

INSTALLATION GUIDE

INSULATION AND AIR BARRIER SYSTEM



ISOCLAD®

AIR BARRIER/NON VAPOUR BARRIER RIGID INSULATION WITH A LAMINATED MEMBRANE FOR ABOVE GRADE EXTERIOR WALLS



BENEFITS

Ensures continuous insulation

- High-performance product, known and reputed for more than 20 years.
- Eliminates thermal bridges: creates a continuous insulating air barrier / weather barrier envelope.

Peace of mind

- Non vapour barrier.
Reduces risks of mould growth by allowing humidity in walls to evaporate.
- No need to determine dew point location in assembly.
- Very high permeance to water vapour.
Nearly two times more permeable than the minimum requirement of ≥ 60 ng to be considered a vapour permeable material (i.e. not a vapour barrier):
 $1'' = 105 \text{ ng/Pa}\cdot\text{s}\cdot\text{m}^2$
 $2\ 1/4'' = 73 \text{ ng/Pa}\cdot\text{s}\cdot\text{m}^2$



In cold climate zones, it is preferable to favour the installation of an insulating and vapour permeable product outside the building to reduce the risk of condensation and to encourage the drying out of walls if there was infiltration from outside or inside the building.

Easy to install

- 2 steps in 1.
Quick and easy to install thanks to its laminated membrane, notably when scaffolding is required.
- Flexible and weather resistant product. Reduces breakage on the jobsite.
- Shiplapped on 4 sides and easy to seal for better air and water tightness.
- Comprehensive guide for a simplified installation.



WORKING WITH **ISOCLAD** IS...

CHOOSING A COMPETITIVE SOLUTION
SPEEDING UP PROJECT COMPLETION
REDUCING CONSTRUCTION AND LABOUR COSTS
MAXIMIZING THE THERMAL PERFORMANCE AND AIRTIGHTNESS OF EXTERIOR WALLS

COMPLIMENTARY INFORMATION

ISOCLAD insulation panels

- Are designed for above grade walls.
- Cannot be used as structural sheathing for walls.
- Can be installed over structural sheathing or directly to the structure.
- Must not be used as backing, regardless of exterior wall cladding.
- Do not expose to weather and ultraviolet rays for more than 180 days.

PRODUCTS AND RECOMMENDED USE

Developed by **ISOlofoam Group**, **ISOCLAD** is an air barrier/vapour permeable insulation panel with an integrated membrane.

Designed as an exterior insulating sheathing for above ground walls of residential, commercial, industrial or institutional buildings, both for new construction and renovation.

Although other methods may be used, this installation guide presents best practices to achieve continuous insulation and optimum sealing of the building envelope.



CCMC # 12981-R: Air barrier material
 CAN/ULC-S741 : Standard for Air Barrier Materials - Specification
 CAN/ULC-S742 : Standard for Air Barrier Assemblies - Specification


TOOLS AND ACCESSORIES

1  ISOCLAD insulation panels	2  Utility knife and replacement blades	3  Measuring tape	4  Hammer	5  Rip-cut saw (optional)	6  Nails and screws
7  Ring nails with supporting washers (25 mm/1 in diameter, minimum)	8  Sealing tape*	9  Self-adhesive sealing membrane*	10  Expanding foam sealant*	11  Caulking/sealant* (to seal joints)	12  Sill plate gasket

*Note: Ensure material compatibility.

AVAILABLE DIMENSIONS

ISOCLAD insulation panels are available in a wide variety of sizes and thicknesses in order to meet applicable construction requirements in your area or to fulfill building energy performance targets.

