



# FLEXIBLE DUCTS DATASHEET



# INSULATED FLEXIBLE DUCTS

Delta Duct 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. Delta Duct Flexible Duct is extremely durable and will maintain dimensional stability when fully extended.

## Application:

- Economical & ideal solution for connecting equipment's in air conditioning and ventilation systems, for applications such as, office Buildings and many other Industrial and Residential projects.
- Available Uninsulated & Insulated with quality fiberglass insulation.
- Offers high degree of flexibility, which allows it to be easily connected to any desired position.
- A quick and economical means of correcting misalignment between system components.
- Allows ducting around obstacles where fabricated and fitted ducts would be difficult and costly to install.
- Highly efficient when correctly installed & provides a maintenance free service life under normal operating conditions.

## Features:

- Tear and puncture resistant construction
- Delta Duct Flexible Duct offers smooth air tight inner core when correctly installed which provides low friction loss.
- Highly resistant to corrosion and microorganism.
- Spring steel wire helix assures dimensional stability, resists mechanical abuse and provides more efficient air distribution.

## Models:

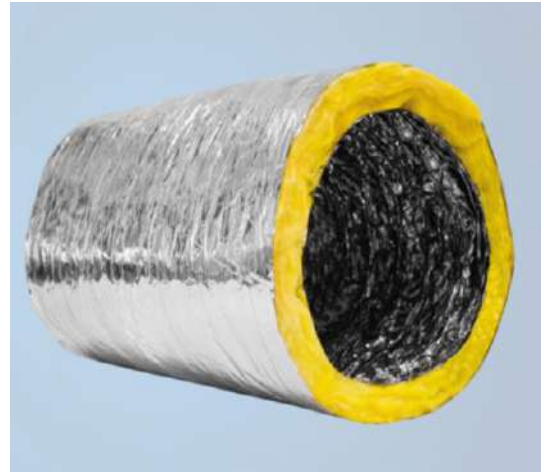
1. Delta Duct FD3
2. Delta Duct FD4
3. Delta Duct FD5
4. Delta Duct FD3 - RN
5. Delta Duct FD4 - RN
6. Delta Duct FD5 - RN
7. Delta Flex
8. Delta Flex - AC

## 1. DELTA DUCT FD3

Delta Duct FD3 is insulated flexible duct with outer jacket as metalized PET laminated over clear polyester, middle layer is of good quality fiber glass insulation & inner core is double layer of clear polyester permanently bonded with flame retardant bonding adhesive with coated steel spring helix.

### Specification:

Diameter	: 4" to 20"
Insulation Density	: (16, 24, 32) kg/m <sup>3</sup>
Available Insulation Thickness	: 25 mm
Length	: 25 feet
Maximum Velocity	: 5000 FPM (25.5 m/s)
Maximum Positive Pressure	: 10" W.C. (2.5 KPa)
Maximum Negative Pressure	: 1/2" W.C. (0.12 KPa)
Insulation R Value	: 4.2 or 6 (F-hr/BTU)



## 2. DELTA DUCT FD4

Delta Duct FD4 is insulated flexible duct with outer jacket as metalized PET laminated over clear polyester, middle layer is of Good quality fiber glass insulation & inner core is double layer of metalized PET & clear polyester permanently bonded with flame retardant bonding adhesive with coated steel spring helix.

### Specification:

Diameter	: 4" to 20"
Insulation Density	: (16, 24, 32) kg/m <sup>3</sup>
Available Insulation Thickness	: 25 mm
Length	: 25 feet
Maximum Velocity	: 5000 FPM (25.5 m/s)
Maximum Positive Pressure	: 10" W.C. (2.5 KPa)
Maximum Negative Pressure	: 1/2" W.C. (0.12 KPa)
Insulation R Value	: 4.2 or 6 (F-hr/BTU)

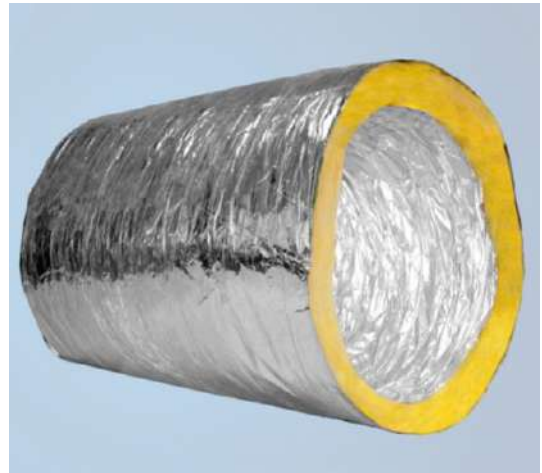


### 3. DELTA DUCT FD5

Delta Duct FD5 is insulated flexible duct with outer jacket as metalized PET laminated over clear polyester, middle layer is of Good quality fiber glass insulation & inner core is double layer of ALU PET & clear polyester permanently bonded with flame retardant bonding adhesive with coated steel spring helix.

