

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.

www.westaflex.com.au

DUCTING

UNILOK S FLEXIBLE DUCT

**Australian Standard (AS) 4254
(Insulated Version Only)
Fire Rated Flexible Duct
Suitable for all Types of HVAC Systems**

UNILOK-S is the professionals choice in flexible duct and has been produced to meet the demands of today's HVAC systems. Unlike other types of flexible duct, **UNILOK-S** has an outer steel rib that ensures the products integrity and correct diameter, even in the tightest bends. Due to its steel rib, it is not prone to glue failure or fatigue (sagging or ovalization) from vibration with age like plastic ribbed or non ribbed glued duct. **UNILOK - S** is available manufactured with an acoustic inner core that complies to AS 4254 in its insulated form at no extra cost to you. Operating temperature range -10°C to +80°C.



» CONSTRUCTION

INNER CORE (Plain Nude)

UNILOK-S plain nude is manufactured from a thick, fire rated, UV Stabilised, low density polyethylene that is locked together in a steel rib that encapsulates a copper coated spring steel wire.

INSULATION

UNILOK-S is thermally insulated with polyester fibre blanket to achieve a nominal thermal rating of either R^T0.6, R^T1.0 or R^T1.5.

The outer jacket on **UNILOK-S** is manufactured from one layer of clear PET bonded to one layer of metalised PET with fire retarded glue, encapsulating woven polyester cotton reinforcing, spun over the lap joins for extra strength.

» ORDERING EXAMPLE

EXAMPLE 1: Insulated R^T0.6 **UNILOK-S** 12" (300mm) diam, 6 meters in length, the code would read **91614126**

EXAMPLE 2: Insulated R^T1.0 **UNILOK-S** 14" (350mm) diam, 6 meters in length, the code would read **91654146**

EXAMPLE 3: Insulated R^T1.5 **UNILOK-S** 10" (250mm) diam, 6 meters in length, the code would read

SIZE	Plain Nude		R ^T 0.6		R ^T 1.0		R ^T 1.5		
	Code: 91700 - P Code: 91800 - A	3mtr	6mtr	Code: 91614 - P Code: 91914 - A	3mtr	6mtr	Code: 91654 - P Code: 91954 - A	3mtr	6mtr
4" (100mm)				N/A	N/A	N/A	N/A	N/A	N/A
5" (125mm)				N/A	N/A	N/A	N/A	N/A	N/A
6" (150mm)									
8" (200mm)									
10" (250mm)									
12" (300mm)									
14" (350mm)									
16" (400mm)									
18" (450mm)									N/A
20" (500mm)								N/A	N/A
22" (550mm)						N/A	N/A	N/A	N/A
24" (600mm)						N/A	N/A	N/A	N/A

*Note: (P) = Plain, (A) = Acoustic

All prices **DO NOT** include GST.

www.westaflex.com.au

DUCTING

UNILOK FR1 FLEXIBLE DUCT

**Australian Standard (AS) 4254
(Insulated Version Only)
Fire Rated Flexible Duct
Suitable for all Types of HVAC Systems**

UNILOK FR1 is a flexible duct manufactured “tough” for consumer & installer peace of mind. Unlike other types of flexible duct, **UNILOK FR1** has an outer steel rib that ensures the products integrity and correct diameter, even in the tightest bends. Due to its steel rib, it is not prone to glue failure or fatigue (sagging or ovalization) from vibration with age like plastic ribbed or non ribbed glued duct. **UNILOK FR1** is available manufactured with an acoustic inner core that complies to AS 4254 in its insulated form at no extra cost. Operating temperature range -10°C to +80°C.



» CONSTRUCTION

INNER CORE (Plain Nude)

UNILOK FR1 plain nude is manufactured from a thick, fire rated, UV Stabilised, low density polyethylene that is locked together in a steel rib that encapsulates a copper coated spring steel wire.

INSULATION

UNILOK FR1 is thermally insulated with polyester fibre to achieve a nominal thermal rating of either R^T0.6, R^T1.0 or R^T1.5.

OUTER JACKET

The outer jacket on **UNILOK FR1** is manufactured from a thick, fire rated, UV stabilised, low density polyethylene that has its specifications printed on it for easy recognition.

