

Custom Sheet Metal  
Metal Forming  
Accessories  
Hardware Supplies



**DUCT.WORK**

## Custom Metal Fabrication - HVAC Air Duct and Fittings





## Introduction

Established in 2000 (over 15 years of excellence) – BADRY Air Ducts been operating in Egypt and sub-continent and has been actively engaged in the manufacturing of quality Air distribution, Air control and Fire safety products for HVAC industry.

We have diversified our business into different areas of HVAC Duct-Work “Sheet Metal Ducting” construction industry in past few years such as: Manufacturing of Air Ducting, Duct Fittings, Air Outlets, Fire rated steel & Acoustic doors, HVAC designing & contracting, Manufacturing Tapes / Adhesives for HVAC & Packaging industry,.

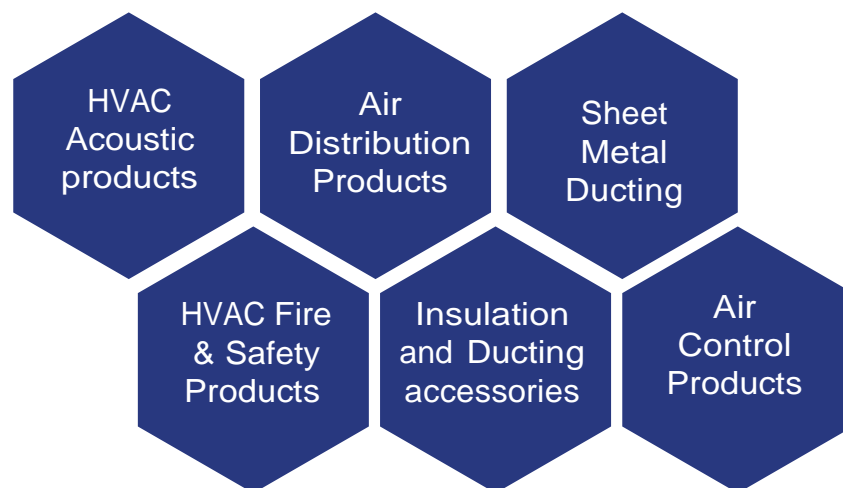
Based on Computerized state-of-the-art sheet metal duct manufacturing facility has the capability of producing over 20,000 sq.ft. of ducting per day. We supply entire range of rectangular, round and spiral ductwork for the HVAC projects. Other ducting accessories such as dampers, sound attenuators, flexible ducts, duct tapes, flanges NBR and XLP insulation and so on are also manufactured in house.

We understand that ducting is always on the critical line for any MEP project.

The requirements are always linked with other MEP activities in line with civil progress. Rest assured that our team of highly skilled and productive workforce can cater to all your design and delivery requirements on timely basis.

Being one of the market leaders in HVAC, our vision is to make BADRY Air Ducts as one stop shop for all the HVAC needs of our customers. Our Ducting workshop is a step forward to achieve this vision. Our progressive growth is attributed to the hands-on approach by the top management. We operate manufacturing facilities in different parts of Egypt with a highly-trained workforce, led by a team of experienced managers and engineers thus ensuring delivery of quality engineered products to meet the busy schedule of our customers.

## ONE STOP SHOP FOR ALL YOUR HVAC REQUIREMENT



**CUSTOM SHEET METAL FITTINGS**

**BADRY** can support you in all your Custom Sheet Metal Fabrication needs, all custom ducts and fittings, Light and heavy gauges from 26 to 10 Gauge to serve your projects needs

Please call us at 02-219-06-401 for your custom fittings or email it to [Air.Ducts@badrygroup.com](mailto:Air.Ducts@badrygroup.com)



**Rectangular Ducting**  
**Round Ducting**  
**Spiral Ducting**  
**Pre-Insulated Ducting**  
**Exhaust Ducting**  
**Kitchen Hoods**

**MS Ducting (Fully Welded)**  
**Air Duct Fittings**  
**Air Duct & Pipes Cladding**  
**Acoustic Plenum Boxes**  
**Sound Attenuators**  
**Transverse Duct Connectors**

