

Round Ductwork Construction



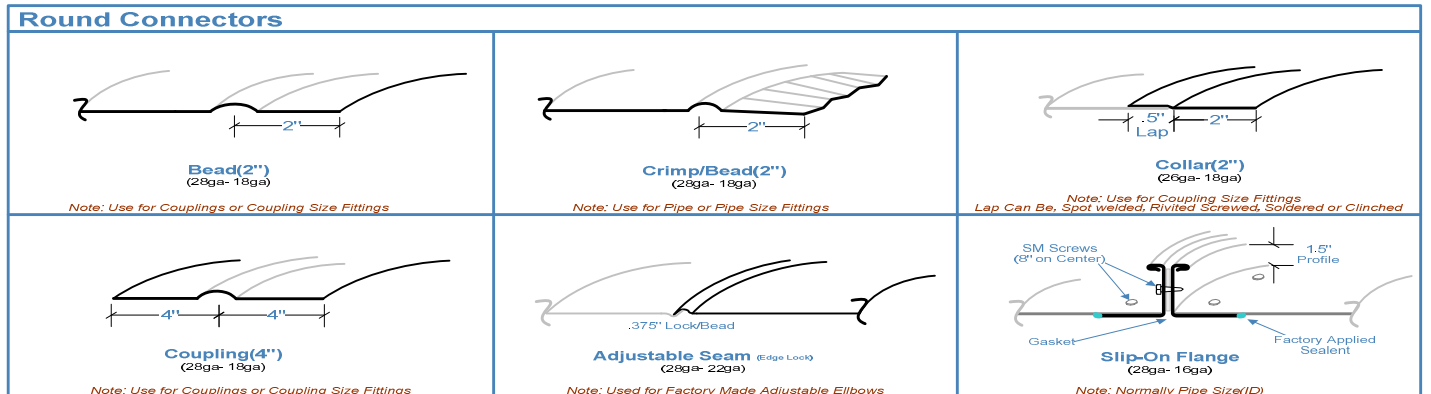
Round Pipe & Fittings Construction

to 10" WG Positive Pressure		SMACNA (2005 HVAC Round Construction Standards) (Supply, Return, Makeup Air)					
Pipe Diameter	Length	Spiral Pipe			Longitudinal Seamed Pipe & Fittings		
		Gauge	Seam	Connector	Gauge	Seam	Connector
0-14"	Any	*28ga	Spiral	Coupling	26ga	Lap&Spot	Crimp/Bead/Collar
to 18"	Any	*26ga	Spiral	Coupling	26ga	Lap&Spot	Crimp/Bead/Collar
to 24"	Any	*26ga	Spiral	Coupling	24ga	Lap&Spot	Crimp/Bead/Collar
to 30"	Any	24ga	Spiral	Coupling	22ga	Lap&Spot	Crimp/Bead/Collar
to 42"	Any	24ga	Spiral	MfgFlg(Slip-on)	22ga	Lap&Spot	MfgFlg(Slip-on)
to 60"	Any	22ga	Spiral	MfgFlg(Slip-on)	20ga	Lap&Spot	MfgFlg(Slip-on)
to 66"	Any	22ga	Spiral	MfgFlg(Slip-on)	18ga	Lap&Spot	MfgFlg(Slip-on)
to 96"	Any	20ga	Spiral	MfgFlg(Slip-on)	18ga	Lap&Spot	MfgFlg(Slip-on)
Over-96"		n/a			n/a		

