

SUBMITTAL RECORD

JOB _____
 LOCATION _____
 SUBMITTED TO _____
 SUBMITTAL PREPARED BY _____
 APPROVED BY _____
 DATE _____

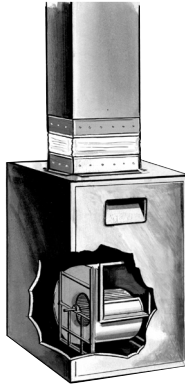


**Specification Form
 DDFDC-0703
 Flexible Duct Connector**

DESCRIPTION

All air duct installations for heating, cooling or ventilation are attached to mechanical equipment containing a fan or blower. Vibrations, noises and rattles resulting from operation of the fan or blower are transmitted into the metal ducts which carry the noises throughout the system.

In order to isolate the vibration and noises to the source, an air - tight flexible joint, consisting of a fabric which is attached to sheet metal on both side, must be inserted between the equipment and the ductwork. This vibration isolator is called a "Flexible Duct Connector".



RELATED NFPA 90A & 90 B STANDARDS

2-3.2.2 Vibration isolation connectors in duct systems shall be made of an approved flame-retardant fabric or shall consist of sleeve joints with packing of approved material, each having a maximum flame spread index of 25 and a maximum smoke developed index of 50. Exception: Approved flame-retardant fabric having a maximum length of 10 in. (45.4 cm) in the direction of airflow-**NFPA No. 90A 1999**

2-1.1.1 Exception No. 3: Vibration isolation connectors in duct systems shall be made of approved flame-retardant fabric or shall consist of sleeve joints with packing of approved noncombustible material. The fabric shall not exceed 10 in. (254 mm) in length in direction of airflow-**NFPA No. 90B 1999**

"METAL - FAB"

Gauge: 24
Dimensions: 3" metal-
 3" fabric- 3" metal
Seam: "Grip Loc"

"SUPER METAL - FAB"

Gauge: 24
Dimensions: 3" metal-
 6" fabric- 3" metal
Seam: "Grip Loc"



| FABRIC COMPARISONS | <input type="checkbox"/> Excelon ⁶ | <input type="checkbox"/> Neoprene | <input type="checkbox"/> Durolon | <input type="checkbox"/> Insulflex | <input type="checkbox"/> Thermafab |
|---|--|-----------------------------------|--|--|---|
| Continuous Temp. Range | -40°F. to 180°F. | -40°F. to 200°F. | -40°F. to 250°F. | -40°F. to 180°F. | -65°F. to 500°F. |
| Color | Black or Spec Chek Orange | Black | White | Black | Grey |
| Weight Per Square Yard | 22 | 30 | 24 | 28 (composite weight) | 17 |
| Abrasion Resistance¹ | 15,000 cycles | 600 cycles | 500 cycles | 500 cycles | 125 cycles |
| Leakage Resistance² | 350 | 595 | 250 | 125 | 400 |
| Minimum Radiation Resistance of Fabric³ | 19 x 10 ⁶ | 55 x 10 ⁶ | 19 x 10 ⁶ | 19 x 10 ⁶ | 10 x 10 ⁶ |
| Tear Strength⁴ | 100/100 | 12/12 | 12/12 | 8/11 | 50/40 |
| Tensile Strength⁵ | 240/220 | 500/450 | 225/300 | 70/70 | 200/150 |
| Features | High Tear Strength High Abrasion Resistance. | General Purpose | Excellent Ozone and Weathering Resistance. Best Overall Acid Resistance. | Low Smoke Emission Insulated 3-4-3 Configuration. | Very Low Smoke Emission. High Temperature Resistant. |
| Codes | | | | | |
| Metal-Fab | MBX(#10159) MSPX(#10263) | MFN(#10003) | MFD(#10002) | IDC(#10173) | MFT(#10005) |
| Super Metal-Fab | MB6X(#10160) MSP6X(#10265) | MF6N(#10012) | MF6D(#10011) | | MF6T(#10013) |

Notes:

