



Dow Building Solutions

Detail Set: Thermax Wall System Masonry



This detail set outlines the masonry guidelines for design using the THERMAX™ Wall System, focusing around attachment of masonry façades and the continuity of the four control layers (thermal, air, vapor, and water).

The THERMAX Wall System is an innovative way to achieve complete, long-term protection. With three simple components – continuous insulation, all-weather flashing, and an insulating air barrier – you get one integrated system that insulates and seals against water, air, and vapor more effectively for ultimate long-term envelope protection.

As codes become increasingly more demanding, designers are constantly challenged to find new ways to meet them. Dow's THERMAX Wall System meets all applicable IBC and ASHRAE requirements using industry-proven products for greater results – saving you

Thermax™ money and increasing profitability for your business.

exterior insulation by 

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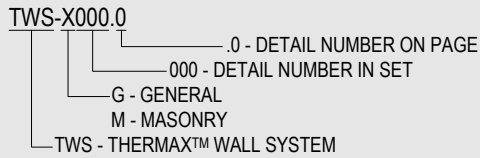
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Supplemental / Cladding-Specific Detail Sets

- **General** (Cladding Neutral)
- **Rain Screen** (Metal Panel, Terra Cotta, Fiber Cement Panels, etc.)
- **Applied** (Adhered Stone, Stucco, etc.)

DETAILS GUIDE

1. WALL SECTION LISTS APPLICABLE DETAILS FOR REFERENCE.
2. DETAIL NAMING SYSTEM:



3. FULL DETAIL SETS FOR "TWS-G" AND "TWS-M" AVAILABLE AT DOWBUILDINGSOLUTIONS.COM

PARAPET DETAILS

- TWS-G015.1
- TWS-G015.2
- TWS-G016.1
- TWS-G016.2

EDGE OF SLAB DETAILS

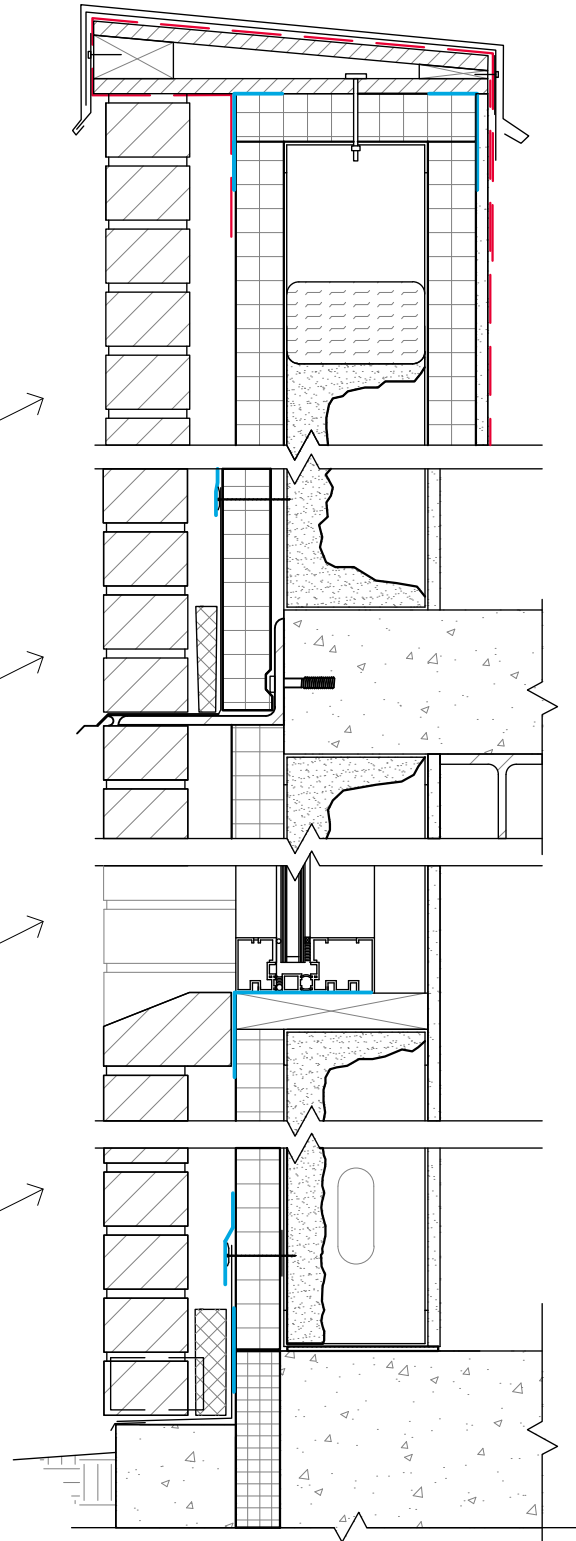
- TWS-G012.1
- TWS-G012.2
- TWS-M006.1
- TWS-M006.2

WINDOW DETAILS

- TWS-G009.1
- TWS-G009.2
- TWS-G009.3
- TWS-G009.4
- TWS-G010.1
- TWS-G010.2
- TWS-G010.3
- TWS-G010.4
- TWS-M005.1
- TWS-M005.2
- TWS-M005.3

FOUNDATION DETAILS

- TWS-G007.1
- TWS-G007.2
- TWS-G007.3
- TWS-G007.4
- TWS-M004.1
- TWS-M004.2



MASONRY OVERVIEW SECTION

TWS-M001 COLOR FOR VISUAL CLARIFICATION ONLY

MINIMUM REQUIREMENTS

1. ACCEPTABLE DETAILS INCLUDE, BUT ARE NOT LIMITED TO, THOSE LISTED ABOVE. MUST REFERENCE THERMAX WALL SYSTEM GENERAL DETAILS (CLADDING NEUTRAL) FOR OTHER MIN. REQUIREMENTS.