**CUSTOM SHEET METAL FITTINGS**

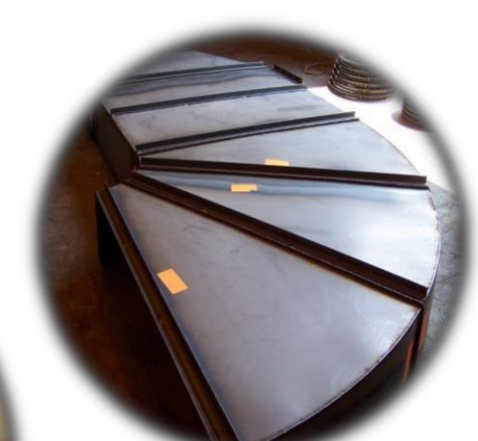
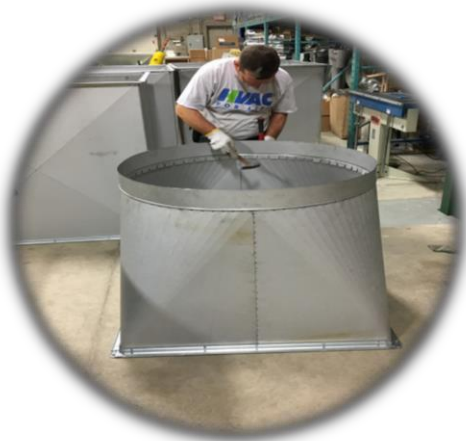
We at BADRY Work-Shop are using the latest available technology in rectangular duct manufacturing i.e. **TDC** (Transverse Duct Connector System) which is the ultimate & the most economical method of air tight duct connection in industry also makes sure to save time & material drastically with its well seal, strong and durable joint structure.

**TDF** is a flanging system that consists of forming a flange profile on the duct ends, thus made from a sheet from which the duct is fabricated. **TDF** is a 4-bolt duct connection system that eliminates time wastage.

Rather than using separate connectors to assemble your system, TDF flanges are roll formed onto duct during the manufacturing process.

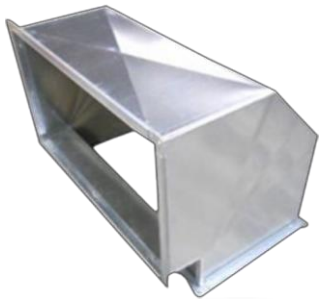
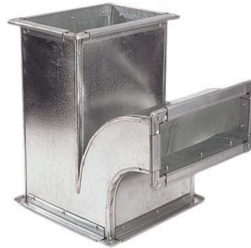


BADRY can do at its workshop all kind of welded exhaust 16 Gauge grease duct which is a duct that is connected to the Kitchen Exhaust hood and is specifically designed to vent grease, smoke and other harmful contaminants from commercial cooking equipment to the outside of a building. Grease ducts are regulated both in terms of their construction and maintenance, forming part of the building's passive fire protection system.

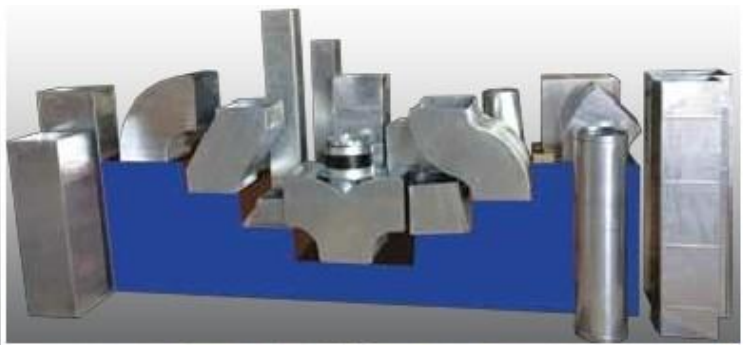


## CUSTOM SHEET METAL FITTINGS

**BADRY** can support you in all your Custom Sheet Metal Fabrication needs, all custom ducts and fittings, Light and heavy gauges from 26 to 10 Gauge to serve your projects needs  
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# Image Gallery