DIMENSIONS	THICKNESSES	R VALUE	SHEETS/PKG	SHEETS/SKID
48" x 96" (4' x 8') or 48" x 108" (4' x 9')  Shiplapped 4 sides	1/2" butt edge	2	48	96
	3/4" butt edge	3	32	64
	1"	4.05	24	48
	1 1/4"	5.05	19	38
	1 1/2"	6.05	16	32
	2"	8.1	12	24
	2 1/4"	9.1	11	22
	2 1/2"	10.1	9	18
3"	12.1	8	16	


Also available: 24" x 96" (2' x 8'), 48" x 120" (4' x 10'), other thicknesses; butt edge or shiplapped 2 sides.

AIR BARRIER CONTINUITY

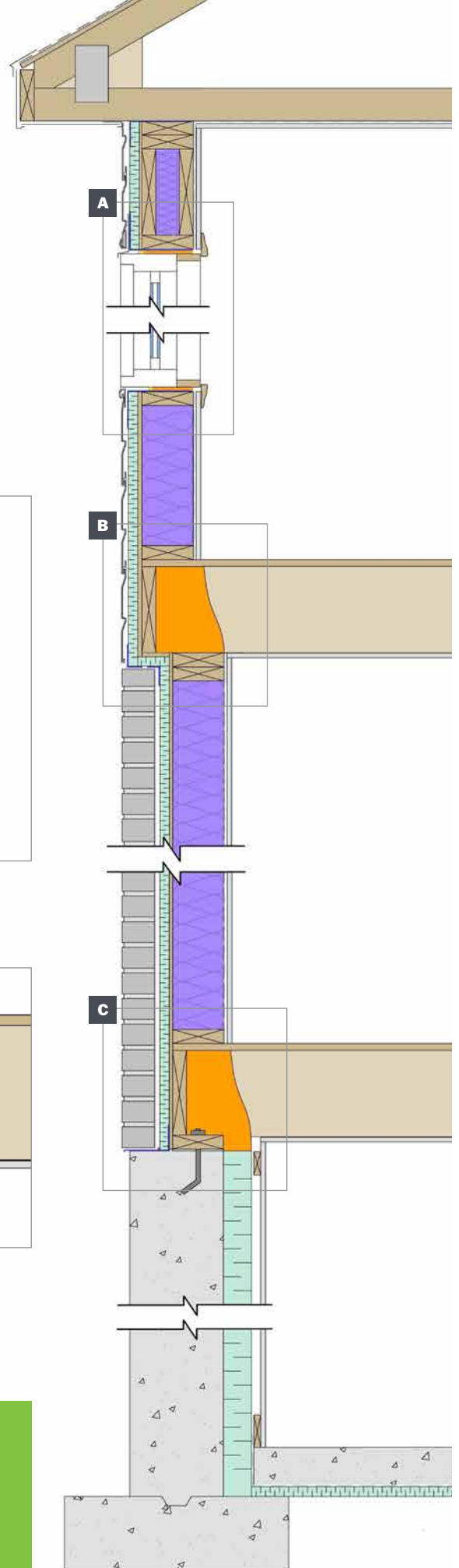
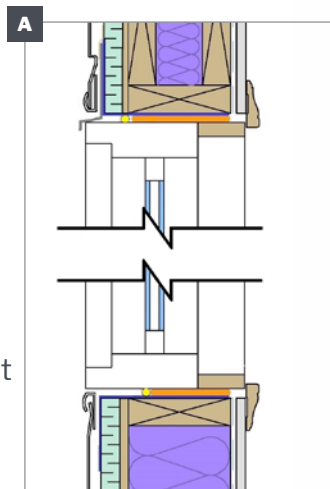
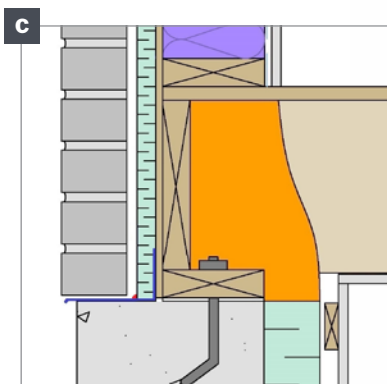
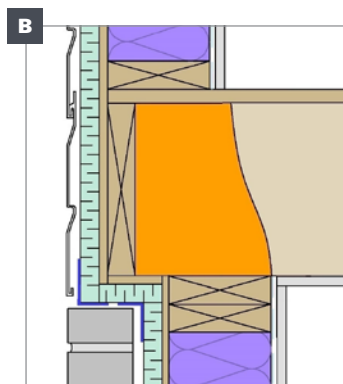
Cross-section View

