

# DUCTING

## INTRODUCTION

### FLEXIBLE DUCTWORK & INSULATION SPECIFICATION – May 2007

In accordance with - Building Code of Australia 2007 (B.C.A. May 2007)  
- Australian Standards;  
- AS4254 AS4859.1 AS1530.3 AS1668.1

#### Note: GENERAL - 3 ZERO - 4 ZERO - AS 4254

Prior to 1995, AS 1530.3 (commonly known as the 4 zero test) was the B.C.A. requirement for flexible duct. In 1995 AS 4254 was introduced by the B.C.A. incorporating AS 1530.3 and 10 other tests for fire & structural integrity of flexible ducting. Ducting tested only to the 4 zero or the lesser 3 zero test requirements does not comply to B.C.A. 2007 or AS 4254. Flexible ducting installed into all new Class 2-9 buildings and some new Class 1 & 10 buildings that do not fully comply to all 11 tests of AS 4254 in accordance with B.C.A. 2007 may void insurances on those projects.

**N.A.T.A. Certification.** Certification will be deemed acceptable. In-house produced test reports are not acceptable. Only N.A.T.A certified test reports in their entirety stating the name of the manufacturer and name of the product tested will be deemed compliant.

- All relevant test reports and authorities approval certificates must be submitted prior to installation.

**AS4254 - Fire & Mechanical Testing, Test Reports & Compliance.** Australian Flexible Duct Standard 4254 (AS4254) comprises 11 individual tests (2 fire tests & 9 mechanical, structural & resilience fit for purpose tests), all of which must be passed to claim compliance to AS4254.

**B.C.A. 2007 - Thermal Requirements.** Significant increases to previously required thermal values for flexible duct and fittings have been incorporated into the B.C.A. 2007 varying for different regions of Australia and different types of installations. Ensure insulation products used in flexible ducting and fittings have the appropriate thermal value for the region and type of installation they shall be installed in.

**Flexible Duct – Insulated - Non Acoustic.** Fabricated to AS4254 from a U.V. resilient, fire retarded 100UM black low density polythene mechanically locked into an outer metal helix by a copper coated spring wire, wrapped in an insulation blanket (with a thermal value appropriate to the region and type of installation in accordance with the BCA 2007), encapsulated by a U.V. stabilised fire retarded outer sheath, similar to Unilok S or a N.A.T.A. approved equivalent.

**Flexible Duct – Insulated - Acoustic.** Only duct structurally & mechanically tested to AS4254 in its acoustic form will be acceptable. Acoustic duct: Generally a process of punching hundreds of holes into the duct core thus reducing its resilience to damage and structural integrity. (Requirements as per Flexible Duct Insulated Non-Acoustic).

**Flexible Duct – Un-Insulated - Non Acoustic.** Only duct tested to AS4254 in its un-insulated form will be acceptable. For exhaust air & ventilation applications, ducting shall be fabricated to AS4254 by incorporating an aluminium foil surface to both the inside and outside of the duct similar to V Flex or N.A.T.A. approved equivalent.

**Fittings.** In low, high & negative pressure applications, flexible ducting shall have N.A.T.A. approved test data confirming its suitability for the specified pressure duties required.

**Performance - In Duct Pressure.** In low, high & negative pressure applications, flexible ducting shall have N.A.T.A. approved test data confirming its suitability for the specified pressure duties required.**Performance – Radius Bends.** Form bends with a centre line radius of not less than 1.5 diameter of the duct.

**Performance – Impedance of Airflow.** As per AS4254 hangers/support systems used for flexible ducting shall not; deform the internal diameter of the duct core, nor sag any more than 40mm between hangers/supports. Duct shall extend for a minimum of 100mm from a connection before changing direction (as per AS4254) and be in a stretched condition as to minimize restriction to air flow.

**Performance – Radius Bends.** Form bends with a centre line radius of not less than 1.5 diameter of the duct.

**Performance – Damaged/Deformed Duct.** Replace all such duct with new duct.

**Performance – Maximum Recommended Length.** 6 metres of flexible duct.

**Installation – Joining & Sealing.** Use duct tape, masticks and hose clip / banding systems compliant to AS4254.

**Installation – Hangers & Supports.** As per AS4254: Support ducting at least every 2000mm, at each change in direction and via a fire and rot proof webbing / metal strapping at least 25mm wide.

All prices **DO NOT** include GST.

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