#### Specification:

Diameter	: 4" to 20"
Insulation Density	: (16, 24, 32) kg/m <sup>3</sup>
Available Insulation Thickness	: 25 mm
Length	: 25 feet
Maximum Velocity	: 5000 FPM (25.5 m/s)
Maximum Positive Pressure	: 10" W.C. (2.5 KPa)
Maximum Negative Pressure	: 1/2" W.C. (0.12 KPa)
Insulation R Value	: 4.2 or 6 (F-hr/BTU)



### 4. DELTA DUCT FD3 - RN

Delta Duct FD3 - RN is insulated flexible duct with outer jacket as reinforced metalized PET laminated over clear polyester, middle layer is of Good quality fiber glass insulation & inner core is double layer of clear polyester permanently bonded with flame retardant bonding adhesive with coated steel spring helix.

#### Specification:

Diameter	: 4" to 20"
Insulation Density	: (16, 24, 32) kg/m <sup>3</sup>
Available Insulation Thickness	: 25 mm
Length	: 25 feet
Maximum Velocity	: 5000 FPM (25.5 m/s)
Maximum Positive Pressure	: 10" W.C. (2.5 KPa)
Maximum Negative Pressure	: 1/2" W.C. (0.12 KPa)
Insulation R Value	: 4.2 or 6 (F-hr/BTU)

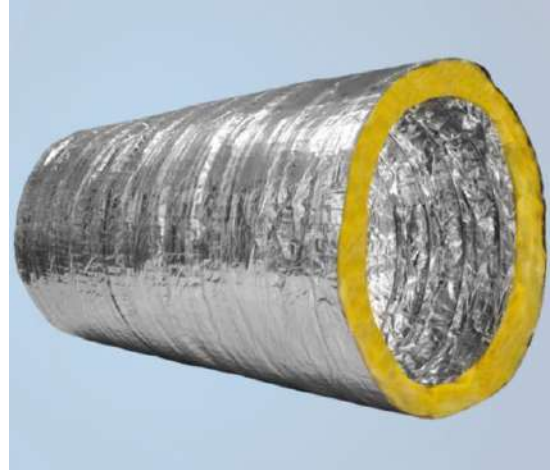


## 5. DELTA DUCT FD4 - RN

Delta Duct FD4 - RN is insulated flexible duct with outer jacket as reinforced metalized PET laminated over clear polyester, middle layer is of Good quality fibre glass insulation & inner core is double layer of metalized PET & clear polyester permanently bonded with flame retardant bonding adhesive with coated steel spring helix.

### Specification:

Diameter	: 4" to 20"
Insulation Density	: (16, 24, 32) kg/m <sup>3</sup>
Available Insulation Thickness	: 25 mm
Length	: 25 feet
Maximum Velocity	: 5000 FPM (25.5 m/s)
Maximum Positive Pressure	: 10" W.C. (2.5 KPa)
Maximum Negative Pressure	: 1/2" W.C. (0.12 KPa)
Insulation R Value	: 4.2 or 6 (F-hr/BTU)

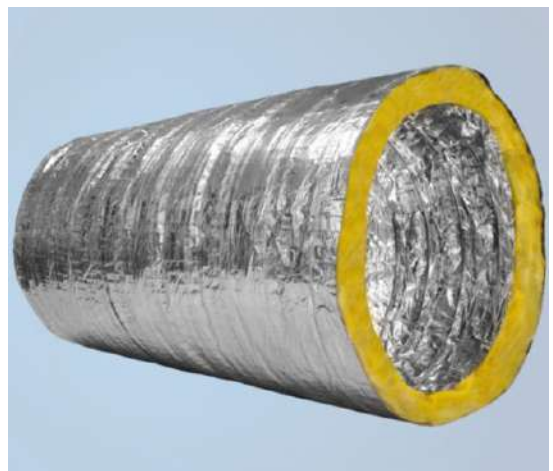


## 6. DELTA DUCT FD5 - RN

Delta Duct FD5-RN is insulated flexible duct with outer jacket as reinforced metalized PET laminated over clear polyester, middle layer is of Good quality fiber glass insulation & inner core is double layer of ALU PET & clear polyester permanently bonded with flame retardant bonding adhesive with coated steel spring helix.