During installation, take care to properly assemble and seal the various materials in order to ensure the air barrier system's integrity, paying attention to openings and penetrations, as well as envelope junctions (wall/roof, foundation, etc). When applying tape and self adhesive membrane, it is important to avoid folds, fish mouths or openings at material transitions to reduce risks of water or air infiltrations.

Legend:

-  : ISOCLAD Rigid insulation
-  : Self-adhesive sealing membrane
-  : Backer rod
-  : Caulking/sealant
-  : Low expansion foam sealant
-  : Interior vapour barrier
-  : Batt insulation

Foundation wall insulation: ISOFOIL
 Underslab insulation: iFLEXFOAM or HD/XHD + vapour barrier

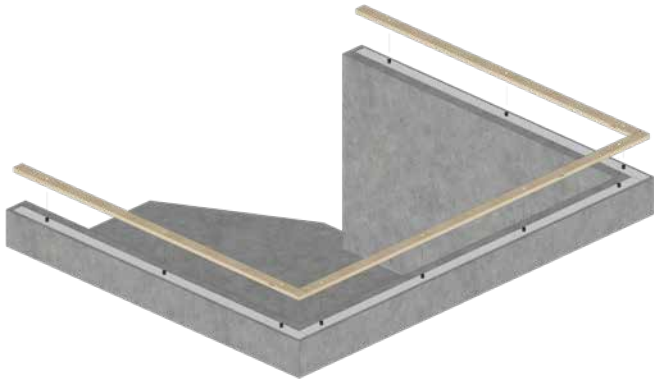


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INSTALLATION STEPS



1 SILL PLATE



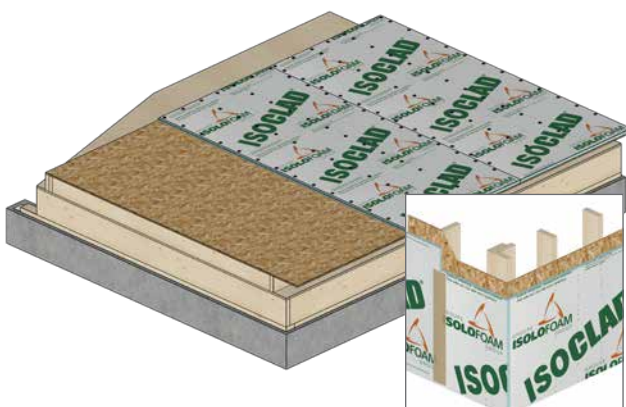
- 1.1 Install sill plate gasket on top of foundation walls.
- 1.2 Install sill plate to anchor floor joists.

2 WALL FRAMING



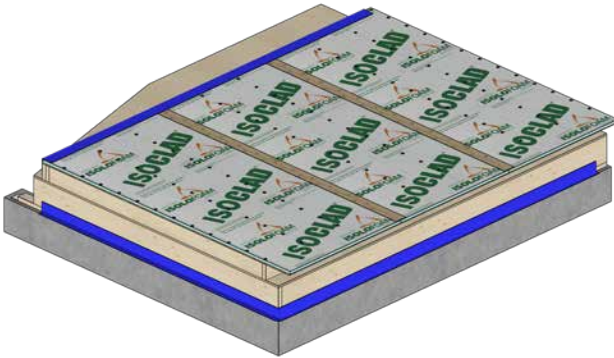
- 2.1 Build floor structure and cover with subfloor.
 - 2.2 Assemble wall structure.
 - 2.3 Install wall bracing; metal T-brace at a 45° angle or wood sheathing, such as OSB, can be used.
-  Refer to applicable building code requirements for bracing.
 -  Ensure OSB panel installation avoids contact with top of foundation wall, for example, leave gap or install moisture break between panels and foundation wall.

