



# HVAC AIR DUCTS

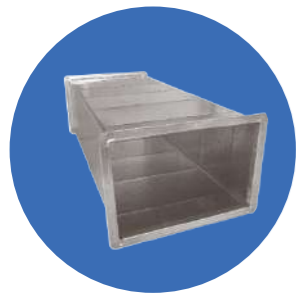
## PRODUCTS



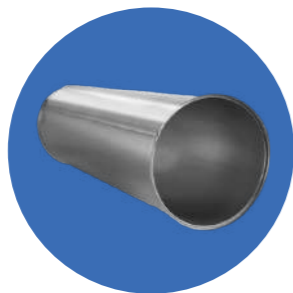
Choose FAST For Quality Products



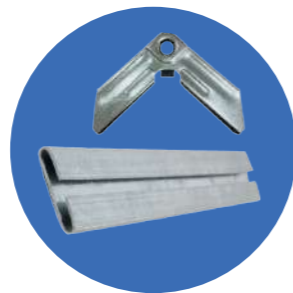
### MAIN PRODUCTS



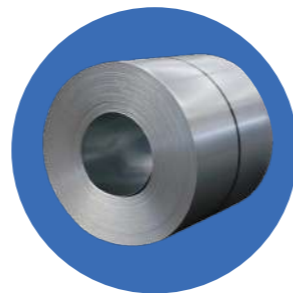
**RECTANGULAR AIR DUCT**



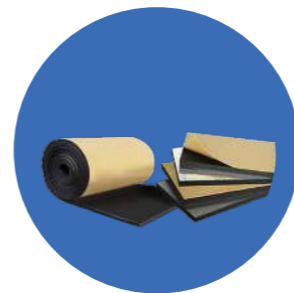
**ROUND AIR DUCT**



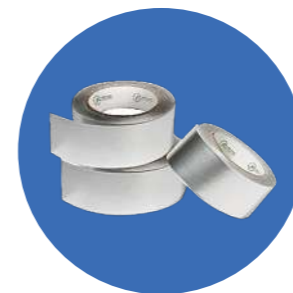
**CORNERS & DRIVE SLIP**



**G.I STEEL COIL ROLL & SHEET**



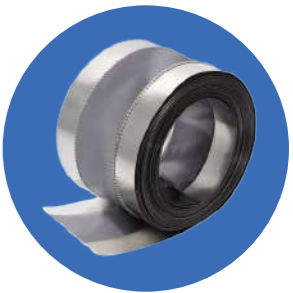
**INSULATION FOAM TAPE**



**ALUMINUM FOIL TAPE**



**INSULATION FOAM TAPE**



**CANVAS DUCT CONNECTOR**

**AUTOMATIC PRODUCTION LINE**

# CONTENTS

DUCT INTRODUCTION

DUCT SYSTEM CONSTRUCTION

RECTANGULAR DUCT & FITTINGS

ROUND DUCT & FITTINGS

CORNERS & DRIVE SLIP

G.I STEEL COIL ROLL

G.I STEEL SHEET

INSULATION

ACOUSTIC INSULATION

INSULATION FORM TAPE

ALUMINUM FOIL TAPE

FLEXIBLE AIR DUCT WITH INSULATION

FLEXIBLE AIR DUCT WITHOUT INSULATION

CANVAS DUCT

CANVAS FIRE RATED

DUCT SEALANT

FIRE RATED ACRYLIC SEALANT

NEUTRAL WEATHERPROOF SILICONE SEALANT

INSULATION GLUE

# DUCT INTRODUCTION

A duct system is an assembly whose primary function is to convey air between specified points.

ASHRA categorizes duct systems as either single path or dual path. Systems should be designed using accepted engineering practice and data such as that in the four ASHRAE Handbooks and the SMACNA HVAC Duct Systems Design manual. A duct system may contain ducts under positive and negative pressure. Air velocities will vary within the system. At coils and filters, the velocity may vary from below 1000 fpm (5m/s) to over 3000 fpm (15m/s). Velocity in duct mains and branches can be at constant (high or low) or varying levels. With the many available systems sizing methods (e.g., **equal friction, static regain, velocity reduction, total pressure**) and system types, performance cannot be economically optimized unless the designer selects construction details appropriate for the given pressure and velocity.

Generally speaking, duct strength, deflection, and leakage are more functions of pressure than of velocity. In conventional systems, noise, vibration, and friction

loss are more related to velocity than to pressure. Because total pressure is less downstream than upstream, a duct construction pressure classification equal to the fan outlet pressure (or to the fan total static pressure rating) cannot economically be imposed on the entire duct system. Pressure in ducts near room air terminals is nearly always below 1/2" water gage (125 Pa).

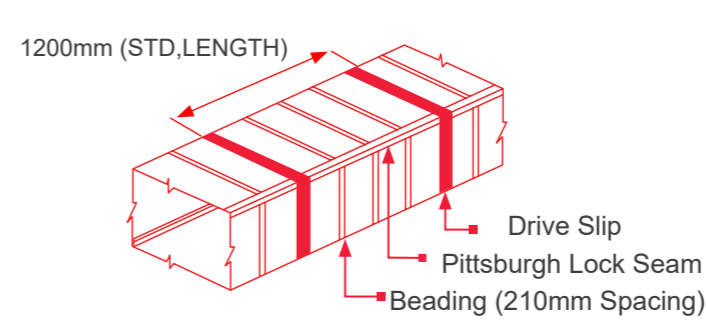
For a clear interpretation of requirements for ducts and for economical attainment of performance objectives, it is ESSENTIAL THAT CONTRACT PLANS IDENTIFY THE PORTION OF EACH DUCT SYSTEM TO BE CONSTRUCTED FOR A PARTICULAR PRESSURE CLASSIFICATION OR THAT THE ENTIRE SYSTEM BE ASSIGNED A PRESSURE CLASSIFICATION.



