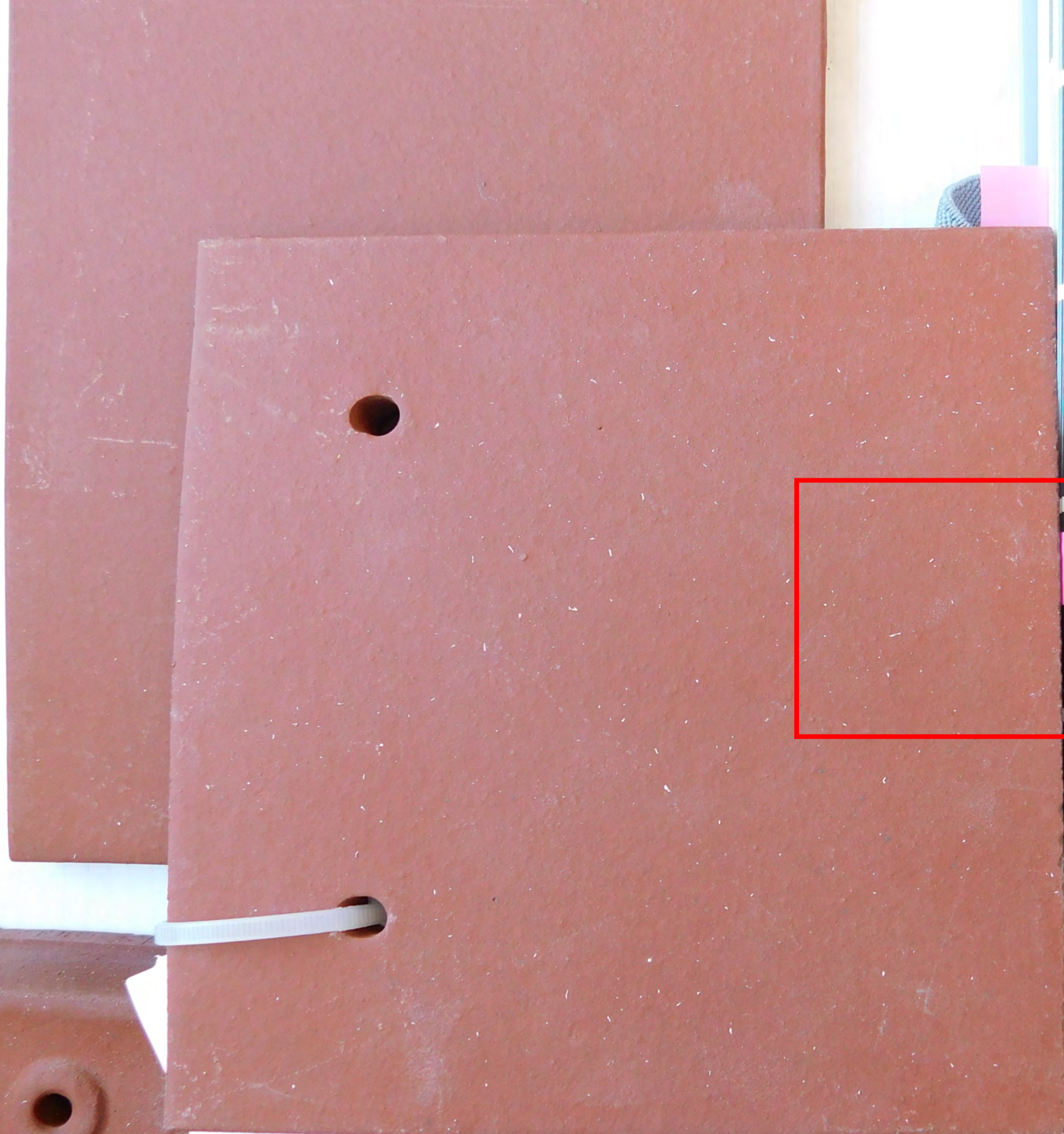
EXISTING ROOF TILE



LUDOWICI
HIP TILE SAMPLE
COLOR/ FINISH NOT ACCURATE



LUDOWICI
RIDGE TILE SAMPLE
COLOR/ FINISH NOT ACCURATE



TRIM/ GUTTER/
DOWNSPOUT COLOR TO
MATCH ROOF TILE
(SW 7594 CARRIAGE DOOR)

Sure-Seal® EPDM

Dusted Non-Reinforced Membranes



Overview

Carlisle's Sure-Seal EPDM Dusted Non-Reinforced membranes are available in thicknesses of 45-mil (1.14 mm) and 60-mil (1.52 mm), widths of up to 50' (15 m), and lengths of up to 200' (60 m). Ideal for new construction and re-roofing applications, this membrane is available in a Fire Retardant (FR) version that is specially formulated to inhibit the spread of flame and meet or exceed code body testing criteria for fire-retardant roofing membranes.