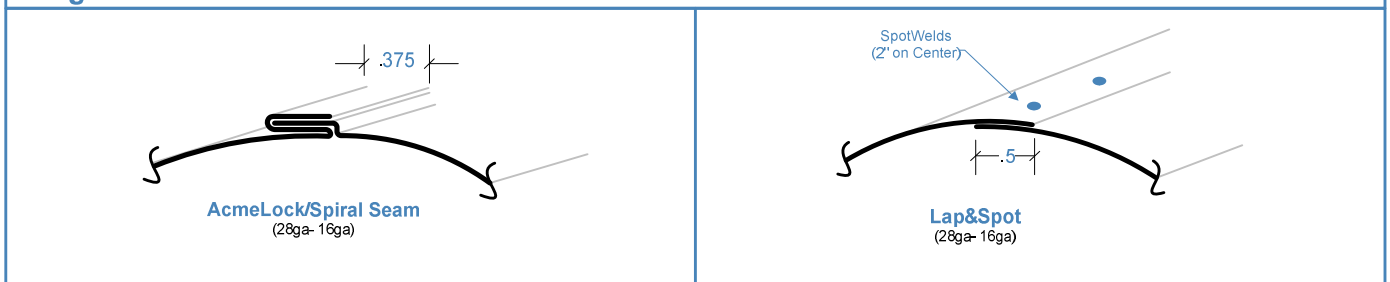
(*)Stock

Definitions

Coupling	4" Coupling Attachment with SM Screws 8"oc
Crimp/Bead/Collar	Crimp/Bead/Collar 2" Slip Attachments with SM Screws 8"oc
Slip-On Flange	Slip-on Manufactured Flange Mated with Butyl or Neoprene Gasket and Attached with SM Screws.
Spiral Seam	3/8" Acme Lock/Spiral Seam
Lap&Spot	Longitudinal Seam Spot Welded 2" on Center or Tack Welded 3" Intervals



Longitudinal Seams



References

SMACNA	(2005 3rd Edition, HVAC Duct Construction Standards Metal and Flexible) Table 3-5 Round Duct Gauge Unreinforced Positive Pressure to 10in. Wg Figure 3-1 Round Duct Transverse Joints Figure 3-2 Round Duct Longitudinal Seams Figure 3-4 Round Duct Elbows
---------------	---

Round Pipe & Fittings Construction

to -2" WG Negative Pressure	SMACNA (2005 HVAC Round Construction Standards) (Exhaust, Fume or Ventilation)								
Pipe Diameter	Spiral Pipe					Longitudinal Seamed Pipe & Fittings			
	Length	Gauge	Seam	Connector	Stiffener Spacing	Gauge	Seam	Connector	
0-12"	Any	*28ga	Spiral	Coupling	-	26ga	Lap&Spot	Crimp/Bead/Collar	
to 14"	Any	*28ga	Spiral	Coupling	-	24ga	Lap&Spot	Crimp/Bead/Collar	
to 16"	Any	*26ga	Spiral	Coupling	-	24ga	Lap&Spot	Crimp/Bead/Collar	
to 20"	Any	24ga	Spiral	Coupling	-	22ga	Lap&Spot	Crimp/Bead/Collar	
to 24"	Any	22ga	Spiral	Coupling	-	22ga	Lap&Spot	Crimp/Bead/Collar	
to 42"	10'	24ga	Spiral	MfgFlg(Slip-on)	-	24ga	Lap&Spot	MfgFlg(Slip-on)	
to 54"	10'	22ga	Spiral	MfgFlg(Slip-on)	-	22ga	Lap&Spot	MfgFlg(Slip-on)	
to 66"	Any	22ga	Spiral	MfgFlg(Slip-on)	1½x1½x1/8" Angle @10'	22ga	Lap&Spot	MfgFlg(Slip-on)	
to 72"	Any	20ga	Spiral	MfgFlg(Slip-on)	1½x1½x1/8" Angle @10'	20ga	Lap&Spot	MfgFlg(Slip-on)	
to 90"	Any	20ga	Spiral	MfgFlg(Slip-on)	1½x1½x3/16" Angle @10'	20ga	Lap&Spot	MfgFlg(Slip-on)	
to 96"	Any	20ga	Spiral	MfgFlg(Slip-on)	1½x1½x1/4" Angle @10'	20ga	Lap&Spot	MfgFlg(Slip-on)	
Over-96"	n/a					n/a			

(*)Stock Pipe

See "Stiffener Details for Negative Pressure Round Pipe"