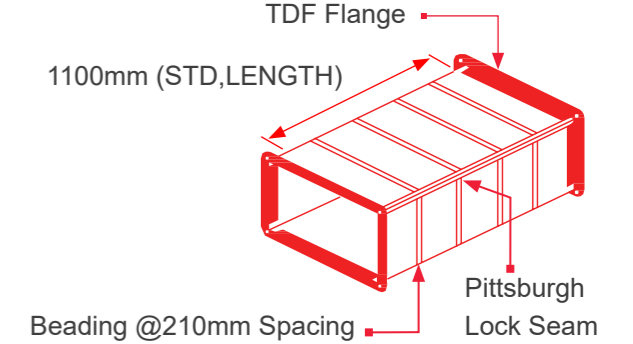
HANGER DIMENSION & RECOMMEND SHEET STEEL THICKNESS				
Dimension of duct (Width size)	G.I Metal thickness (mm)	Steel rod (mm)	Steel Hanger (mm)	Spacingduct (mm)
Up to 600	0.6	8	V-30x30x3	1800
600 to 800	0.8	10	V-40x40x4	1800
850 to 1000	0.8	12	V-50x50x5	1500
1050 to 1800	1	14	U-100x50x5	1500
1850 to 2400	1.2	16	U-100x50x5	1500
Over 2400	1.2 (with reinforcement)	18	U-100x50x5	1500

If no standard required, FAST will fabricate air duct follow SMACNA standard (HVAC duct construction standard metal and flexible, Second Edition - 1995).