Features and Benefits

- » Carlisle EPDM has 50 years of proven performance and industry-leading resistance to weathering, with 41,580 kJ/m² total radiant exposure without cracking or crazing
- » Factory-Applied Tape™ seam technology and a full line of Pressure-Sensitive flashing accessories enhance workmanship quality
- » Dark-colored EPDM is the smart choice in colder climates:
 - Reduces heating costs, which are generally 3–5 times greater than air conditioning costs
 - Reduces carbon footprint by lowering heating costs
 - Reduces safety hazards from snow and ice accumulation
 - Reduces hazardous conditions caused by frost, dew, and ice
 - Reduces the potential for condensation problems
- » Life Cycle Assessment using EPA's TRACI model analyzed EPDM, TPO, PVC and Modified Bitumen:
 - EPDM had the lowest global warming potential
 - EPDM had the lowest acid rain impact
 - EPDM had the lowest contribution to smog

- » Numerous studies and real-world experience confirm that Sure-Seal EPDM's 465% elongation and weathering resistance result in superior hail damage resistance (UL 2218 Class 4 Rating)
- » EPDM is the most dimensionally stable, heat-resistant membrane, and stays flexible even in extremely cold conditions down to -40°F (-40°C): see flexibility/torsion DMA data
- » Wide array of design choices that are UL Classified and FM Approved
- » Industry-leading 15-, 20-, and 25-year warranties are available
- » Carlisle manufactures all the major components of a typical roofing system, including membrane, flashings, tapes, adhesives, sealants, insulations, and insulating cover boards

Carlisle's Factory-Applied Tape Seam Technology

The Factory-Applied Tape process results in a reliable seam with greater peel and shear strengths and no entrapped air bubbles. Consistent placement of the Factory-Applied Tape also maximizes the splice area and results in a high-quality seam. Factory-Applied Tape has a shelf life of one year.

Productivity Boosting Features and Benefits:

- » With Carlisle's Factory-Applied Tape, most of the labor to create seams between membrane panels is completed in a quality-controlled, state-of-the-art environment
- » Factory-Applied Tape is available on all Sure-Seal membranes up to 30' (9 m) in width, providing the fastest way to complete a seam in today's roofing market
- » Wider sheets like 16.5', 20', and 25' reduce the frequency of seams compared to 10'-wide sheets



Installation

Sure-Seal 45-mil (1.14 mm) and 60-mil (1.52 mm) membranes are typically utilized in Design A: Fully Adhered (60-mil only), Design B: Ballasted, and Design C: Loose-Laid Protected roofing systems.

For Design A: Fully Adhered Roofing System

Insulation is mechanically attached or adhered to the roof deck. The substrate and membrane are coated with the appropriate Carlisle bonding adhesive. The membrane is then rolled into place and broomed down. To complete seams between two adjoining membrane panels, apply primer to the splice area in conjunction with Carlisle's Factory-Applied Tape. As an alternative, Carlisle's hand-applied SecurTAPE™ may be used.

Sure-Seal EPDM

Dusted Non-Reinforced Membranes

For Design B: Ballasted Roofing System

Insulation is loose-laid over the roof deck. Membrane is loose-laid over the insulation and secured with a minimum 10 lbs (4.5 kg) of ballast per square foot. Design C is a similar system with the insulation installed on top of the membrane. To complete seams between two adjoining membrane panels, apply primer to the splice area in conjunction with Carlisle's Factory-Applied Tape. As an alternative, Carlisle's hand-applied SecurTAPE may be used.

Follow these steps for splicing in temperatures below 40°F (5°C):

1. Heat the primed area of the bottom membrane with a hot-air gun as the top sheet with Factory-Applied Tape is applied and pressed into place.
2. Prior to rolling the splice area with a 2"-wide steel hand roller, apply heat to the top side of the membrane with a hot-air gun. The heated surface should be hot to the touch. Be careful not to burn or blister the membrane.

Review Carlisle specifications and details for complete installation information.

Precautions

- » Use proper stacking procedures to ensure sufficient stability of the materials.
- » Exercise caution when walking on wet membrane. Membranes are slippery when wet.
- » Membranes with Factory-Applied Tape should not be exposed to prolonged jobsite storage temperatures in excess of 90°F (32°C), otherwise the shelf life of the tape may be affected.
- » When membranes with Factory-Applied Tape are used in warm, sunny weather, shade the tape end of the rolls until ready to use.
- » Carlisle Factory-Applied Tape has a shelf life of one year.

