

Insulate and Install Flex Ducts

Job Aid for Insulate Ducted Distribution System Badge

Aligns With Standard Work Specifications 5.0107.1, 5.0105.2

BEFORE YOU BEGIN



Verify ducts are connected and air sealed at metal connections and any other holes within the liner. When new flex duct is needed, select insulation (duct wrap or flex duct) with a minimum R-8.



Secure flex duct liner to hard connections with zip tie and tensioner tool. If using duct wrap, follow the same procedure after adding insulation where missing, being careful not to compress the insulation.



Pull insulation over hard connections as needed.



Secure vapor retarder layer at boots.



Seal new joints where duct insulation meets plenum using UL-listed material.

AFTER



All exposed ducts located in unconditioned spaces are sealed, insulated, and supported with 1.5 inch or greater material.

CHECKLIST

Insulate ducted distribution system

DESIRED OUTCOME

Reduced conductive heat transfer of duct system and minimized condensation on the duct system.¹

Preparing for the work:

- ☐ Ducts are prepared and sealed according to “air seal ducted distribution system” guidelines.

General:

- ☐ Duct insulation has an attached and continuous vapor barrier.
- ☐ Duct insulation is mechanically fastened and sealed with no exposed ducts.
- ☐ All insulation seams are sealed.
- ☐ Ducts are adequately supported and support materials do not cause the interior dimensions of the ductwork to be smaller than specified.

Metal ducts:

- ☐ Insulation is securely attached to the ducts with metal wire or rot-proof nylon twine.
- ☐ Pattern of wire or twine is sufficient to securely hold the duct insulation tight to the duct.
- ☐ Duct insulation vapor barrier seams are sealed with manufacturer approved tape.
- ☐ Duct insulation is minimum R-8.²

1. Relevant Standards: 5.0107.1, 5.0105.2

2. If variance request has been approved, replace this with approved figure.

3. Or other appropriate mechanical fasteners as necessary.

Flex ducts:

- ☐ All metal fittings including boots, elbows, and takeoffs are insulated separately using a duct wrap of the minimum acceptable R value with vapor retarder.
- ☐ Insulation on metal fittings, boots, elbows, and takeoffs is mechanically fastened (e.g., stitch staples, tie bands) and sealed with no exposed metal.
- ☐ Any replacement flex duct is sized accordingly.
- ☐ Interior liner of flex-to-metal connections is fastened with tie bands using tie band tensioning tool.³
- ☐ Interior liner of flex-to-metal connections is sealed with UL 181B-M listed mastic.
- ☐ The exterior liner of the flex duct is fastened with tie bands using a tie band tensioning tool.
- ☐ Exterior liner connections are sealed with UL 181B-M listed mastic.