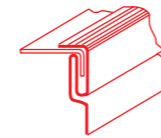
# DUCT SYSTEM CONSTRUCTION



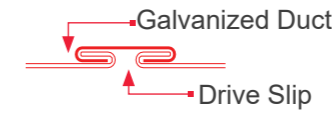
**STRAIGHT DUCT SLIP DRIVE CONNECTION**



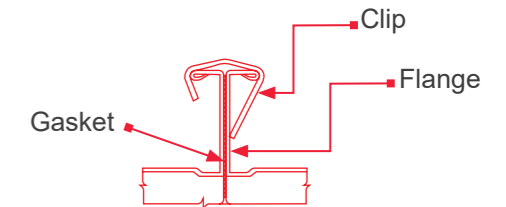
**STRAIGHT DUCT FLANGE CONNECTION**



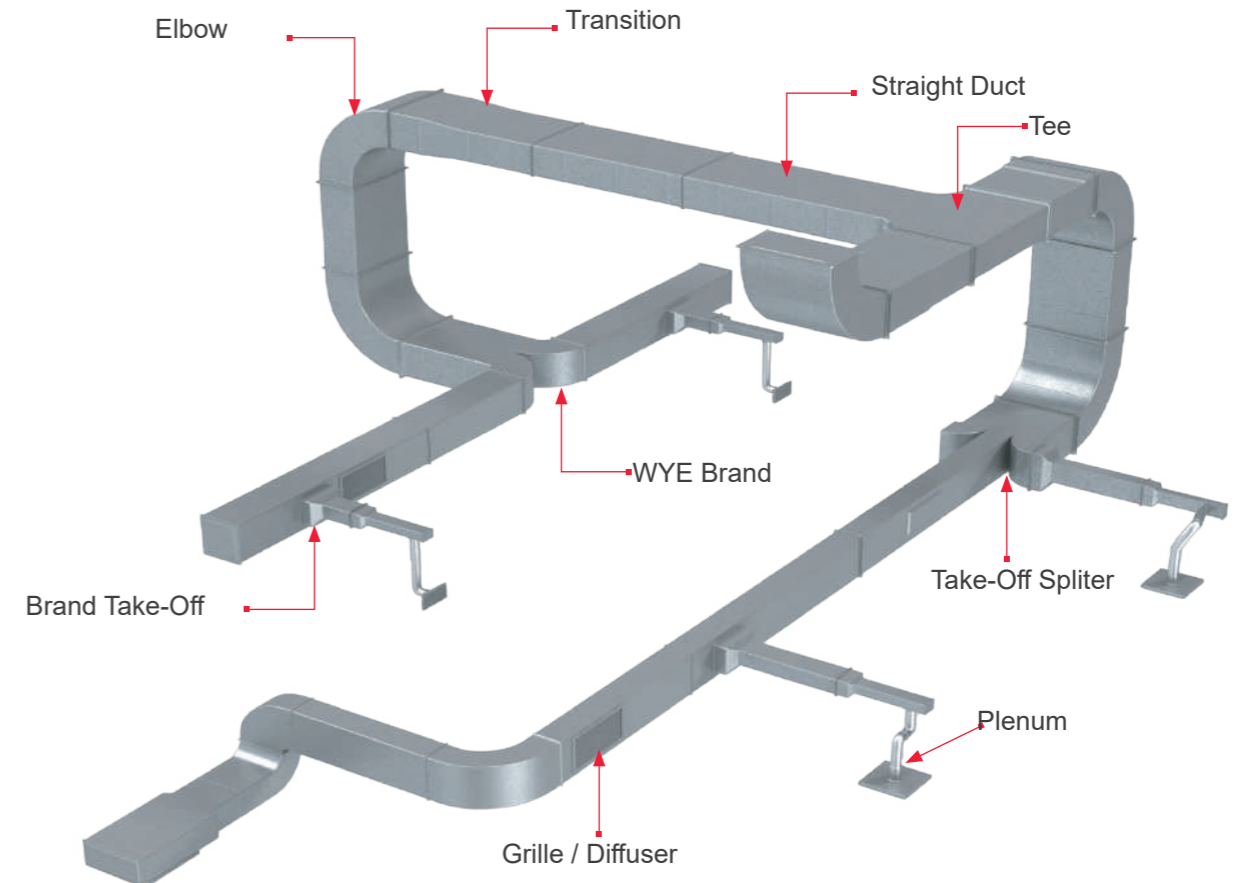
**L-1 PITTSBURGH LOCK**



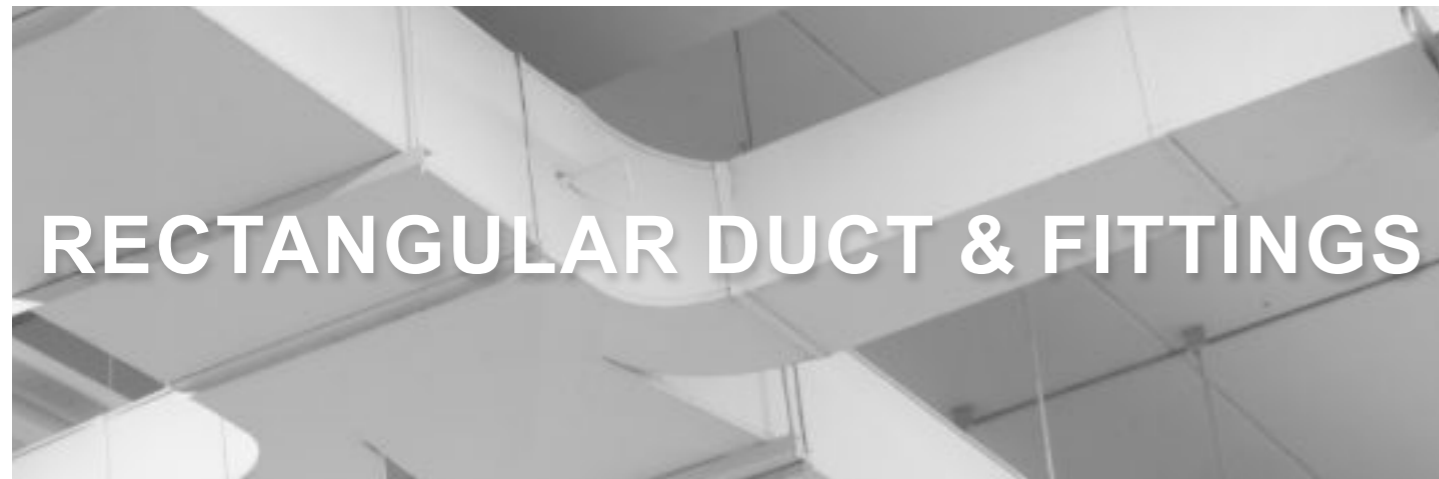
**DRIVE SLIP**



**TDF FLANGE**



**RECTANGULAR AIR DUCT SYSTEM**



# RECTANGULAR DUCT & FITTINGS

## SPECIFICATION

Fabrication standard: SMACNA | DW 144| ASHRAE.

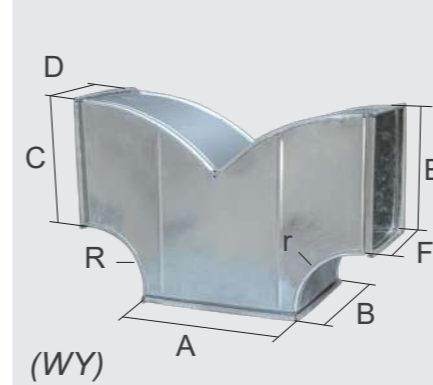
Material: G.I | Aluminium | Black Steel

Joint: Drive Slip | TDF Flange | Pittsburgh Lock Seam| Welded.

Assembly: Pre-Assembly or Full Assembly.

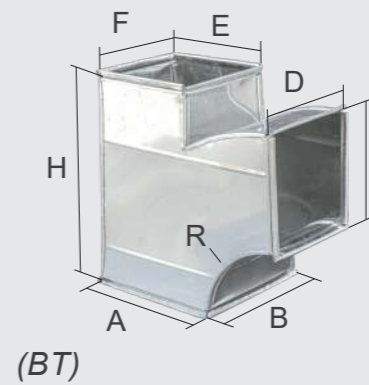
Application: HVAC | Ventilation Kitchen Hood

### WYE BRAND



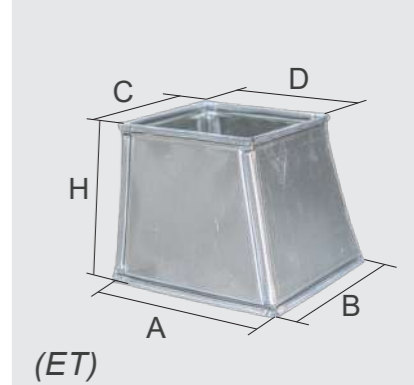
Order size: WY:A x B - C x D - E x F - R- r  
 Example Order Size  
 WY: A200 x B200- C100 x D100 - E100 x F100  
 R100 - r100

### BRANCH TAKE OFF



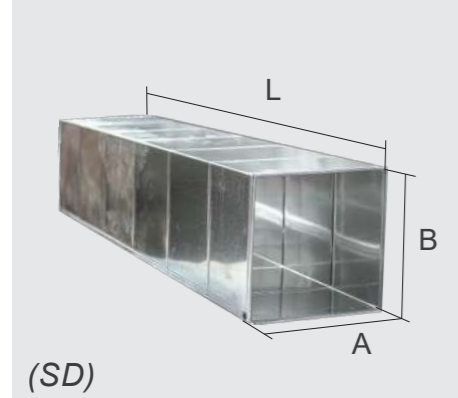
Order size: BT: A x B - C x D - E x F - R  
 Example Order Size  
 BT: A250 x B250 - C250 x D200 - E200 x F200- R100