» ORDERING EXAMPLE

EXAMPLE 1: Insulated R^T0.6 **UNILOK FR1** 12”(300mm) diam, 6 meters in length, the code would read **91711126**

EXAMPLE 2: Insulated R^T1.0 **UNILOK FR1** 14”(350mm) diam, 6 meters in length, the code would read **91751146**

SIZE	R ^T 0.6		R ^T 1.0		R ^T 1.5	
	Code: 91711 - P Code: 91811 - A		Code: 91751 - P Code: 91851 - A		Code: 91761 - P Code: 91861 - A	
	3mtr	6mtr	3mtr	6mtr	3mtr	6mtr
4” (100mm)	N/A	N/A	N/A	N/A	N/A	N/A
5” (125mm)	N/A	N/A	N/A	N/A	N/A	N/A
6” (150mm)						
8” (200mm)						
10” (250mm)						
12” (300mm)						
14” (350mm)						
16” (400mm)						
18” (450mm)						N/A
20” (500mm)					N/A	N/A
22” (550mm)					N/A	N/A
24” (600mm)					N/A	N/A

*Note: (A) = Acoustic

All prices **DO NOT** include GST.

www.westaflex.com.au

DUCTING

QS-FLEX FLEXIBLE DUCT

Australian Standard (AS) 4254

Fire Rated Flexible Duct

QS-FLEX is for use with ducted Evaporative systems only.

NOT for use on Heating Systems.

QS-Flex was designed to provide the lowest possible noise factor in ducted evaporative cooling systems. The **QS-Flex** inner liner absorbs noise and vibration to give ultra quiet air flow into each room. The tough, tear and puncture resistant outer jacket forms a vapour barrier. Constructed of reinforced silver-metallized polyester, the outer jacket is not only fire resistant but is not subject to UV degradation.

Superior Choice for Ducted Evaporative Cooling

- Has an Australian Design Award.
- Meets Australian Insulation Standard AS 4859.1.
- Meets Australian Fire Standard AS 4254.
- Has a 10 Year Warranty.

» CONSTRUCTION

INNER CORE (Plain Nude)

QS-FLEX plain nude is manufactured from a thick, tough, fire resistant permeable spun bonded non woven polypropylene that is locked together with a steel rib that encapsulates a copper coated spring steel wire.

INSULATION

QS-FLEX is thermally insulated with polyester fibre blanket to achieve a nominal thermal rating of either R^T0.6, R^T1.0.

OUTER JACKET

The outer jacket on **QS-FLEX** is manufactured from one layer of clear PET bonded to one layer of metalised PET with fire retarded glue, encapsulating woven polyester cotton reinforcing, spun over the lap joins for extra strength.



» ORDERING EXAMPLE

EXAMPLE 1: Insulated R^T0.6 **QS-FLEX** 12”(300mm) diam, 6 meters in length, the code would read **9714126**

EXAMPLE 2: Insulated R^T1.0 **QS-FLEX** 14”(350mm) diam, 6 meters in length, the code would read **9754146**

SIZE	R ^T 0.6		R ^T 1.0	
	Code: 9714		Code: 9754	
	3mtr	6mtr	3mtr	6mtr
6” (150mm)	N/A	N/A	N/A	N/A
8” (200mm)	N/A	N/A	N/A	N/A
10” (250mm)				
12” (300mm)				
14” (350mm)				
16” (400mm)				
18” (450mm)				
20” (500mm)				
22” (550mm)		N/A	N/A	N/A
24” (600mm)		N/A	N/A	N/A

QS-FLEX is for use with ducted Evaporative systems only.

NOT for use on Heating Systems.

All prices **DO NOT** include GST.

www.westaflex.com.au

DUCTING

QUADROFLEX - OVALIZED FLEXIBLE DUCT

Australian Standard (AS) 4254

Fire Rated Flexible Duct

OVAL UNILOK FR1 & OVAL UNILOK S Suitable for all HVAC Systems

OVAL QS-FLEX Suitable for Ducted Evaporative Systems Only

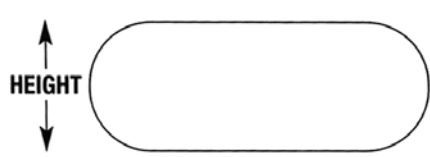
QUADROFLEX has been specifically designed to fit into false ceilings, between floors and low ground clearance applications. Refer to pages A4-A6 for individual duct compositions. Operating temperature of -10°C to +80°C. (UNILOK-S & UNILOK FR1 only).



EQUIVALENT ROUND DUCT SIZE	WIDTH	HEIGHT
200	260	140
250	325	160
300	380	200
350	435	240
400	470	310
450	555	320

← WIDTH →

↑ HEIGHT ↓



N.B. Add approximately 60-120mm to these sizes to allow for insulation.