LEED® Information	
Pre-consumer Recycled Content	5%
Post-consumer Recycled Content	0%
Manufacturing Locations	Carlisle, PA Greenville, IL
Solar Reflectance Index	9

Typical Properties and Characteristics

Physical Property	Test Method	SPEC. (PASS)	Typical	
			45-mil	60-mil
Tolerance on Nominal Thickness, %	ASTM D412	±10	±10	±10
Weight, lbf/ft ² (kg/m ²)			0.29 (1.4)	0.39 (1.9)
Tensile Strength, min, psi (MPa)	ASTM D412	1305 (9)	1600 (11.0)	1600 (11.0)
Elongation, Ultimate, min, %	ASTM D412	300	480	465
Tear Strength, min, lbf/in (kN/m)	ASTM D624 (Die C)	150 (26.3)	200 (35.0)	200 (35.0)
Factory Seam Strength, min	Modified ASTM D816	Membrane Rupture	Membrane Rupture	Membrane Rupture
Resistance to Heat Aging* Properties after 28 days @ 240°F (116°C)	ASTM D573			
Tensile Strength, min, psi (MPa)	ASTM D412	1205 (8.3)	1500 (10.3)	1450 (10.0)
Elongation, Ultimate, min, %	ASTM D412	200	225	280
Tear Strength, min, lbf/in (kN/m)	ASTM D624	125 (21.9)	215 (37.6)	215 (37.6)
Linear Dimensional Change, max, %	ASTM D1204	±1.0	-0.4	-0.50
Ozone Resistance* Condition after exposure to 100 pphm Ozone in air for 168 hours @ 104°F (40°C) Specimen is at 50% strain	ASTM D1149	No Cracks	No Cracks	No Cracks
Brittleness Temp., max, °F (°C)*	ASTM D746	-49 (-45)	-49 (-45)	-49 (-45)
Resistance to Water Absorption* After 7 days immersion @ 158°F (70°C) Change in mass, max, %	ASTM D471	+8, -2	+2.0	+2.0
Water Vapor Permeance* Max, perms	ASTM E96 (Proc. B or BW)	0.10	0.05	0.03
Flexibility/Torsion DMA	ASTM D5279-08	N/A	225 MPa @ -40°F	225 MPa @ -40°F
Fungi Resistance	ASTM G21	N/A	0 (No Growth)	0 (No Growth)
Resistance to Outdoor (Ultraviolet) Weathering* Xenon-Arc, total radiant exposure at 0.70 W/m ² irradiance, 80°C black panel temperature	ASTM G155	No Cracks No Cracking 7,560 kJ/m ² 3,000 hrs	No Cracks No Cracking 41,580 kJ/m ² 16,500 hrs	No Cracks No Cracking 41,580 kJ/m ² 16,500 hrs
At 0.35 W/m ² irradiance, 80°C black panel temperature		6,000 hrs	33,000 hrs	33,000 hrs

*Not a quality control test due to the time required for the test or the complexity of the test. However, all tests are run on a statistical basis to ensure overall long-term performance of the sheeting.

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

Note: Sure-Seal Dusted Non-Reinforced EPDM membrane meets or exceeds the minimum requirements set forth by ASTM D4637 for Type I non-reinforced EPDM single-ply roofing membranes.

DensDeck® Roof Board



Overview

DensDeck Roof Board's patented design features a gypsum core with embedded glass mat facers on the top and bottom of the board. DensDeck can be used in a variety of commercial roof systems and provides an excellent thermal barrier as well as exceptional fire, moisture, and wind uplift resistance properties.

DensDeck is primarily used as a cover board over insulation in mechanically fastened roofing applications. Frequently used in wood deck construction to achieve UL code ratings. DensDeck reduces the potential for growth of mold and mildew per ASTM D 3273.

Features and Benefits

- » UL code ratings available for (class A, B, C) unlimited slopes and wood decks
- » FM Approved
- » Improves resistance to foot traffic and hail damage
- » Excellent wind uplift ratings
- » Resistant to deterioration, warping, and jobsite damage
- » 5/8" DensDeck can replace any generic Type "X" gypsum board in any roof assembly in the UL Fire Resistance Directory under the prefix "P"

Installation

DensDeck may be secured with Flexible FAST™ Adhesive, fastened in accordance with an approved fastening pattern, or mopped with Type III or IV asphalt.

Edge joints should be located on and parallel to deck ribs. End joints of adjacent lengths should be staggered.

1. This material shall be installed with ends and edges butted tightly.
2. When installed over combustible wood decks or insulations, all joints should be staggered.
3. In accordance with approved shop drawings, FM Approved fasteners shall be installed with plates through the roof board, flush with the surface.

Review Carlisle specifications and details for complete installation information.