Design Intent

1. USE SELF-SEALING MASONRY ANCHORS TO MAINTAIN INTEGRITY OF 4 CONTROL LAYERS.
2. SELECT FASTENERS WITH THERMAL BREAKS TO IMPROVE EFFECTIVE R-VALUE OF THE ENVELOPE.
3. USE BARREL-LIKE MASONRY FASTENERS TO REDUCE NUMBER OF PENETRATIONS TO ENVELOPE.
4. SEAL UNEVALUATED FASTENERS WITH SELF-SEALING DOW MEMBRANES.

Masonry Anchor Recommendations

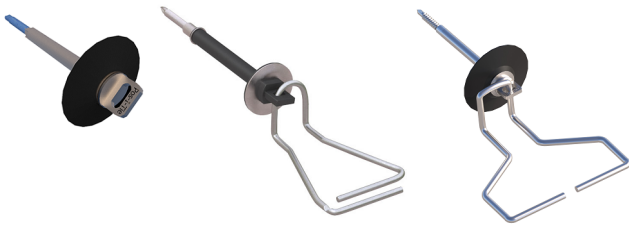
EVALUATED SELF-SEALING BARREL STYLE ANCHORS

- HECKMANN POS-I-TIE® WITH RODENHOUSE THERMAL-GRIP® CI WASHER
- HOHMANN & BARNARD 2-SEAL™ TIE, 2-SEAL THERMAL WINGNUT ANCHOR, & THERMAL 2-SEAL TIE
- WIRE-BOND SURE TIE WITH THERMAL WASHER

ANCHORS REQUIRING ADDITIONAL FLASHING

- HOHMANN & BARNARD: DW-10X SERIES, HB200/213 SERIES
 - WIRE-BOND: HCL SERIES, TYPE III X SERIES
- LIST NOT EXHAUSTIVE.

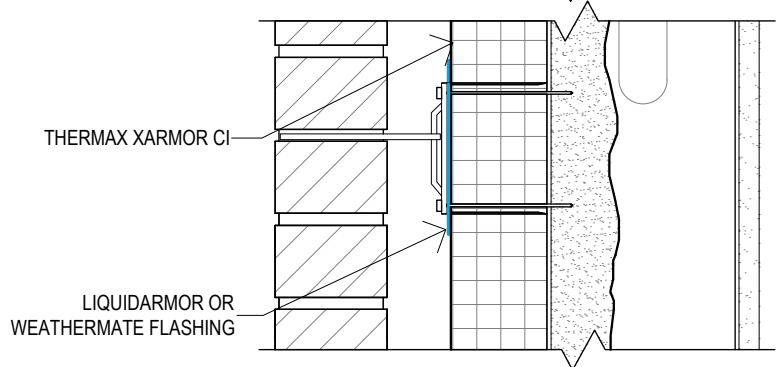
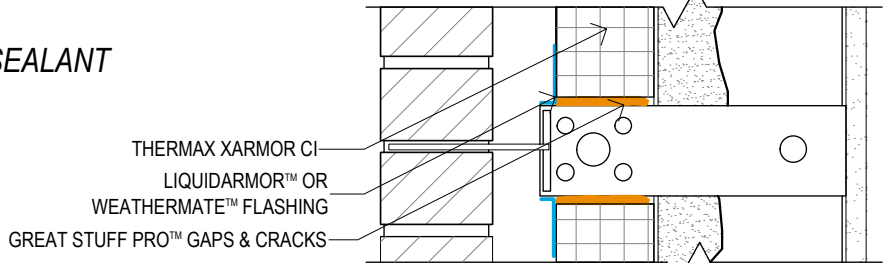
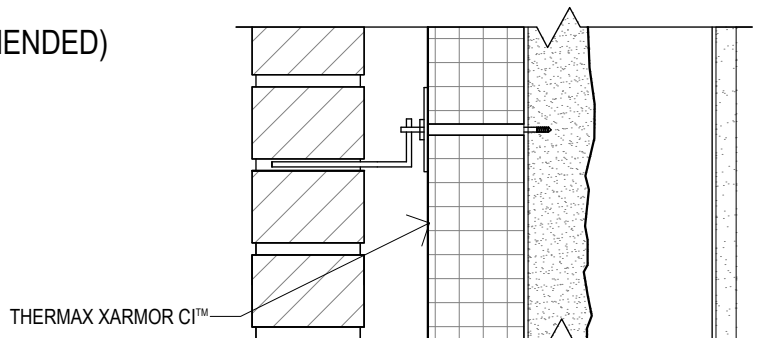
SELF -SEALING BARREL FASTENERS (RECOMMENDED)