### ECCENTRIC TRANSITION



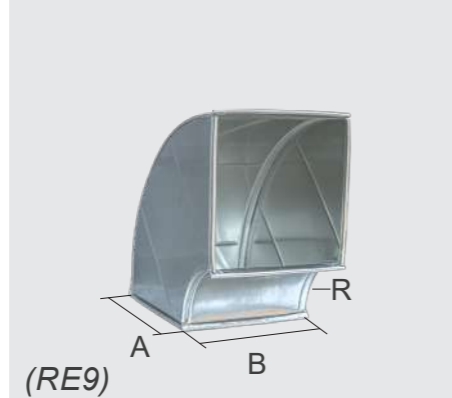
Order size: ET: A x B - C x D - H  
 Example Order Size  
 ET: A250 x B250 - C200 x D200  
 H100

### STRAIGHT DUCT



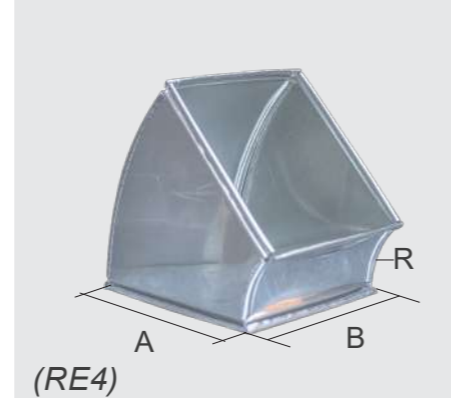
Standard :  
 L=1200mm For Drive Slip  
 L=1100mm For TDF Flange  
 Order size: SD: A x B - L  
 Example Order Size  
 SD: A250 x B250 - L1200

### ELBOW 90°



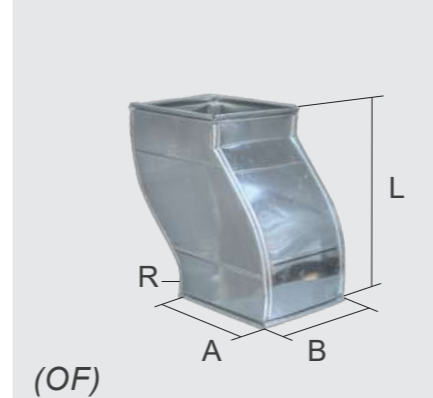
Order size: RE9: A x B - R  
 Example Order Size  
 RE9: A100 x B100 - R100

### ELBOW 45°



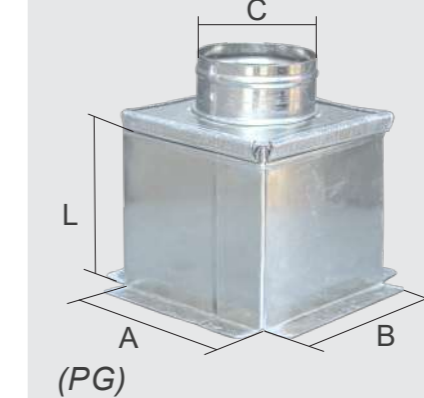
Order Size: RE4: A x B - R  
 Example Order Size  
 RE4: A250 x B250 - R250

### OFFSET



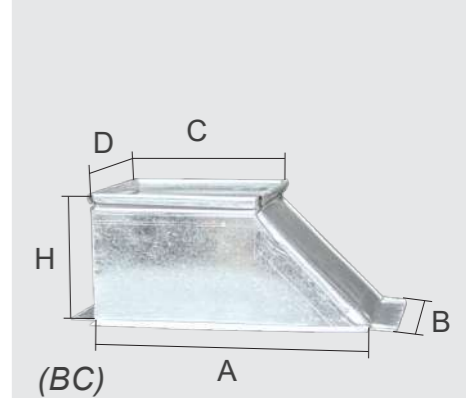
Order size: OF: A x B - L - R  
 Example Order Size  
 OF: A250 x B250 - L250  
 R100

### PLENUM GRILLE



Standard: L= 150 mm  
 Order size: PG: A x B - C - L  
 Example Order Size  
 PG: A150 x B150 - C100 - L150

### BRANCH CONNECTIONS



Order size: BC: A x B - C x D - H  
 Example Order Size  
 BC: A250 x B200 - C100 x C200  
 H200



# ROUND DUCT & FITTINGS

## SPECIFICATION

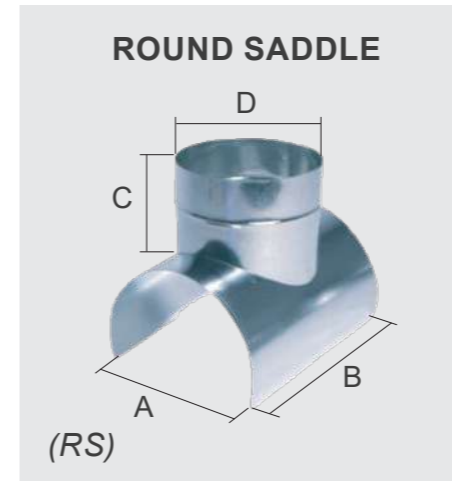
Fabrication standard: SMACNA | DW 144 | ASHRAE.

Material: G.I | Aluminium | Black Steel

Joint: Drive Slip | TDF Flange | Pittsburgh Seam Lock | Welded.