» ORDERING EXAMPLE

EXAMPLE 1: Insulated R^T0.6 QUADRO UNILOK FR1 10" **991711103**

EXAMPLE 2: Insulated R^T1 QUADRO UNILOK-S 18" **991654183**

EQUIVALENT ROUND DUCT SIZE	QUADRO UNILOK FR1		QUADRO UNILOK-S	
	CODE PREFIX		CODE PREFIX	
	R ^T 0.6	R ^T 1	R ^T 0.6	R ^T 1
8				
10				
12				
14				
16				
18				

* Non acoustic supplied standard (acoustic available upon request).

* 3 meter lengths only.

* Pricing and availability on QUADRO Q/S FLEX on application.

* Oval joiners available refer page B9.

All prices **DO NOT** include GST.

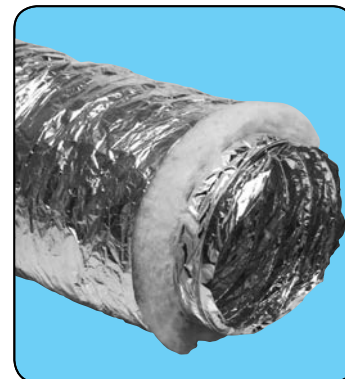
www.westaflex.com.au

DUCTING

V-FLEX FLEXIBLE DUCT

**Australian Standard (AS) 4254
Fire Rated Flexible Duct
Suitable for all HVAC Systems**

V-FLEX flexible duct has been developed to meet the demands of today's HVAC systems. V-FLEX has been used in numerous major developments around Australia such as, Star City Casino and the Sydney 2000 Olympic Site including Telstra Stadium, Eureka Tower in Melbourne and Football Park in Adelaide to name a few. Consultants and engineers specify V-FLEX because it is manufactured from materials that will stand up to the test of time, is 4-Zero fire rated to Australian Standard (AS) 1530 part 3 and has a temperature range of -10c to +80c



» CONSTRUCTION

INNER CORE (Plain Nude)

V-FLEX plain nude is manufactured from two layers of high grade metallised polyester bonded together with fire rated glue encapsulating copper coated spring steel wire and poly cotton spun over material lap joins for extra strength.

INSULATION

V-FLEX is thermally insulated with polyester fibre blanket to achieve a nominal thermal rating of either R^T0.6 or R^T1.0

OUTER JACKET

The outer jacket on V-FLEX is manufactured from a tear and puncture resistant foil PET composite material that is bonded together with fire resistant glue, encapsulating poly cotton spun over material lap joins for extra strength.

» ORDERING EXAMPLE

EXAMPLE 1: Plain Nude V-FLEX 10" (250mm) diam, 3 meters in length, the code would read **91000103**

EXAMPLE 2: Insulated R^T0.6 V-FLEX 12" (300mm) diam, 6 meters in length, the code would read **9813126**

EXAMPLE 3: Insulated R^T1.0 V-FLEX 14" (350mm) diam, 6 meters in length, the code would read **9853146**

SIZE	Plain Nude		R ^T 0.6		R ^T 1.0	
	Code: 91000		Code: 9813		Code: 9853	
	3mtr	6mtr	3mtr	6mtr	3mtr	6mtr
4" (100mm)					N/A	N/A
5" (125mm)					N/A	N/A
6" (150mm)						
8" (200mm)						
10" (250mm)						
12" (300mm)						
14" (350mm)						
16" (400mm)						
18" (450mm)						
20" (500mm)						

All prices **DO NOT** include GST.

www.westaflex.com.au

DUCTING

TRADEFLEX FLEXIBLE DUCT

BUDGET

**Australian Standard (AS) 4254
(Insulated Version Only)
Fire Rated Flexible Duct
Suitable for all Domestic HVAC Systems.**

TRADEFLEX has been designed for the installer that has an application that requires less rigid flexible duct. Compliant to all requirements of Australian Standard (AS) 4254 and the Building Code of Australia. Available in "Plain Nude", Insulated to R^T0.6 and R^T1.0. Not available in R^T1.5. Operating temperature range -10°C to +80°C.



» CONSTRUCTION

*INNER CORE (Plain Nude)

TRADEFLEX plain nude is manufactured from two layers of high grade clear polyester bonded together with fire rated glue encapsulating copper coated spring steel wire and poly cotton reinforcing.