Precautions

- » Panels must be kept dry before, during and after installation. Apply only as much roof board as can be covered by roof membrane in the same day.
- » 1/4" DensDeck is not recommended for vertical parapet applications or for asphalt attachment.
- » In ballasted roofing systems, DensDeck is not an acceptable membrane underlayment.

Ratings and Certifications

- » Manufactured to conform to ASTM C-1177
- » Tested in accordance with ASTM E-84 or CAN/ULC-S102
- » Non-combustible when tested in accordance with ASTM E-136
- » UL code approval for current class A, B, C approvals

DensDeck Roof Board

Typical Properties and Characteristics

Properties	¼" (6.4 mm)	½" (12.7 mm)	⅝" (15.9 mm)
Thickness, nominal	¼" (6.4 mm) ± 1/16" (1.6 mm)	1/2" (12.7 mm) ± 1/32" (.8 mm)	5/8" (15.9 mm) ± 1/32" (.8 mm)
Width, standard	4' (1219 mm) ± 1/8" (3 mm)	4' (1219 mm) ± 1/8" (3 mm)	4' (1219 mm) ± 1/8" (3 mm)
Length, standard	8' (2438 mm) ± ¼" (6.4 mm)	8' (2438 mm) ± ¼" (6.4 mm)	8' (2438 mm) ± ¼" (6.4 mm)
Weight, nominal, lbs./sq. ft. (Kg/m ²) ⁷	1.2 (5.9)	2.0 (9.8)	2.5 (12.2)
Surfacing	Fiberglass mat	Fiberglass mat	Fiberglass mat
Flexural Strength ¹ , parallel, lbf. min. (N)	≥40 (178)	≥80 (356)	≥100 (444)
Flute Spanability ²	2⅝" (67 mm)	5" (127 mm)	8" (203 mm)
Permeance ³ , perms (ng/Pa•S•m ²)	>50 (2850)	>35 (1995)	>32 (1824)
R Value ⁴ , ft ² •°F•hr/BTU (m ² •K/W)	0.28	0.56	0.67
Linear Variation with Change in Temp., in/in °F (mm/mm/°C)	8.5 x 10 ⁻⁶ (15.3 x 10 ⁻⁶)	8.5 x 10 ⁻⁶ (15.3 x 10 ⁻⁶)	8.5 x 10 ⁻⁶ (15.3 x 10 ⁻⁶)
Linear Variation with Change in Moisture	6.25 x 10 ⁻⁶	6.25 x 10 ⁻⁶	6.25 x 10 ⁻⁶
Water Absorption ⁵ , %	5	5	5
Compressive Strength ⁶ , psi nominal	900	900	900
Surface Water Absorption, grams, nominal ¹	1.0	1.0	1.0
Flame Spread, Smoke Developed (ASTM E84)	0/0	0/0	0/0
Bending Radius	5' (1524 mm)	8' (2438 mm)	12' (3658 mm)

¹ Tested in accordance with ASTM C473 method B.

⁴ Tested in accordance with ASTM C518 (heat flow meter).

⁷ Represents approximate weight for design and shipping purposes. Actual weight may vary based on manufacturing location and other factors.

² Tested in accordance with ASTM E661.

⁵ Tested in accordance with ASTM C1177.

³ Tested in accordance with ASTM E96 (dry cup method).

⁶ Tested in accordance with ASTM C473.

LEED® Information

Manufacturing Location ¹	Total Recycled Content ²	Pre-Consumer Recycled Content ²	Post-Consumer Recycled Content ²
Acme, TX	0%	0%	0%
Antioch, CA	0%	0%	0%
Ft. Dodge, IA	0%	0%	0%
Las Vegas, NV	0%	0%	0%
Lovell, WY	0%	0%	0%
Newington, NH	30%	30%	0%
Savannah, GA	0%	0%	0%
Tacoma, WA	14%	14%	0%
Wheatfield, IN	94%	94%	0%

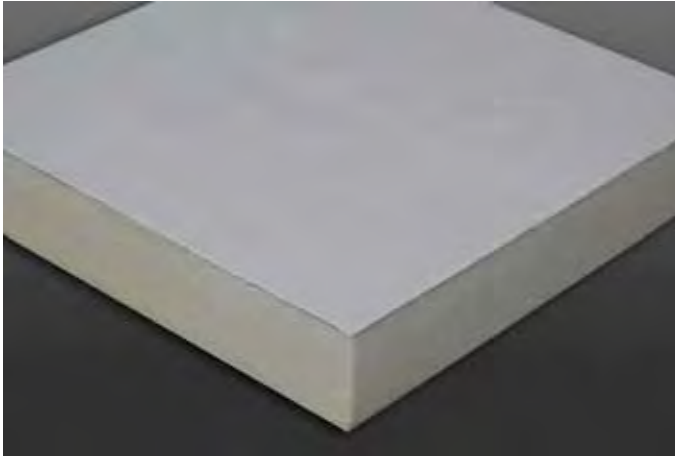
¹ Manufacturing locations subject to change. Please visit www.gpgypsum.com and click on Sustainability.