ENGINEERED TIE (HIGH RISE)⁽⁵⁾ REQUIRES ADDITIONAL FLASHING / SEALANT



FACE MOUNTED / PENETRATING ANCHOR⁽⁴⁾ REQUIRES ADDITIONAL FLASHING / SEALANT (NOT PREFERRED)



ANCHOR GUIDELINES ON STUD

TWS-M002 COLOR FOR VISUAL CLARIFICATION ONLY

MINIMUM REQUIREMENTS

1. GENERAL FASTENING PATTERN IS 16" O.C. VERTICALLY & HORIZONTALLY UNLESS SPECIFIED DIFFERENTLY BY LICENSED ENGINEER.
2. APPROVED ANCHORS MUST INCLUDE WASHER.
3. WHERE ANCHOR USES MIN. 2" DIA. WASHER, MASONRY ANCHOR MAY BE USED TO REPLACE 1 INSULATION FASTENER AT THAT LOCATION.
4. ALL PENETRATING ANCHORS MUST BE INSTALLED THROUGH LIQUIDARMOR OR WEATHERMATE FLASHING WITH MIN. WIDTH BASED ON DETAIL TWS-G005.
5. MUST SEAL VOIDS AROUND ALL SHEAR / PLATE ANCHORS WITH GREAT STUFF PRO INSULATING FOAM SEALANT OR OTHER APPROVED SEALANT AND FLASH USING LIQUIDARMOR FLASHING.

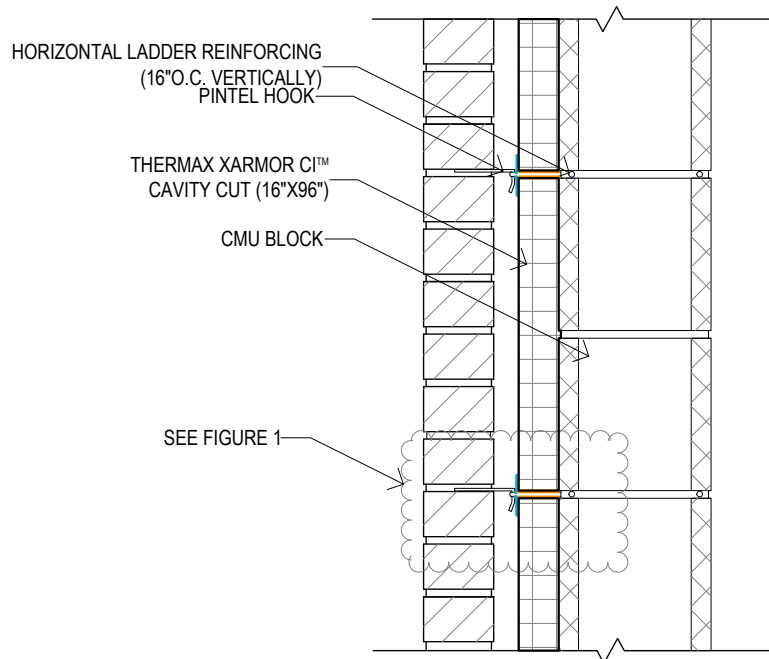
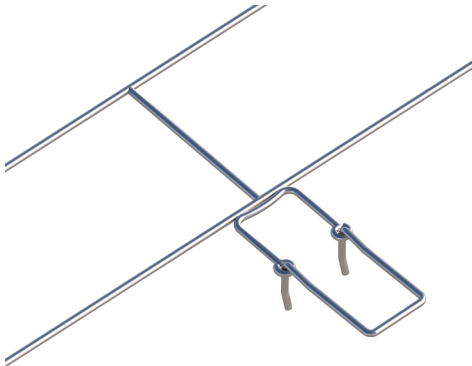
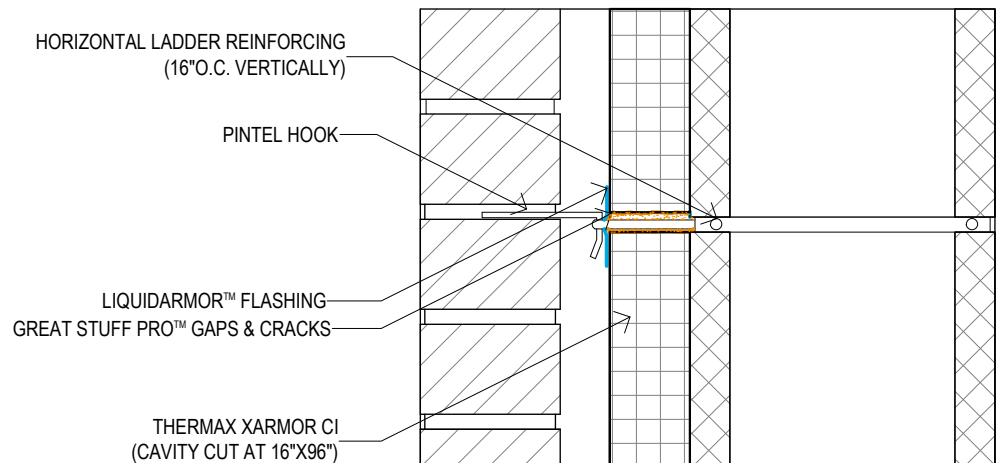


