

# Flexible Duct Connector

## How to select the proper type of Flexible Duct Connector for your installation!

To meet every type of application requirement, Cain has developed the **FABRIC SELECTION CHART** for a quick comparison of the many types of fabric currently available. Whether for institutional, factory, office or residential, Cain offers just the right fabric.\*\* Cain Duct Connectors are pre-assembled with the (24 gauge or 28 guage\*) sheet metal permanently secured to fabric by means of Cain "Flex-Loc" or optional "S-Loc" seam locks.

Cain Flexible Duct Connectors are produced in continuous coils of 50', 100' or 150' long and are shipped in convenient dispenser cartons.

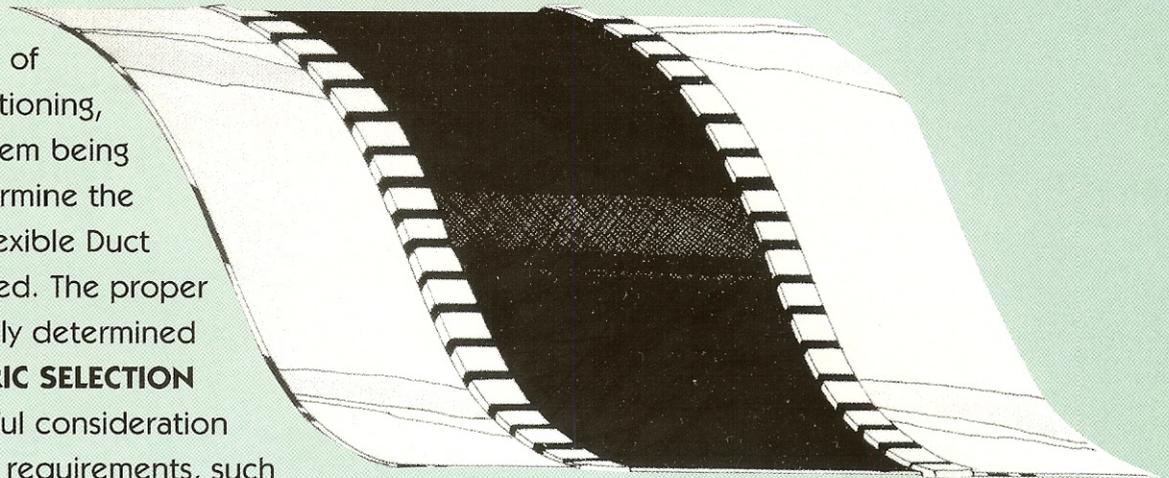
Any questions remaining may be answered by your local factory representative, or call Cain direct, to talk with our engineers.

- \*\* Cain metals meet ASTM 924/653  
Many Cain fabrics are ISO 9000 approved.
- \* Some products, also available in aluminum or stainless.

