Technical Solution Sheet 7.04

This technical solution sheet specifies the requirements for flexible ducting for heating, cooling, and ventilation.

The figures below provide guidance for:

- Minimum R-value of insulation required for heating and cooling ductwork
- Victorian climate zones for heating and cooling ductwork
- Flexible duct support spacings
- Hanging saddle and load distribution support systems
- Sub-floor clearances
- Flexible duct labelling
- Flexible duct changes in direction

Figure 1: Minimum material R-value for ductwork

To establish the correct ductwork insulation R-value required you will need to establish both the type of system to be installed and the climate zone you must refer to *https://www.abcb.gov.au/Resources/Tools-Calculators/Climate-Zone-Map-Victoria*

Figure 1, Climate zone map is current as of July 2020.

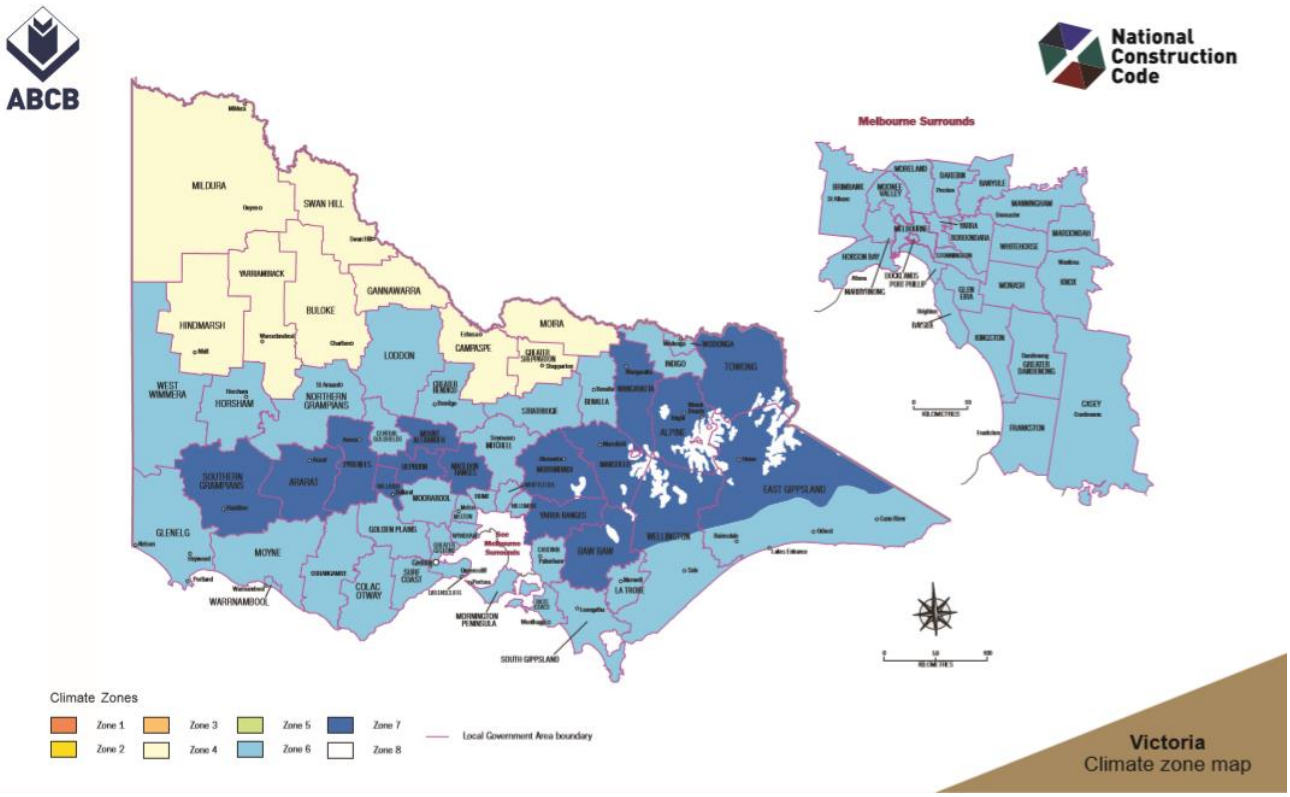


Figure 2: Victorian Climate Zones

The NCC sets out the minimum R-value that the required ductwork must achieve. These values must be in accordance with Figure 2.