FIGURE 1




ANCHOR GUIDELINES ON CMU

TWS-M003 *COLOR FOR VISUAL CLARIFICATION ONLY*

MINIMUM REQUIREMENTS

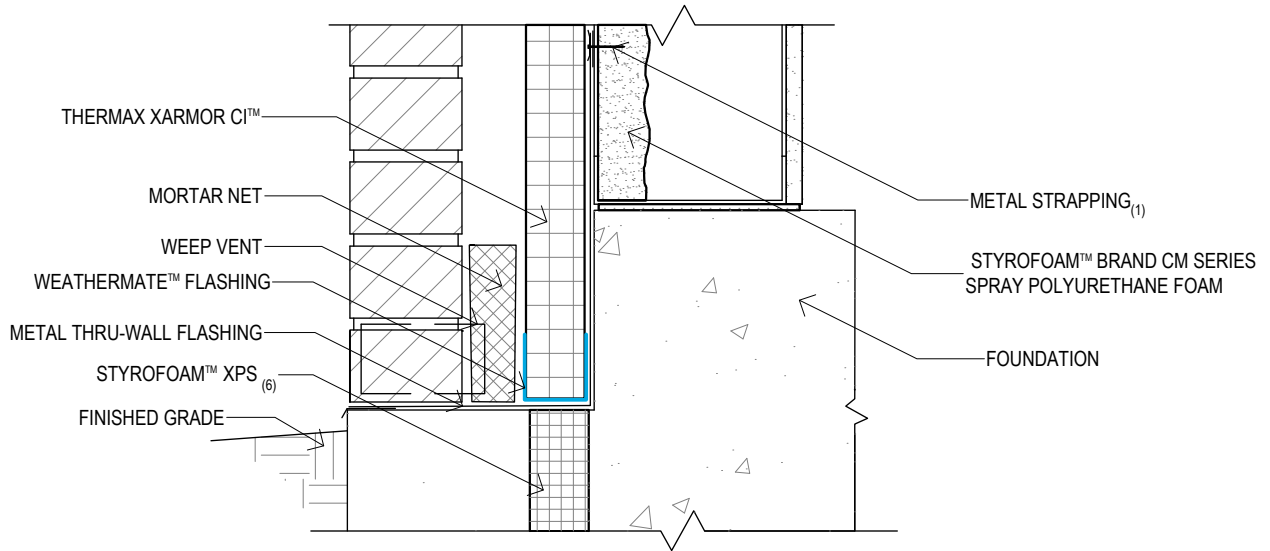
1. THERMAX™ BRAND INSULATION BOARDS TO BE CUT AT 16" O.C. WITH A SQUARE EDGE (NOT SHIP LAPPED).
2. JOINTS AT BOARD PERIMTER TO BE FILLED WITH GREAT STUFF PRO GAPS & CRACKS INSULATING FOAM SEALANT OR OTHER APPROVED SEALANT PRIOR TO INSTALLATION OF LIQUIDARMOR.
3. GREAT STUFF PRO GAPS & CRACKS MUST TACK OVER (10-15 MIN.) PRIOR TO INSTALLATION OF LIQUIDARMOR FLASHING.
4. WEATHERMATE FLASHING OR OTHER SELF ADHERED FLASHING MATERIALS ARE NOT ACCEPTABLE FOR THIS APPLICATION DUE TO THE DIFFICULTY IN CREATING A PROPER SEAL AROUND MASONRY WIRE TIES.
5. LIQUIDARMOR FLASHING CAN SPAN A MAX. 1/4" GAPS - ALL AREAS WHERE JOINTS BETWEEN THERMAX BOARDS EXCEED 1/4" REQUIRE GREAT STUFF PRO GAPS & CRACKS OR OTHER APPROVED SEALANT TO BE INSTALLED.
6. GREAT STUFF PRO GAPS & CRACKS MAY BE LEFT EXPOSED FOR 60 DAYS MAX.
7. LIQUIDARMOR FLASHING MAY BE LEFT EXPOSED FOR A MAX. OF 6 MONTHS OR 180 DAYS.
8. GREAT STUFF PRO GAPS & CRACKS MAY ALSO BE USED TO ADHERE INSULATION BOARDS TO CMU SUBSTRATE.

