



SES Foam, LLC
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Spring, TX 77388
713-767-5013

SES FOAM 0.5 LB SPRAY

INSTALLATION INSTRUCTIONS

PART I-- GENERAL

A. SUMMARY

SES Foam 0.5 lb Spray provides building envelopes with seamless insulation which substantially reduces air infiltration. SES Foam 0.5 lb Spray is applied to the full or partial thickness of stud-wall and/or rafter cavities for a total insulation/air barrier package. Air infiltration is substantially reduced due to the sealing characteristics of the spray foam system and eliminates the need for house wrap. Typical building assemblies for which these Installation Instructions apply include:

- Stud walls
- Masonry walls (interior)
- Attic floors
- Attic ceilings and walls (unvented attics)
- Crawlspace (vented and unvented)

B. QUALITY ASSURANCE

SES Foam 0.5 lb Spray must be installed by a qualified spray polyurethane foam applicator who is familiar with the operation and maintenance of his equipment and who is familiar with the properties of the SES spray foam system which is being applied.

C. MATERIAL DELIVERY AND STORAGE

1. Materials shall be delivered in their original, tightly sealed containers.
2. Keep the temperature of the chemicals above 70 °F for several days prior to use. Cold chemicals can cause pump cavitation and, therefore, incorrect metering. Storage temperatures should not exceed 90 °F. Do not store in direct sunlight. Keep drums tightly closed when not in use. Under proper storage conditions, shelf life of SES Foam 0.5 lb Spray is six months.

D. SEQUENCE AND SCHEDULING

The spray polyurethane foam used in the SES Foam 0.5 lb Spray system is applied after the perimeter wall is in place, windows and doors installed, and rough-in plumbing and electrical inspections are complete.

E. VAPOR BARRIER: Install vapor barriers as required by local code.

F. SAFETY

1. **HANDLING OF LIQUID COMPONENTS:** Use caution in removing bungs from 55-gallon drums. Loosen $\frac{3}{4}$ -inch bung and let gas escape before completely removing. Avoid breathing of vapors. In case of chemical contact with eyes, flush with water for at least 15 minutes and get medical attention. For further information refer to “Working with MDI and Polymeric MDI: What You Should Know,” Reference No. AX 205, published by Alliance for the Polyurethanes Industry, 1300 Wilson Boulevard, Arlington, VA 22209, www.polyurethane.org.
2. **15-MINUTE THERMAL BARRIER:** Federal, state, and local building codes vary. All require that spray-applied polyurethane foam insulation be covered with an approved 15-minute fire rated thermal barrier. One typically approved material is $\frac{1}{2}$ -inch gypsum wallboard (sheetrock) applied over the spray polyurethane foam insulation. However, always check with local officials for recommendations and approvals.
3. **IGNITION BARRIER:** Prescribed ignition barriers are permitted by model building codes (including the International Residential Code and the International Building Code) in lieu of thermal barriers in attics and crawlspaces where access is limited to the service of utilities. SES Foam 0.5 lb Spray has been tested in accordance with AC377, Appendix X. Therefore when applied in attics and crawlspaces with limited access per the building code, SES Foam 0.5 lb Spray the prescriptive ignition barrier may be omitted. Other limitations may apply, depending on specific project circumstances. Review the limitations in ICC-ES Evaluation Report No. ESR-3375, Section 4.4 (www.icc-es.org) before installing without a thermal barrier or prescriptive ignition barrier.
4. **PERSONAL PROTECTIVE EQUIPMENT (PPE):**
 - a. **Skin:** Wear gloves, coveralls, apron and boots as necessary to prevent contact of liquid components or partially-cured SPF with skin. When handling liquid components, gloves should be made of nitrile, neoprene, butyl or PVC.
 - b. **Eyes:** Protect eyes while handling liquid components or spraying with safety goggles or safety goggles and a face shield. During spray application, eye protection may be provided by a full-face or hood respirator.
 - c. **Respiration:** Firms engaged in the application of SES Foam systems must have a written respiratory protection program for employees engaged in handling or applying SES Foam materials. Depending on the situation, respiratory protection may include

dust masks, air-purifying respirators (APR), powered air-purifying respirators (PAPR), or supplied-air respirators (SAR).