INSULATION

TRADEFLEX is thermally insulated with a polyester fibre blanket to achieve a nominal thermal rating of either R^T0.6, R^T1.0

OUTER JACKET

The outer jacket on **TRADEFLEX** is manufactured from one layer of clear and one layer of metallised PET material that is bonded together with fire resistant glue, encapsulating poly cotton spun over the material lap joins, for extra strength.

» ORDERING EXAMPLE

EXAMPLE 1: Plain Nude **TRADEFLEX** 10" (250mm) diam, 3 meters in length, the code would read **91400103**

EXAMPLE 2: Insulated R^T0.6 **TRADEFLEX** 12" (300mm) diam, 6 meters in length, the code would read **91414126**

EXAMPLE 3: Insulated R^T1.0 **TRADEFLEX** 14" (350mm) diam, 6 meters in length, the code would read **91454146**

SIZE	Plain Nude		R ^T 0.6		R ^T 1.0	
	Code: 91400		Code: 91414		Code: 91454	
	3mtr	6mtr	3mtr	6mtr	3mtr	6mtr
4" (100mm)	N/A		N/A	N/A	N/A	N/A
5" (125mm)	N/A		N/A	N/A	N/A	N/A
6" (150mm)	N/A		N/A		N/A	
8" (200mm)	N/A		N/A		N/A	
10" (250mm)	N/A		N/A		N/A	
12" (300mm)	N/A		N/A		N/A	
14" (350mm)	N/A		N/A		N/A	
16" (400mm)	N/A		N/A		N/A	
18" (450mm)	N/A		N/A		N/A	
20" (500mm)	N/A		N/A		N/A	

*Note: Plain nude Tradeflex has not been tested to AS-4254 on it's own.

All prices **DO NOT** include GST.

www.westaflex.com.au

A 7 - August '08 Issue

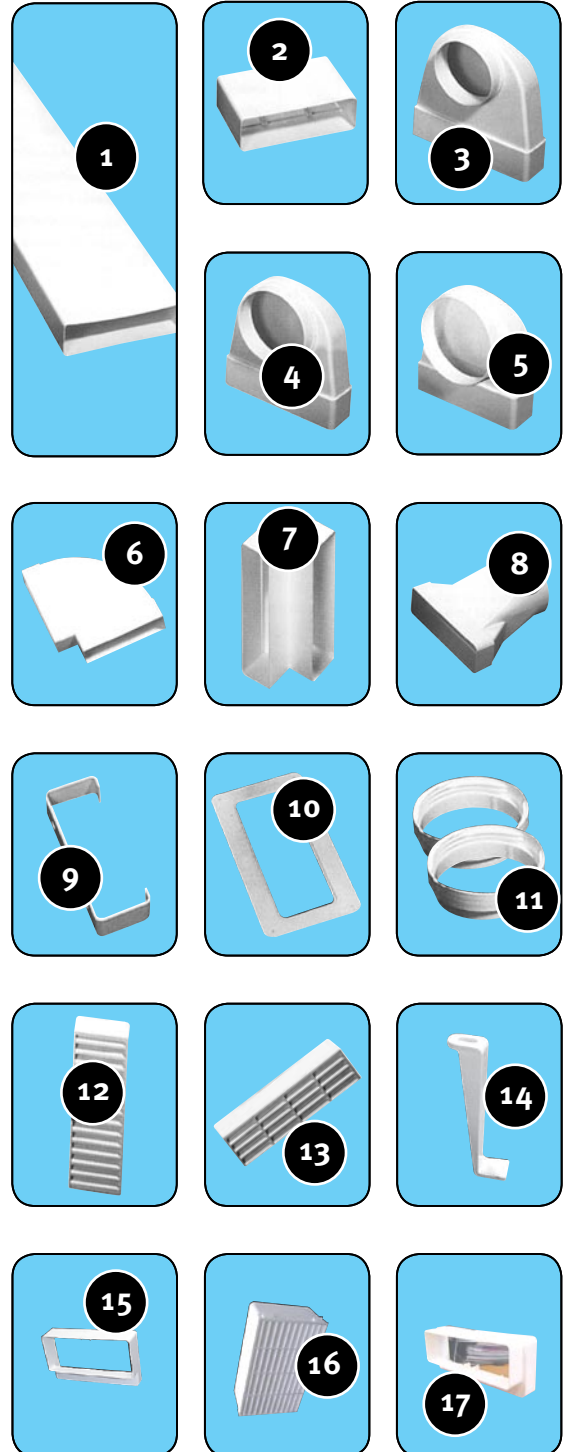
DUCTING

POLY LOW PROFILE DUCT

Modular Flat Channel Ventilation System

The range of Low Profile Modular Ducting Systems offered by Westaflex / Uniflex offer a problem solving solution where round ducting has installation difficulties. Its low profile enables it to be concealed when installed along the top of wall units or within wall cavities. It can also be fitted in ceiling voids providing versatility whilst remaining unobtrusive. Manufactured from flame retarded ABS plastics it enables installation into all classes of buildings.