THERMAX™ wallsystem

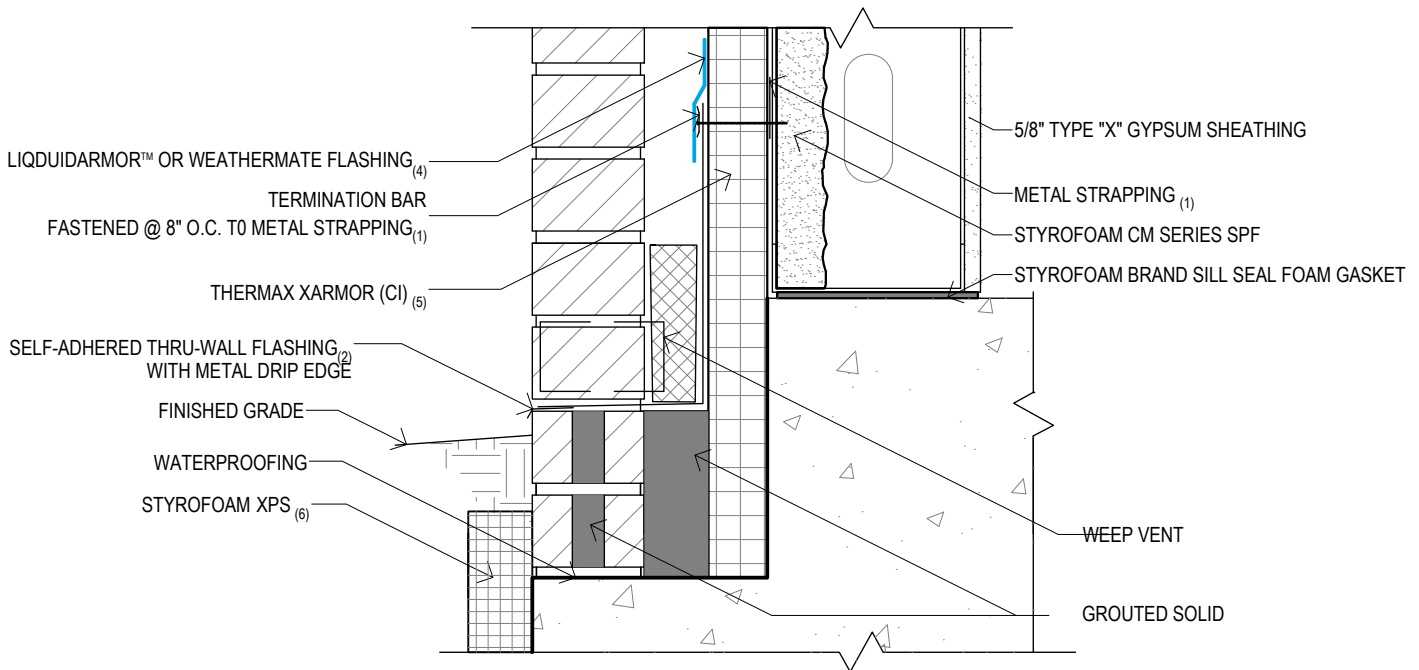
details by 

MASONRY

Foundation



 **FOUNDATION BRICK AT GRADE**
TWS-M004.1 COLOR FOR VISUAL CLARIFICATION ONLY



 **FOUNDATION PARTIAL BELOW GRADE - GROUDED SOLID**
TWS-M004.2 COLOR FOR VISUAL CLARIFICATION ONLY

MINIMUM REQUIREMENTS

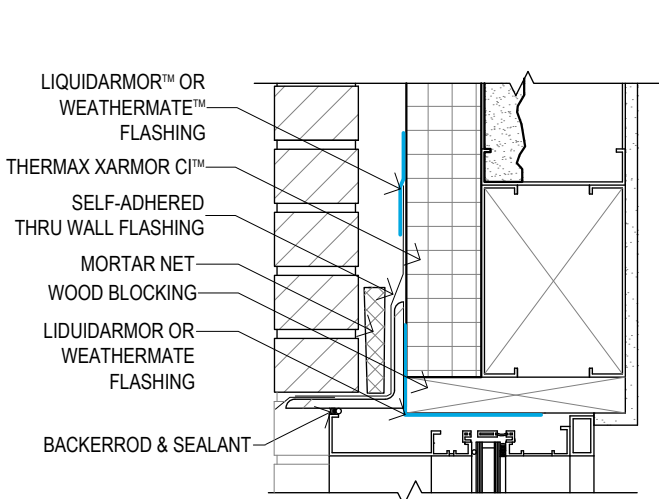
1. MIN. 3" WIDTH OF LIGHT GAUGE METAL STRAPPING, MIN. 16" O.C. ABOVE GRADE, TO ACT AS NAILING BASE FOR TERMINATION BAR.
2. THRU-WALL FLASHING MIN. 40 MIL THICK, MIN 90 DAY UV RESISTANCE, INSTALLED PER MANUFACTURER'S RECOMMENDATIONS USING EDGING TOOL OR ROLLER (HAND APPLIED PRESSURE NOT ACCEPTABLE). WEATHERMATE FLASHING AND LIQUIDARMOR NOT ACCEPTABLE FOR THIS APPLICATION.
3. MIN. WIDTHS OF LIQUIDARMOR AND WEATHERMATE FLASHINGS APPLIED BASED ON DETAIL TWS-G005.
4. THERMAX™ BRAND INSULATION NOT INTENDED FOR USE BELOW GRADE.
5. MIN. 25 PSI STYROFOAM TYPE IV (PER ASTM C578) EXTRUDED POLYSTYRENE (XPS) TO BE USED WHEN INSULATING BELOW GRADE.
6. SEE THERMAX WALL SYSTEM GENERAL DETAIL SET ("TWS-G") FOR OTHER FOUNDATION OPTIONS AND REQUIREMENTS.