3 INSTALL INSULATION



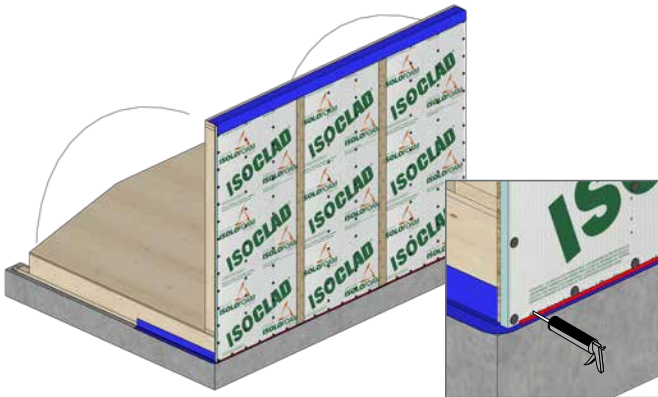
- 3.1 Install **ISOCLAD** insulation on wall structure and make sure that all panel edges are well supported.
 - If 9 ft panels are used, cut and remove lap edge along bottom of panel, to cover floor joist and sill plate.
- 3.2 Attach **ISOCLAD** insulation to wall studs with nails and washers every 8" along perimeter and in field of panel.
- 3.3 At outside corners, allow panels to exceed beyond wall framing to ensure continuity of insulation and air barrier.

4 WATER AND AIR TIGHTNESS



- 4.1 Seal all joints between panels with sealing tape or self-adhesive sealing membrane.
 - 4.2 If wall section is on the top floor, seal top panel edge to the top plate with a self-adhesive sealing membrane.
 - 4.3 To ensure air and water tightness of the building, it is important to seal all openings, junctions, penetrations and perforations in the membrane.
 - 4.4 Install wood furring if required.
 - 4.5 Install a sealant joint between the top of the foundation wall and the flexible flashing (self-adhesive sealing membrane), i.e. under the flexible flashing. (Not illustrated)
 - 4.6 Install the flexible flashing (self-adhesive sealing membrane) at the bottom of the floor joist and overflow it from the foundation before lifting the wall.
- 📖 For furring installation requirements, refer to the exterior finish manufacturer's installation guide.
 - 📖 If wood furring are installed, the air gap thus created between the insulation and the finishing coating may require the installation of a fire barrier in accordance with the Building Code.
 - 📖 If wood furring are installed after the walls have been erected, refer to step 6 where the flexible flashing can be installed between the insulation and the air barrier membrane.

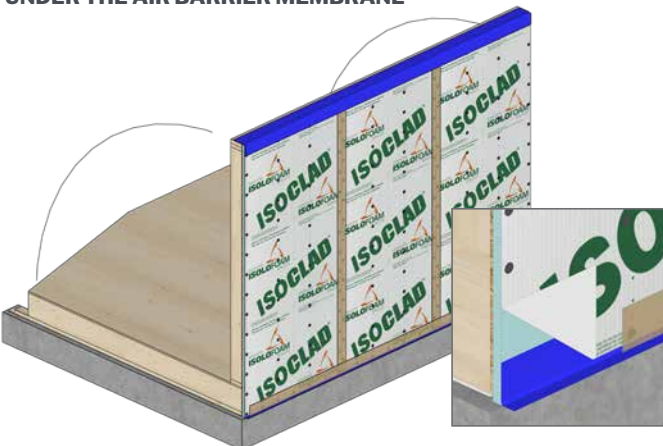
5 ERECT THE WALL



- 5.1 Erect and support walls with temporary bracing.
 - 5.2 Fix bottom of each panel to rim joist.
 - 5.3 To ensure the airtightness of the assembly, a bead of caulking/sealant must be applied at the bottom. If the space between the panel and the flashing is large, an expanding foam sealant should be applied.
- 📖 The wall must be supported from the inside until the entire structure is assembled and permanently fixed.

