

Quality Caulking and Sealing (Air Sealing) Contractor Scope of Work

Introduction

Airflow through cracks and holes in the walls, ceiling and floor is referred to as air infiltration. Air infiltration is minimized by caulking and sealing the envelope, usually performed by the insulation contractor. A home that is not sealed for air infiltration will be uncomfortable due to drafts and will use about 30% more energy than a relatively airtight home. Controlling air infiltration is one of the most cost-effective energy-efficiency measures in modern construction practices. In addition, good caulking and sealing will reduce dust and dirt that can enter homes through cracks and holes. Caulking and sealing is also one of the simplest energy-efficiency measures to install.

How to use this Scope of Work

The purpose of this document is to provide the tools to ensure caulking and sealing is properly specified and installed, resulting in a comfortable, energy-efficient home.

Builder: Include these materials in your bidding and contracting documents. It is meant to form the basis of a scope of work for both bidding and contracting. Its use will help ensure consistent bids and quality installations. Caulking and Sealing Procedures are to be followed by the insulation contractors.

Contractor: Follow Caulking and Sealing Procedures.

Field Superintendent: Review Caulking and Sealing Procedures to check installation quality.

Criteria for a Quality Envelope

Caulking and sealing should:

1. Seal gaps and holes between the inside conditioned space and the outside,
2. Be installed without gaps or large excesses,
3. Be installed carefully around sliding glass doors and vinyl windows,
4. Specific Leakage Area (SLA) should be between 1.5 and 3.8 when measured with a Blower Door.

Procedures to Caulk and Seal for a Quality Envelope

The following steps should be followed in the installation of insulation to ensure efficiency and comfort (details follow):

1. Work with the architect and framer to minimize air-sealing problems.
2. Seal soleplate to floor.
3. Seal all exterior wall penetrations.
4. Seal all top-plate penetrations.
5. Weather-strip all operable openings to the exterior; including doors and attic access holes.

Caulking and Sealing Procedures

Seal sole plates

- Materials: compressible sealant, caulk, foam, or mastic
- Produce continuous bead or layer of sealant
- Where not certain that continuous bead or layer will be achieved, combine two techniques, e.g., rope caulk under sill followed by penetrating foam after wall is erect

Seal exterior penetrations

- Materials: foam, caulk, or gasket
- Example openings: plumbing, gas lines, electrical boxes and outlets
- Seal large gaps around windows between house framing and window frame – use special care on large sliding-glass doors and vinyl-framed windows: do not use expansive foam on these.

Note: Install caulking and sealing with care to seal all joints without excess sealant. Excess is wasted and must be removed before installing drywall. Care must be exercised during removal of excess sealant after hardening to avoid damage or removal of the required sealant.

Seal top plate penetrations

- Materials: foam or caulk
- Example openings: plumbing, electrical, cable, security

Weather-strip exterior doors and other openings to the exterior

- Weather-strip around all doors
- Weather-strip around attic access

HVAC/Plumbing closet inside conditioned space

- Seal wall penetrations of interior closets for HVAC and/or water heating equipment
- Weather-strip access door(s)

Raised floors

- Seal around tub and shower drains

Windows

- Windows must be certified by the manufacturer to limit air leakage to less than 0.37 cfm per operable foot of sash crack.
- Windows should be installed to avoid both air leakage and water penetration – see separate procedures for proper installation of windows.

Test

- To determine actual air-tightness, a Blower Door test needs to be performed