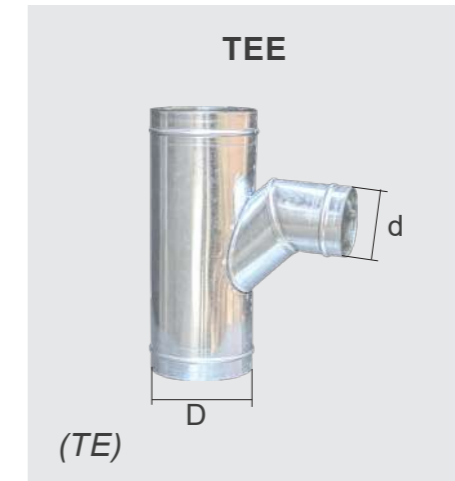
Assembly: Pre-Assembly or Full Assembly.

Application: HVAC | Ventilation Kitchen Hood



**ROUND SADDLE**  
(RS)

Order size:  
RS: A x B - C x D  
Example Order Size  
RS: A150 x B200 - C100 x D150



**TEE**  
(TE)

Order size: TE: D x d  
Example Order Size  
TE: D150 x d100



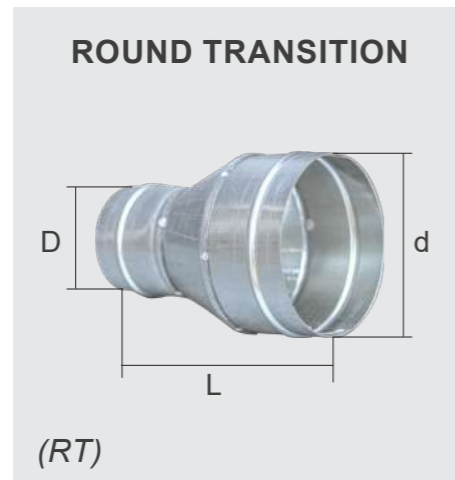
**ROUND OFFSET**  
(RO)

Order Size: RO: D x d - H  
Example Order Size  
RO: D150 x d150 - H150



**ROUND DUCT**  
(RD)

Standard: L=1200 mm  
Order size: RD: D - L  
Example Order Size  
RD: D150 - L1200



**ROUND TRANSITION**  
(RT)

Order size:  
RT: D x d x L  
Example Order Size  
RT: D100 x d125 x L300



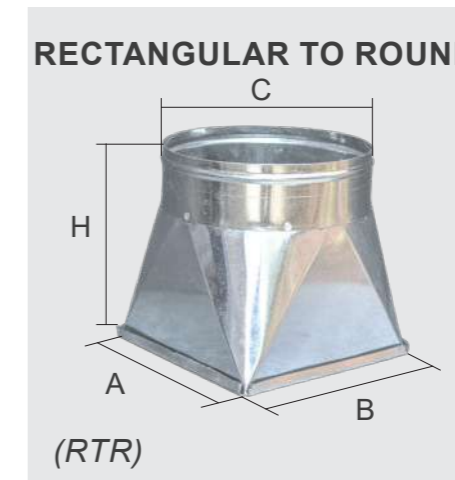
**ROUND COLLA**  
(RC)

Order size:  
RC: D - L  
Example Order Size  
RC: D200 - L100



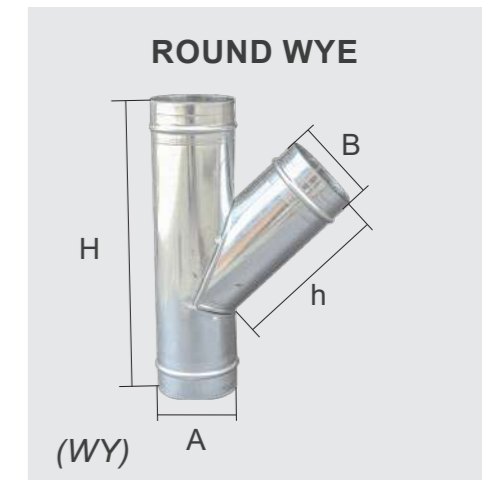
**ROUND ELBOW**  
(RE)

Order Size: RE: D1 - D2 - R  
Example Order Size  
RE: D150 - d150 - R150



**RECTANGULAR TO ROUND**  
(RTR)

Order size: RTR: A x B - C  
Example Order Size  
RTR: A200 x B200 - C200 H200



**ROUND WYE**  
(WY)

Order Size: WY: A - B - H - h  
Example Order Size  
WY: A100 - B100 H300 x h150



## CORNERS & DRIVE SLIP



## G.I STEEL COIL ROLL & G.I STEEL SHEET

Galvanizing, or galvanization, is a manufacturing process where a coating of zinc is applied to steel or iron to offer protection and prevent rusting. There are several galvanizing processes available, but the most commonly offered and used method is called hot-dip galvanizing.



**CORNER**



**DRIVE SLIP**



**TDF DRIVE CLEAT**



**G.I STEEL COIL ROLL**

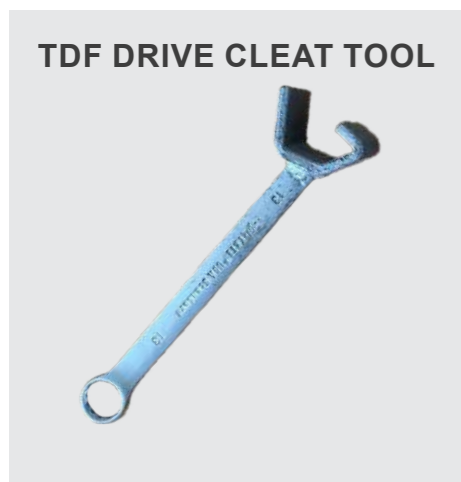
PRODUCT SPECIFICATIONS	
Base steel thickness	0.25 mm - 3.00 mm
Width	860 mm - 1250 mm
Coating mass weight	(Z80 - Z500g/m <sup>2</sup> 2mat)