## Raw Material Specifications:

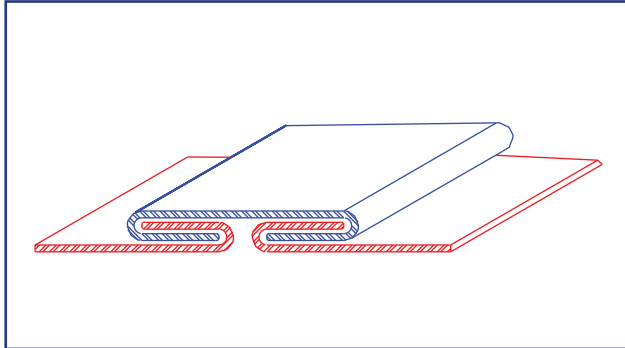
Material	Specifications	Thickness Range	Coat/ftl	Quality
G.I.Sheets	ASTMA635/ A 653 M,LFQ Grade,Zinc Coating Z27/G90(as standard)	26g-16g	Z27/G90	Prime
555heets	ASTMA167,A480 Grades 55304 & 55316	26g-16g	NA	Matt Finish
MSSheets	ASTMA366,A568. AS69,Grade HR	26g-16g	NA	Black Sheets
Aluminum	Alloy H 3003,Grade H14,B209	26g-16g	NA	

# Transverse Duct Connector Systems:

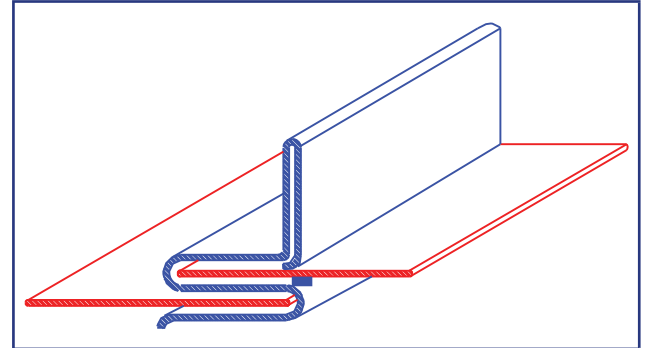


## 1. Slip & Drive—Cleating systems

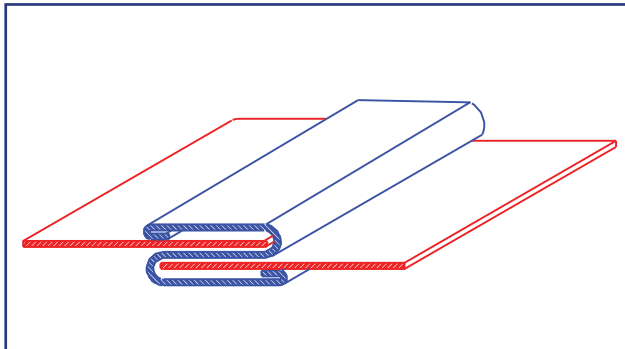
Drive Cleat (SMACNA -T1)



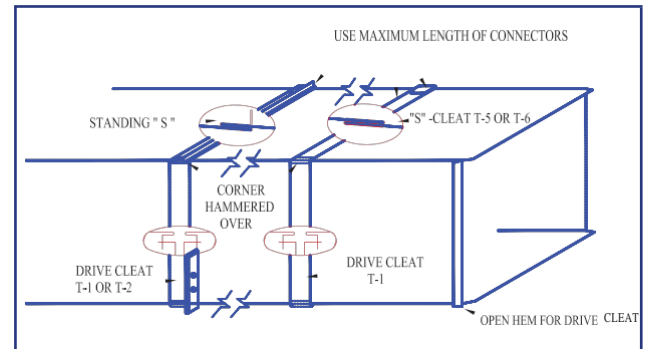
Standing "S" Cleat (SMACNA-T11)