DESIGN INTENT

1. USE WEATHERMATE™ OR LIQUIDARMOR™ FLASHING TO TRANSITION THE AIR & WATER RESISTIVE BARRIER FROM THE FACE OF THE THERMAX™ INSULATION INTO ALL JAMBS, SILLS, & WINDOW HEADS PRIOR TO INSTALLATION OF PUNCH WINDOWS & WINDOW RECEPTORS.
2. SEALANTS AND CAULKS AS SPECIFIED BY WINDOW MANUFACTURER TO BE USED AS PRIMARY DEFENSE AGAINST MOISTURE INTRUSION & AIR INFILTRATION.
3. WINDOW RECEPTOR TO ATTACH TO WOOD BLOCKING THROUGH DOW FLASHING MEMBRANES FOR ENHANCED AIR AND MOISTURE SEALING.

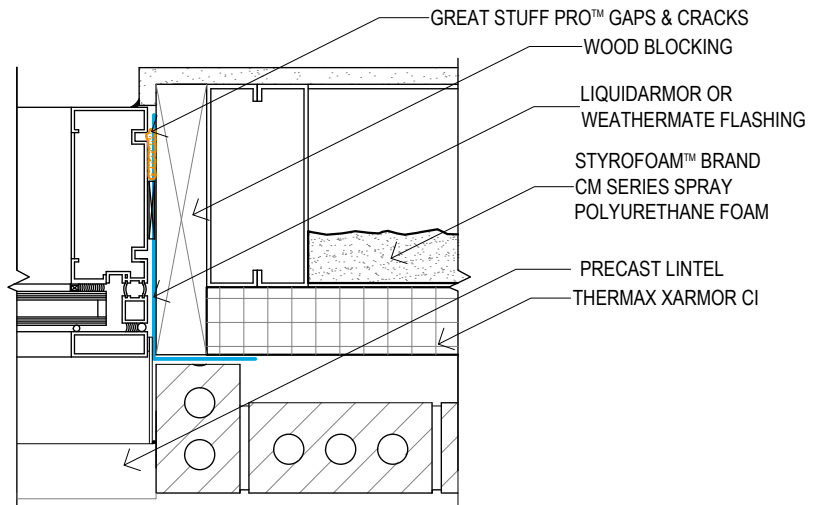
GENERAL RECOMMENDATIONS

1. WINDOW SEALANT COMPATIBILITY SHOULD BE VERIFIED BY DOW FOR LONG-TERM ADHESION TO DOW FLASHING.
2. DOW CORNING® BUILDING SEALANTS ARE COMPATIBLE WITH DOW FLASHING MATERIALS AND SHOULD BE USED AS PER MANUFACTURER'S & INSTALLATION INSTRUCTIONS.
3. WOOD BLOCKING IS PREFERRED TO PROVIDE ADDED RIGIDITY AND A NAILING BASE AT JAMBS, SILLS, & HEADS.
4. A DOUBLE STUD IS RECOMMENDED AT JAMBS TO ALLOW FOR GREATER FLEXIBILITY WITH CLADDING TERMINATIONS AROUND WINDOWS & DOORS.