6 INSTALL THE FLASHING

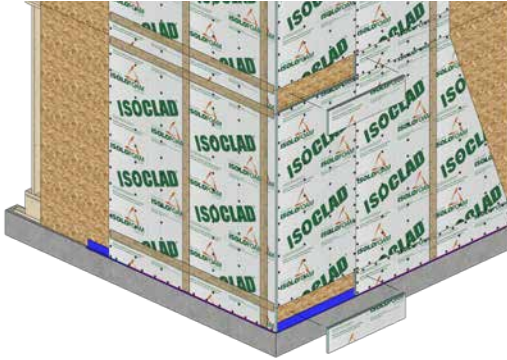
UNDER THE AIR BARRIER MEMBRANE



If the flashing was not installed in step 4, proceed as follows:

- 6.1 When the wall is vertical, at the bottom of the **ISOCCLAD** panels, manually peel the laminated air barrier membrane, approximately 6" long.
- 6.2 Install self-adhesive sealing membrane adhering the vertical portion to the face of polystyrene and extending it horizontally over top of foundation wall.
- 6.3 Fold back down the air barrier membrane onto the vertical portion of flashing.
- 6.4 Seal the air barrier membrane to the flashing using sealing tape or self-adhesive sealing membrane.

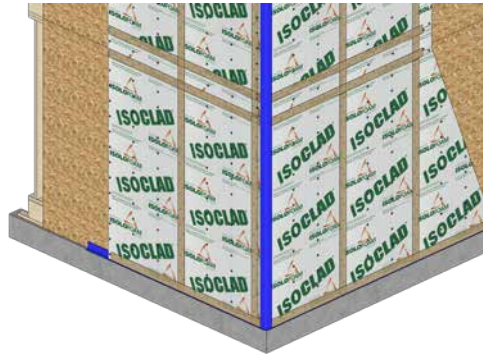
7 INSULATE JOISTS




- 7.1** If the insulation does not cover the floor joists, cut sections of **ISOCCLAD** panels to fill the uninsulated space.
- Panels must be mechanically fastened to structure.
 - Proceed with the installation of the flashing as presented in steps 4 and 5 or 6.

8 WATER AND AIR TIGHTNESS

WALL JUNCTIONS AND CORNERS



- 8.1** Seal joints between floor walls with sealing tape or self-adhesive sealing membrane.
- 8.2** Seal wall corners using minimum 6" wide self-adhesive sealing membrane.
-  If wood furring were previously installed on the walls (step 4), complete the installation of the wood furring at the junction of the storey walls and at the corners of the walls.



9 CANTILEVERED FLOORS

Cantilevers are treated in the same manner as exterior corners of walls.

METHOD A

WITHOUT LIFTING THE AIR BARRIER MEMBRANE





- 9.1** Install the insulation boards by leaving the vertical panel to cover the end of the horizontal panel (under the cantilever face) and thus ensure continuity of insulation at the outer corners of the walls.
- 9.2** Seal joints between panels with self-adhesive sealing membrane.
- 9.3** Seal corner junctions using minimum 6" wide self-adhesive sealing membrane.
-  If cantilevered floor intersects foundation, adapt sealing method to the foundation.
-  Refer to applicable building code requirements for cantilevered floor insulation.