5. VENTILATION: Provide ventilation and other engineering controls to exhaust vapors from work areas and to protect building occupants and other trades.

PART II-- PRODUCTS

A. POLYURETHANE FOAM

The polyurethane foam used shall be SES Foam 0.5 lb Spray. Typical physical properties of foam made with this System are:

Property	SES Foam 0.5 lb Spray
Core Density (Nominal)	0.5 lb/ft ³
Flame Spread (4" thick)**	5
Smoke Developed**	450

R* Value

Thickness (inches)	R Value (°F•hr•ft ² / Btu)
1	4.0
2	7.6
3	11
3.5	13
4	15
5	19
6	22

Thickness (inches)	R Value (°F•hr•ft ² / Btu)
7	26
8	30
9	33
10	37
11	41
12	44

*As with all insulating materials, the R Value will vary with age and use conditions. R-values are calculated based on k-factors at 1- and 3.5-inch thicknesses.

**These numerical flame spread ratings and smoke developed numbers are not intended to reflect hazards presented by this or any other material under actual fire conditions. For proper use refer to the appropriate building code.

B. ACCESSORIES

1. Joint Filler Foam: Touch 'nSeal No-Warp Foam or equivalent
2. Caulk: Sikaflex 1a: Single component polyurethane or equivalent

PART III-- EXECUTION

A. SURFACE PREPARATION

All surfaces to be sprayed with SES Foam 0.5 lb Spray polyurethane foam must be dry, clean, and secure. Remove sawdust and other debris from areas to be sprayed by blowing with compressed air or vacuuming with a shop vacuum. Check surfaces with MDP (moisture detection paper) strips to verify dryness. All metal to which foam is to be applied must be free of oil, grease, rust, etc. Primers should be used where necessary.

Mask off all areas not to receive spray foam with masking tape and plastic sheeting. Apply release agent to stud facing to facilitate removal of foam.

B. FOAM APPLICATION

SES Foam 0.5 lb Spray is a fast rise foam system. The foam is applied in one pass to completely or partially fill the construction cavity. (It is acceptable practice to leave an air space between the finished SES Foam 0.5 lb Spray surface and the wall board.) Use a spray technique whereby the stud/rafter faces are thinly sprayed with foam chemicals to assure adhesion to the studs. The resulting foam pass would be slightly "U" shaped with rapid gun sweeps across the stud faces. Spray technique may be adjusted for on-site conditions to obtain desired thickness and properties.

Where SES Foam 0.5 lb Spray is applied between joists (below a floor or above a ceiling), apply sufficient foam thickness to achieve the desired R-value (the cavity does not need to be completely filled).

- C. Cavities formed by studs, joists or rafters need only be filled to the thickness required to meet the specified R-value. In construction cavities to be covered with gypsum board, it is permissible to leave an air space between the spray foam surface and the gypsum board. Foam should be fully adhered to all substrate surfaces including stud, joist or rafter surfaces to assure an air seal; no gaps are permitted between the spray foam and the structural lumber.
- D. Avoid foam application to under the following circumstances and/or substrates:
 1. Areas or surfaces which have a service temperature exceeding 180 °F.
 2. Inside of electrical junction or electrical outlet boxes.
 3. In contact with wet surfaces or onto surfaces where snow or ice is present.
 4. In direct contact with soil.

