

Halo® Subterra® Protection Board

HALO®

ADVANCED GRAPHITE INSULATION SYSTEM

INSTALLATION GUIDE



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For more information, or to contact a Halo representative, visit our website at www.BuildWithHalo.com and click “Contact Us”.

This manual will be updated regularly. Current updates will be available at www.BuildWithHalo.com.

1.0 - PRECAUTIONS FOR HANDLING, STORAGE & INSTALLATION

Precautionary measures taken in packaging, storage, transportation and installation of Halo products can help minimize the potential for damage to the products.

1.1 - JOBSITE STORAGE AND HANDLING

Halo products should be protected from reflective sunlight or prolonged solar exposure.

Always keep stored Halo products tarped or covered to protect from weather. Do not use a clear plastic covering film. If possible, store indoors.

1.2 - INSTALLATION

Until the building is enclosed with the wall, subfloor or roof sheathing, the following recommendations will help ensure installed Subterra products are protected from thermal expansion, and minimize damage due to reflective sunlight or prolonged solar exposure.

- Remove or cover any surface that is casting a reflection on installed Halo products, or shield the affected Halo products. (Reflections can also come through the building enclosure through openings or non-opaque areas, such as windows).
- Cover Subterra products if left exposed for more than 30 days. Faded printing on Halo laminates is normal and will not degrade the Halo properties.
- Ensure all butt joints are tightly fitted. See "5.6 - SEALING JOINTS AND FASTENER PENETRATIONS" on page 12.
- Immediately tape seal or temporarily cover all joints of inside corners until tape sealant is applied. Edges of Subterra products installed on subgrades and adjacent to Exterra or Interra should also be immediately covered until proper sealant method is applied along the perimeter between Subterra and Exterra or Intrerra.

For more information contact your local Halo representative or e-mail info@buildwithhalo.com.



2.0 – USEFUL TOOLS & MATERIALS

Recommended for sealing joints, penetrations, perimeter edges and flashing details.

- Halo Sheathing Tape
- Perma R Products Sheathing Tape
- Vapor barrier blue Tuck Tape,
- 3M peel and stick membrane,
- Expandable foam and
- Blueskin flashing tape (may require a primer for some surfaces)

Recommended for fastening or gluing

- Weather resistive construction glue, such as PL 300

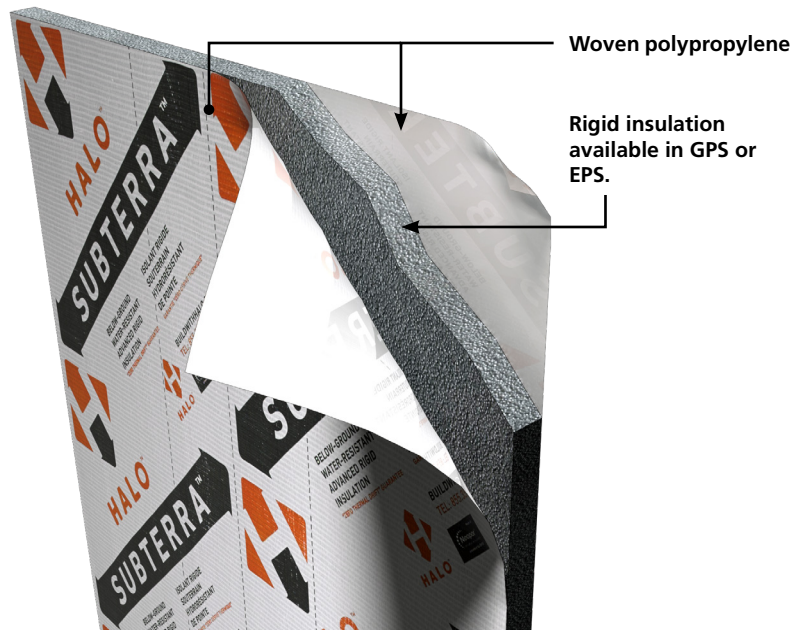
Additional tools:

- Hammer and cordless drill
- Hole saw
- Utility knife and straight edge

3.0 – PRODUCT DESCRIPTION

FEATURES

Subterra Protection Board products are rigid foam sheathing insulation faced with a polypropylene woven fabric. The insulation is made with either EPS (expanded polystyrene) or GPS (expanded polystyrene containing graphite). Products made with GPS provides up to 18% more R-value than conventional EPS.



