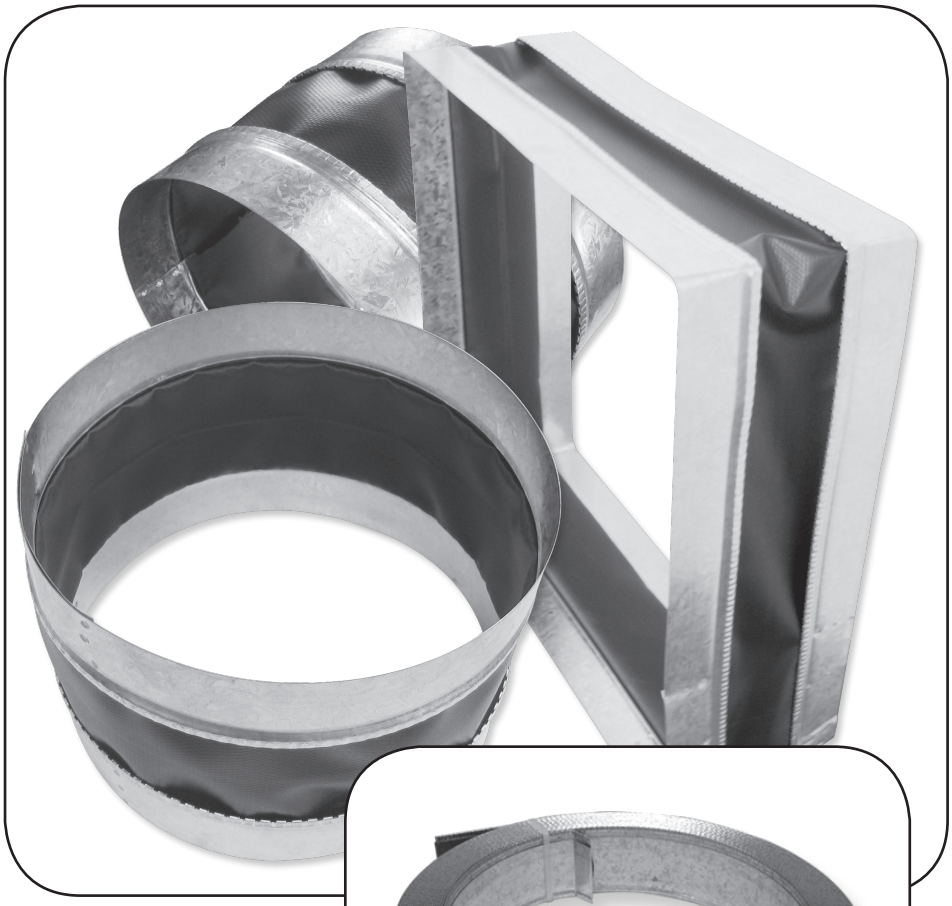
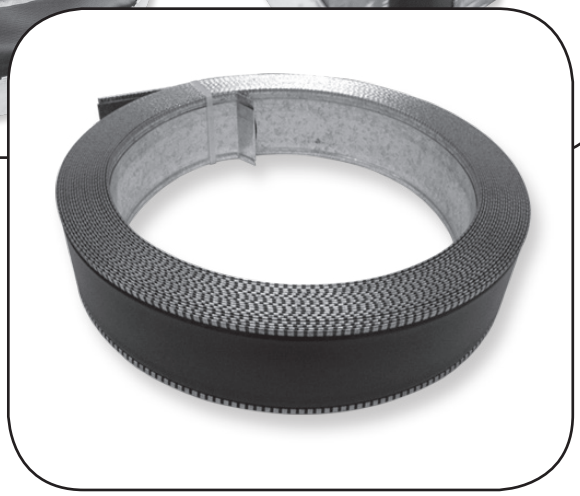
DURA~FLEX

MANUFACTURED BY SMOOTHFLO PRODUCTS PTY LTD

METAL EDGE FLEXIBLE DUCT CONNECTORS

In most air duct installations for heating, cooling and ventilation, fans and blowers create noise, rattles and vibration which is then transmitted throughout the duct run. The Dura~Flex range of metal edge flexible duct connectors provide an economical, air tight, high strength and extremely durable vibration and noise isolator joint in the ducting system, as well as allowing expansion and contraction of the ductwork run.





Supplied ready for use in dispenser type cartons, the Dura~Flex range of flexible duct connectors offers a choice of fabric types suited for use in even the harshest operating environments, and a range of metal widths to meet all commercial, industrial and residential requirements.