Ductwork Element	Minimum material R-Value for ductwork and fittings in each climate zone				
	Heating-only system or cooling-only system including an evaporative cooling system		Combined heating and refrigerated cooling system		
	1, 2, 3, 4, 5, 6 and 7	8	1, 2, 3, 4, 5, 6 and 7	2 and 5	8
Ductwork	1.0	1.5	1.5 (see note)	1.0	1.5
Fittings	0.4				
Note:					
The minimum material R-Value required for ductwork may be reduced by 0.5 for combined heating and refrigerated cooling systems in climate zones 1, 2, 3, 4, 6 and 7 if the ducts are -					
(a)	under a suspended floor with an enclosed perimeter; or				
(b)	in a roof space that has insulation of not less than R0.5 directly beneath the roofing.				

Figure 3: Flexible Duct Support Spacings

As shown in Figure 3, flexible ductwork is to be supported *in accordance with AS 4254.1-2012.*

- Hangers shall be adequately attached to the building structure
- Support spacings no greater than 1500mm apart and;
- Shall not have greater than 40mm/m of sag per support spacing.

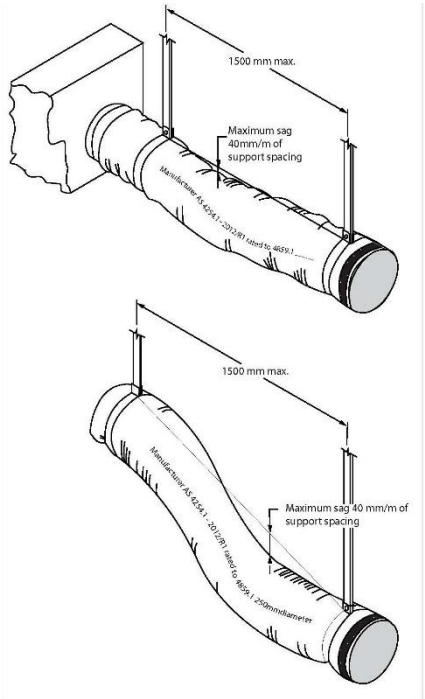


Figure 4: Hanging Saddle & Load Distribution Support System

As shown in Figure 4, the hanger or saddle securing the flexible duct must be a minimum width of 25mm.

A semi-rigid, fire-resistant, load-distributing support material must have a minimum width of 75mm and must be in contact with the flexible duct for at least a of quarter of its circumference, *in accordance with AS 4254.1-2012.*

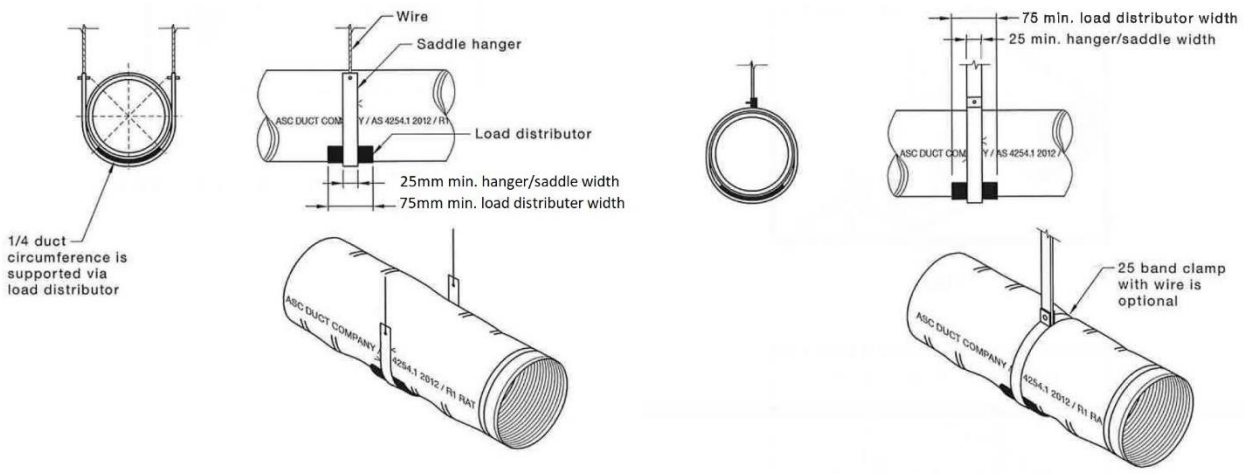


Figure 5: Sub-floor clearances

As shown in Figure 5, flexible ductwork installed in sub-floor sites must be supported in a way that no part of the flexible duct is in contact with the ground, *in accordance with AS 4254.1-2012.*