METHOD B

LIFTING THE AIR BARRIER MEMBRANE



- 9.1** Install the insulation boards by leaving the vertical panel to cover the end of the horizontal panel (under the cantilever face) and thus ensure continuity of insulation at the outer corners of the walls.
- 9.2** Seal joints between panels with self-adhesive sealing membrane.
- 9.3** For the panel at the end of the cantilever, manually peel the laminated membrane from the product.
- 9.4** Seal the outside and inside corner of the cantilever using minimum 6" wide self-adhesive sealing membrane.
- 9.5** Seal the laminated membrane to the flashing using sealing tape or self-adhesive sealing membrane.
-  If cantilevered floor intersects foundation, adapt sealing method to the foundation.
-  Refer to applicable building code requirements for cantilevered floor insulation.


10 WINDOWS – FLASHING, WATER AND AIR TIGHTNESS


10.1 Install self-adhesive sealing membrane strip to cover entire window sill.

10.2 Extend strips up at least 6" on the sides of silljamb.

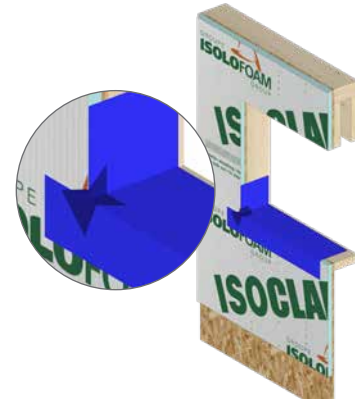
10.3 Add to bottom corners pre-cut self-adhesive sealing membrane pieces. 

 The window sill should be built to ensure the drainage of water to the outside.

 When applying sealing tape and self-adhesive sealing membrane, it is important to avoid folds, fish mouths or openings at material transitions, in order to reduce the risks of air or water infiltrations. If after installation, folds, fish mouths or openings are detected, sealant can be used to repair and seal defects.

 **Continue using one of two methods (A or B).**

If the exterior finish is masonry, method B must be used to meet the effective requirements.



METHOD A

WITHOUT LIFTING THE AIR BARRIER MEMBRANE

11 A



11.1 Add self-adhesive sealing membrane to cover sills.

11.2 Adhere strips to jambs, up to top of window opening.

11.3 Add to top corners pre-cut self-adhesive sealing membrane pieces.

METHOD B

LIFTING THE AIR BARRIER MEMBRANE

11 B



11.1 Cut the sheathing membrane at both top corners following a 45° angle for about 6".

11.2 Manually, peel the laminated membrane from the product.

11.3 Install self-adhesive sealing membrane to cover both jambs, extending beyond the window header.

11.4 Add to top corners pre-cut self-adhesive sealing membrane pieces.


12 A



12.1 Add self-adhesive sealing membrane to cover window header.

12.2 Fold the excess portion of the membrane towards the inside of the opening.

12.3 Install window.

 Refer to window manufacturer for sealing recommendations.


12 B



12.1 With the laminated membrane peeled back, install self-adhesive sealing membrane to cover the header.

12.2 Fold the excess portion of the membrane towards the inside of the opening.

12.3 Install window.


 Refer to window manufacturer for sealing recommendation.

13 A



13.1 Install metal flashing above window. Fasten properly to the structure.

13.2 Apply a self-adhesive sealing membrane strip over the metal flashing to ensure water tightness.


 Metal flashing must comply with requirements of applicable building code and be installed above window.

13 B

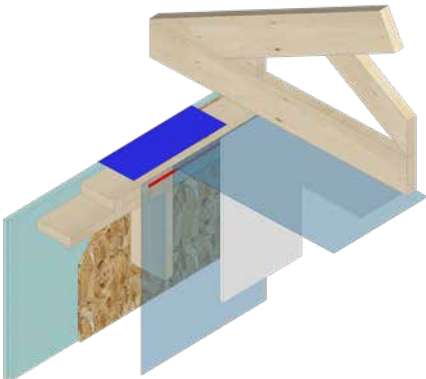


13.1 Install metal flashing above window. Fasten properly to the structure.

13.2 Fold down the laminated air barrier membrane onto the metal flashing. Seal them together as well as the 45° opening in the laminated membrane using sealing tape.