E. ACCESSORY APPLICATION

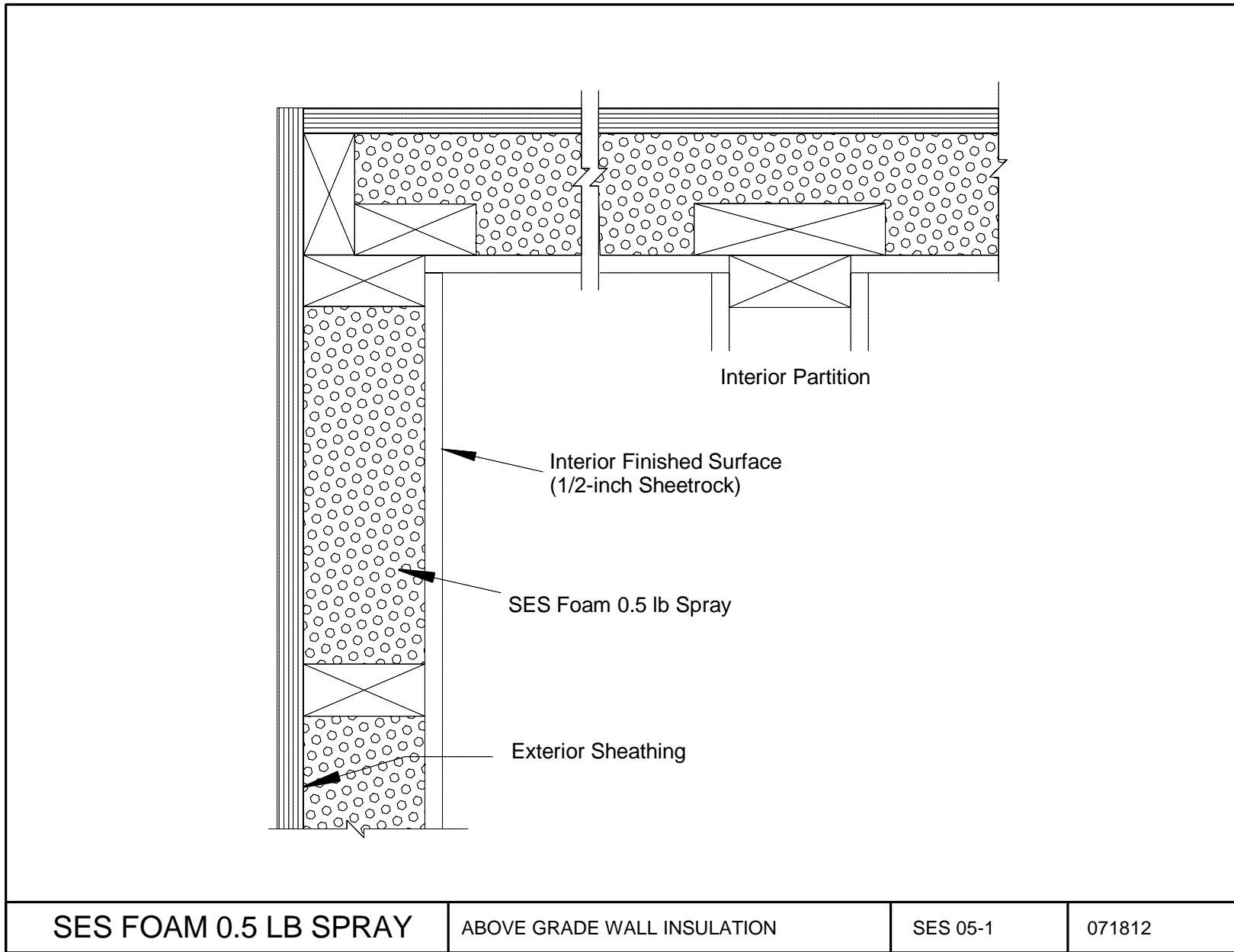
1. Joint Filler Foam and Caulk: Use joint filler foam and/or caulk to seal around windows, doors, chimneys, electrical raceways, sill plates, multiple studs, etc. **Caution: Joint filler foam can tighten window frames and door jambs to the point that they will not open or close properly. Care must be used in these areas to avoid distortion of these members.**
2. Thermal Barriers: SES Foam 0.5 lb Spray, at a maximum thickness of 11.5 inches in wall and ceiling cavities, must be separated from the interior of the building by an approved thermal barrier of 0.5-inch thick (min.) gypsum wallboard or an equivalent 15-minute thermal barrier complying with and installed in accordance with the applicable building code. See next section regarding attics and crawlspaces.
3. Ignition Barriers: In attics and crawlspaces where entry is made only for the service of utilities, SES Foam 0.5 lb Spray may be left exposed (without a prescriptive ignition barrier or coating) on all attic and crawlspace construction planes. Thickness is limited to 12 inches on overhead applications and 11.5 inches for vertical applications and on attic floors.