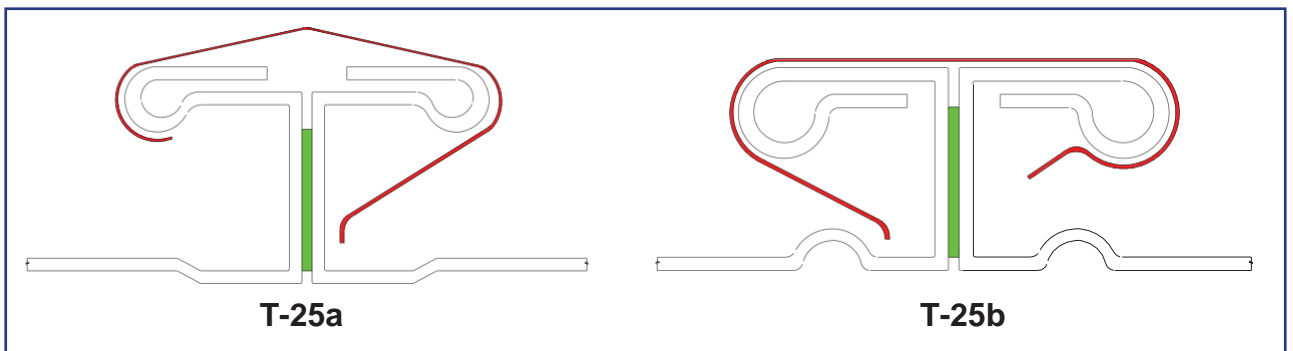
Hemmed "S" Cleat (SMACNA T6)



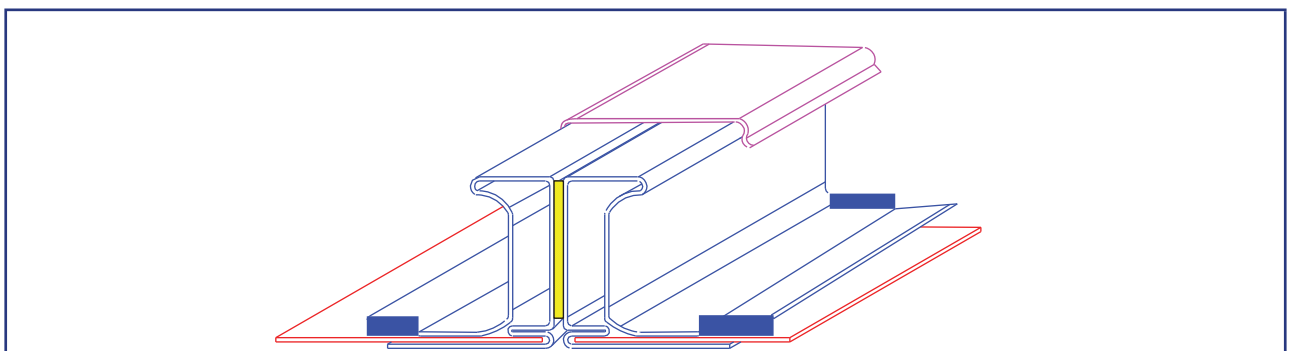
Assembly:



