

Xcel Ductwork Jointing System

Slide on Flange Details & Specifications

- Provides for rapid assembly of cross joints.
- Integral pocket with permanently flexible non toxic sealant.
- Available in standard Euro sizes of 20mm, 30mm and 40mm.
- Fully conforms to UK, B&ES Specification DW/144 (2013).
- Awarded Quality Assurance Certification BS EN ISO 9001.
- Full range of accessories to suit all sizes of flange.
- Tested & certified by BSRIA in accordance with the B&ES (formally HVCA) test procedures DW/TM1.
- Suitable for B&ES specification DW/144 for Joint Ratings up to J4 and pressure classes A, B and C.



Design Specification

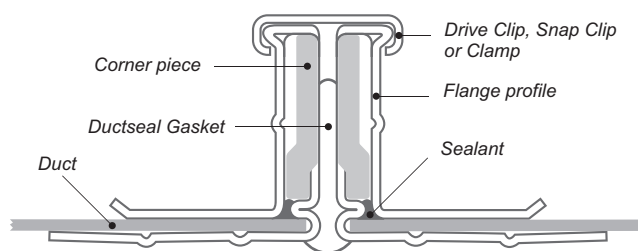
During the manufacturing process the sealant pocket is rolled into the profile and airtightness is ensured by the inclusion of a non-toxic sealant.

The corner is formed to enable the duct to pass into the integral sealant during fabrication.

All rectangular ductwork cross joints shall be the Xcel slide on flange type complete with captive sealant pocket with integral permanently flexible non toxic sealant, consisting of a Galvanised MS profile and EZP corner pieces. The appropriate size of flange shall be fitted to the ductwork as covered by the construction tables 2.2, 3.2 and 4.2 of specification DW/144, shall be independently tested to the procedures of BSRIA in accordance with HVCA specification DW/TM1, and as manufactured by Doby Verrolec. The flange

shall be fitted to the ductwork and assembled on site with the appropriate gasket all to the manufacturers instructions, (see separate fabrication & installation instructions).

Xcel Profile - Cross Section



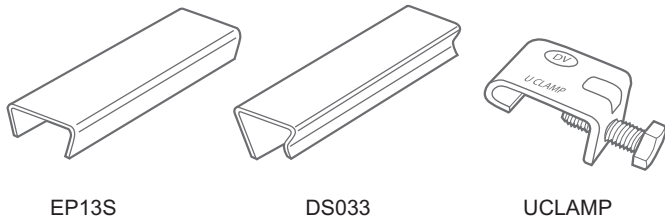
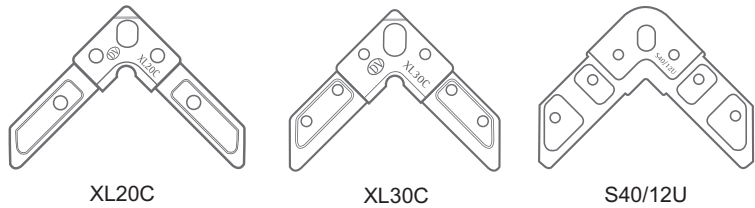
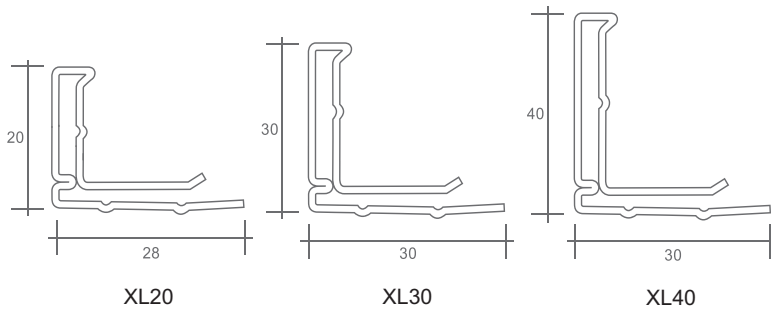
DW/TM1 Test Results

Pressure Class	Joint Rating	Pressure Class		
		A	B	C
XL20	J2	✓	✓	✓
XL30	J3	✓	✓	✓
XL30	J4	✓	✓	✓
XL40	J4	✓	✓	✓

As tested by BSRIA in accordance with B&ES (formally HVCA) specification DW/TM1 test procedures March 1996. Retested in accordance with DW/TM1 December 2007 & approved by B&ES.



Product Details & Specifications



Flange Profiles

	gauge(mm)	weight(kg)
XL20	0.7	0.538/m
XL30	0.8	0.712/m
XL40	1.0	1.028/m

Steel Grade and surface coating is BS EN 10346:2015 DX51D +Z275 MAC.