BENEFITS

When installed under slabs Subterra Protection Board offers the following functional benefits.

- Prevents the ingress of radon - 7 times more radon resistant than 6 mil polyethylene membranes.¹
- Replaces 6 mil polyethylene membranes as the air and vapor barrier.³
- Protects void forms under structural slabs.
- Provides a water resistant barrier - resistant to over 2 feet of standing water.²
- Continuous insulation reducing heat loss through the slab.
- Flexible, resilient and durable against heavy loading and construction traffic conditions - will not warp.
- Provides a safe, non-slip, surface.
- Quick and simple installation - saves time and labour.
- Light in weight and easily cut to fit any space.

AVAILABLE SIZES

Available in 4ft x 8ft sheets, 1/2", 3/4", 5/8", 1", 1.5" and 2" thickness. Custom sizes are available. Contact your local Halo representative for availability.

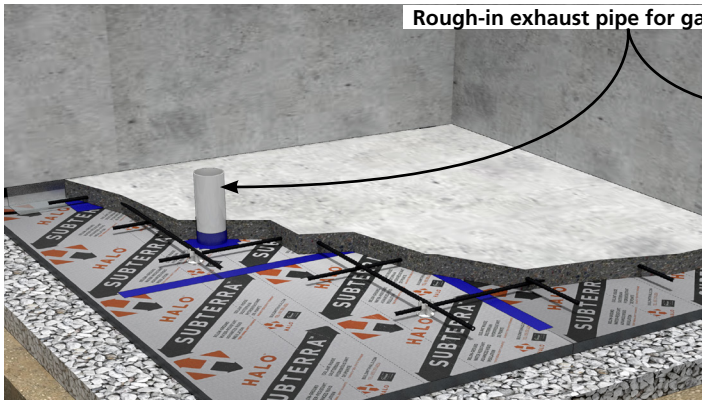
1. National Research Council of Canada's (NRC) Radon Diffusion Test, which shows Subterra Protection Board is more than 7 times Radon resistant than 6 mil polyethylene membranes.
2. In accordance with AATCC 127, Water Resistance: Hydrostatic Pressure Test, and AC71, Foam Plastic Sheathing Panels Used as Weather-resistive Barriers.
3. Independently evaluation of Subterra to the National Building Code of Canada by QAI (Quality Auditing Institute).



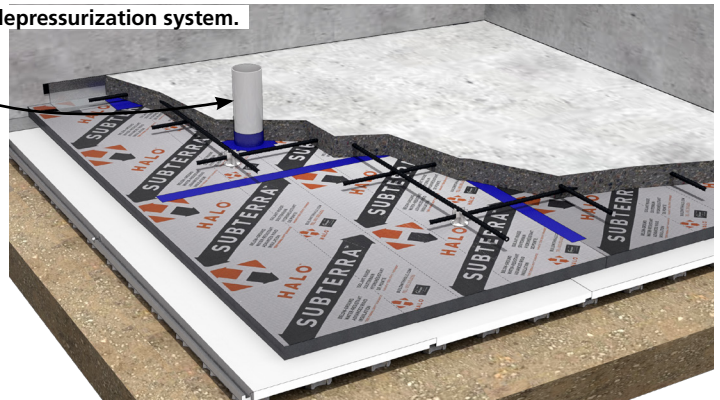
HALO® SUBTERRA® PROTECTION BOARD - RADON BARRIER

4.0 – APPLICATIONS

Ideal for under-slab applications providing the required continuous insulation, and preventing the ingress of moisture and radon gas into the interior.

