

Insulate Hard Pipe 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 properly connected, supported, and sealed.



Layer insulation around duct, fitting between duct and construction members as necessary.



Tape joints to secure insulation in place.



Ensure insulation is not compressed.



Tape around circumference of duct at regular intervals.



Use twine or zip ties to provide additional support, being careful to not compress the insulation.



Well-supported and uniformly-insulated ducts perform at higher efficiency.

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 retarder.
- 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 take-offs are insulated separately using a duct wrap of the minimum acceptable R-value with vapor retarder.
- Insulation on metal fittings, boots, elbows, and take-offs 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 181 B-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 181 B-M listed mastic.