

# Western Australia/ ADMA-NCC (BCA) Flexible Duct, Thermal & Fire Rating Requirements from May 1 2011

## Domestic Applications

BCA 2011 is mandatory for all Class 1 + 10 domestic buildings in WA issued with a building permit from May 1 2011.

BCA 2011 specifies;

- Material R values (R Value of insulation only) must be used on flexible duct and fittings tested to AS/NZS 4859.1. It is not acceptable to quote an insulation thickness and/or weight instead of a Total R Value ( $R_t$ ).
- All duct in a heating systems that is ignited by a flame must be fire rated to AS 4254
- $R_m$  0.4 for fittings in all installations
- $R_m$  0.6 insulation can only be used on duct within 'the insulated building envelope' e.g In riser shafts and in between floors
- $R_m$  1.0 for duct in all heating only refrigerated cooling only and evaporative cooler only systems (except zone 8,  $R_m$  1.5 is required)
- $R_m$  1.5 for duct in all reverse cycle and add on cooling systems, except zone 5 where  $R_m$  1.0 is acceptable. (see note).

Note:  $R_m$  1.0 may be used in reverse cycle and add on cooling systems in climate zones 1, 3, 4, and 6 if the ducts are;

- Under a suspended floor within an enclosed perimeter or
- In a roof space that has downward facing reflective foil insulation fitted to the underside of the roofing i.e. above the duct

## Climate Zones

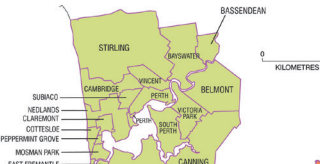
- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5
- Zone 6
- Zone 7
- Zone 8

Local Government Area boundary

### Perth Surrounds



### Perth Urban



See Perth Urban



## Commercial Applications

BCA 2011 is mandatory for most classes of commercial buildings in WA issued with a building permit from May 1 2011 :

Note: BCA 2011 calls up in BCA Vol. 1 Appendices Variations and Additions manual additional clauses, WA part JO parts (a) and (b) These clauses provide options on compliance to Class 2 buildings and Class 4 part of a building.

BCA 2011 specifies;

- "Material R Values" ( $R_m$ ) (R Value of insulation only) must be used on flexible duct and fittings, tested to AS/NZS 4859.1 "Total R Values" ( $R_t$ ) are not acceptable nor is quoting insulation thickness and or weight instead of a Material R-value ( $R_m$ ).
- All duct in all systems must be fire rated to AS 4254.
- $R_m$  2.0 duct and fittings must be used on all in heating, cooling and evaporative installations unless;
  - Duct is no more than 3 meters in length to an outlet or from an inlet then  $R_m$  1.0 is acceptable.
  - Duct and fittings are installed within a "conditioned space" which require Zones 1,3 and 5- $R_m$  1.2, Zones 4 and 6 –  $R_m$  1.2.

Contractors/homeowners need to ensure that only duct with a designated and appropriate Material R-Value ( $R_m$ ) or Total R Value ( $R_t$ ) is installed and that documentary evidence is available to demonstrate that required thermally rated duct has been ordered, supplied and installed by the duct supplier.

The supply of a "letter of certification", "letter of compliance", or equivalent, by a builder that indicates compliance, demonstrates that regulatory standards have been followed. The failure to install thermally and fire rated compliant product may breach state or local regulations, builders' guarantees, or the Trade Practices Act, possibly triggering make-good provisions, and may extend for some years depending on local regulations and building contracts.