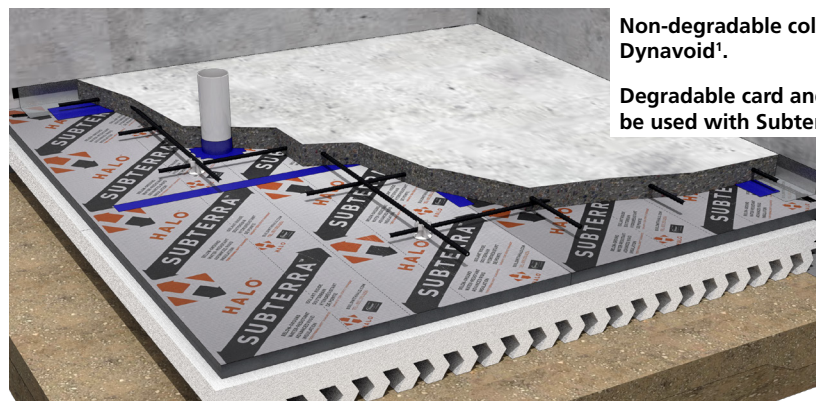


Subterra Protection Board over granular substrate as part of the subfloor gas depressurization system.



Subterra Protection Board over proprietary subfloor gas depressurization system.

And due to its light weight, durability and resiliency against heavy construction loading, Subterra Protection Board is an ideal replacement to OSB as protection for void forms under structural concrete slabs.



Non-degradable collapsing void form, Dynavoid¹.

Degradable card and solid void forms can also be used with Subterra Protection Board.

Subterra Protection Board as void form protection.

1. For information on Dynavoid visit www.beaverplastics.com or call 1-888-453-5961.

5.0 – INSTALLATION

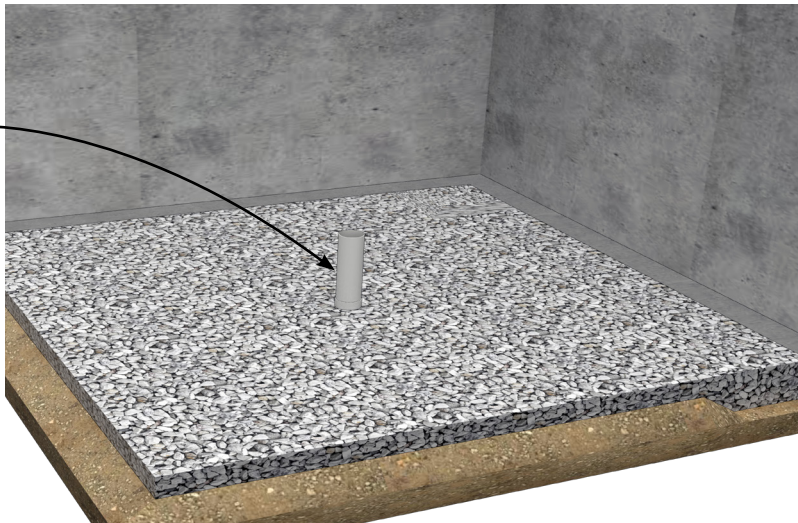
The following instructions are typical for the installation of Subterra Protection Board as a Radon barrier.

Installation may vary depending on project specific requirements. Before starting, make sure all installation complies with local building code requirements.

STEP 1 - Level and Compact The Base Material:

Level and compact the earth or granular material under the slab. Inspect the surface to ensure there are no protrusions that could prevent Subterra from being placed level and flush to the base material