1. Abrasion resistance as per Federal Test Standard 191 Method #5306 using CS 17 wheel with 250 Gram load.
2. Leakage resistance as per Federal Test Standard 191 Method #5512. Results in P.S.I. (To convert inches of water multiply P.S.I. x 27.176.).
3. Radiation resistance shown is in Rads and represents the amount of radiation the fabric can withstand and still retain 95% of its tensile strength.
4. Tear strength in tongue pounds as per Federal Test Standard 191 Method #5134.1 (warp/fill).
5. Tensile strength in grab pounds as per Federal Test Standard 191 Method #5100 (warp/fill).
6. Standard Excelon is not LA city approved use Excelon-LA when LA city approval is necessary. (See Specification Form Excelon-LA - 203)

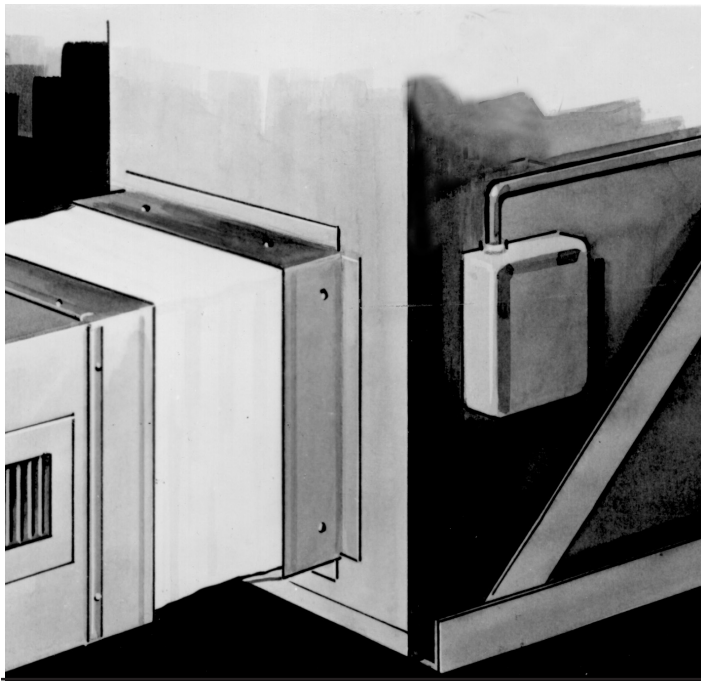
SUGGESTED SPECIFICATION

Vibration Isolating Flexible Duct Connector For Heating, Cooling & Exhaust Supplies & Returns.

At the inlet and discharge of all air handling equipment(unless otherwise noted) furnish and install vibration isolators. Vibration isolators shall be a coated woven fabric named _____ and shall be "Underwriters Laboratories Classified".

Vibration isolators shall have a tear strength of not less then _____, an abrasion resistance of not less than _____, and a continuous temperature range of _____. Vibration isolators shall be preassembled metal to exposed fabric to metal. Fabric and metal shall be joined by means of a double lock seam.

Vibration isolators shall be code _____ (called Flexible Duct Connectors) as manufactured by Duro Dyne Corporation, Bay Shore, N.Y.



Specifications

All Listed Duro Dyne Flexible Duct Connector Fabrics are designed to meet the following specifications:

1. MIL-C-20696B Para. 4.4.3. (Oil Resistance).
2. MIL-C-20696B Para. 4.4.4. (Hydro Carbon Resistance).
3. NFPA 90A Installation of Air Conditioning and Ventilating Systems Para. 2-3.2.2 1999 Edition.
4. NFPA 90B Warm air heating and air conditioning systems. Para. 2-1.1.1 exc. no 3 1999 Edition.
5. UL214 Tests for Flame Propagation of Fabrics and film.
6. California State Fire Marshal Approved.
7. Los Angeles City Approved. (See note 1 below)
8. Denver City Approved.

All Duro Dyne Flexible Duct Connectors utilize galvanized steel meeting ASTM-A-525 G 60.