Fabric Selection Guide

Vinyl:
Reinforced woven polyester base fabric coated with UV stabilised and flame retardant PVC coating - colour black. This is an excellent all purpose fabric with low cost, and amongst it's many features is excellent flexibility, excellent resistance to acids, oils, greases, mildew, alkalis and most chemicals, extremely high tear strength and abrasion resistance, excellent water resistance, airtight, excellent ageing characteristics. Best suited for use in internal applications and protected external applications, or with suitable covers to shield fabric in very sever external environments. Recommended temperature range -10°C to +75°C.

Silicone:
Woven fibreglass base cloth coated with proprietary silicone rubber formulation. This fabric is almost completely inert, and offers extremely low flammability and smoke emission. This fabric has been tested in accordance with AS1530.3 – 1999 and complies fully with AS1668.1 – 1991. With excellent performance in both high (up to 315°C) and low (-15°C) temperatures, the fabric offers excellent resistance to almost all chemicals, ozone, weathering, mildew and is highly recommended for all applications – a breakthrough in flexible duct connector technology.

Fabric Specification Guide

	Vinyl	Silicone Hvy Dty
Nominal Weight (gms/sq. mtr)	650	1050
Nominal Thickness (mm)	0.70	1.0
Tensile strength (N/5cm square)		
Warp	>1600	>1650
Weft	>1650	>1650
Tongue Tear Strength (N)	>450	>400
Coating adhesion (N/5.0cm strip)	100	90
Flex cracking resistance (> 250,000 cycles)	Pass	Pass
Burst strength kPa	>3500	>3500
Service temperatures (C)		
Continuous maximum	75	260
Intermittent maximum	95	315
Continuous minimum	-10	-15
Flammability (AS1668.1.1991)		
- Ignitability index (Range 0 - 20)	16	0
- Flame spread index (Range 0 - 10)	0	0
- Heat evolved index (Range 0 - 10)	1	0
- Smoke developed index (Range 0 - 10)	7	1
Colour	Black	Silver
General specifications:		
Waterproof	Yes	Yes
Airtight	Yes	Yes
Mildew, mould, fungus resistant	Yes	Yes

VRecommended jointing adhesive:
For joining the Vinyl fabric, we recommend a general purpose contact cement such as Selleys Kwik Grip, Bostik 2405, or equivalent. For the Silicone fabric, we recommend the use of an acid cure silicone such as RTV922 and to allow a drying period of at least 24 hours before the flexible connection is put under pressure. In all cases we advise that mechanical fasteners such as rivets, screws or staples are used in addition to the adhesive systems.

** Indicative specification values. Actual values of production batches may vary within commercially accepted tolerances.*

Chemical Resistance Guide:

Chemical	Vinyl	Silicone Hvy Dty	Chemical	Vinyl	Silicone Hvy Dty
Acetic Acid	-	X	Hydrogen Peroxide	X	X
Aluminium Chloride	X	X	Hydrogen Sulphide	X	O
Aluminium Sulphate	X	X	Lactic Acid	-	X
Ammonia (Anhyd)	X	X	Linseed Oil	-	X
Ammonium Hydroxide	X	X	Maleic Acid	X	X
Ammonium Sulphate	X	X	Methyl Alcohol	-	X
Barium Sulphide	X	O	Mineral Oil		X
Boric Acid	X	X	Naptha	-	X
Butyl Alcohol	-	X	Nickel Chloride	-	X
Calcium Chloride	X	X	Nickel Sulphate	X	X
Calcium Hypochlorite	X	O	Oxalic Acid	X	X
Chlorine Water	X	-	Phosphoric Acid (85%)	-	X
Citric Acid	X	X	Potassium Hydroxide (40%)	X	X
Copper Sulphate	X	O	Sodium Chloride	X	X
Cottonseed Oil	X	X	Sodium Hydroxide (40%)	-	X
Ethyl Alcohol	-	X	Sodium Hypochloride	-	-
Ethylene Glycol	-	X	Sulphur Dioxide (Liquid)	-	X
Ferric Chloride	X	X	Sulphuric Acid (50%)	X	-
Ferric Sulphate	X	X	Tannic Acid	X	O
Formadelhyde (40%)	X	X	Vinegar	X	X
Formic Acid	X	X			
Glucose	X	X			
Glycerine	-	X			
Hydrochloric Acid	-	X			

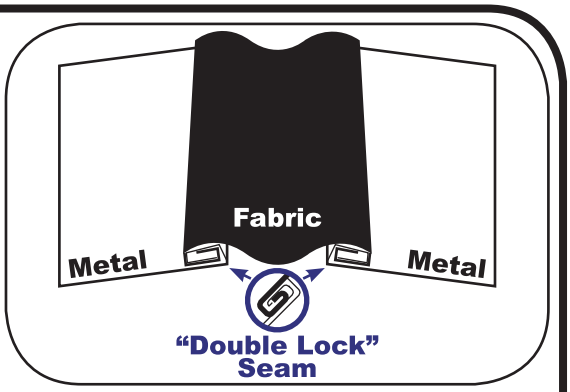
X	Extremely Resistant
-	Not Recommended
O	No Data Available