CODE	DESCRIPTION	PIC No.	PRICE
SECD0519	Flat Channel 204 x 60 x 1500mm	1	
SECD0520	Flat Channel Connector	2	
SECD0521	Elbow Bend 100mm	3	
SECD0522	Elbow Bend 125mm	4	
SECD0523	Elbow Bend 150mm	5	
SECD0524	Horizontal 90° Bend	6	
SECD0525	Vertical 90° Bend	7	
SECD0526	Adaptor (airbrick to 125mm)	8	
SECD0527	Flat Channel Clip	9	
SECD0528	Rectangular Wall Plate	10	
SECD0529	Hosecon Thread 120mm (male)	11	
SECD0530	Hosecon Thread 120mm (female)	11	
SECD0531	Hosecon Thread 150mm (male)	11	
SECD0532	Hosecon Thread 150mm (female)	11	
SECD0534	Vertical Airbrick Insert	12	
SECD0533	Horizontal Airbrick Insert	13	



(High Performance - Low Profile)
 (Round adaptor can be cut to fit 100mm, 120mm & 150mm duct)

CODE	DESCRIPTION	PIC No.	PRICE
SECD1443	1.5m Rectangular Duct	1	
SECD1442	Duct Joiner	2	
SECD1444	100mm Elbow *	3	
SECD1440	125mm Elbow *	4	
SECD1441	150mm Elbow *	5	
SECD1448	Horizontal Bend	6	
SECD1447	Vertical Bend	7	
SECD1446	Rect-Round Adaptor	8	
SECD1445	Mounting Clip **	14	
SECD1450	Double Airbrick	15	
SECD1451	Dbi Airbrick Adaptor	16	
SECD1452	Flat Channel Reducer (220 x 90 : 204 x 60)	17	

* Rotating offset spigot

** 2 clips required to secure ducting

All prices **DO NOT** include GST.
www.westaflex.com.au

DUCTING

P.V.C FLEXIBLE DUCT

Australian Standard (AS) 1530 part 3 Fire Resistant Duct

P.V.C Flexible Duct is a product that is extremely versatile in the ventilation industry. It doesn't rot, is non collapsing, is fire resistant, has an operating temperature of +6 deg to +50 deg and is available in a range of sizes from 100mm to 150mm.

» CONSTRUCTION

P.V.C Flexible Duct is manufactured from a fire retardant P.V.C material that meets Australian Standard (AS)1530 part 3 and is reinforced with a spring steel wire.



CODE	DUCT DIAMETER	LENGTH	PACK	PRICE
SECD0936	4" (100 mm)	1 mtr	Header Carded	
SECD0336	4" (100 mm)	3 mtr	Header Carded	
SECD0937	5" (120 mm)	1 mtr	Header Carded	
SECD0337	5" (120 mm)	4 mtr	Boxed	
SECD0938	6" (150 mm)	1 mtr	Boxed	
SECD0338	6" (150 mm)	5 mtr	Boxed	

ALUMINIUM EXPANDABLE DUCT

High Heat Semi Rigid Duct

SEMIDUCT, or also known as semi-rigid aluminium ducting is a lightweight, flexible but strong corrugated aluminium duct. It is spiral wound with a unique interlocked and knotted continuous seam. It is self supporting over its 3.0 meter length and mostly needs only the fittings or mechanics at each end for support. SEMIDUCT has an operating temperature of -30 deg to +250 deg and is available in a range of sizes from 100mm to 200mm.

» CONSTRUCTION

SEMIDUCT is manufactured from semi rigid aluminium.



CODE	DUCT DIAMETER	LENGTH	PACK	PRICE
SECD0114	4" (100 mm)	3 mtr	Loose	
SECD0115	5" (125 mm)	3 mtr	Loose	
SECD0116	6" (150 mm)	3 mtr	Loose	
SECD0117	8" (200mm)	3 mtr	Loose	

All prices **DO NOT** include GST.

www.westaflex.com.au

A 9 - August '08 Issue