² Recycled content subject to change +/- 1.0%.

³ Based on ICC Evaluation Service Verification of Attributes Report for Dens® brand products issued August 1, 2009. www.saveprogram.icc-es.org

HP-F POLYISO

Insulation



Overview

Carlisle's HP-F Polyiso is a rigid roof insulation panel composed of a closed-cell polyisocyanurate foam core manufactured on-line to an impermeable foil facer on both sides.

Features and Benefits

- » Foil facer to provide low vapor permeability
- » Approved for direct application to steel decks

Panel Characteristics

- » Available in 4' x 4' (1220 mm x 1220 mm) and 4' x 8' (1220 mm x 2440 mm) panels in thickness of 1" (25 mm) to 3.0" (76.2 mm)

Applications

- » Single-ply roof systems (ballasted, mechanically attached)

HP-F Polyiso Thermal Values

Thickness	R-value*	Flute Spanability
1.00" (25 mm)	6.5	2 ⁵ / ₈ "
1.50" (38 mm)	10.0	4 ³ / ₈ "
2.00" (51 mm)	13.3	4 ³ / ₈ "
2.50" (64 mm)	17.0	4 ³ / ₈ "
3.00" (76 mm)	20.3	4 ³ / ₈ "

*Initial thermal values are determined by using ASTM C518 at 75°F mean temperature and are typical values for impermeable faced products.

Installation

Ballasted Single-Ply Systems

Each HP-F panel is loosely laid on the roof deck. Butt edges and stagger joints of adjacent panels. Install the roof covering according to Carlisle's specifications.

Mechanically Attached Single-Ply Systems

Each HP-F panel must be secured to the roof deck with fasteners and plates appropriate to the deck type. Butt edges and stagger joints of adjacent panels. Install the roof covering according to Carlisle's specifications.

Review Carlisle specifications and details for complete installation information.

Precautions

Insulation must be protected from open flame and kept dry at all times. Install only as much insulation as can be covered the same day by completed roof covering material. Carlisle will not be responsible for specific building and roof design by others, for deficiencies in construction or workmanship, for dangerous conditions on the jobsite or for improper storage and handling. Technical specifications shown in this literature are intended to be used as general guidelines only and are subject to change without notice. Call Carlisle for more specific details, or refer to PIMA Technical Bulletin No. 109: Storage & Handling Recommendations for Polyiso Roof Insulation.

HP-F POLYISO

Insulation

Typical Properties and Characteristics

Physical Property	Test Method	Value
Compressive Strength	ASTM D1621 ASTM 1289	20 psi** minimum (138 kPa, Grade 2)
Dimensional Stability	ASTM D2126	2% linear change (7 days)
Moisture Vapor Transmission	ASTM E96 12.10	<1 perm (57.5 ng/(Pa•s•m ²))
Water Absorption	ASTM C209	<1% volume
Service Temperature		-100° to 250°F (-73)°C to 122°C

**Also available in 25 psi minimum, Grade 3

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.


Codes and Compliances

- » ASTM C1289, Type I, Grade 2 (20 psi), Grade 3 (25 psi)
- » International Building Code (IBC) Section 2603
- » UL Standard 790, 263 and 1256: Component of Class A Roof Systems (refer to UL Roof Materials' system directory)
- » FM® Standards 4450/4470: Class 1 approval for steel roof-deck constructions (refer to FM RoofNavSM)
- » California Code of Regulations, Title 24, Insulation Quality Standard License #TI-1418
- » Third-party certification with the PIMA Quality Mark for Long-Term Thermal Resistance (LTTR) values
- » CAN/ULC 5704, Type 2 & 3, Class 2

NOTE: Please be aware the Federal Specification HH-I-1972/GEN has been replaced.