Rough-in for exhaust
pipe for radon mitigation



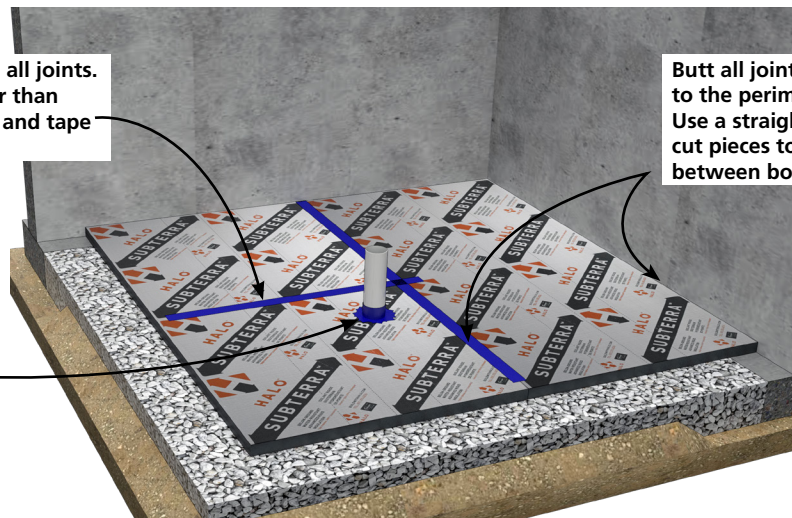
STEP 2 - Install Subterra Protection Board:

Install Subterra over the base material covering the entire area of the concrete pour. The orientation of Subterra can be placed in any direction.

Use sheathing tape to seal all joints.
Gaps between joints larger than
1/4" should be foam filled and tape
sealed.