Integral Sealant, Evode Glasticon 126 Solvent Free permanently non-setting mastic.

Xcel profiles are also available in heavier gauges.

Corner Pieces

	gauge(mm)	weight(kg)
XL20C	2.3	6.8/200
XL30C	2.3	7.1/100
S40/12U	3.0	7.4/50

Steel Grade EN 10111:1998-DD11 Pickled & Oiled Finish - Zinc and clear passivate to BS EN 12329-Fe/Zn5/A.

Clips and Clamp

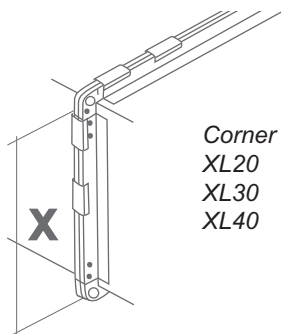
	gauge(mm)	weight(kg)
EP13S	0.8	5.4/200
DS033	0.8	8.2/200
UCLAMP	3.0	9.3/200

Steel Grade EN 10111:1998-DD11 Pickled & Oiled Finish - Zinc and clear passivate to BS EN 12329-Fe/Zn5/A.

Ductseal Gasket

Ductseal Gasket has a cross linked closed cell polyethylene foam combined with a high grab sensitive adhesive to give good all round sealing properties. Temperature range -70°C to $+95^{\circ}\text{C}$. We recommend the use of the appropriate 'DUCTSEAL' gasket to ensure performance in accordance with our DW/TM1 test results. Supplied in blue for easy identification.

Corner Hole Centering



Corner Holes Centres (X)

XL20	Ductsize plus 20 nom
XL30	Ductsize plus 30 nom
XL40	Ductsize plus 40 nom

Packing details

Profiles

Bundles of 1000m, 500m and 250m.
5000mm standard length, 3000mm to order.

Corner Pieces

XL20C in boxes of 200
XL30C in boxes of 100
S40/12U in boxes of 50

Clips

EP13S in boxes of 200
DS033 in boxes of 200

Clamps

UCLAMP in boxes of 200

Gasket

DS120 in cartons of 510m (34 rolls)
DS130 in cartons of 300m (20 rolls)
DS140 in cartons of 300m (20 rolls)

Corner Nuts and Set Screws

DS160 - DS163 in boxes of 250

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Fabrication Instructions

Cut lengths of profile to suit the duct dimensions less the tolerance below, (Fig. 1).

Note: external dimensions of the duct are to be used.

XL20C = Duct width less 30-32mm

XL30C = Duct width less 38-40mm

S40/12U = Duct width less 38-40mm

The profile should be cut in the direction shown to prevent the metal cuttings contaminating the sealant. For best results use a circular cut off saw with pneumatic vice. The use of an abrasive blade or wheel should not be used, the heat can melt the sealant and affect the airtightness of the completed joint. If any burring has occurred during the cutting of the flange, this must be removed before assembly. (Fig. 2).

Fully insert four corners into the pre-cut profiles up to the swage as shown, to form a frame. The corners are fitted with the swage away from the duct, when correctly fitted they are flush with the frame face, (Fig. 3). Corners can be secured into profile by dimpling if preferred (machine reference DS145-147).

For certain high pressure applications it may be appropriate to spot weld the corners to the flange to give the optimum strength (refer to sales office for details).

Push the completed frame onto the duct starting at the corner. When all sides are entered, firmly tap the frame home ensuring that the duct passes into the sealant pocket formed within the profile. Check on corners that the duct has passed under the corner and entered the sealant pocket. Check larger ducts with a straight edge that frame is level, (Fig. 4).