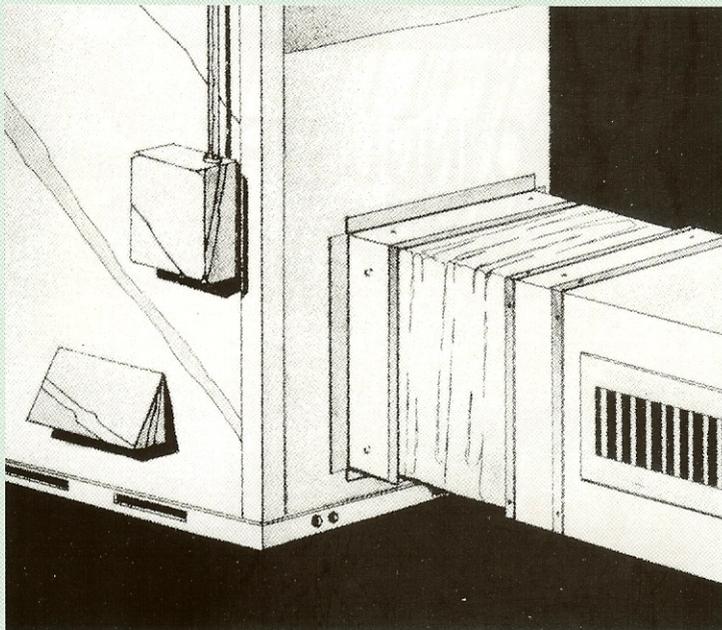


# FLEXIBLE DUCT CONNECTOR

The size and type of heating, air conditioning, or ventilation system being installed will determine the proper type of Flexible Duct Connector required. The proper fabric can be easily determined by using the **FABRIC SELECTION CHART** after careful consideration of the installation requirements, such as: pressure of the system, temperature range, indoor or outdoor installation, proximity to chemicals or fumes, and approvals required, such as: NFPA, UL, City of Los Angeles, Government/Military specifications or California Fire Marshall approvals.



Patent No. 2,825,384 and 3,183,701.



## SUGGESTED SPECIFICATIONS

At inlet and discharge of all air handling equipment, and where indicated on drawings, furnish and install **Cain Flexible Connectors** of ( name of fabric ) having a weight of \_\_\_\_\_ oz/yd<sup>2</sup> of fabric, having a tensile strength of no less than \_\_\_\_\_ lbs. and a temperature range of \_\_\_\_\_ °F ( to \_\_\_\_\_ °F (Please refer to the **FABRIC SELECTION CHART** on next page).

(metal type)

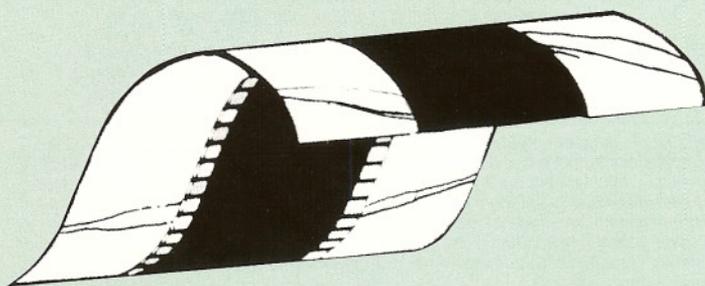
Flexible Duct Connectors shall be pre-assembled  24 gauge,  28 gauge; Galv., Alum., Stainless, x \_\_\_\_\_" wide to \_\_\_\_\_" wide fabric, clenched by means of a roll formed double lock seam. Flexible Duct Connectors shall be of a grade:  Commercial  Economy  Residential ( name of fabric ) as manufactured by **Cain Manufacturing Company, Inc., Pelham, AL 35124.**