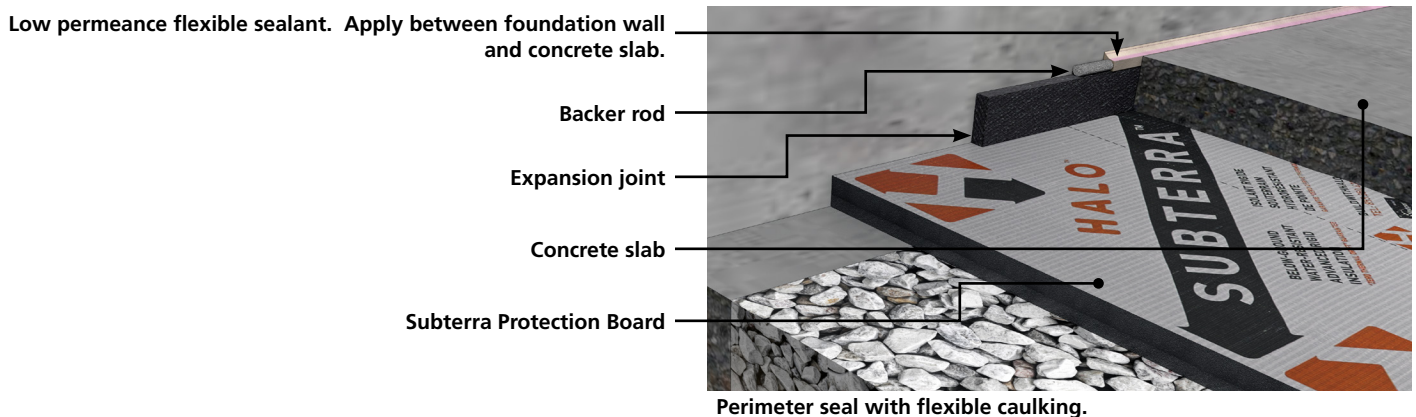
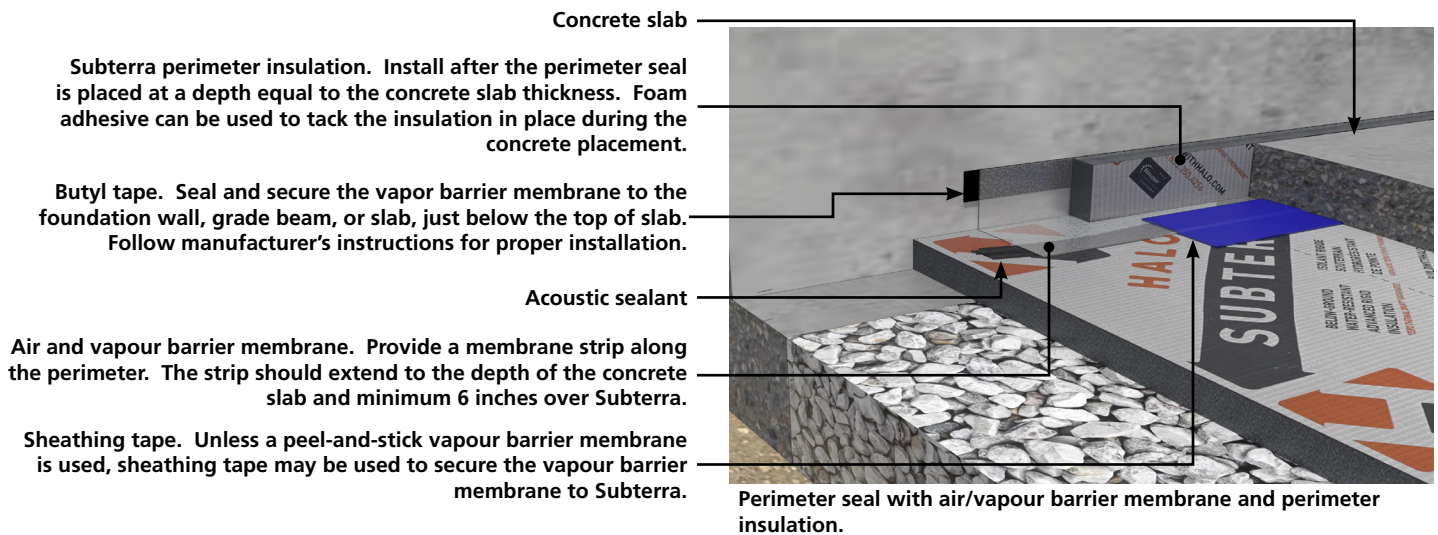
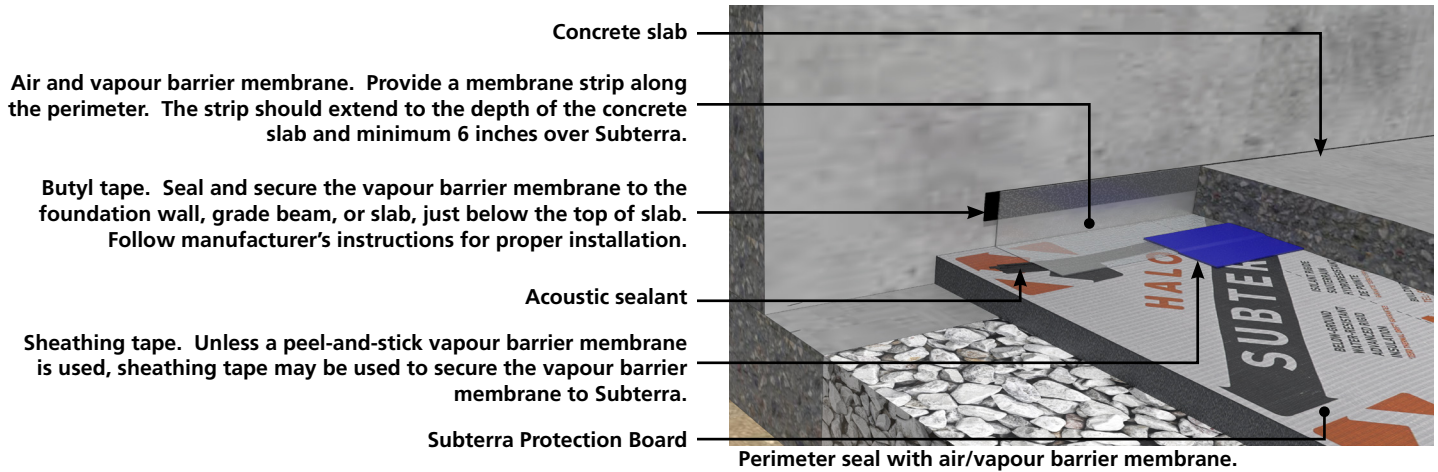
Butt all joints tightly together and
to the perimeter of the slab area.
Use a straight edge to measure and
cut pieces to maintain a snug fit
between boards.