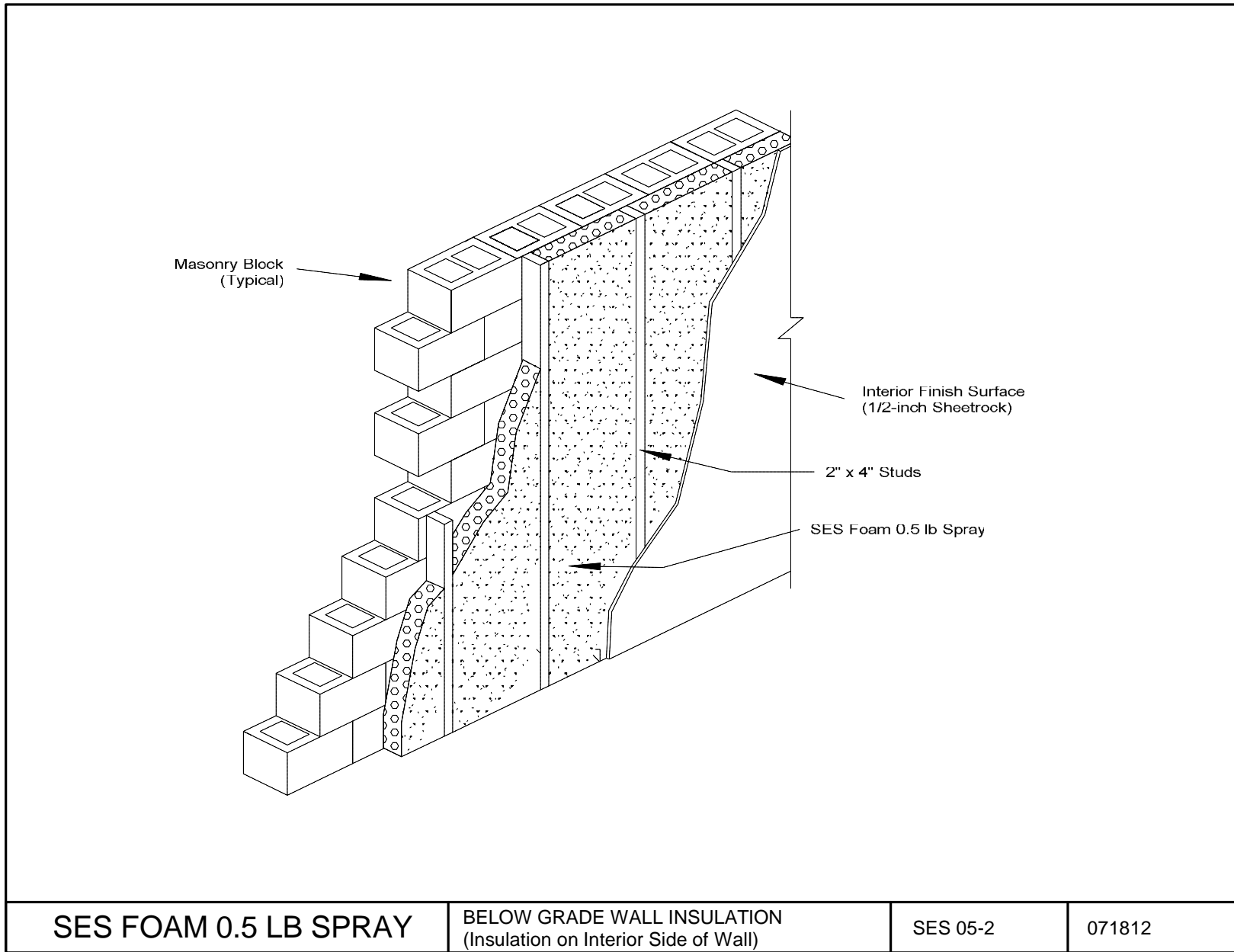
F. CLEAN UP

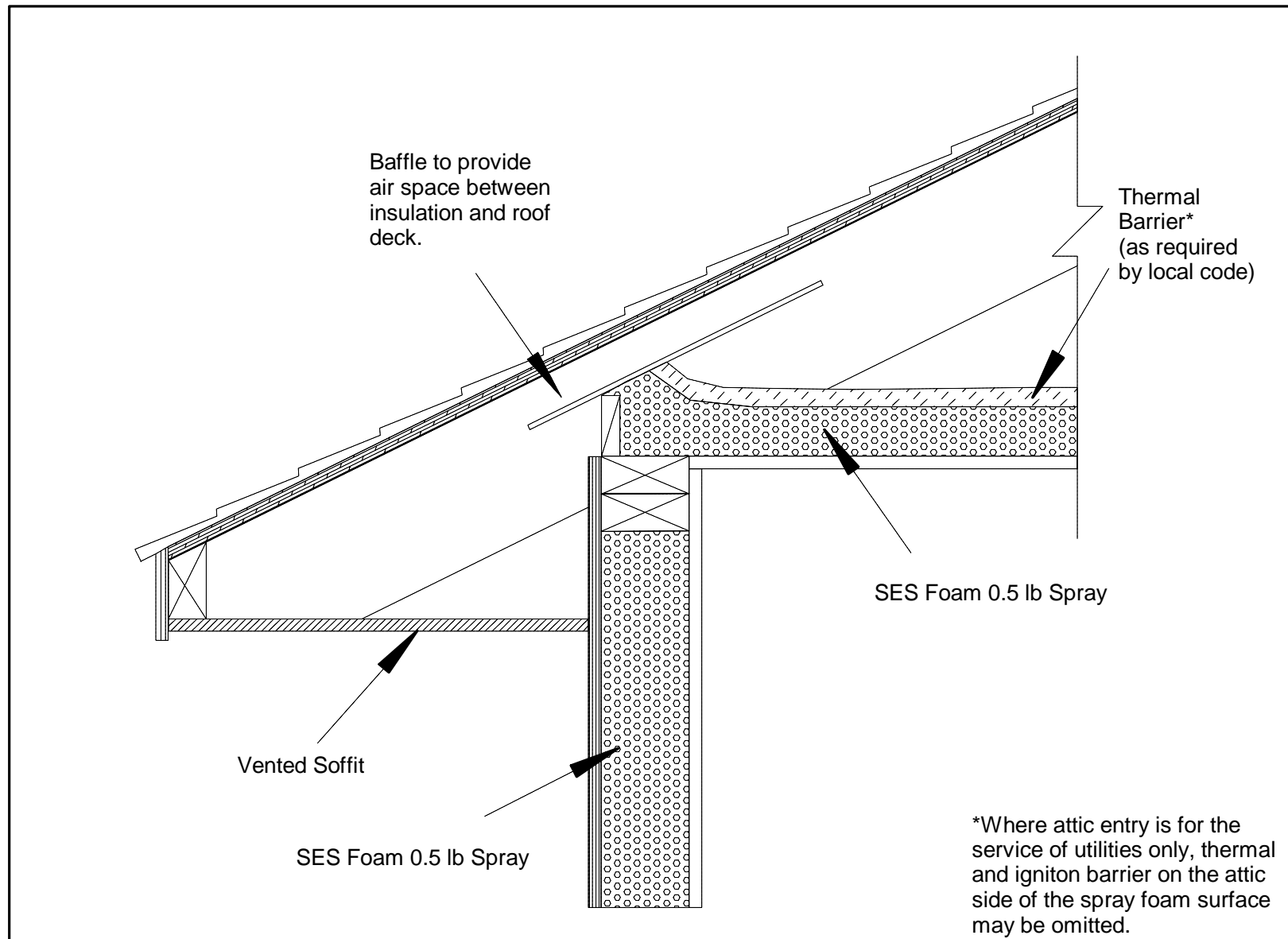
Clean off all overspray and overfill from the interior stud facings. Where stud cavities have been overfilled, shave off the foam face to provide a surface flush with the stud for drywall installation. Remove all masking materials.