 Metal flashing must comply with requirements of applicable building code and be installed above window.

14 WALL TO CEILING AIR BARRIER CONTINUITY



Air barrier continuity at wall-to-roof junction transferred through interior vapour barrier.

- 14.1 Attach vapour barrier to ceiling framing members with staples.
- 14.2 Seal ceiling vapour barrier of last floor to top plate with acoustic sealant.
- 14.3 Install vapour barrier on interior walls.
- 14.4 Seal all joints.



If partition or load-bearing walls need to be erected before vapour barrier installation, vapour barrier continuity must be ensured at each junction.

15 WATER AND AIR TIGHTNESS – OPENINGS

EXTERIOR WITH RIMS, EDGES OR FLANGES

- 15.1 Install exterior outlet or penetrating accessory.
- 15.2 Seal lower lip/edge with sealing tape or self-adhesive sealing membrane.
- 15.3 Seal, following this order: side lips/edges followed by upper (top) lip/edge, with sealing tape or self-adhesive sealing membrane.



16 WATER AND AIR TIGHTNESS – OPENINGS

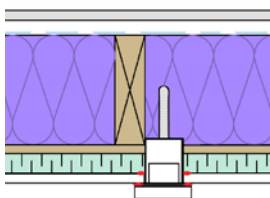
EXTERIOR ROUND

- 16.1 If opening is slightly bigger than pipe, seal with expanding foam sealant.
- 16.2 Seal around pipe using flexible self-adhesive sealing membrane.
- 16.3 Add additional strips of sealing tape or self-adhesive membrane onto upper edge of flexible membrane to ensure water tightness.



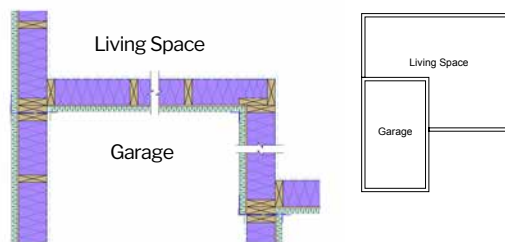
17 WATER AND AIR TIGHTNESS – ELECTRICAL BOXES

EXTERIOR WITHOUT RIMS, EDGES OR FLANGES



- 17.1 Select exterior use airtight electrical box.
- 17.2 Seal around electrical box with sealant.
- 17.3 If opening is too wide, fill gaps with expanding foam sealant.

18 JUNCTION WITH INSULATED GARAGE



Exterior walls of heated garages must be built like other exterior walls.

- 18.1 Ensure air barrier continuity on exterior side of dividing wall between house and garage.
- 18.2 Ensure air barrier continuity of exterior garage walls.
- 18.3 Exterior walls of heated garage must include a vapour barrier; garage vapour barrier needs to be sealed to the sheathing membrane of **ISOCLAD** panels installed on dividing walls between house and garage, using sealing tape or self-adhesive sealing membrane.

INGENIOUS INSULATION DESIGNED HERE

Isolofoam is a Canadian manufacturer that specializes in the fabrication of innovative and eco-responsible products made of expanded polystyrene.

Adapted to any type of project, our insulation products will always allow you to meet the highest building code standards and requirements.



DISCLAIMER The procedures presented in this document are intended as a guideline only, to provide a basic understanding of the concepts involved in the proper and effective installation of Isolofoam Group's **ISOCLAD®** product. It remains the responsibility of the installer and/or builder to ensure that all work performed conforms to applicable building code and labour safety regulations governing the construction. While care has been taken to ensure accuracy, and convey proper construction practices, Isolofoam Group does not assume responsibility for consequential loss, errors or oversights resulting from the information contained herein. Our liability is expressly limited to replacement of defective goods from Isolofoam Group.