Thickness: 10c = 1mm  
1bag = 25kg = 550pcs

Thickness: 10c = 1mm  
Order Length: 1.2m  
1bundle = 25kg = 50length

Thickness: 6c = 0.6mm  
Order Length: 1.2m  
1bundle = 25kg = 80length

Standard : JIS 3302, AS 1397,  
ASTM A653/A653M, EN 10346  
Order size: 300kg - 5000kg



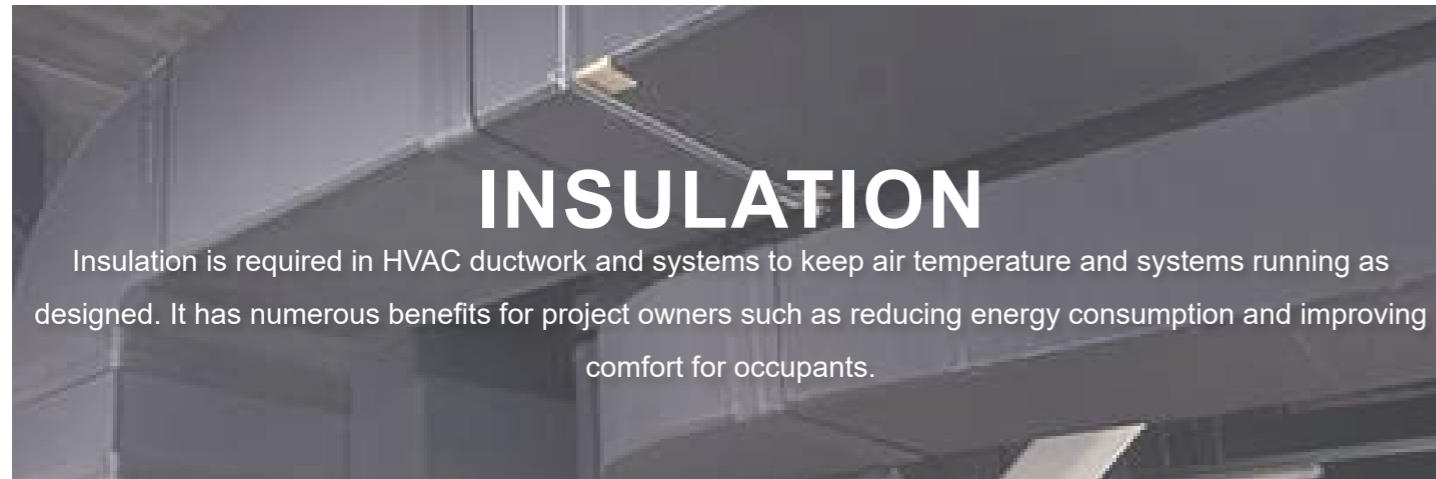
**TDF DRIVE CLEAT TOOL**



**G.I STEEL SHEET**

Order size: 1250mm x 2400mm  
Size can be special request

GALVANIZING STANDARDS	
Coated standard	Base steel standard
JIS 3302	SGCC, SGC340,SGC400,SGC440, SGC570
AS 1397	G250, G300, G350, G450, G550
ASTM A653/A653M	CSA,CSB, SS33, SS37, SS50, SS60, SS70, SS80
EN 10346	DX51, S220GD, S250GD, S280GD, S320GD, S350GD, S550GD



## INSULATION

CF - Closed, idea | structure NBR Rubber Foam is a high quality flexible thermal insulation product, idea | for HVAC & R application. It includes pipe and sheet insulations. The main application is for refrigerant medium system in A/C machine, metal air duct system, chilled and condensed water systems and hot water piping system.



PROPERTIES	DATA	TEST METHOD
Density	40-90 kg/m <sup>3</sup> 250 - 561 lbs / ft <sup>3</sup>	ASTM D1667
Thermal conductivity	W/m.k (BTU.in/ft <sup>2</sup> °F)	
-20°C	0.0310 (0.225)	ASTM C518
0°C	0.0340 (0.240)	
40°C	0.0380 (0.260)	
Water Vapor Permeability	1.16x10 <sup>-13</sup> (0.08) s.m.Pa (perm-in)	ASTM E96
Moisture Resistance	>= 7000	
Water Absorption(%)	>= 0.2 (by volume)	
Flammability and Smok developed	25/50	ASTM E84/ULC S102
	Class 0	BS 476 Part 6 & 7
Dimensional Stability	0 to 7%	ASTM C534
Temperature Range	-50 ~ + 105°C (-58 ~ +221 °F)	

THICKNESS		WIDTH	LENGTH	LENGTH
Inch	mm	m	m	PE Bag
1/8	3	1.0, 1.2	10	1 roll/Bag
1/4	6			
3/8	9			
1/2	13			
3/4	19	1.0, 1.2, 1.5		
1	25			
1 1/4	32			
1 1/2	38	1.0, 1.2	4	5 sheet/Bag
2	50			

## ACOUSTIC INSULATION

Is engineered and designed specifically for air - conditioning units, automotive, generator shell, generator room sound insulation.



PYSICAL PROPERTIES	DATA
Density	45 - 60 kg/m <sup>3</sup>
Structure	Open cell structure
Patterns	Waved, Plain
Thickness	6, 10, 15, 20, 25mm
Size	1m x 1m, 1m x 1.5m, 1m x 2.0m
Package	Plastic bag or Paper carton





**INSULATION FORM TAPE**

## INSULATION FORM TAPE

Application: Sealing and insulating between material joints

PACKING	
Size	Rolls/Carton
3mm x 50mm x 10m	60



**ALUMINUM FOIL TAPE**

## ALUMINUM FOIL TAPE

Application : Sealing joining joints and seams against moisture and vapor on foil jacketing, or used in refrigerators, heaters, etc.