## 2. TDC/TDF built-in connectors (SMACNA - T25a &T25b)

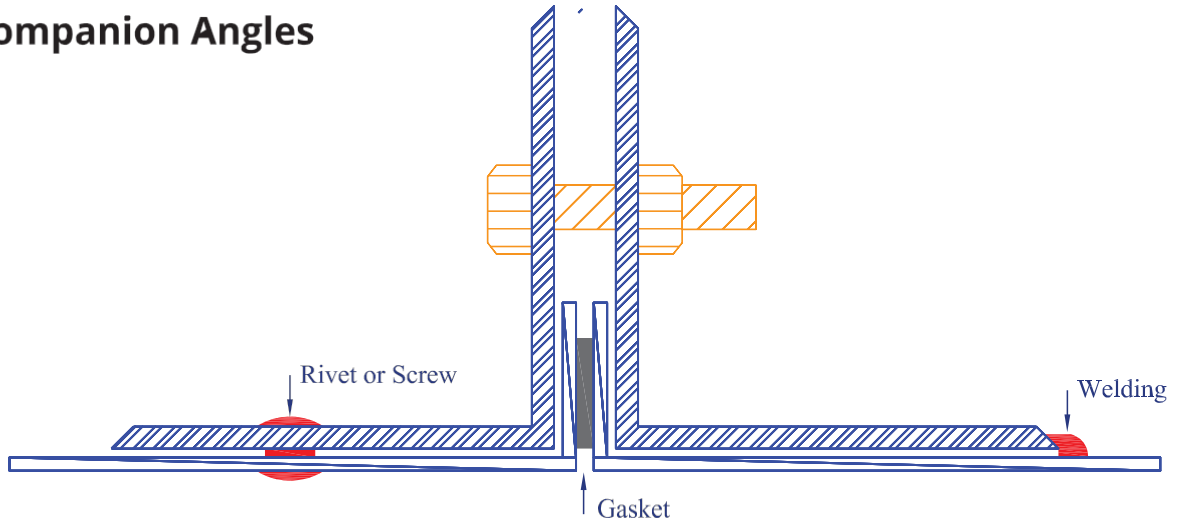


## 3. Slip-on Flanging Systems



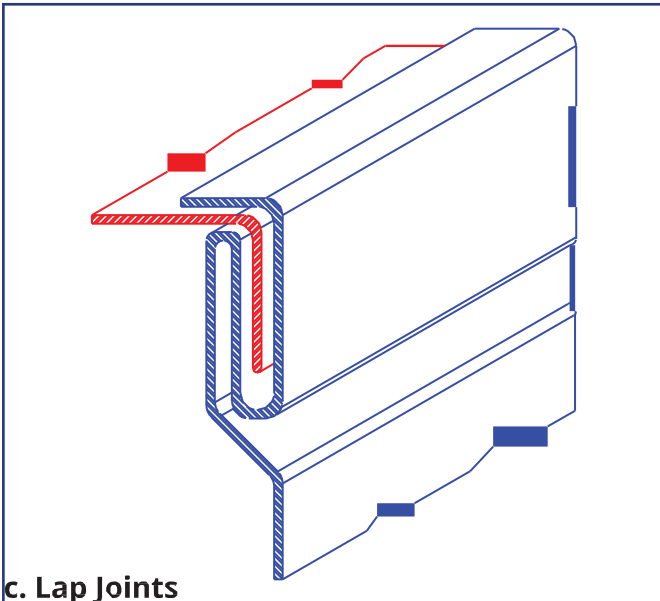


## 4. Companion Angles

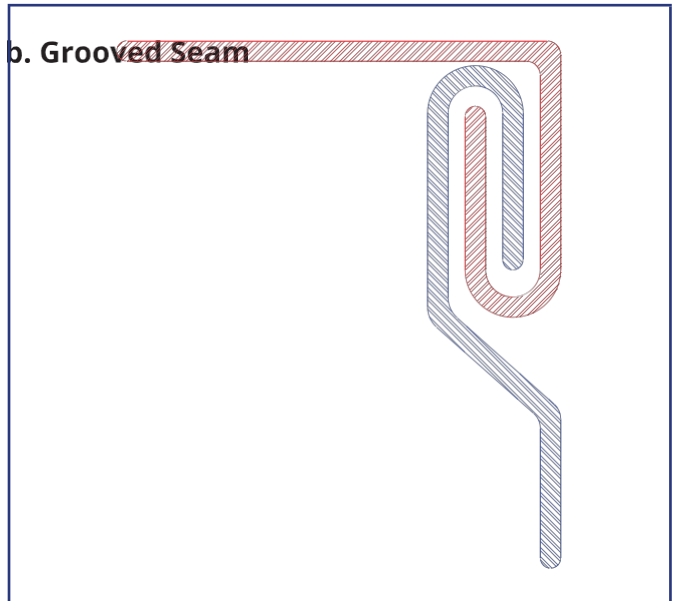


## Longitudinal Joints

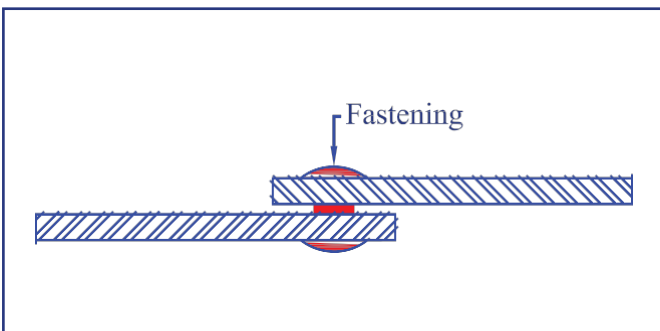
a. Pittsburgh Lock



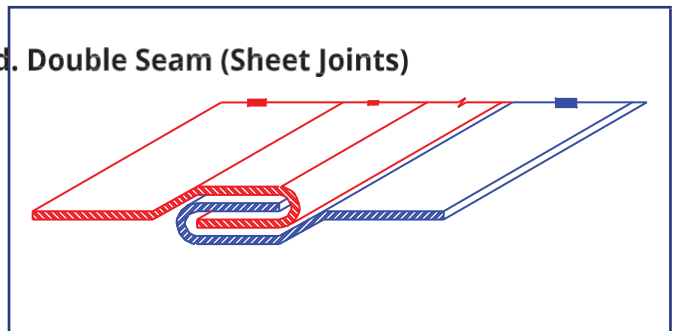
b. Grooved Seam



c. Lap Joints



d. Double Seam (Sheet Joints)



# Duct Construction Standards:

The duct construction standards would be either SMACNA or DW/144 standards/specifications generally. However, any customized duct construction specifications can be taken up for fabrications for specific project approval/submittal.

## SHOP STANDARDS (Ref.SMACNA)

### Shop Standards for Selection of Flange Class and Duct Gauges At max.1200 mm (4ft) Spacing

Duct Dimension (in mm)	Duct Pressure in Inches/(Pascals)					
	1"(250)	2"(500)	3"(750)	4"(1000)	6"(1500)	10"(2500)
	<b>Reinforcement Class - Duct Gauge</b>					
Upto 250	B-26	B-26	B-26	B-26	C-26	C-24
251-300	B-26	B-26	B-26	C-26	C-24	D-24
301-350	B-26	B-26	C-26	C-26	C-24	D-22
351-400	B-26	C-26	C-26	C-26	D-24	E-20
401-450	B-26	C-26	C-26	D-26	E-24	F-20
451-500	C-26	C-26	D-24	D-24	E-24	F-20