Important Note: *The information given above is based on the results of laboratory tests. However since service conditions and factors such as temperature, intermittent or continuous exposure, concentration of chemicals etc. can vary widely, we recommend that these factors be taken into account when considering a particular application.*

The Metal to Fabric Joint:

In order to ensure extremely high mechanical strength and airtightness, the metal to fabric joints in all Dura~Flex duct connectors are precision roll formed with an exclusive double lock seam.

The standard range is supplied with a **Smoothlock** edge, which has a plain or smooth metal edge. As an option, **Notchlock** edge is also offered, in which the metal edge is notched to facilitate the cutting and bending of the material. The choice for the fabricator, and your preference should be confirmed at the time of ordering.



Construction Types:

In addition to the three fabric choices available, the Dura~Flex range also offers a choice of four widths in the metal-fabric-metal construction. Details are listed in the table below, but as a general guide:

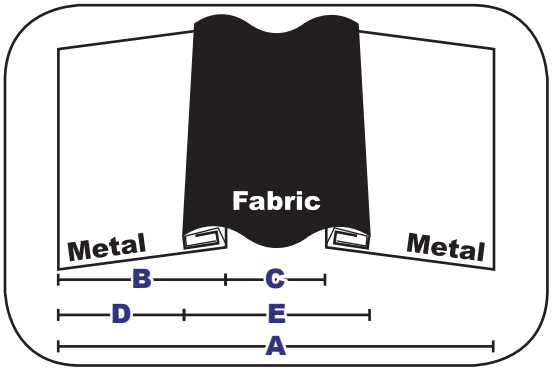
Econoflex is designed for general use in all commercial, industrial and residential systems and was developed in response to a market demand for a narrower metal-width connector. The fabric width of 100mm ensures that Econoflex provides ample flexibility in all sizes of ductwork systems.

Metalflex is the traditional dimension duct connector, and is also suitable for use is all applications including the heaviest of commercial and industrial projects.

Wideflex is manufactured with wider metal to allow ample material for roll forming a connecting flange on both sides of the flexible connection. This product is compatible with both TDF (Engel) and TDC (Lockformer) flange roll forming machines.

Wideflex Extra incorporates both wider metal and extra wide fabric for those situations where very large equipment can cause excessive vibration or ductwork movement. This product maintains compatibility with both TDF and TDC flange roll forming machines.

All flexible connection products are constructed using 0.6mm, G2 Z275 Bluescope Steel for the metal edge.



	A	B	C	D	E
Econoflex	195	53	88	47	100
Metalflex	240	18	84	72	100
Wideflex	280	98	84	92	100
Wideflex Extra	300	98	104	92	120

All dimensions are shown in mm.

Ordering Codes and Packaging:

To simplify the ordering procedure, each product is identified by it's individual components. To order any Dura~Flex connector simply specify:

1) Fabric Type
2) Construction type
3) Smooth-lock seam will be supplied as standard unless you specify "Notch-lock" on your order.

   Thus a typical order will read as follows:
   Econoflex Vinyl or Wideflex Silicone Notch-Lock

All Dura~Flex connectors are supplied ready-for-use in dispenser type cartons - the metal edges are packaged in an overlapped position to allow for accurate scribing during fabrication. The standard roll length is 30.5mtrs - special roll lengths up to 46mtrs can be manufactured as required (subject to minimum order quantities.)

Guide to Assembly of a Flexible Connection:

1) Cut a length of Dura~Flex Duct Connector approximately 50mm longer than the required perimeter, and scribe bend points accordingly.
2) On one end cut approximately 50mm of metal away leaving the fabric intact. The ends are now ready for bending and joining.
3) Carefully fabricate the connector to the desired shape and join the metal rivets, screws or spot welds. Join the fabric with the recommended adhesives and staples. Always take care when fabricating a flexible connection not to pinch or damage the fabric in folders or rollers.

When installing large size flexible connections, it may assist if the assembly is made more rigid. This is relatively easily achieved without added expense simply by bending the double lock seam up to 90 degrees on a folder prior to fabricating the connection. This standing seam should be notched at the bend points when forming to shape.

When installed in a ductwork run, the metal edges of the flexible connection should be roughly 40-50mm apart for optimum effectiveness in handling vibration and movement of the duct run.