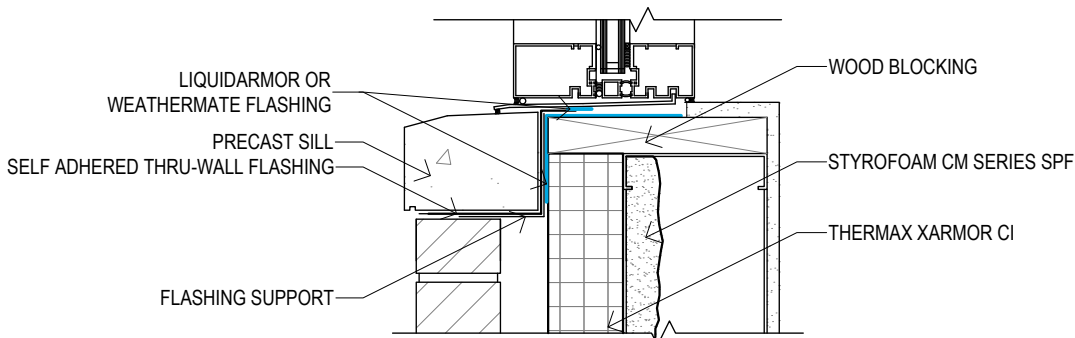
WINDOW HEAD | SECTION

TWS-M005.1 COLOR FOR VISUAL CLARIFICATION ONLY



BRICK FACE RETURN AT WINDOW JAMB | PLAN

TWS-M005.2 COLOR FOR VISUAL CLARIFICATION ONLY

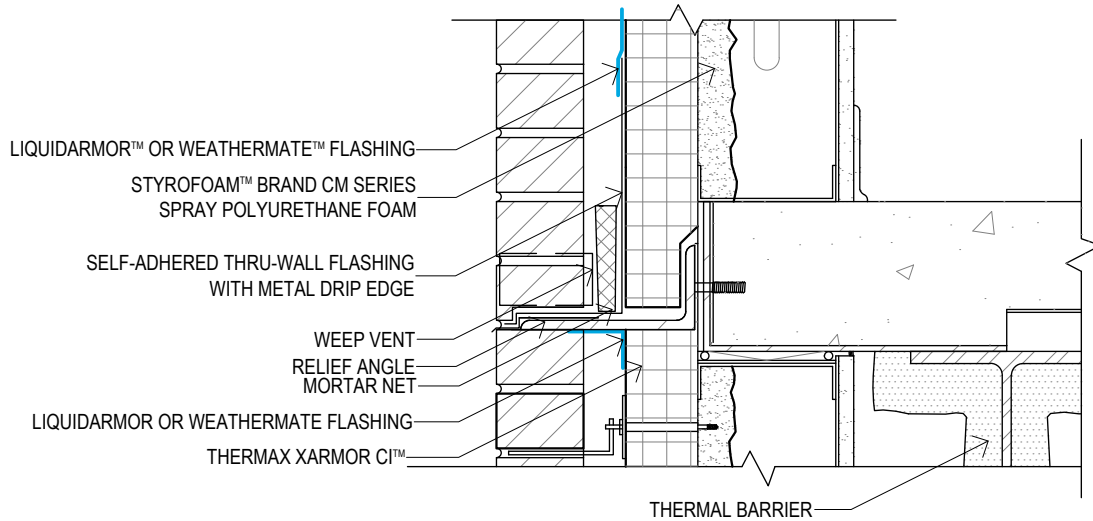


PRECAST WINDOW SILL | SECTION

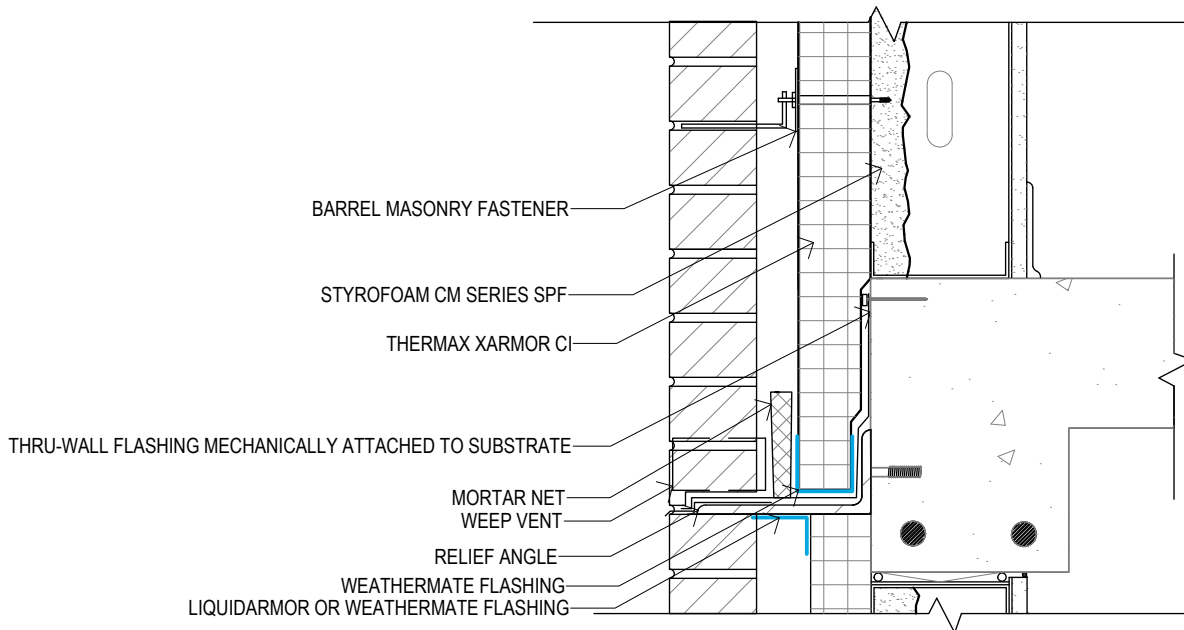
TWS-M005.3 COLOR FOR VISUAL CLARIFICATION ONLY

MINIMUM REQUIREMENTS

1. DOW FLASHING TO BE INSTALLED ONTO FACE OF THERMAX BASED ON WIDTH REQUIREMENTS ON DETAIL TWS-G005 AND INTO ROUGH OPENING (SILL, JAMB, & HEADER) MIN. 2" OR 1" PAST INTERIOR CAULK JOINT, WHICHEVER IS GREATER.
2. IF NOT USING WOOD BLOCKING AT WINDOW JAMB, HEAD, SILL, (AND RAW EDGE OF THERMAX IS LEFT EXPOSED), MUST USE WEATHERMATE FLASHING (NOT LIQUIDARMOR) TO BRIDGE INSULATION CORE (RAW EDGE).
3. FOR WIDTHS REQUIRING MULTIPLE WYTHES OF WEATHERMATE FLASHING, PIECES SHOULD BE INSTALLED IN A SHINGLE-LAP FASHION TO PROMOTE WATER SHEDDING WITH MIN. 2" ADHERENCE BETWEEN EACH PIECE.
4. SEE THERMAX WALL SYSTEM GENERAL DETAIL SET ("TWS-G") FOR OTHER WINDOW OPTIONS & REQUIREMENTS.