LEED® Information

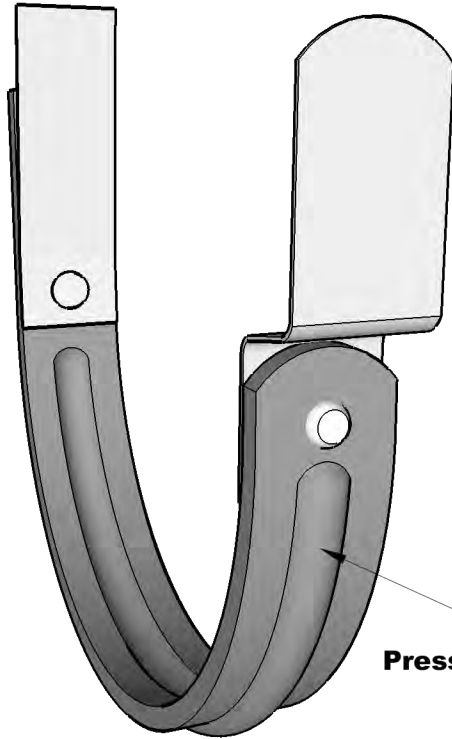
Pre-consumer Recycled Content	9%
Post-consumer Recycled Content	0%
Manufacturing Locations	Smithfield, PA Franklin Park, IL Tooele, UT Terrell, TX Lake City, FL



Foamed plastic as roof deck construction material with resistance to an internal fire exposure only for use in construction no.(s) 120 and 123. See UL Directory of Products Certified for Canada and UL Roofing Materials and Systems Directory. 99DL.