# FABRIC SELECT

	<b>CANFLEX</b> (CANVAS) TRADITIONAL DUCT FABRIC	<b>FLEXLON</b> (HYPALON/FIBERGLASS) IDEAL OUTDOORS HIGH VELOCITY	<b>GLASSTITE</b> (VINYL/FIBERGLASS) GENERAL PURPOSE LOW/MED VELOCITY	<b>HYPALON</b> (HYPALON/POLYESTER) ALL WEATHER HIGH VELOCITY
<b>DESCRIPTION</b>	CANFLEX is a canvas fabric which is fire retardant, waterproof and mildew proof. It will not burn or support combustion and will only char when exposed to a flame. Air leakage is virtually eliminated by its close weave and the finish will not wash out.	FLEXLON is a heavy glass fabric, coated on both sides with white hypalon. Fabric is non-combustible and coating is flame proof. Has excellent weathering quality and is waterproof. Resistant to ozone, acids, alkalis, gasoline and grease.	GLASSTITE is a glass fabric sealed airtight and watertight with a vinyl coating, both sides. The glass fabric is non-combustible and the coating flame retardant. Resistant to acids, alkalis, gasoline and grease.	HYPALON is a polyester fabric with a heavy hypalon coating on both sides. Airtight and watertight fabric has outstanding resistance to weathering, ultraviolet radiation, ozone and is not affected by mildew.
<b>APPROVALS</b>	Listed by Underwriters' Laboratories, Inc. Meets the following government specifications MIL-D10860, CCC-C-419, CCC-D-428. Conforms with standards for flexible duct connectors outlined in pamphlet 90B published by National Fire Protection Association.	Listed by Underwriters' Laboratories, Inc. Conforms with standards for flexible duct connectors outlined in pamphlet 90A published by National Fire Protection Association. Complies with Federal Specifications MIL-C-20696B, MIL-Y-1140 C. Fabric is U.L. listed (File No. R 4597). U.L. 214 CCC-T-191A	Listed by Underwriters' Laboratories, Inc. Conforms with standards for flexible duct connectors outlined in pamphlets 90A and 90B published by National Fire Protection Association. Complies with Government Specifications and CCC-T-191B.  Conforms To: UL181 Class 1 <b>L.A. APPROVED</b>	Hypalon is designed to meet and conform with standards for flexible duct connectors outlined in pamphlet 90A and 90B published by the National Fire Protection Association. Hypalon is U.L. listed and has received Class A Fire Resistance Approval (R 10321).
<b>TECHNICAL DATA</b>	<b>WEIGHT</b> ASTM D 751-73 15 oz/sq yd +/- 0.5	<b>WEIGHT</b> ASTM D 751-73 23 oz/sq yd +/- 1.5	<b>WEIGHT</b> ASTM D 751-73 16 oz/sq yd +/- 0.5	<b>WEIGHT</b> Fed. Std. 191B Method 5041 35 oz/sq yd +/- 1
	<b>GRAB TENSILE STRENGTH</b> ASTM D 751-73 Method 5100 260 Lbs. Warp x 195 Lbs. Fill	<b>GRAB TENSILE STRENGTH</b> ASTM D 751-73 Method 5100 475 Lbs. Warp x 375 Lbs. Fill	<b>GRAB TENSILE STRENGTH</b> ASTM D 751-73 Method 5100 90 Lbs. Warp x 90 Lbs. Fill	<b>GRAB TENSILE STRENGTH</b> ASTM D 751-73 200 Lbs. Warp x 200 Lbs. Fill
	<b>FIRE RESISTANCE</b> Fed. Std. 191A Method 5905 Will not burn nor support combustion. Test CCC-T-191 will conform to U.L. Approval File A Max. 2 sec. after flame	<b>FIRE RESISTANCE</b> Fed. Std. 191A Does not burn - Test Method 5902 of Spec. Fed. Std. 191A (Vertical) has no glow time and only 1/4" char length.	<b>FIRE RESISTANCE</b> Fed. Std. 191A Method 5903 Glass fabric non-combustible coating Flame retardant test CCC-T-191B U.L. 214, R 4597 After flame 2 sec. max. Char length 3.5"	<b>FIRE RESISTANCE</b> Passed U.L. 214 Listed Class A Fire Resistance Approval (R 10321)