Definitions

Coupling	4" Coupling Attachment with SM Screws 8"oc
Crimp/Bead/Collar	Crimp/Bead/Collar 2" Slip Attachments with SM Screws 8"oc
Slip-On Flange	Slip-on Manufactured Flange Mated with Butyl or Neoprene Gasket and Attached with SM Screws
Angle Stiffener	Angle Ring Attachment with Tack Welds Screws 12"oc (See Rating for Size)
Spiral Seam	3/8" Acme Lock/Spiral Seam
Lap&Spot	Longitudinal Seam Spot Welded 2" on Center or Tack Welded 3" Intervals

Reinforcement Ratings

Class (A)	Manufacturers Slip-On Flange
Class (B)	1½ x 1½ x 1/8" Angle Ring
Class (C)	1½ x 1½ x 3/16" Angle Ring
Class (D)	1½ x 1½ x 1/4" Angle Ring
Class (E)	2 x 2 x 3/16" Angle Ring
Class (F)	2 x 2 x 1/4" Angle Ring
Class (G)	3 x 3 x 1/4" Angle Ring

References

SMACNA	(2005 3rd Edition, HVAC Duct Construction Standards Metal and Flexible)
	Table 3-2 Angle Ring Size
	Table 3-6 Minimum Required Gauge for Longitudinal Seam Duct Under Negative Pressure
	Table 3-10 Minimum Required Gauge for Spiral Duct Under Negative Pressure
	Table [2-29] Transverse Joint Reinforcement & Table [2-32] Intermediate Reinforcing (Class-A Reinforcement)
	Figure 3-1 Round Duct Transverse Joints
	Figure 3-2 Round Duct Longitudinal Seams

Round Pipe & Fittings Construction

to -4" WG Negative Pressure	SMACNA (2005 HVAC Round Construction Standards) (Exhaust, Fume or Ventilation)							
Pipe Diameter	Spiral Pipe					Longitudinal Seamed Pipe & Fittings		
	Length	Gauge	Seam	Connector	Stiffener Spacing	Gauge	Seam	Connector
0-10"	Any	*28ga	Spiral	Coupling	-	26ga	Lap&Spot	Crimp/Bead/Collar
to 12"	Any	26ga	Spiral	Coupling	-	24ga	Lap&Spot	Crimp/Bead/Collar
to 16"	Any	22ga	Spiral	Coupling	-	22ga	Lap&Spot	Crimp/Bead/Collar
to 20"	Any	22ga	Spiral	Coupling	-	22ga	Lap&Spot	Crimp/Bead/Collar
to 24"	10'	26ga	Spiral	MfgFlg(Slip-on)	-	24ga	Lap&Spot	MfgFlg(Slip-on)
to 42"	10'	24ga	Spiral	MfgFlg(Slip-on)	-	22ga	Lap&Spot	MfgFlg(Slip-on)
to 60"	Any	22ga	Spiral	MfgFlg(Slip-on)	1½x1½x1/8" Angle @10'	20ga	Lap&Spot	MfgFlg(Slip-on)
to 66"	Any	22ga	Spiral	MfgFlg(Slip-on)	1½x1½x3/16" Angle @10'	18ga	Lap&Spot	MfgFlg(Slip-on)
to 72"	Any	20ga	Spiral	MfgFlg(Slip-on)	1½x1½x3/16" Angle @10'	18ga	Lap&Spot	MfgFlg(Slip-on)
to 78"	Any	20ga	Spiral	MfgFlg(Slip-on)	1½x1½x1/4" Angle @10'	18ga	Lap&Spot	MfgFlg(Slip-on)
to 96"	Any	20ga	Spiral	MfgFlg(Slip-on)	2x2x3/16" Angle @10'	18ga	Lap&Spot	MfgFlg(Slip-on)
Over-96"	n/a					n/a		

(*)Stock

See "Stiffener Details for Negative Pressure Round Pipe"

Definitions

Coupling	4" Coupling Attachment with SM Screws 8"oc
Crimp/Bead/Collar	Crimp/Bead/Collar 2" Slip Attachments with SM Screws 8"oc
Slip-On Flange	Slip-on Manufactured Flange Mated with Butyl or Neoprene Gasket and Attached with SM Screws
Angle Stiffener	Angle Ring Attachment with Tack Welds Screws 12"oc (See Rating for Size)
Spiral Seam	3/8" Acme Lock/Spiral Seam
Lap&Spot	Longitudinal Seam Spot Welded 2" on Center or Tack Welded 3" Intervals