### Specification:

Diameter	: 4" to 20"
Insulation Density	: (16, 24) kg/m <sup>3</sup>
Available Insulation Thickness	: 25 mm
Length	: 25 feet
Operating Temperature	: - 30°C to + 150°C
Maximum Velocity	: 5000 FPM (25.5 m/s)
Maximum Positive Pressure	: 10" W.C. (2.5 KPa)
Maximum Negative Pressure	: 1/2" W.C. (0.12 KPa)
Insulation R Value	: 4.2 or 6 (F-hr/BTU)



## 7. DELTA Flex

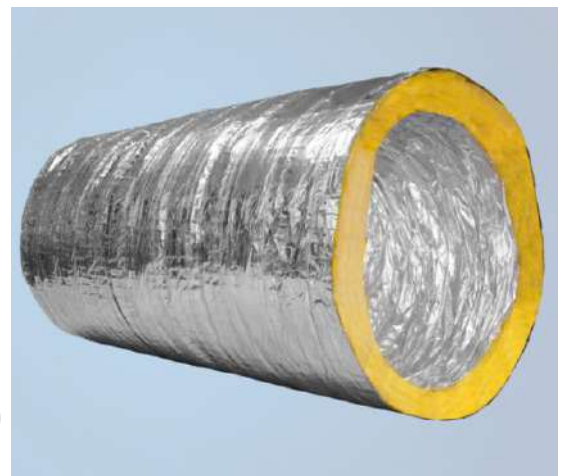
Delta Flex is UL listed flexible duct according to UL 181 Class 1 standard. Also classified by Underwriters Laboratories INC, in accordance with ADC flexible duct performance and installation standards using ASTM C518.

Delta Flex is insulated flexible duct with outer jacket as reinforced metalized PET laminated over clear polyester, middle layer is of Good quality fiber glass insulation & inner core is double layer of ALU PET & clear polyester permanently bonded with flame retardant bonding adhesive with coated steel spring helix.



### Specification:

Diameter	: 4" to 20"
Insulation Density	: 32 kg/m <sup>3</sup>
Available Insulation Thickness	: 25 mm
Class	: 1
Length	: 25 feet
Operating Temperature	: - 30°C to + 150°C
Maximum Velocity	: 5000 FPM (25.5 m/s)
Maximum Positive Pressure	: 10" W.C. (2.5 KPa)
Maximum Negative Pressure	: 1/2" W.C. (0.12 KPa)
Insulation R Value	: 4.2 or 6 (F-hr/BTU)



- **Delta Flex complies with UAE Fire & Life Safety Code - 2018.**
- **The insulation is DCL certified.**
- **The insulation confirms with Dubai Green Building Code.**

## 8. DELTA Flex AC

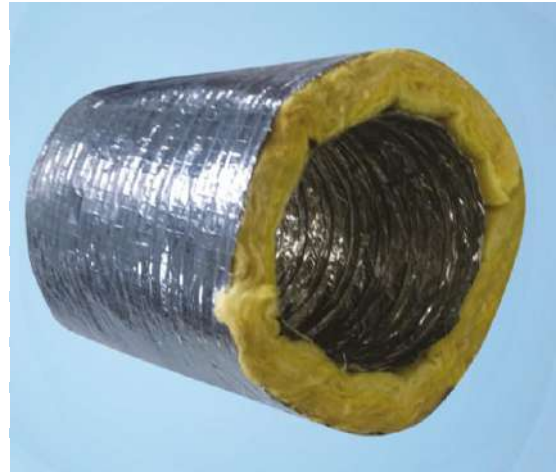
Delta Flex - AC is UL listed flexible duct according to UL 181 Class 1 standard. Also classified by Underwriters Laboratories INC, in accordance with ADC flexible duct performance and installation standards using ASTM C518.

Delta Flex - AC is insulated flexible duct with outer jacket as reinforced metalized PET laminated over clear polyester, middle layer is of Good quality fiber glass insulation with BGT facing & inner core is perforated double layer of ALU PET & clear polyester permanently bonded with flame retardant bonding adhesive with coated steel spring helix.