For sealing penetrations
see "5.6 - SEALING
JOINTS AND FASTENER
PENETRATIONS" on page
12.



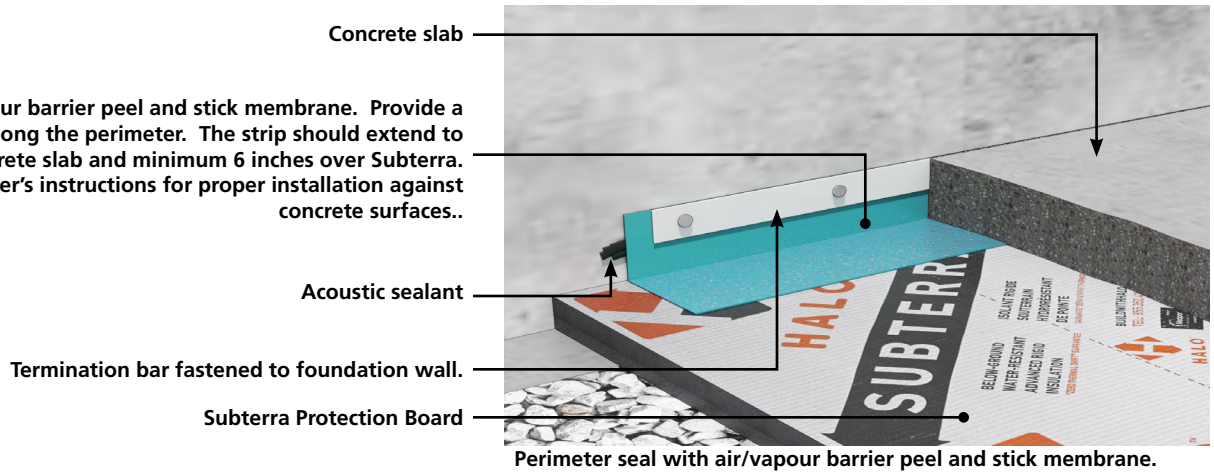
STEP 3 - Seal The Perimeter:

Proper sealing of the perimeter prevents ingress of radon gas into the building structure. Different examples for sealing Subterra to the perimeter of the concrete slab are shown below.



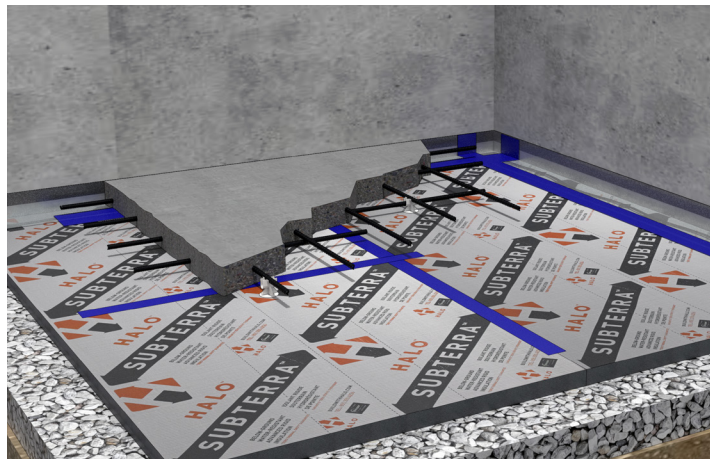
STEP 3 Cont'd:

Air and vapour barrier peel and stick membrane. Provide a membrane strip along the perimeter. The strip should extend to the depth of the concrete slab and minimum 6 inches over Subterra. Follow manufacturer's instructions for proper installation against concrete surfaces..