Reinforcement Ratings

Class (A)	Manufacturers Slip-On Flange
Class (B)	1½ x 1½ x 1/8" Angle Ring
Class (C)	1½ x 1½ x 3/16" Angle Ring
Class (D)	1½ x 1½ x 1/4" Angle Ring
Class (E)	2 x 2 x 3/16" Angle Ring
Class (F)	2 x 2 x 1/4" Angle Ring
Class (G)	3 x 3 x 1/4" Angle Ring

References

SMACNA	(2005 3rd Edition, HVAC Duct Construction Standards Metal and Flexible)
	Table 3-2 Angle Ring Size
	Table 3-7 Minimum Required Gauge for Longitudinal Seam Duct Under Negative Pressure
	Table 3-11 Minimum Required Gauge for Spiral Duct Under Negative Pressure
	Table [2-29] Transverse Joint Reinforcement & Table [2-32] Intermediate Reinforcing (Class-A Reinforcement)
	Figure 3-1 Round Duct Transverse Joints
	Figure 3-2 Round Duct Longitudinal Seams



Round Pipe & Fittings Construction

to -6" WG Negative Pressure	SMACNA (2005 HVAC Round Construction Standards) (Exhaust, Fume or Ventilation)								
Pipe Diameter	Length	Gauge	Seam	Spiral Pipe Connector		Stiffener Spacing	Longitudinal Seamed Pipe & Fittings Gauge Seam Connector		
0-8"	Any	*28ga	Spiral	Coupling	-		26ga	Lap&Spot	Crimp/Bead/Collar
to 10"	Any	26ga	Spiral	Coupling	-		24ga	Lap&Spot	Crimp/Bead/Collar
to 12"	Any	24ga	Spiral	Coupling	-		24ga	Lap&Spot	Crimp/Bead/Collar
to 14"	Any	24ga	Spiral	Coupling	-		22ga	Lap&Spot	Crimp/Bead/Collar
to 18"	Any	22ga	Spiral	Coupling	-		22ga	Lap&Spot	Crimp/Bead/Collar
to 22"	10'	26ga	Spiral	MfgFlg(Slip-on)	-		24ga	Lap&Spot	MfgFlg(Slip-on)
to 30"	10'	24ga	Spiral	MfgFlg(Slip-on)	-		22ga	Lap&Spot	MfgFlg(Slip-on)
to 36"	10'	22ga	Spiral	MfgFlg(Slip-on)	-		20ga	Lap&Spot	MfgFlg(Slip-on)
to 42"	Any	22ga	Spiral	MfgFlg(Slip-on)	1½x1½x1/8" Angle @10'		20ga	Lap&Spot	MfgFlg(Slip-on)
to 48"	Any	22ga	Spiral	MfgFlg(Slip-on)	1½x1½x1/8" Angle @10'		20ga	Lap&Spot	MfgFlg(Slip-on)
to 60"	Any	20ga	Spiral	MfgFlg(Slip-on)	1½x1½x3/16" Angle @10'		18ga	Lap&Spot	MfgFlg(Slip-on)
to 66"	Any	20ga	Spiral	MfgFlg(Slip-on)	1½x1½x1/4" Angle @10'		18ga	Lap&Spot	MfgFlg(Slip-on)
to 72"	Any	20ga	Spiral	MfgFlg(Slip-on)	2x2x3/16" Angle @10'		18ga	Lap&Spot	MfgFlg(Slip-on)
to 84"	Any	18ga	Spiral	MfgFlg(Slip-on)	2x2x3/16" Angle @10'		18ga	Lap&Spot	MfgFlg(Slip-on)
to 90"	Any	18ga	Spiral	MfgFlg(Slip-on)	2x2x1/4" Angle @10'		18ga	Lap&Spot	MfgFlg(Slip-on)
to 96"	Any	18ga	Spiral	MfgFlg(Slip-on)	3x3x1/4" Angle @10'		18ga	Lap&Spot	MfgFlg(Slip-on)
Over-96"	n/a						n/a		