## Specification:

Diameter	: 4" to 20"
Insulation Density	: 48 kg/m <sup>3</sup>
Available Insulation Thickness	: 25 mm
Class	: 1
Length	: 25 feet
Operating Temperature	: - 30°C to + 150°C
Maximum Velocity	: 5000 FPM (25.5 m/s)
Maximum Positive Pressure	: 2" W.C. (0.5 KPa)
Maximum Negative Pressure	: 1/2" W.C. (0.12 KPa)
Insulation R Value	: 4.2 or 6 (F-hr/BTU)



- **Delta Flex complies with UAE Fire & Life Safety Code - 2018.**
- **The insulation is DCL certified.**
- **The insulation confirms with Dubai Green Building Code.**

## TESTS

### 1. Test for Surface Burning Characteristics

Delta-flex Duct is positioned in the 25 ft. long fire test chamber specified in the standard for test for surface burning characteristics of building material, UL 723.

Delta-flex Duct has achieved Class 1 rating that is flame spread index less than equal to 25 without evidence of continued progressive combustion and smoke developed index of not over 50.

### 2. Flame Penetration Test

This test measures resistance to flame while the sample supports a static load of 2 pounds per square inch. The test was conducted in a furnace for 30 minutes.

### 3. Burning Test

This test measures resistance to ignition and to progressive burning. The test utilizes a Bunsen burner; Insulated Flexible duct sections mounted in horizontal, vertical, and 45-degree positions.

### 4. Mold Growth and Humidity Test

This test measures resistance to mold growth and to the effects of high humidity. The samples are kept for 60 days in an atmosphere saturated with water vapor.

## **5. Temperature and High Temperature Test**

This test measures resistance to the temperatures higher and lower than normal service.

## **6. Puncture Test**

This test measures resistance to puncture by a plunger. The test apparatus provides a free fall of a plunger onto the surface of the flexible duct.

## **7. Static Load Test**

This test measures resistance to sagging, permanent deformation or damage.

Sections of flexible duct are installed horizontally on supports. A static load is applied at the longitudinal center of the sample by suspending two 5-pound (2.26 kg) weights on a 1-inch (25.4 mm) wide pipe strap material for 24 hours.

## **8. Impact Test**

This test measures resistance to damage as a result of an impact. The test apparatus provides a free fall of a sand bag weighing 15 pounds (6.8 kg) onto the surface of the flexible duct.

## **9. Erosion Test**

This test measures resistance to erosion when air is passed through typical flexible duct sections at a velocity of two and one-half times the manufacturer's rated velocity.

## **10. Pressure and Collapse Tests**

These tests measure resistance to positive and negative pressure.

Sections of flexible duct are subject to internal air pressure of 2-1/2 times the manufacturer's rated positive pressure and 2-1/2 times the manufacturer's rated negative pressure.

## **11. Torsion Test**

This test state that, flexible duct joints between sections, shall not be damaged when subjected to a torque of 25 foot-pounds (33.9 N-m) or a torque capable of reducing an angular rotation of 180 degrees. The duct shall not rupture, break, tear, rip, collapse, or separate.

## **12. Corrosion Resistance Test**

This test measures resistance to corrosion for iron and steel articles using the Standard Test Method for Weight [Mass] of Coating ANSI/ASTM A90.

## **13. Leakage Test**

This test measures flexible duct air leakage. An air pressure of 0.5 inch water column (125.5 Pa) is to be maintain in the duct for a period of 1 hour.



# UNINSULATED FLEXIBLE DUCTS

## Models:

1. Delta Duct FD100

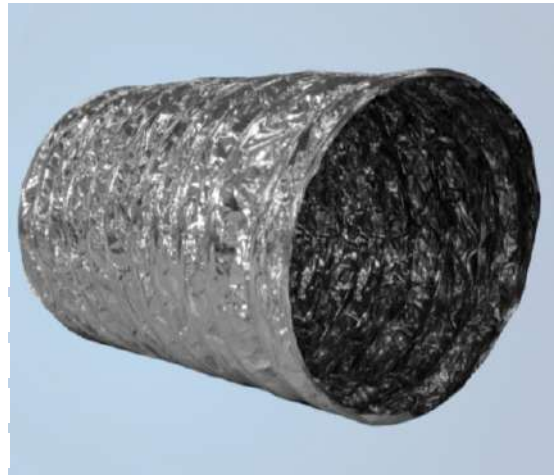
2. Delta Duct FD200

## 1. DELTA Duct FD100

Delta Duct FD100 is made of Double lamination of metalized PET & polyester film permanently bonded using flame retardant bonding adhesive to a coated spring steel wire helix.