STEP 4 - Pour The Slab:

Prior to concrete placement, inspect the condition of the Subterra boards and all sealed joints and penetrations. See "7.0 - INSPECTION & REPAIRS" on page 20.

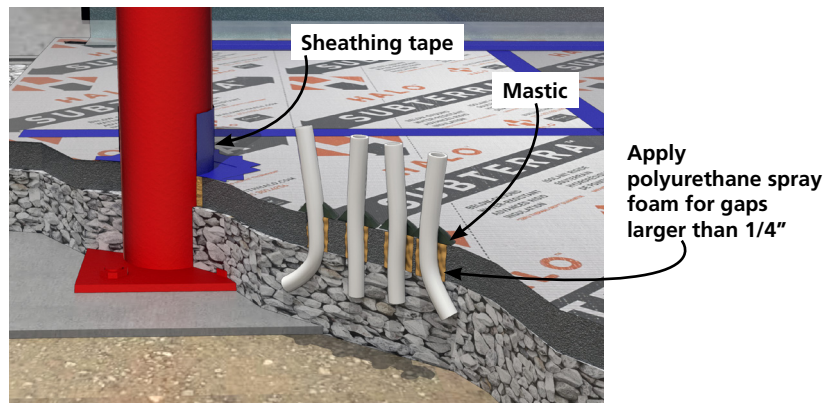


HALO® SUBTERRA® PROTECTION BOARD - RADON BARRIER

6.0 – PENETRATIONS

Penetrations through Subterra Protection Boards, such as utilities or columns can be simply sealed with sheathing tape or a mastic sealant to maintain the continuity of the air and moisture barrier.

Gaps larger than 1/4" between Subterra Boards and the penetration should be foamed filled before tape sealing.



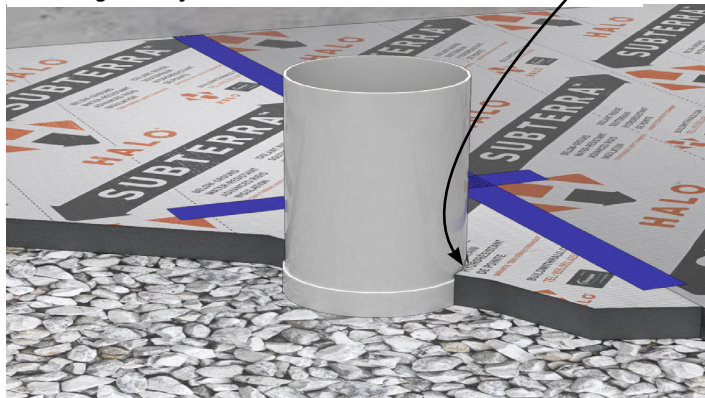
RADON MITIGATION

Reducing radon ingress and buildup from below the slab typically involves the installation of a vertical exhaust pipe through the installed Subterra Protection Boards. This allows airborne radon to escape to the outside of the building.

STEP 1 - Cut A Hole for The Exhaust Pipe:

Mark the location for the pipe rough-in, and cut a hole through Subterra that will tightly fit the exhaust pipe.

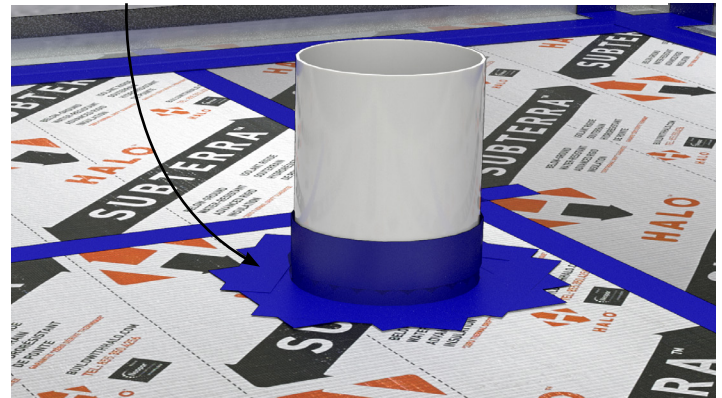
Building codes typically require a 4 inch pipe so using a 4 inch hole saw will provide a secure fit. The hole can also be cut using a utility knife.