ALUMINUM FOIL TAPE SIZE	
Thickness	35mic
Width	48mm
Length	25m
Pack	36 rolls/1carton



**FLEXIBLE AIR DUCT WITH INSULATION**

## FLEXIBLE AIR DUCT WITH INSULATION

Flexible Duct is a very strong fully flexible compressible light weight air duct which is widely used in Air Conditioning and Ventilation Systems for Commercial, Industrial and Residential applications. It is extremely durable and will maintain dimensional stability when fully extended.

PROPERTIES	
Material	Aluminum foil/Polyester film/Laminated x 2 ply/ Spring copper wire/Glass Wool
Glass Wool Density	32Kg/m3
Aluminum Glue Adhesive	Heat- resistant Glue
Aluminum thickness	0.02 ~ 0.03 mm
Application temperature	-30°C ~ +140°C
Pressure	250mm WG (2500pa)
Air Speed Max	25m/s
Inner Diameter	D100 - D500
Length	8m - 20m
Application	<ul style="list-style-type: none"> <li>- No fire ignition</li> <li>- Water proof</li> <li>- High heat resistance (Heat Range -4 - + 150)</li> <li>- Used in hot and cool air system in buildings, apartments, offices, hotels, hospitals, factories, workshops.</li> </ul>



**FLEXIBLE AIR DUCT WITHOUT INSULATION**

## FLEXIBLE AIR DUCT WITHOUT INSULATION

PROPERTIES	
Material	Aluminum foil/Polyester film/Laminated x 2 ply/ Spring copper wire/Glass Wool
Aluminum Glue Adhesive	Heat- resistant Glue
Aluminum thickness	0.02 ~ 0.03 mm
Application temperature	-30°C ~ +140°C
Pressure	250mm WG (2500pa)
Air Speed Max	25m/s
Inner Diameter	D100 - D500
Length	8m - 20m
Application	<ul style="list-style-type: none"> <li>- No fire ignition</li> <li>- Water proof</li> <li>- High heat resistance (Heat Range -4 - + 150)</li> <li>- Used in hot and cool air system in buildings, apartments, offices, hotels, hospitals, factories, workshops.</li> </ul>

## CANVAS DUCT

- The surface is made of polyurethane layer fiber cloth, which has been tested for high temperature resistance for thousands of times.
- The accessories of this product are tightly combined, with good air tightness and oxidation resistance this product has good plasticity, can be folded into the desired
- temperature 20°C - 60°C.



CANVAS DUCT

### Construction

- Frame & inner: Sheet iron + PVC Flame retardant polyester cloth.

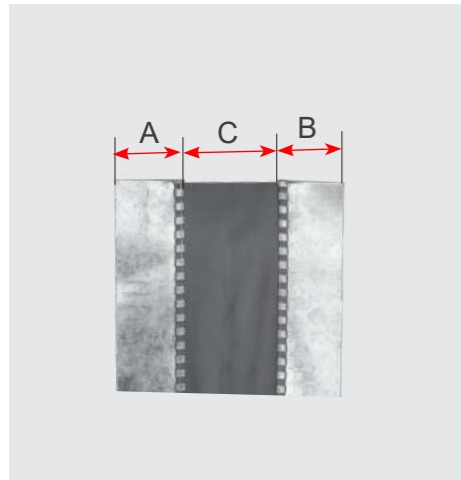
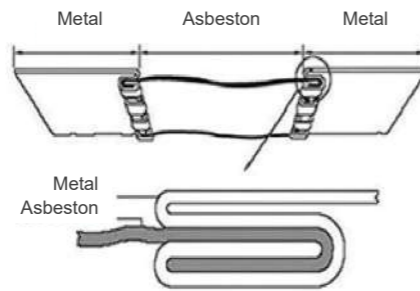
### Surface Finish

- Gavanize and antioxidant treatment .

### Material thickness

- Algam: (Metal): 0.5mm / cloth: 0.45mm (PVC gray)
- Algam: (Metal): 0.5mm / cloth: 0.45mm (Fiberglass grey)
- Algam: 0.5mm / cloth: 0.45mm (Silica red).

### Drawing



SPECIFICATION				
	First algam length (A)	Cloth length (C)	Second algam length (B)	Roll
Specification	45mm	60mm	45mm	L =25m
	45mm	100mm	45mm	L =25m

## CANVAS FIRE RATED

The surface is made of polyurethane layer fiber cloth, which has been tested for high temperature resistance for thousands of times.

- The accessories of this product are tightly combined, with good air tightness and oxidation resistance this product has good plasticity, can be folded into the desired
- temperature 250°C.



CANVAS FIRE RATED

### Construction

- Frame & inner: Sheet iron + PVC Flame retardant polyester cloth.

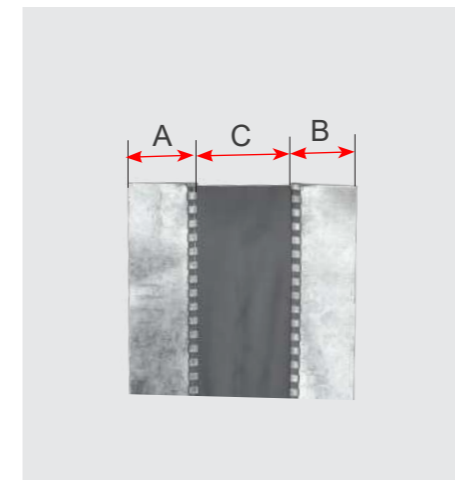
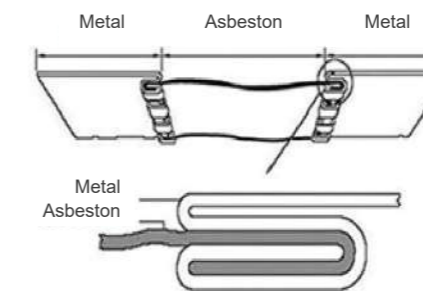
### Surface Finish

- Gavanize and antioxidant treatment.