 **EDGE OF SLAB - FACE FLASHED**
TWS-M006.1 *COLOR FOR VISUAL CLARIFICATION ONLY*



 **EDGE OF SLAB - FLASHED AT SLAB**
TWS-M006.2 *COLOR FOR VISUAL CLARIFICATION ONLY*

MINIMUM REQUIREMENTS

1. WEATHERMATE FLASHING TO ENCAPSULATE BOTTOM EDGE OF THERMAX™ BRAND INSULATION WITH MIN. APPLICATION WIDTH ON EACH FACE OF INSULATION BASED ON TWS-G005.
2. WHERE THERMAX COUNTERFLASHES THRU-WALL FLASHING, SELF ADHERED MEMBRANES ARE ONLY ACCEPTABLE IF SLAB PROVIDES SUFFICIENT SUBSTRATE TO BE INSTALLED ON - ALL OTHER APPLICATIONS WILL REQUIRE METAL THRU-WALL FLASHINGS.
3. INSULATION SHOULD BE FLASHED TO BOTTOM EDGE OF RELIEF ANGLES TO PREVENT MOISTURE INTRUSION.
4. IF THRU-WALL FLASHING INSTALLED ON FACE OF THERMAX, LIQUIDARMOR OR WEATHERMATE FLASHING MUST COUNTER FLASH LEADING EDGE OF THRU-WALL FLASHING.
5. SEE THERMAX WALL SYSTEM GENERAL DETAIL SET ("TWS-G") FOR OTHER EDGE OF SLAB OPTIONS & REQUIREMENTS.

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Illustrations are not intended to replace the need for design by appropriate professionals such as architects or engineers.

STYROFOAM™ Brand Spray Polyurethane Foam contains isocyanate, hydrofluorocarbon blowing agent and polyol. Read the instructions and (Material) Safety Data Sheet ((M)SDS) carefully before use. Wear protective clothing (including long sleeves), gloves, goggles and proper respiratory protection. Supplied air or an approved air-purifying respirator equipped with an organic vapor sorbent and a P100 particulate filter is required to maintain exposure levels below ACGIH, OSHA, WEEL or other applicable limits. Provide adequate ventilation. Contents under pressure. STYROFOAM™ Brand SPF should be installed by a trained SPF applicator.

CAUTION: When cured, these products are combustible and will burn if exposed to open flame or sparks from high-energy sources. Do not expose to temperatures above 240°F (116°C). For more information, consult (Material) Safety Data Sheet ((M)SDS), call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400 in the U.S. or 1-519-339-3711 in Canada.

GREAT STUFF PRO™ Insulating Foam sealant and adhesive products contain isocyanate and a flammable blowing agent. Read all instructions and (Material) Safety Data Sheet ((M)SDS), carefully before use. Eliminate all sources of ignition before use. Cover all skin. Wear long sleeves, gloves, and safety glasses or goggles. Not for use in aviation, or food/beverage contact, or as structural support in marine applications. Provide adequate ventilation or wear proper respiratory protection. Contents under pressure. Not to be used for filling closed cavities or voids such as behind walls and under tub surrounds.

CAUTION: When cured, these products are combustible and will burn if exposed to open flame or sparks from high-energy sources. Do not expose to temperatures above 240°F (116°C). For more information, consult (Material) Safety Data Sheet ((M)SDS), call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400 in the U.S. or 1-519-339-3711 in Canada.

Dow Polyurethane Foam Insulation and Sealant

CAUTION: When cured, these products are combustible and will burn if exposed to open flame or sparks from high-energy sources. Do not expose to temperatures above 240°F (116°C). For more information, consult (Material) Safety Data Sheet ((M)SDS), call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400 in the U.S. or 1-519-339-3711 in Canada.

CAUTION: This product is combustible and shall only be used as specified by the local building code with respect to flame spread classification and to the use of a suitable thermal barrier. For more information, consult (Material) Safety Data Sheet ((M)SDS), call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400 in the U.S. or 1-519-339-3711 in Canada.

LIQUIDARMOR™

Read the instructions and (Material) Safety Data Sheets ((M)SDS) carefully before use. It is recommended that spray applicators and those working in the spray area wear eye protection. Contact with exposed skin may cause skin discoloration and dryness. Gloves are recommended for prolonged exposures. Ensure adequate ventilation during spray applications.

THERMAX™ Brand Polyisocyanurate Insulation

CAUTION: This product is combustible and shall only be used as specified by the local building code with respect to flame spread classification and to the use of a suitable thermal barrier. For more information, consult (Material) Safety Data Sheet ((M)SDS), call Dow at 1-866-583-BLUE (2583), or contact your local building inspector. In an emergency, call 1-989-636-4400.

STYROFOAM™ Extruded Polystyrene Foam Insulation

CAUTION: This product is combustible. Protect from high heat sources. A protective barrier or thermal barrier may be required as specified in the appropriate building code. For more information, consult (Material) Safety Data Sheet ((M)SDS), call Dow at 1-866-583-BLUE (2583) or contact your local building inspector. In an emergency, call 1-989-636-4400 in the U.S. or 1-519-339-3711 in Canada.

WARNING: Rigid foam insulation does not constitute a working walkable surface or qualify as a fall protection product.

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier including Dow can give assurance that mold will not develop in any specific system.

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