	<b>TEMPERATURE RANGE</b> ASTM D 2136-66 ASTM D 573 Will withstand 210°F for short periods, 185°F Continuous	<b>TEMPERATURE RANGE</b> ASTM D 2136-66 ASTM D 573 -40°F to 240°F Continuous 250°F Intermittent	<b>TEMPERATURE RANGE</b> ASTM D 2136-66 ASTM D 573 -40°F to 180°F 200°F Intermittent	<b>TEMPERATURE RANGE</b> ASTM D 2136-66 ASTM D 573 -45°F to 200°F 240°F Intermittent
	<b>TONGUE TEAR STRENGTH</b> ASTM D 751-73 CCC-T-191B Method 5134 8 Lbs. x 8 Lbs.	<b>TONGUE TEAR STRENGTH</b> ASTM D 751-73 20 Lbs. x 15 Lbs.	<b>TONGUE TEAR STRENGTH</b> ASTM D 751-73 CCC-T-191B Method 5134 8 Lbs. x 9 Lbs.	<b>TONGUE TEAR STRENGTH</b> ASTM D 751-B Fed. Std. 191B Method 5134 80 Lbs. Tongue Tear
	<b>WATERPROOF QUALITIES</b> Mullen Burst Test ASTM D 751-73 Method 5512 CCC-C-419 Water resistant	<b>WATERPROOF QUALITIES</b> Mullen Burst Test ASTM D 751-73 Method 5512 Hydrostatic Resistance 750 Lbs. per square inch	<b>WATERPROOF QUALITIES</b> Mullen Burst Test ASTM D 751-73 Method 5512 Hydrostatic Resistance 160 Lbs. per square inch	<b>WATERPROOF QUALITIES</b> Mullen Burst Test ASTM D 751-73 Method 5512 Hydrostatic Resistance 375 Lbs. per square inch
	<b>THICKNESS</b> ASTM D 751-73 .028"	<b>THICKNESS</b> ASTM D 751-73 .020"	<b>THICKNESS</b> ASTM D 751-73 .016"	<b>THICKNESS</b> ASTM D 751-73 .036"
	<b>CHEMICAL/MILDEW RESISTANCE ASTM D 1149</b> Treated for fire, water, weather and mildew resistance, Class 1. Will pass 14 day soil burial test CCC-T-191A	<b>CHEMICAL/MILDEW RESISTANCE ASTM D 1149</b> Resistant to ozone, acids, alkalis, gasoline and grease.	<b>CHEMICAL/MILDEW RESISTANCE ASTM D 1149</b> Resistant to acids, alkalis, chemical fumes, grease, oil and gasoline.	<b>CHEMICAL/MILDEW RESISTANCE ASTM D 1149</b> Outstanding resistance to weathering, ultraviolet radiation, ozone and is not affected by mildew.
	<b>SUGGESTED USES</b>	FLEXLON can be used in practically every type of installation. White coating reflects heat and is clean appearing. Having excellent weathering characteristics, waterproof and ozone resistant makes Flexlon ideal for outdoor applications. Because it is resistant to acids, alkalis, gasoline and grease it can be used in kitchen exhaust and fume hoods. Being absolutely airtight, it is ideal for high pressure systems. Having exceptional strength and yet highly flexible it can be used equally well in domestic, commercial and industrial applications.	GLASSTITE, because it is flame retardant, can be used in domestic and medium size commercial heating, ventilating and air conditioning systems. Because it is airtight and watertight it can be used in fume hoods and on outdoor connections.	HYPALON plain or insulated can be used in practically every type of installation. It is especially recommended for heavy weathering applications. It is not affected by ultraviolet radiation, ozone or mildew. Insulated hypalon has an R rating of 2 and will reduce heat loss/gain. Insulated hypalon is energy efficient product.