### Material thickness

- Algam: (Metal): 0.5mm / cloth: 0.45mm (PVC gray)
- Algam: (Metal): 0.5mm / cloth: 0.45mm (Fiberglass grey)
- Algam: 0.5mm / cloth: 0.45mm (Silica red).

### Drawing



SPECIFICATION				
	First algam length (A)	Cloth length (C)	Second algam length (B)	Roll
Specification	45mm	60mm	45mm	L =25m
	45mm	100mm	45mm	L =25m

## DUCT SEALANT

Duct Sealant is a gray water-based duct sealant used in medium and high-pressure duct system. TA102 is a special formulation which provides permanent flexibility, excellent water-resistance and superior sealing strength.



### Features

- Low VOC and Low ODOR
- Excellent workability
- Non corrosive towards metals
- Slump resistant
- High solid content
- Low shrinkage superior sealing strength.

## FIRE RATED ACRYLIC SEALANT

Fire rated acrylic sealant is a single component, non-sage, fire rated acrylic base sealant. It is acrylic based sealing compound specifically manufactured for sealing low movement interior joints in masonry and plasterboard to provide a fire barrier for periods up to 4 hours.



### Features

- More than 4 hours of fire resistance without using any backfilling materials in
- Certain conditions
- Good unprimed adhesion to most common construction substrates
- No-slump
- Can be painted over using water based paints
- Easy to apply

PACKING		
600ml	White, Black, Grey etc.	20 sausages
300ml	White, Black, Grey etc.	24 cartridges
280ml	White, Black, Grey etc.	24 cartridges

PACKING		
600ml	White, Black, Grey etc.	20 sausages
300ml	White, Black, Grey etc.	24 cartridges

TECHNICAL DATA		
Appearance	Paste	Typical application
Density	1.63g/cm <sup>3</sup>	HVAC duct system
Skin Time	7~10min	
Curing time	3.5mm/24h	
Elongation at break	250%	
Application temperature range	5°C to 40°C	
Service temperature range	-20°C to 75°C	
Hardness Shore A	32	

TECHNICAL DATA		
Appearance	Paste	Typical application
Density	1.63g/cm <sup>3</sup>	HVAC duct system Construction joints Metal pipes HVAC penetration
Skin Time	12min	
Curing time	2day	
Elongation at break	100%	
Application temperature range	5°C to 40°C	
Service temperature range	-20°C to 75°C	
Hardness Shore A	40	

## NEUTRAL WEATHERPROOF SILICONE SEALANT

TNS-731 NEUTRAL WEATHERPROOF SILICONE SEALANT is a one-part, durable, neutral-cure, architectural grade sealant. With excellent adhesion for use on a wide variety of materials in new or renovated weatherproofing applications.



### Features

- Excellent adhesion to non-porous construction material. No need to use primer for most building materials such as glass, coated glass, painted metal.
- Neutral curing, suitable for most building materials without adverse reactions or corrosion.
- Excellent UV, weathering and high temperature resistance, forming a strong and elastic silicone rubber after curing, not affected by rain, snow
- High Movement capability and permanent flexibility.

TNS-731

PACKING		
600ml	White, Black, Grey etc.	20 sausages
300ml	White, Black, Grey etc.	24 cartridges
280ml	White, Black, Grey etc.	24 cartridges

TECHNICAL DATA		
Appearance	Paste	Typical application
Density	1.63g/cm <sup>3</sup>	HVAC duct system
Skin Time	7~10min	
Curing time	3.5mm/24h	
Elongation at break	250%	
Application temperature range	5°C to 40°C	
Service temperature range	-20°C to 75°C	
Hardness Shore A	32	

## INSULATION GLUE

A black, air-drying contact adhesive that is excellent for joining seams and butt joints of TPFLEX Pipe and Sheet Insulations



INSULATION GLUE

- Surfaces of materials: dry, clean and free from dust, sand, oil, grease
- Stir TPGLUE well and use short hair brush to apply a layer of TPGLUE on the 2 joining surfaces
- After applying TPGLUE on the surface, wait for the solvent to evaporate about 5-30 minutes depending on the glue content until the surface is dry and sticky
- Time required for 2 surfaces to be bonded:
  - Minimum 5 minutes: non-absorbent or non-permeable surfaces such as PVC, PPR, steel pipes.,
  - Minimum 2 minutes: with absorbent or permeable surfaces such as TPFLEX insulation.
- Press the surface to get the best bonding.

PACKING		
CODE	SIZE	PACKING
TPGLUE 700	700 GR/CAN	12 cans/ Carton
TPGLUE 3500	3500 GR/Gallon	6 Gallons/ Carton

SPECIFICATION	
Material	Polychloroprene
Appearance	Black viscous liquid
Viscosity	2,000 - 3,000 cPs.
Solid content	24.00 - 26.00 %
High heat resistance	Approx. over 100 oC
Open tack time	Short
Application temp	Room temp
Coverage (apply adhesive both surfaces)	200 - 220 g/m <sup>2</sup>



March.2023

- +855 10 468 111
- +855 10 690 111
- fastcambodia.com
- info@fastcambodia.com
- #2235, Sangkat Khmounh, Khan Sen Sok, Phnom Penh, Cambodia

**FAST**

FAST CAMBODIA