(*)Stock

See "Stiffener Details for Negative Pressure Round Pipe"

Definitions

- Coupling** 4" Coupling Attachment with SM Screws 8"oc
- Crimp/Bead/Collar** Crimp/Bead/Collar 2" Slip Attachments with SM Screws 8"oc
- Slip-On Flange** Slip-on Manufactured Flange Mated with Butyl or Neoprene Gasket and Attached with SM Screws
- Angle Stiffener** Angle Ring Attachment with Tack Welds Screws 12"oc (See Rating for Size)
- Spiral Seam** 3/8" Acme Lock/Spiral Seam
- Lap&Spot** Longitudinal Seam Spot Welded 2" on Center or Tack Welded 3" Intervals

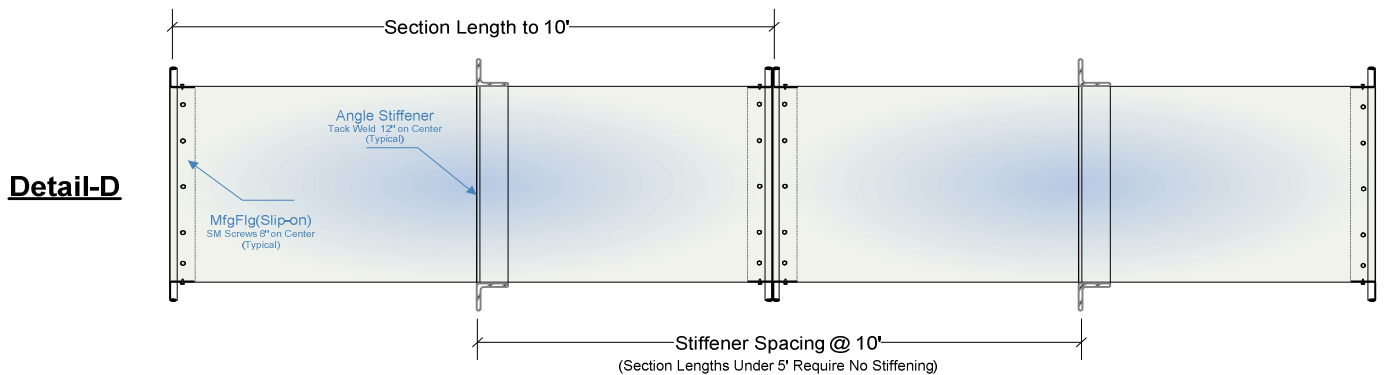
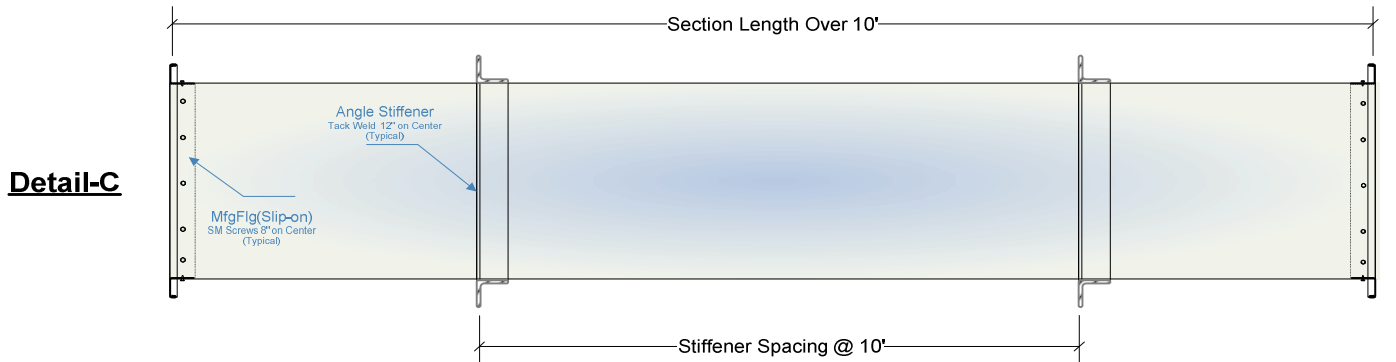
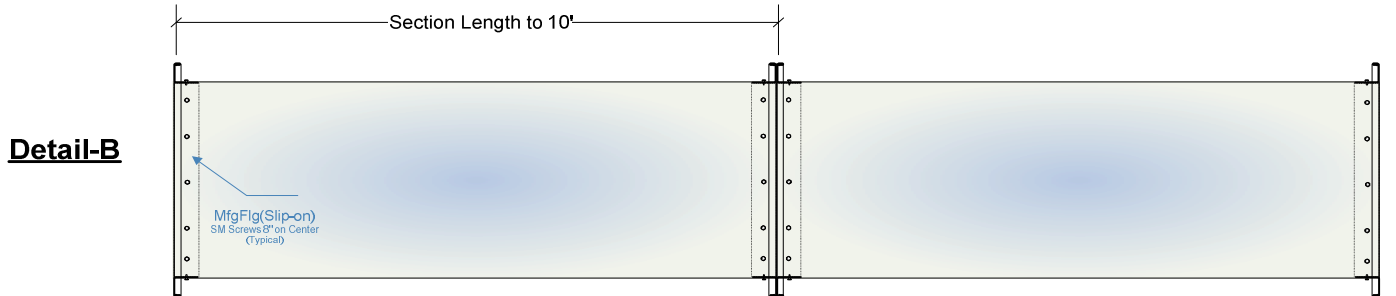
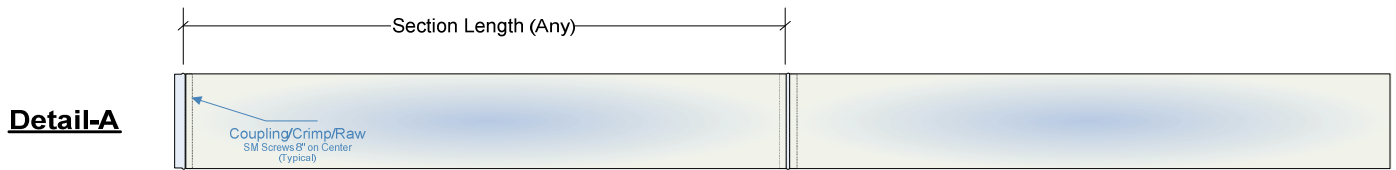
Reinforcement Ratings