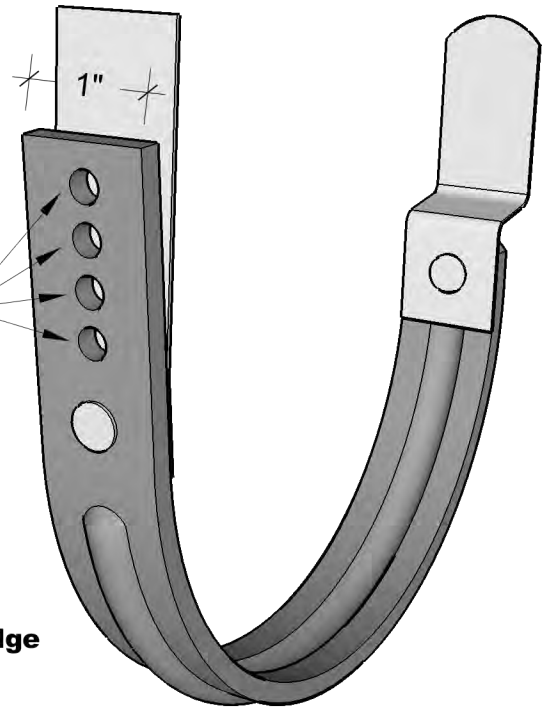


Front View

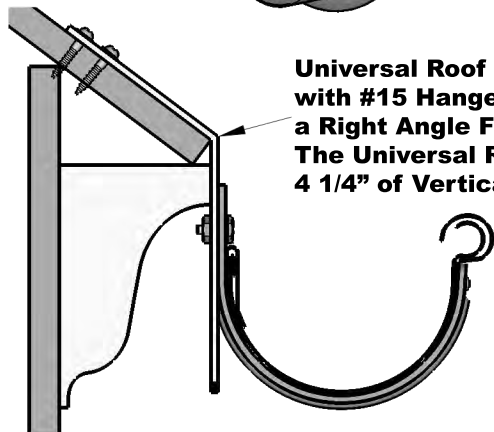


Press Formed Stiffing Wedge

Back View

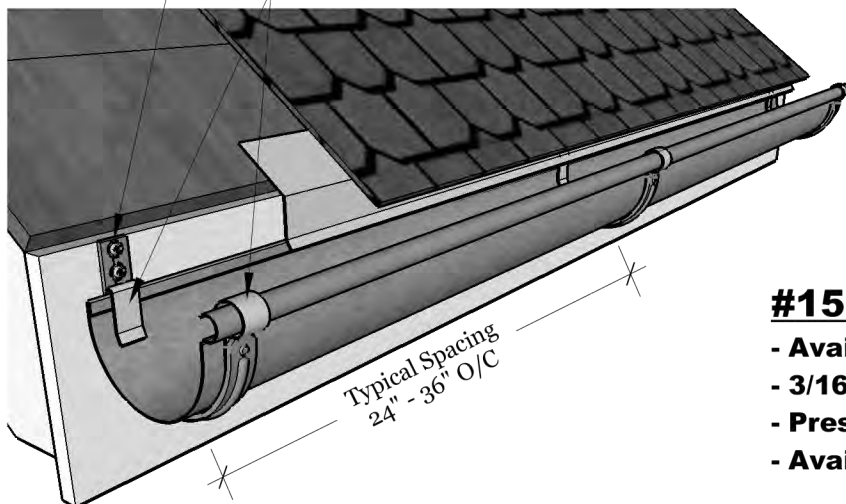


Multiple Holes for Fastening & Adjustments



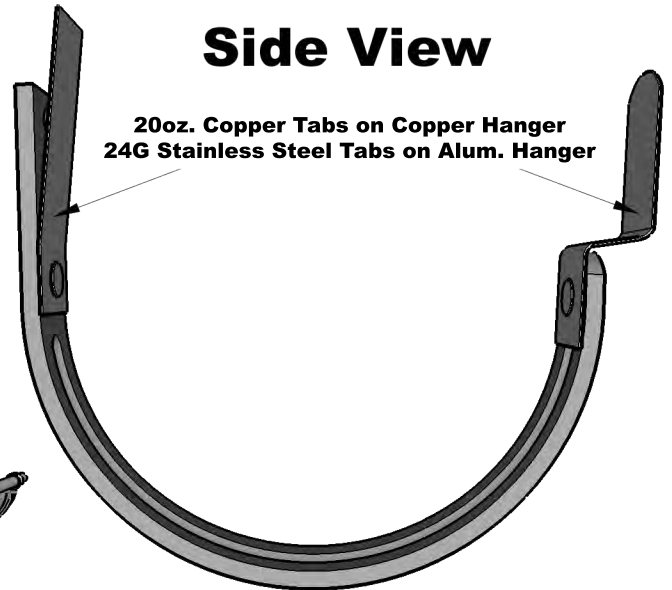
Universal Roof Mount can be used with #15 Hanger to Install Gutter on a Right Angle Fascia or Crown Molding The Universal Roof Mount gives you 4 1/4" of Vertical Pitch Adjustment

Mount Directly to a Plumb Fascia Board.
Fold over Tabs Secure Gutter in Place



Typical Spacing
24" - 36" O/C

Side View



20oz. Copper Tabs on Copper Hanger
24G Stainless Steel Tabs on Alum. Hanger

#15 Hanger for Half Round Gutter

- Available for 5", 6", & 8" Half Round Gutter
- 3/16" x 1" Heavy Duty Bar Stock
- Pressed Formed Bracket w/ Stiffing Wedge
- Available in Copper or Alum. Paint to Match



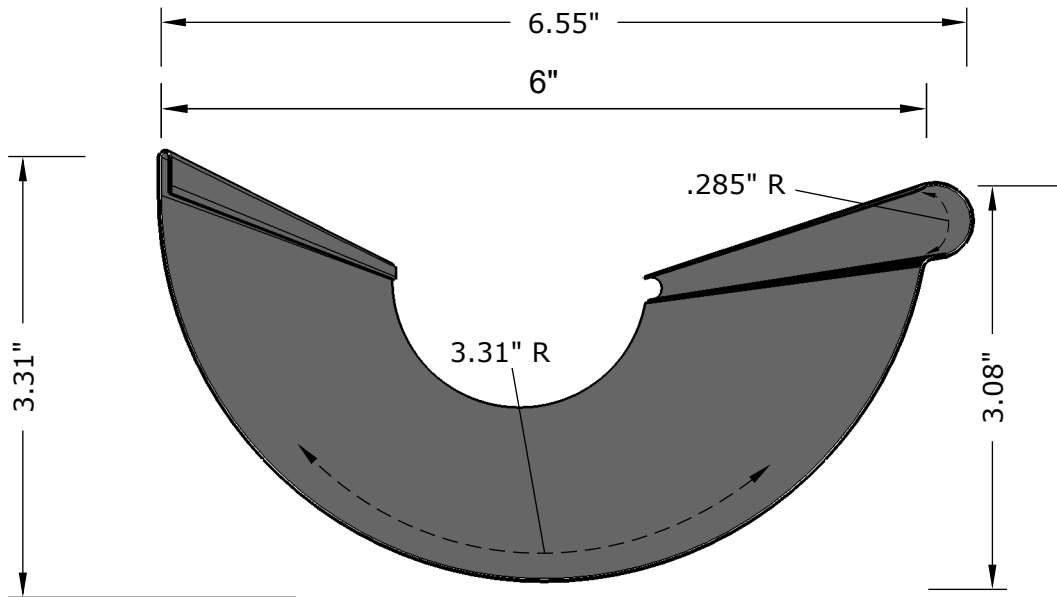
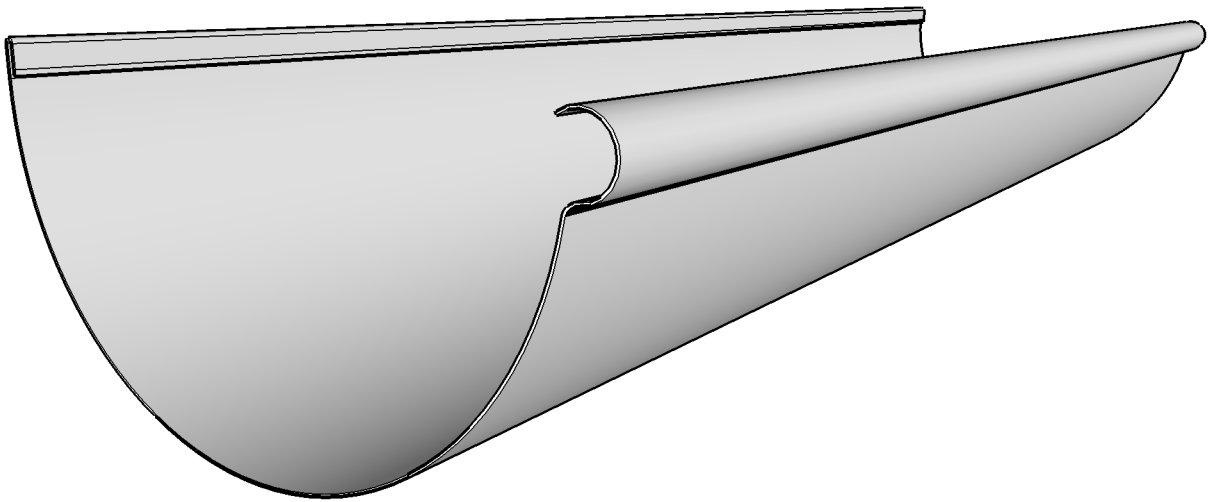
1310 E. Cornwallis Rd.
Durham, NC 27713
P-(919) 544-8887 F- 544-8898
info@kmsheetmetal.com - www.kmsheetmetal.com