Note 1 - Standard Excelon is not LA city approved use Excelon-LA when LA city approval is Necessary. (See Specification Form Excelon-LA - 203)

CHEMICAL RESISTANCE

(X = Extremely Resistant)

(~ = Not Recommended)

(O = No Data Available)

| Chemical | | | | | | Chemical | | | | | |
|---------------------------|---------|----------|---------|-----------|-----------|---------------------------|---------|----------|---------|-----------|-----------|
| | Excelon | Neoprene | Durolon | Insulflex | Thermafab | | Excelon | Neoprene | Durolon | Insulflex | Thermafab |
| Acetic Acid | ~ | X | X | ~ | ~ | Hydrofluoric Acid (100%) | ~ | X | X | ~ | ~ |
| Aluminum Chloride | X | X | X | X | X | Hydrogen Peroxide | X | ~ | X | X | X |
| Aluminum Sulfate | X | X | X | X | X | Hydrogen Sulfide | X | X | X | X | O |
| Ammonia (Anhyd) | X | X | X | X | X | Lactic Acid | ~ | X | X | ~ | O |
| Ammonium Hydroxide | X | X | X | X | X | Linseed Oil | ~ | X | X | ~ | X |
| Ammonium Sulfate | X | X | X | X | X | Magnesium Chloride | ~ | X | X | ~ | ~ |
| Barium Sulfide | X | X | X | X | O | Maleic Acid | X | ~ | X | X | X |
| Black Sulfate Liquor | X | X | X | X | ~ | Methyl Alcohol | ~ | X | X | ~ | ~ |
| Boric Acid | X | X | X | X | X | Methyl Cellosolve | ~ | X | X | ~ | ~ |
| Butyl Alcohol | ~ | X | X | ~ | ~ | Mineral Oil | X | X | X | X | ~ |
| Cadmium Plating Solution | X | ~ | ~ | ~ | O | Naptha | ~ | ~ | ~ | ~ | X |
| Calcium Chloride | X | X | X | X | X | Nickel Chloride | X | X | X | X | O |
| Calcium Hypochlorite | X | ~ | X | X | O | Nickel Sulfate | X | X | X | X | X |
| Chlorine Water | X | ~ | ~ | X | ~ | Nitric Acid (40%) | X | ~ | X | X | ~ |
| Chromic Acid | X | ~ | X | X | O | Oleic Acid | X | ~ | ~ | X | ~ |
| Chromium Plating Solution | X | O | O | ~ | O | Oleum | ~ | ~ | X | ~ | O |
| Citric Acid | X | X | X | X | X | Oxalic Acid | X | X | X | X | X |
| Copper Chloride | X | X | X | X | O | Phosphoric Acid (85%) | ~ | X | X | ~ | X |
| Copper Sulfate | X | X | X | X | O | Pickling Solution | X | ~ | X | X | O |
| Cottonseed Oil | X | X | X | X | X | Potassium Chloride | X | X | X | X | O |
| Diacetone Alcohol | ~ | X | X | ~ | O | Potassium Cyanide | X | X | X | X | O |
| Disodium Phosphate | X | ~ | ~ | X | O | Potassium Dichromate | X | X | X | X | O |
| Ethyl Alcohol | ~ | X | X | ~ | ~ | Potassium Hydroxide (40%) | X | X | X | ~ | X |
| Ethylene Glycol | ~ | X | X | ~ | X | Potassium Sulfate | X | X | X | X | O |
| Ferric Chloride | X | X | X | X | X | Propyl Alcohol | ~ | X | X | ~ | ~ |
| Ferric Sulfate | X | X | X | X | X | Sodium Chloride | X | X | X | X | X |
| Fluoroboric Acid | X | X | X | ~ | O | Sodium Hydroxide (40%) | ~ | X | X | ~ | X |
| Formaldehyde (40%) | X | X | X | X | O | Sodium Hypochlorite | ~ | ~ | X | ~ | ~ |
| Formic Acid | X | X | X | X | O | Steam | ~ | X | ~ | ~ | O |
| Glucose | X | X | X | X | X | Sulfur Dioxide (Liquid) | ~ | X | X | ~ | X |
| Glycerine | ~ | X | X | ~ | X | Sulfuric Acid (50%) | X | ~ | X | ~ | ~ |
| Heptane | ~ | X | X | ~ | O | Sulfuric Acid (over 50%) | ~ | ~ | X | ~ | ~ |
| Hexane | ~ | X | X | ~ | O | Tannic Acid | X | X | X | X | O |
| Hydrobromic Acid (40%) | ~ | X | X | ~ | O | Vinegar | X | X | X | X | X |
| Hydrochloric Acid (conc) | ~ | X | X | ~ | ~ | | | | | | |

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Duro Dyne West Division, Santa Fe Springs, CA 562-926-1774 Fax: 562-926-5778

Duro Dyne Canada, Lachine, Quebec, Canada 514-422-9760 Fax: 514-636-0328

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