# ON CHART

<b>MULTIFLEX</b> (PVC/POLYESTER) GENERAL PURPOSE LOW/MED VELOCITY	<b>NEOFLEX</b> (NEOPRENE/FIBERGLASS) INDUSTRY STANDARD HIGH VELOCITY	<b>THERMOLON</b> (SILICONE/FIBERGLASS) SUPERIOR WEATHERING HIGH TEMPERATURES	<b>VINYLON</b> (PVC/NYLON/POLYESTER) GENERAL PURPOSE LOW/MED VELOCITY
MULTIFLEX is a new polyester fabric with a vinyl coating on both sides. An extremely tough connector material. Black in color, the coating is flame retardant. Multiflex is airtight, weather resistant and chemical resistant.	NEOFLEX is a heavy glass fabric, coated on both sides with neoprene. The glass fabric is non-combustible, and the coating is fire retardant, and has no glow time or char length. NEOFLEX is waterproof, airtight, and gasoline and grease resistant.	THERMOLON is a very heavy glass fabric, coated on both sides with silicone. Silver in color, flame proof, it has excellent resistance to many chemicals and weathering. Designed for high temperature applications.	VINYLON is a nylon polyester fabric with a heavy vinyl coating on both sides and extremely tough connector material. Dark gray in color the coating is flame retardant. Vinylon is airtight, weather resistant, and chemical resistant.
Designed to meet NFPA Standard 90A and 90B for flexible duct connectors. Complies with Government Specifications MIL-20696B. Fed. Std. 191B.	Listed by Underwriters' Laboratories, Inc. Conforms with standards for flexible duct connectors outlined in pamphlet #90A National Fire Protection Association. Complies with Federal Specifications MIL-Y-1140 C. U.L. Listed (File 327 G)  Conforms To: UL 181 Class 1 <b>L.A. APPROVED</b>	Meets requirements of Underwriters' Laboratory Test procedure U.L. 214. Lab tested for temperatures up to 500° (continuous, 600°F intermittent. Will not support flame. Fabric meets requirements of MIL-Y-1140 H and FTMS 191 A test method 5903. MIL-C-20696 C. Conforms To: UL 181 Class 0 <b>L.A. APPROVED</b>	Listed by Underwriter's Laboratories, Inc. Test procedure U.L. 214. Designed to meet NFPA Standard 90A and 90B. Complies with Government Specifications MIL-C-20696B. U.L. 214 (R 4597) California Fire Marshall F-102.4
<b>WEIGHT</b> Fed. Std. 191B Method 5041. 12 oz/sq yd +/- 1	<b>WEIGHT</b> ASTM D 751-73 Method 5041 29 oz/sq yd +/- 1.5	<b>WEIGHT</b> ASTM D 751-73 Method 5041 34 oz/sq yd +/- 0.5	<b>WEIGHT</b> Fed. Std. 191B Method 5041 20 oz/sq yd +/- 1.5
<b>GRAB TENSILE STRENGTH</b> ASTM D 751-73 Method 5100 100 Lbs. Warp x 100 Lbs. Fill	<b>GRAB TENSILE STRENGTH</b> ASTM D 571-73 475 Lbs. Warp x 375 Lbs. Fill	<b>GRAB TENSILE STRENGTH</b> ASTM D 751-73 610 Lbs. Warp x 512 Lbs. Fill Method 5100	<b>GRAB TENSILE STRENGTH</b> ASTM D 751-73 225 Lbs Warp x 250 Lbs Fill
<b>FIRE RESISTANCE</b> Test CCC-T-191B Method 5903 Time after flame 2 sec. Char length 5 inches	<b>FIRE RESISTANCE</b> Passed U.L. 214 Flame Resistance After flame 2 sec. max. 3 1/2" char length	<b>FIRE RESISTANCE</b> Fed. Std. 191 A Method 5903 Flame Resistance FTMS 191 A Method 5903 U.S. Bureau of Mines Safety Standards 75-302-3 0" flame spread Self-extinguishing	<b>FIRE RESISTANCE</b> Passed U.L. 214 Flame Resistance R 4462
<b>TEMPERATURE RANGE</b> ASTM D 2136-66 ASTM D 573 -40°F to 180°F 200°F Intermittent	<b>TEMPERATURE RANGE</b> ASTM D 2136-66 ASTM D 573 -40°F to 200°F	<b>TEMPERATURE RANGE</b> ASTM D 2136-66 ASTM D 573 -67°F to 500°F 600°F Intermittent Method 5903	<b>TEMPERATURE RANGE</b> ASTM D 2136 ASTM D 573 -40°F to 180°F 200°F Intermittent
<b>TONGUE TEAR STRENGTH</b> ASTM D 751-73 Fed. Std. 191B Method 5134 12 Lbs. x 8 Lbs.	<b>TONGUE TEAR STRENGTH</b> ASTM D 751-73 25 Lbs. Warp x 20 Lbs. Fill (Min.)	<b>TONGUE TEAR STRENGTH</b> ASTM D 751-73 60 Lbs. x 25 Lbs. Method 5134	<b>TONGUE TEAR STRENGTH</b> ASTM D 751-B Fed. Std. 191B Method 5134 60 Lbs. x 60 Lbs.
<b>WATERPROOF QUALITIES</b> Mullen Burst Test ASTM D 751-A Method 5512 Hydrostatic Resistance 125 Lbs. per square inch	<b>WATERPROOF QUALITIES</b> Mullen Burst Test ASTM D 751-73 Method 5512 Hydrostatic Resistance 750 Lbs. per square inch	<b>WATERPROOF QUALITIES</b> Mullen Burst Test ASTM D 751-73 Method 5512 Hydrostatic Resistance 600 Lbs. per square inch	<b>WATERPROOF QUALITIES</b> Mullen Burst Test ASTM D 751-73 Method 5512 Hydrostatic Resistance 320 Lbs. per square inch
<b>THICKNESS</b> ASTM 751-73 .015"	<b>THICKNESS</b> ASTM D 751-73 .025"	<b>THICKNESS</b> .030" ASTM D 751-73 .032"	<b>THICKNESS</b> ASTM D 751-73 .023"
<b>CHEMICAL/MILDEW RESISTANCE ASTM D 1149</b> Resistant to weathering, oil, gasoline and many other chemicals.	<b>CHEMICAL/MILDEW RESISTANCE ASTM D 1149</b> Resistant to acids, alkalis, gasoline and grease, not affected by mildew. <b>NOTE:</b> Economy and residential grades are 23 oz/sq yd.	<b>CHEMICAL/MILDEW RESISTANCE ASTM D 1149</b> Excellent resistance to weathering, acids and alkalis. Adversely affected by gasoline, toluene, acetone and grease. MIL-C-20696C Section 4,4,3 and 4,4,4	<b>CHEMICAL/MILDEW RESISTANCE ASTM D 1149</b> Resistant to oil, grease, weathering and many other chemicals. <b>NOTE</b> Surpasses safety standard specifications MIL-C-20696B
MULTIFLEX can be used in practically every type of installation within its temperature range. Recommended for low to medium velocity applications where U.L. listing is not required.	NEOFLEX can be used in practically every type of installation, and most engineers specify it regardless of the type of system. Because it is resistant to acids, alkalis, gasoline and grease, it can be used in kitchen exhaust and fume hoods. Being absolutely waterproof and airtight, it is ideal for high pressure systems and in outdoor connections. Having exceptional strength and yet highly flexible it can be used equally well in domestic, commercial and industrial applications.	THERMOLON can be used in practically every type of installation, especially where high temperatures are used and an airtight connector is required. Thermolon is the logical substitute for asbestos products or where high temperatures are of concern.	VINYLON can be used in practically every type of installation within its temperature limitations. Low in cost - easy to fabricate and extremely high abrasion and cut resistant fabric.