### Specification:

Diameter	: 4" to 20"
Length	: 25 feet
Maximum Velocity	: 5000 FPM (25.5 m/s)
Maximum Positive Pressure	: 10" W.C. (2.5 KPa)
Maximum Negative Pressure	: 1/2" W.C. (0.12 KPa)



## 2. DELTA Duct FD200

Delta Duct FD200 is made of Double lamination of ALU PET & polyester film permanently bonded using flame retardant bonding adhesive to a coated spring steel wire helix.

### Specification:

Diameter	: 4" to 20"
Length	: 25 feet
Maximum Velocity	: 5000 FPM (25.5 m/s)
Maximum Positive Pressure	: 10" W.C. (2.5 KPa)
Maximum Negative Pressure	: 1/2" W.C. (0.12 KPa)



# SEMI RIGID FLEXIBLE DUCTS

Delta Duct Semi Rigid Flexible Duct comply with UL 181 Class 1 standard having surface burning characteristic zero (i.e. flame spread and smoke developed). Delta Duct is manufactured in accordance with (NFPA 90A & 90B standard).

Fire resistant, non-combustible, light weight, very strong with high degree of flexibility, which is widely used in dryer, bathroom or kitchen ventilation for commercial, industrial and residential applications. Delta Duct Semi Rigid Flexible Duct is manufactured from aluminum foil with interlocking seam which is extremely strong yet permits both bending and compression forces without leakage. This self-supporting semi rigid duct designed to be bent into position and yet remain in place to meet heavy-duty applications.



## Applications:

- Ideal for Dryer, Bathroom or Kitchen Ventilation for Commercial, Industrial and Residential applications.
- Offers high degree of flexibility, which allows it to be easily connected to any desired position.
- No need for additional supports.
- Semi rigid but flexible for easy installation.
- Fire resistant, non-combustible and resistance to chemical fumes.
- High resistance to UV rays.
- Easy to transport & store.
- Quick and easy installation.
- Airtight.
- Energy efficient, low operation and maintenance cost.



## Features:

- Fire Resistant to BS 476 part 6 & 7.
- Extremes heat resistance; non-combustible.
- Low operating cost, fully lined for efficient air delivery.
- Compressed ducts reduces freight and storage costs.
- Leak proof interlocked crimp locking.
- Flexible and ideal for low and medium pressure application.
- Quick installation

- Offers high degree of flexibility, which allows it to be easily connected to any desired position.
- No need for additional supports.
- Semi rigid but flexible for easy installation.
- Fire resistant, non-combustible and resistance to chemical fumes.
- High resistance to UV rays.
- Easy to transport & store.
- Quick and easy installation.
- Airtight.
- Energy efficient, low operation and maintenance cost.

## 1. DELTA Duct SFD-300

Delta Duct SFD-300 Uninsulated Semi Rigid Flexible Duct is made in accordance with UL 181 Class 1 standard & following 90A & 90B standard procedure for duct construction using heavy gauge corrugated aluminum with water tight continuous lock seams.

Available ID : 3" to 14"  
Standard Length : 10 feet



## 2. DELTA Duct SFD-6

Delta Duct SFD-6 Insulated Semi Rigid Flexible Duct is made in accordance with UL 181 Class 1 standard & following 90A & 90B standard procedure for duct construction, core is made with heavy gauge corrugated aluminum with watertight continuous lock seams, 25 mm thick fiber glass insulation of density 32 kg/m<sup>3</sup> is applied around duct and sheathed in a durable multilayer of metalized pet as a vapor barrier.

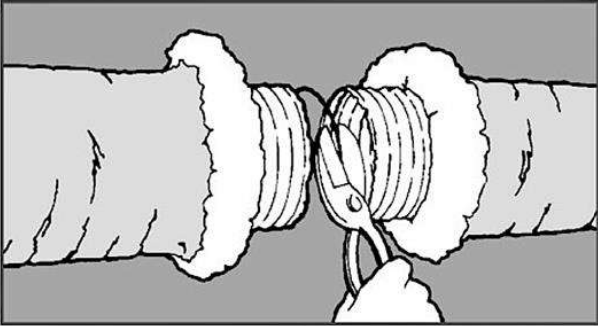
Available ID : 3" to 14"  
Standard Length : 10 feet