G. RE-ENTRY

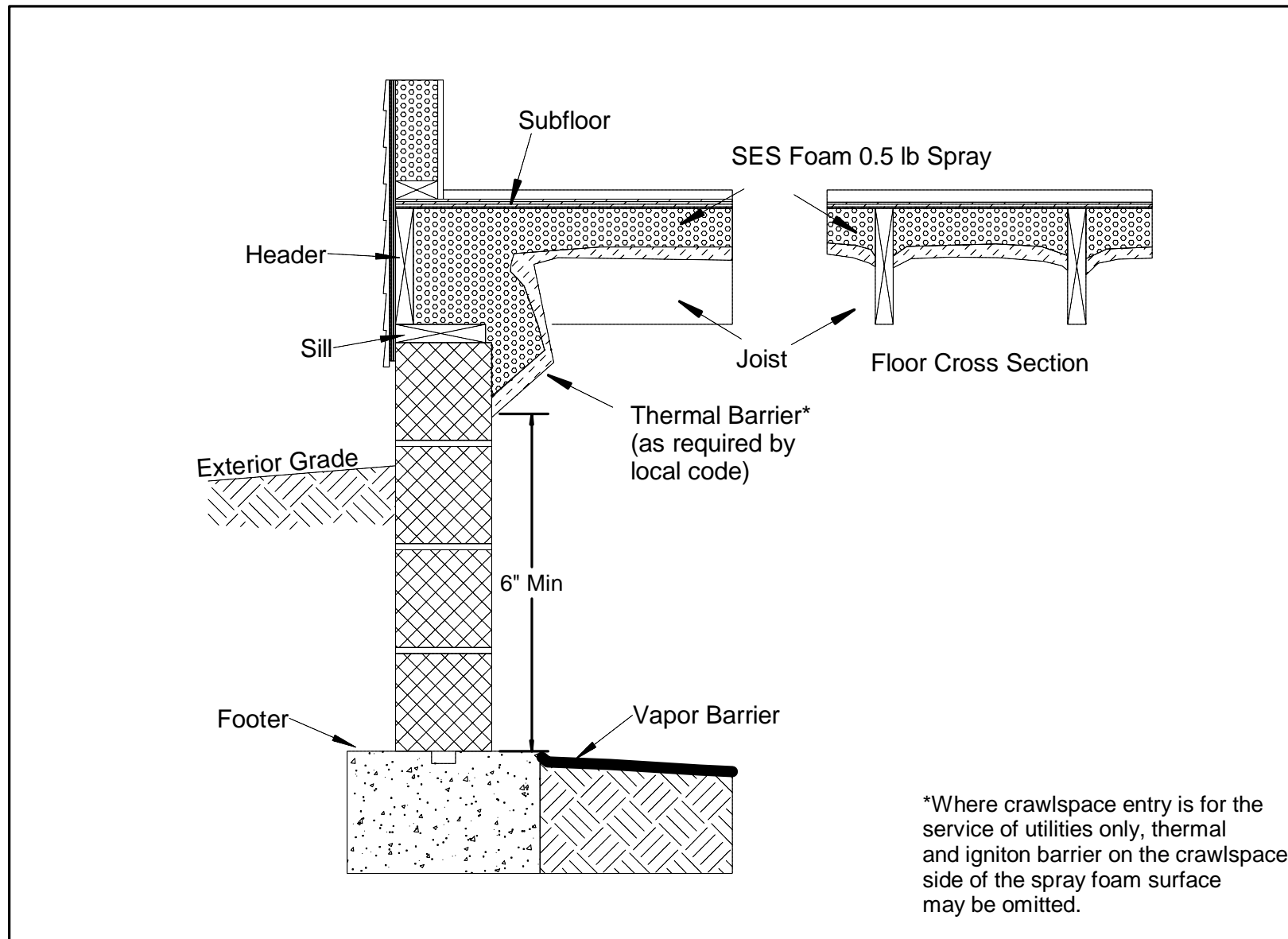
SES Foam 0.5 lb Spray reacts and cures within seconds of application. Re-entry times will vary depending on factors including ventilation. Typically, when ventilation is continued for 24 hours following the conclusion of spray application and re-entry may occur at that time.