501-550	C-26	C-26	D-24	E-24	F-24	G-20
551-600	C-26	D-26	E-24	E-24	F-22	H-20G
601-650	C-26	D-26	E-24	E-24	F-22	H-20G
651-700	C-26	D-26	E-24	F-24	G-22	H-18G
701-750	C-26	E-26	E-24	F-24	G-22	I-18G
751-900	D-26	E-24	F-22	G-22	H-20G	I-18H
901-1000	E-26	F-24	G-22	H-20G	I-18G	J-181
1001-1200	E-24	G-22	H-20	I-18G	I-18H	J-161
12 01-1300	F-24	H-20G	I-18G	1-18G	J-16H	L-161
13 01-1500	F-24	H-20G	I-18G	1-18H	J-16H	
15 01-1800	H-22G	I-20G	J-18H	K-16H		
18 01-2100	1-20G	I-20G	K-16H			
2101-2400	I-18H	J-18H	L-16I			
2401-2700	I-18H	K-16 I				
2701-3000	J-16H					

NOT DESIGNED

#### Notes:

1. The above standards is simplified & extracted from SMACNA-Sheet Metal and Air Conditioning Contractors' National Association Inc -"HVAC Duct Construction Standards-Metal and Flexible" -Third Edition-2005
2. Reading Guide - For duct sizes between, say,651 mm and 700 mm,when the pressure class is 2" w.g. static, we require a 'D' Class Flange and duct gauge of 26. For the same size range but with static pressure at 4" w.g. 'F' Class Flange with duct 24 gauge should be used.
3. Slip-and-Drive (C & 5) cleats are generally recommended for class B connectors in most normal comfort cooling applications.