#15 HANGER

HALF ROUND GUTTER

REVISIONS		REMARKS
1	MM/DD/YY 9/08/2015	...ORIGINAL DRAFT OF DRAWING
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3
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5

D 001



Notes:

Our Reverse Bead Half Round Gutter is Roll Formed and available in lengths up to 40'0"

Available in the following materials:

- .027 & .032 Aluminum
- 16 oz. or 20 oz. Copper & Lead Coated Copper
- 24 ga. Kynar Finish Steel
- 24 ga. Galvalume
- .7mm & .8mm Zinc



1310 E. Cornwallis Rd.
 Durham, NC 27713
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info@kmsheetmetal.com - www.kmsheetmetal.com

6" Reverse Bead

Half Round Gutter

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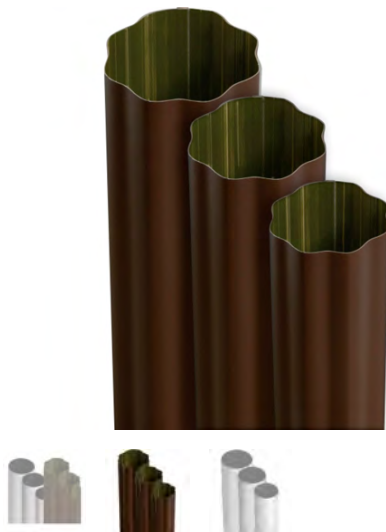
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CLASSIC
GUTTER SYSTEMS L.L.C.

[Estimate Forms](#)[Installations](#)

4" x .024 Aluminum Smooth Round & Corrugated Downspout

[Home](#) / [4" Round Downspout](#) / [4" x .024 Aluminum Smooth Round & Corrugated Downspout](#)



\$19.50 – \$23.50

Downspout sections are available in 10' pre-cut lengths. We recommend corrugated downspout for areas of the country that experience snow and ice. Corrugation allows for expansion in the event of ice build-up in the downspout. Corrugation also helps hide nicks and dents from daily exposure.

Smooth downspout is recommended mainly for southern climates. We take great care in the packaging of our downspout; however, flawless sections of smooth downspout cannot be guaranteed due to potential improper handling by the freight carriers.

All of our 4" aluminum smooth downspout has one expanded end for ease of installation, allowing for a far superior installation to the traditional crimped joint.

Products About Us



Learning Center

Shopping cart icon \$0.00 0

Estimate Forms Installations

Our Aluminum Downspout is available in Smooth and Corrugated styles in these four Standard Colors: high gloss white, low gloss white, dark bronze and royal brown (see Aluminum Color Chart below). Note: We can make **Select Color Corrugated Downspout and Elbows** for a \$100.00 up charge (one charge per color, per order).

Downspout orders LONGER than 6' will be shipped via truck and subject to a MINIMUM shipping fee of \$150.00

One to three pieces of downspout can be sent UPS. The 10' downspout will be cut into 6' & 4' sections. UPS charges will run in the \$100 range. Please indicate in the "Order Notes" area at checkout whether you want a UPS or freight quote.

Each gutter and downspout order is unique at Classic Gutter Systems. Once you've placed your order on this website, you'll be contacted within 48 hours with a complete, detailed quote including packaging and shipping costs.

COLOR

Choose an option

STYLE

Choose an option

- 1 +