STEP 2 - Apply Sheathing Tape:

With the exhaust pipe securely in place, seal Subterra to the exhaust pipe.

Apply sheathing tape, or a mastic sealant, to seal between Subterra and exhaust pipe. Use spray foam to fill gaps larger than 1/4 inch before sealing.



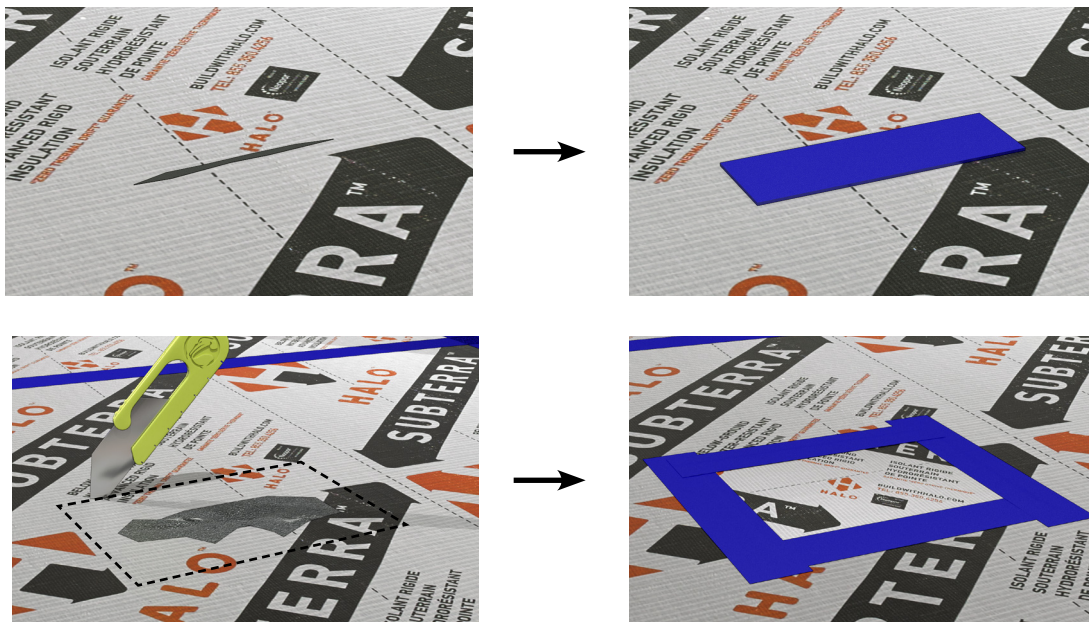
7.0 - INSPECTION & REPAIRS

Subterra Protection Boards are designed to be extremely durable and resilient against heavy construction traffic. However, inspecting the condition of installed Subterra boards prior to the concrete pour will ensure proper installation is maintained.

Inspect installed Subterra boards sufficiently in advance of concrete placement to ensure

- taped seams are not broken
- joints, penetrations and perimeter are properly sealed
- damaged areas are marked and properly repaired.

In most cases repairing damaged Subterra boards simply requires tape sealing over the damaged area. If the foam and laminate are damaged then removing the damaged section and replacing with a new section will be required.





CONNECT WITH A LOCAL MANUFACTURER



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Haysville, KS 67060-2004

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840 Division St.
Cobourg, ON K9A 5V2

800.860.3626

6753 Chestnut Ridge Rd.
Beach City, OH 44608

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35 Headingley Rd.
Headingley, MB R4H 0A8

800.647.6130

2604 Sunset Dr.
Grenada, MS 38901

888.453.5961

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Acheson, AB T7X 6E9

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106 Perma R Rd.
Johnson City, TN 37604

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6333 Unsworth Rd.
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