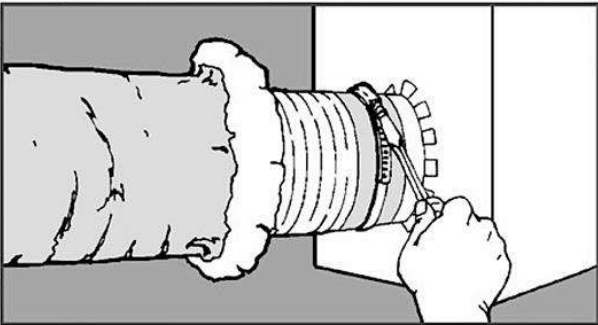
# INSTALLATION INSTRUCTIONS

## Connections

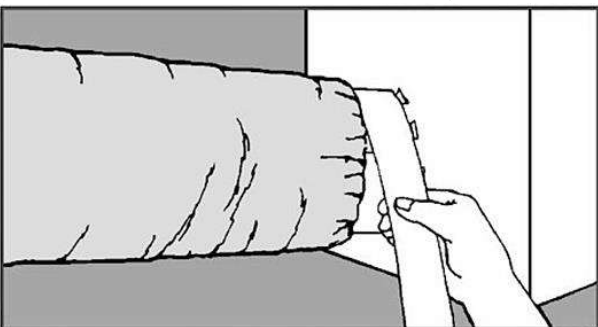
1. After desired length is determined, cut completely around and through duct with knife or scissors. Cut wire with wire cutters. Fold back jacket and insulation.



2. Slide at least 1" [25 mm] of core over fitting and past the bead. Seal core to collar with at least 2 wraps of duct tape. Secure connection with clamp placed over the core and tape and past the bead.

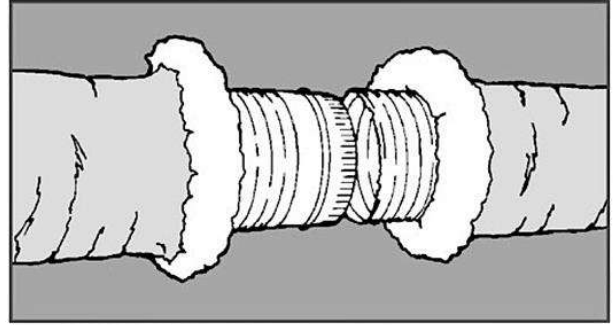


3. Pull jacket and insulation back over core. Tape jacket with at least 2 wraps of duct tape. A clamp may be used in place of or in combination with the duct tape.

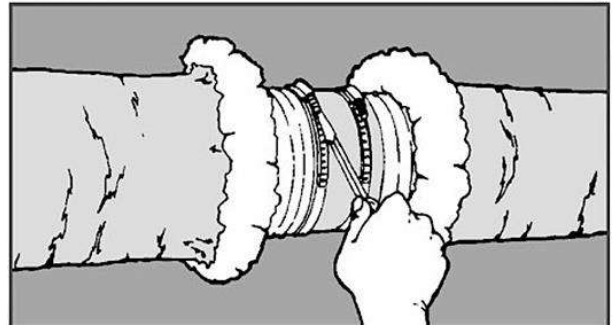


## Splices

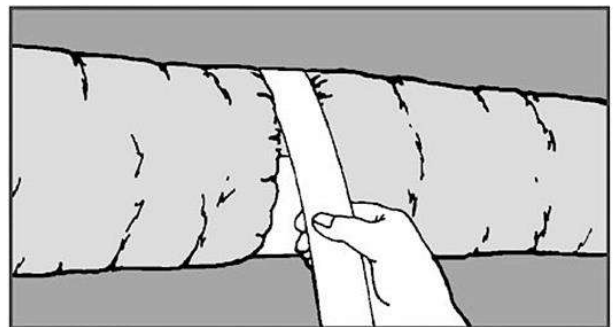
1. Fold back jacket and insulation from core. Butt two cores together on a 4" [100 mm] min. length metal sleeve.



2. Tape cores together with at least 2 wraps of duct tape. Secure connection with 2 clamps placed over the taped core ends and past the beads.



3. Pull jacket and insulation back over cores. Tape jackets together with at least 2 wraps of duct tape.



## NOTES:

1. For uninsulated air ducts and air connectors, disregard references to insulation and jacket.
2. Use beaded sheet metal fittings and sleeves when using non-metallic clamps.
3. Use tapes listed and labeled in accordance with Standard UL 181B and marked "181B-FX".
4. Non-metallic clamps shall be listed and labeled in accordance with Standard UL 181B and marked "181B-C".
5. Use of non-metallic clamps shall be limited to 6 in. w.g. [1500 Pa] positive pressure.



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