### COMMERCIAL GRADE

3" Metal, 3" Fabric, 3" Metal  
Gauge of Steel; 24 Gauge .024" Galv.  
Commercial & Industrial Applications

### RESIDENTIAL GRADE

1 3/4" Metal, 3" fabric, 1 3/4" Metal  
Gauge of Steel; 28 Gauge .017" Galv.  
Light Commercial & Residential Applications

### TDC/TDF COMMERCIAL GRADE

**Designed to be compatible with both TDC (Lockformer) and TDF (Engel) roll forming flange - fabricating machines**  
4" Metal, 4" Fabric, 4" Metal  
Gauge of Steel; 24 Gauge .024" Galv.  
Commercial & Industrial Grade

### ECONOMY GRADE

2 3/4" Metal, 4" Fabric, 2 3/4" Metal  
Gauge of Steel; 28 Gauge .017" Galv.  
Light Commercial Applications

### EXTRA WIDE COMMERCIAL GRADE

3" Metal, 6" fabric, 3" Metal  
Gauge of Steel; 24 Gauge .024" Galv.  
Commercial & Industrial Grade

### INSULATED - ALL WEATHER FLEXIBLE DUCT CONNECTOR

4" Metal; 5" Fabric, 4" Metal  
Gauge of Steel; 28 Gauge .017" Galv.  
Commercial & Industrial Grade

### FLEX-LOC

The double-lock gripping fingers of Cain Flex-Loc add tremendous holding power compared with conventional locking methods. Cain connector lays flat for easy marking, cutting and fabrication. Flex-Loc is standard on Commercial Duct Connector. Plain seam without notches also available upon request.



### S-LOC

Shielded with metal on both sides at the seam, S-Loc forms a tough metal-to-fabric bond. Brake forming is simpler, and the shielded fabric is protected from tears. Standard on economy and residential grades - available on Commercial Grade Duct Connector - specify "S-Loc".



## FABRIC ONLY, WITHOUT METAL



Cain fabrics are available without metal to customers who have need of fabrics only. Refer to our Fabric Selection Chart for descriptions, approvals, technical data and recommended uses. Cain fabrics are available in 4", 5" and 7" widths, in 100 ft. rolls. Some fabric may be available in other widths. Contact your factory representative or call Cain direct.