

Install Efficient New Ductwork; Residential Only**Activity No.****HC3A****1. Activity Specific Definitions**

Thermally efficient ductwork means flexible ductwork that is insulated using bulk insulation that achieves a minimum R value of R1.5 (option 1) or R2.0 (option 2) when measured in a flat plate test in accordance with AS/NZS 4859.1:2002.

2. Activity Description (Summary)

Installation of ductwork of higher than standard insulation R value to a reverse cycle ducted air conditioner or gas ducted heater. See also guidance notes below

3. Activity Eligibility Requirements

1. The space conditioning unit to which the thermally efficient ductwork is to be attached must be located in a residential premises and must be either a reverse cycle ducted air conditioner or gas ducted central heater.
2. The relevant ductwork must be flexible ductwork and be installed within a roof space or between a floor and the natural ground.
3. The installation of ductwork with an R value that exceeds R1.0 must not be otherwise required by law, for example as condition of a development approval under the *Development Act 1993*.

4. Installed Product Requirements

The installed product must :

1. Be thermally efficient ductwork as defined above.
2. Have a thickness of the insulation as installed in the ducting that matches the design insulation thickness as specified by the insulation manufacturer
3. Be longitudinally labelled at intervals of not more than 1.5 metres, in characters that are clearly legible and at least 18mm high stating:
 - i. the duct manufacturer's or duct assembler's name; and
 - ii. the diameter of the duct core; and
 - iii. the R-value of the bulk insulation; and
 - iv. whether the ductwork complies with AS 4254.1-2012;
4. Use fittings that achieve at least the R-value specified by Table 3.12.5.2 of the Building Code of Australia (BCA2013). All dampers must be positive seal dampers to prevent leakage
5. Have a warranty of at least 5years.
6. Comply with any product safety or other product performance requirements in a relevant code of practice or other relevant legislation applying to the activity
7. Be fit for the purpose for which it is intended to be used

5. Minimum Installation Requirements

When installing the flexible ductwork system, the installer shall, at a minimum:

1. Undertake the installation in accordance with manufacturer's instructions
2. Install and support the system in accordance with the requirements set out in AS 4254.1-2012;
3. Duct tape the inner liner to the collar and ensure the insulation is pulled up over the collar before the outer is duct taped and mechanically fixed to minimize heat loss at the collar join;
4. Tape any small tears/holes in the outer or inner sleeve using foil tape for the outer sleeve and duct tape for the inner sleeve. Taping of any significant tears of more than one quarter of the circumference of the duct may not last and therefore that section of duct is no longer suitable and should be replaced.
5. Ensure the activity is completed and certified in accordance with any relevant code or codes of practice and other relevant legislation applying to the activity, including any licensing, registration, statutory approval, activity certification, health, safety, environmental or waste disposal requirements;

6. Activity energy savings

The normalised energy saved from undertaking this this activity is equal to:

Normalised Energy Savings (GJ) = (Savings Factor (as per table below) x The rated output of the space conditioning to which the ductwork is attached in kW*)

Climate Zone	Activity	Savings Factor
BCA Zones 4 & 5	Gas ducted heater Fitted with R1.5 minimum ductwork	0.19177

	Gas ducted heater Fitted with R2.0 minimum ductwork	0.31347
	Reverse cycle air-conditioner Fitted with R 1.5 minimum ductwork	0.1700
	Reverse cycle air-conditioner Fitted with R 2.0 minimum ductwork	0.2800
BCA Zone 6	Gas ducted heater Fitted with R1.5 minimum ductwork	0.46098
	Gas ducted heater Fitted with R2.0 minimum ductwork	0.75232
	Reverse cycle air-conditioner Fitted with R 1.5 minimum ductwork	0.2800
	Reverse cycle air-conditioner Fitted with R 2.0 minimum ductwork	0.4600

* In the case of reverse cycle air-conditioners the products rating in heating mode shall be used. Where ratings are in MJ/h, divide this number by 3.6 to derive the equivalent rating in kW

7. Guidance Notes (Informative only – not mandatory)

This activity is intended to encourage installation of ductwork with insulation value higher than might otherwise occur. It is anticipated that the ductwork will be installed at the time of installing a heating/cooling system. However, retrofitting is not precluded.