- Class (A)** Manufacturers Slip-On Flange
- Class (B)** 1½ x 1½ x 1/8" Angle Ring
- Class (C)** 1½ x 1½ x 3/16" Angle Ring
- Class (D)** 1½ x 1½ x 1/4" Angle Ring
- Class (E)** 2 x 2 x 3/16" Angle Ring
- Class (F)** 2 x 2 x 1/4" Angle Ring
- Class (G)** 3 x 3 x 1/4" Angle Ring

References

- SMACNA** (2005 3rd Edition, HVAC Duct Construction Standards Metal and Flexible)
 - Table 3-2 Angle Ring Size
 - Table 3-8 Minimum Required Gauge for Longitudinal Seam Duct Under Negative Pressure
 - Table 3-12 Minimum Required Gauge for Spiral Duct Under Negative Pressure
 - Table [2-29] Transverse Joint Reinforcement & Table [2-32] Intermediate Reinforcing (Class-A Reinforcement)
 - Figure 3-1 Round Duct Transverse Joints
 - Figure 3-2 Round Duct Longitudinal Seams

Stiffener Details for Negative Pressure Round Pipe



Reinforcement Ratings

- Class (A)** Manufacturers Slip-On Flange
- Class (B)** 1½ x 1½ x 1/8" Angle Ring
- Class (C)** 1½ x 1½ x 3/16" Angle Ring
- Class (D)** 1½ x 1½ x 1/4" Angle Ring
- Class (E)** 2 x 2 x 3/16" Angle Ring
- Class (F)** 2 x 2 x 1/4" Angle Ring
- Class (G)** 3 x 3 x 1/4" Angle Ring