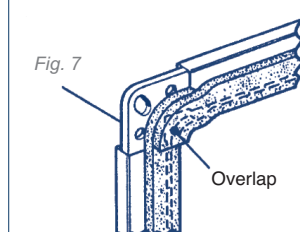
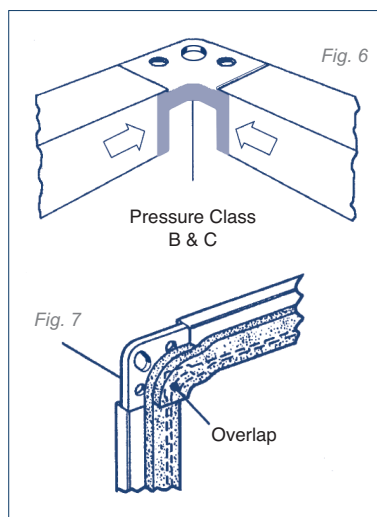
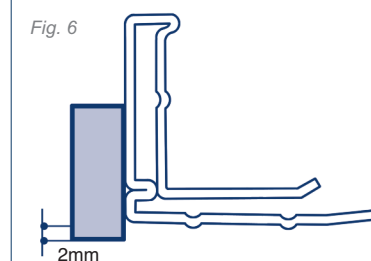
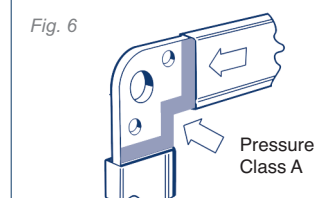
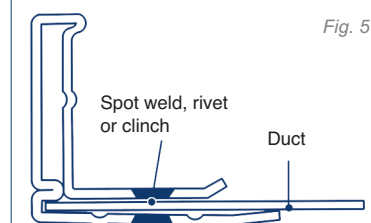
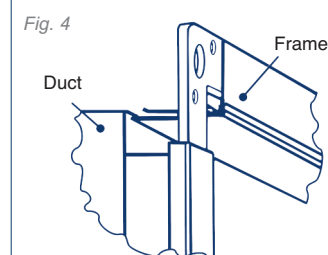
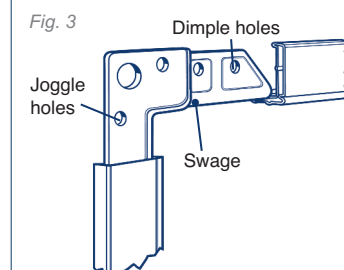
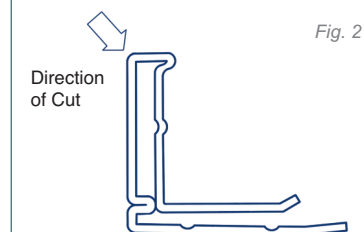
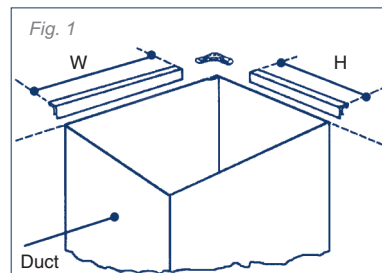
The frame can be attached to the duct by various methods, spot welding, rivet or clinch. Spacing for fastenings to be as DW144 Table 5. A fixing at a maximum of 50mm from each corner is recommended, this will give additional strength during the installation, (Fig. 5).

Any burrs caused during the drilling for fixings should be removed from all surfaces before finally fixing the frame to the duct. Sealant should be applied if any method of fixing pierces the duct.

Applying suitable sealant in areas shown completes frame fitting procedure as pressure class A. Additional sealant should be applied to the ends of the frame on the inside of the duct for pressure classes B and C, (Fig. 6). When using the XL20C & XL30C corners ensure a generous bead of sealant is applied into the sealant retaining lip.

Gasket should be applied to one of the frames to be connected, with an overhang on the inside of the duct as shown. The gasket should be in four pieces, making sure the overlaps cross one another at the exposed duct corners. Do not apply the gasket in one piece without overlaps, (Fig. 7).

Gasket Ref. No	Xcel Profile
DS120 (15mm)	XL20
DS130 (20mm)	XL30
DS140 (25mm)	XL40



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Site Installation

Assemble the ductwork by the use of nuts and set screws fitted into the corner holes. If necessary align the corner holes by use of the joggle holes. The nuts and set screws should be finger tight at this point.

Use M8 x 20mm set screw for XL20

Use M10 x 20mm set screw for XL30

Use M10 x 20mm set screw for XL40

Fit cleats or clamps at the appropriate centres as below to complete the installation.

Xcel Profile	EP13S	DS033	UCLAMP
XL20	✓	✓	•
XL30	✓	✓	•
XL40			✓

• For inaccessible areas

To fit the EP13S drive clip to two sides of the duct, remove one corner set screw and slide the drive clip across the nose of the profile. Compress the nose of the profile together by using molegrips or similar. Repeat this operation for the other two sides. Finally tighten the corner nuts and set screws.

To fit the DS033 snap clip, apply molegrips or similar to compress the nose of the profile together. Fit the DS033 snap clip, use a suitable tool to knock the snap clip into position. Finally tighten the corner nuts and set screws.

To fit the UCLAMP, hook the clamp over the nose of the profile and tighten the set screw with a spanner. Finally tighten the corner nuts and set screws, (Fig. 9).

As an option the ductwork can be supported from the corner by use of the Duct Support Bracket using a DS020 for XL20 and DS021 for XL30.

Fitting Centres for Cleats and Clamps (Fig. 10)

Pressure Class	Centres
A	200 - 300 max
B and C	150 - 250 max

For pressure classes B and C, a cleat or clamp should also be fitted within 50mm of the corner.

Safety

Please make sure you are wearing adequate PPE clothing when handling any exposed metal edges as these can sometimes be sharp.