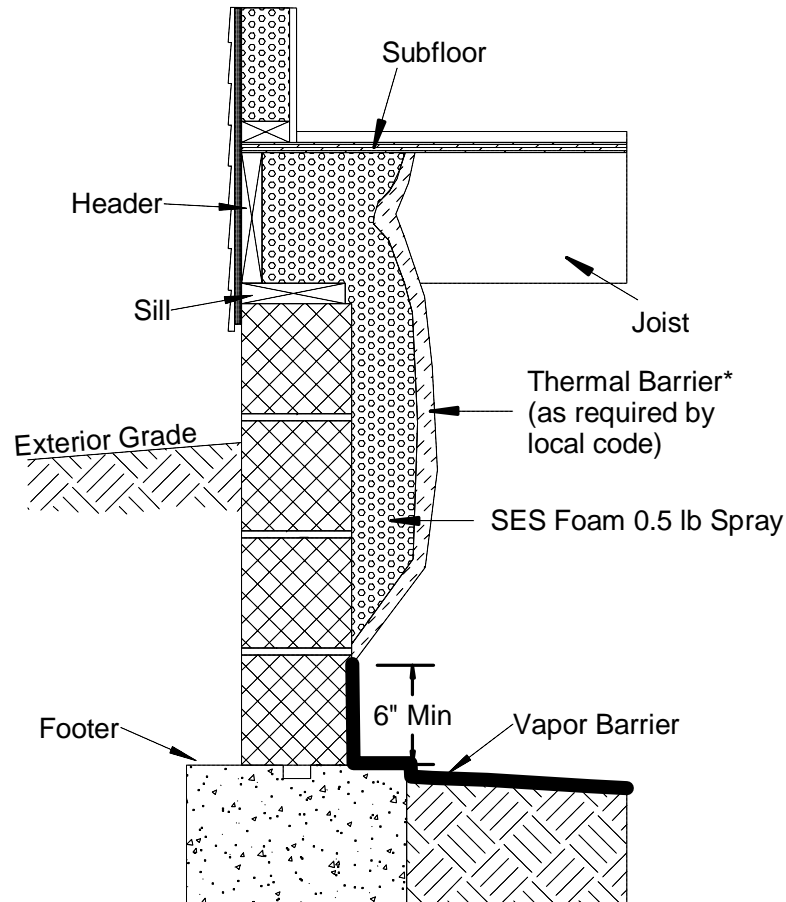




SES FOAM 0.5 LB SPRAY	VENTED ATTIC: FLOOR / SOFFIT	SES 05-3	071812
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SES FOAM 0.5 LB SPRAY	CRAWLSPACE: VENTED	SES 05-4	071812
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*Where crawlspace entry is for the service of utilities only, thermal and igniton barrier on the crawlspace side of the spray foam surface may be omitted.

SES FOAM 0.5 LB SPRAY

CRAWLSPACE: UNVENTED

SES 05-5

071812