## Other BADRY HVAC Products:

### SHOP STANDARDS (Ref. : DW/144)

Pressure Classification		LOW PRESSURE (limited to 500 Pa positive and 500 Pa negative)			
1	2	3	4	5	
Maximum Duct Dimension (Longer Side)	Minimum Sheet Thickness	Maximum Spacing Between Joints	Type of Connectors	Reinforcement Class (Intermediate Reinforcement)	
UP TO 400	24G(0.60mm)	1200	C & S/C1 & C2	NR	
401-1000	22G(0.80mm)	1200	J2	NR	
1001-1250	20G(1.00mm)	1200	J3	NR	
1251-1600	20G(1.00mm)	1200	J4	S4	
1601-2500	20G(1.00mm)	1200	J5	S5	
2501-3000	18G(1.20mm)	1200	J6	S6	

Pressure Classification		MEDIUM PRESSURE (limited to 1000 Pa positive and 750 Pa negative)			
1	2	3	4	5	
Maximum Duct Dimension (Longer Side)	Minimum Sheet Thickness	Maximum Spacing Between Joints	Type of Connectors	Reinforcement Class (Intermediate Reinforcement)	
UP TO 400	24G(0.60mm)	1200	C & S	NR	
401-1000	22G(0.80mm)	1200	J3	NR	
1001-1250	20G(1.00mm)	1200	J4	S4	
1251-2500	20G(1.00mm)	1200	J5	S5	
2501-3000	18G(1.20mm)	1200	J6	S6	

Pressure Classification		HIGH PRESSURE (limited to 2000 Pa positive and 750 Pa negative)			
1	2	3	4	5	
Maximum Duct Dimension (Longer Side)	Minimum Sheet Thickness	Maximum Spacing Between Joints	Type of Connectors	Reinforcement Class (Intermediate Reinforcement)	
UP TO 600	22G(0.80mm)	1200	J2	NR	
601-800	22G(0.80mm)	1200	J3	NR	
801-1000	22G(0.80mm)	1200	J3	S3	
1001-1250	20G(1.00mm)	1200	J4	S4	
1251-1600	20G(1.00mm)	1200	J5	S5	
1601-2500	18G(1.20mm)	1200	J6	S6	



- The joints and stiffeners have been rated in terms of duct longer side and maximum spacing
- In column 2, (a)stiffened sheet, by means of beading at 300 mm maximum centres, or( b) cross-breaking within the frame formed by joints and/or stiffeners; or (c) pleating at 150 mm maximum centres
- Although not covered in DW 144 specification, due to their relatively infrequent use, cleated cross joints are an accepted constructional practice and the HVCA Ductwork Group should be contacted if details of their ratings and limitations are required.

Otherwise, the reference is given in DW/142.

## Other BADRY HVAC Products

### Air Distribution (ETL Certified)

- Grilles & Diffusers
- Louvers
- High Efficiency Sand Trap Louvers
- Security Grilles & Diffusers
- Architectural Grilles & Diffusers
- Jet Diffusers



- Motorized Fire Damper
- Combination Fire & Smoke Damper
- Shut-off Type Fire Damper (3hrs)
- Fire rated steel Doors



# BADRY Air Control & Acoustics

- Variable Air Volume Terminals
- Sound Attenuators
- Acoustic Louvers
- Low leakage Volume Control Dampers
- Non-Return & Pressure Relief Dampers



## Adhesive Tapes, Insulation & Ducting Accessories

- Aluminium & Duct Tapes
- Duct coat, Duct Sealants.
- NBR & XPE Pipe and Duct Insulation
- Flexible & Rigid Aluminium Duct
- Slip on TDC/TDF flanges and corners





Product Improvement is a continuing endeavor at BADRY. Therefore, specifications are subject to change without notice. Consult your BADRY Sales Representative for current specifications or more detailed information. Not all products may be available in all geographic areas. All goods described in this document are warranted as described in the Limited Warranty shown at [www.badrygroup.com/Air.Ducts](http://www.badrygroup.com/Air.Ducts). Our complete product catalog can be viewed online.

## **BADRY GROUP**

**Group Of Companies**

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