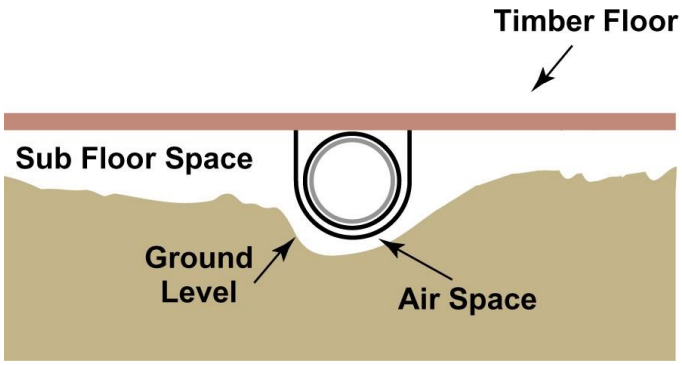


Figure 6: Flexible Duct Labelling

As shown in Figure 6, all flexible ductwork requires labelling, *in accordance with AS 4254.1-2012*.

The labelling must:

- Be repeated along the total length of the ductwork at 1000mm intervals
- Be legible for the service life of the duct
- Be written using characters at least 10mm high
- Include the name of the manufacturer; and
- Have the R-value of the flexible duct.

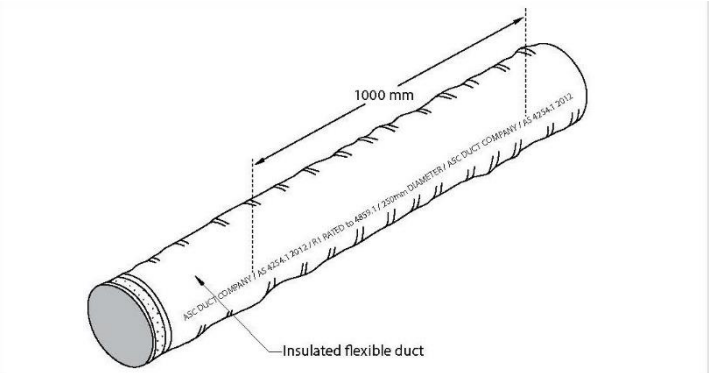
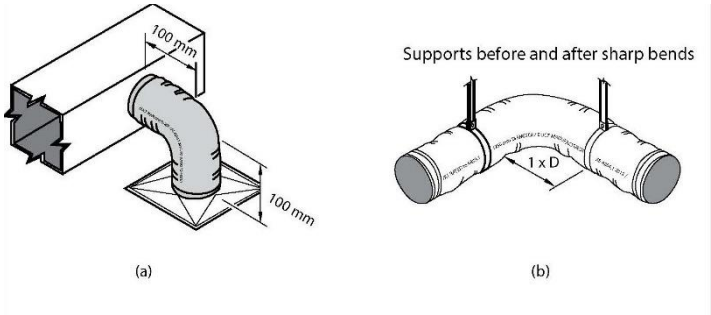


Figure 7: Flexible Duct Changes in Direction

Flexible ductwork must extend straight for 100mm from the connection to an air terminal device, prior to any change in direction, as shown in Figure 7 (a).

The flexible duct must also be installed with a minimum bend radius to a flexible duct diameter of 1 to 1, as shown in Figure 7 (b), and *in accordance with AS 4254.1-2012.*



Related Documentation

- National Construction Code, Volume 3, Plumbing Code of Australia (PCA) 2019: VIC Section G.
- Australian Standard 4254.1-2012- Ductwork for air handling systems in buildings, Part 1: Flexible Duct.

Contact Us

If you have a technical query, please email plumbingtechnicaladvice@vba.vic.gov.au or call 1300 815 127