**DIVISION 23**

**HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)**

**SECTION 23 37 16**

**Fabric Air Distribution Devices (Fabric Ducts)**

Old Format / Location: Division 15, Section 15800

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**Specifier Notes**: This product specification guide is written in accordance to the Construction Specifications Institute (CSI) Format - 2004 Edition.

This section must be carefully reviewed and edited by the Engineer to meet the requirements of the project and local building code. Coordinate with other specification sections and the drawings.

Delete all unnecessary “**Specifier Notes**” when editing this section.

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# GENERAL

## DESCRIPTION OF WORK

Extent of fabric ductwork is indicated by drawings and schedules, and by requirements of this section.

## QUALITY ASSURANCE - Manufacturer’s Qualifications

Firms regularly engaged in manufacture of fabric ducts of types and capacities required whose products have been of satisfactory use in similar service for not less than 10 years.

Firms that are ISO 9001 and ISO 14001 certified.

## Code Compliance

The fabric ductwork must be classified as an air distribution device in accordance with ICC Evaluation Service AC167 and UL 2518.

## Classification

Install fabric ducts classified by UL as an air distribution device in accordance with the flammability requirements of UL 2518. Fabric ducts must be classified by UL in accordance with the 25/50 flame spread/smoke spread.

## Submittals

Submit manufacturer's shop drawings indicating size and placement of ducts, and mounting instructions.

Submit manufacturer’s technical product data for fabric ducts including schedule of ducts with room location, number furnished, model number, size, fabric, finish, mounting hardware included, and accessories furnished.

Submit manufacturer's performance data for each fabric duct, including airflow rate, inlet velocity, room air/supply air temperature difference, static pressure, total pressure at inlet, **throw and thermal velocity of the air at the stated throw distance**. Performance data that only include exit velocity out of duct system shall not be accepted.

## Maintenance Data

Submit manufacturer's maintenance data, including cleaning instructions for finishes, including recommended washing schedule based level of prefiltration installed, percentage of outdoor air used, and room use.

Provide spare parts lists. Include this data, product data, and shop drawings in maintenance manuals.

## Warranty

Manufacturer must provide **a non prorated 10 year warranty** on products supplied for the fabric portion of this system. Prorated warranties or warranties less than 10 years shall not be accepted.

## PRODUCT DELIVERY, STORAGE, AND HANDLING

Deliver fabric ducts in factory-fabricated cardboard type cartons containing ducts sealed in polyethylene protective bags. Identify, on outside of container, type of outlet or inlet and location to be installed. Avoid crushing or bending and prevent dirt and debris from entering and settling in devices. Store fabric duct systems in original cartons and protect from weather and construction work traffic. Where possible, store indoors. When necessary to store outdoors, store above grade and enclose with waterproof wrapping.

# PRODUCTS

## Manufacturer:

## KE Fibertec North America, Inc.

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## Fabric air distribution devices

\*\*\*\*\*\***Specifier notes:** choose one of the following, delete unwanted air distribution methods\*\*\*\*\*\*\*

#### A.) For applications with >15’ throws / >16’ installation heights

Provide **DireJet® Ventilation System** by KE Fibertec or approved equal. Approved equals must be able to provide system with true conical shaped nozzles (multiple nozzle sizes from ½” through 2½”) and non prorated 10 year warranty. Ducts with slots, mesh, reinforced holes or other openings, which do not discharge air perpendicular to the length of the duct, shall not be acceptable. Product substitutions must be pre-approved, in writing, by the project engineer and/or architect, at least ten days prior to bid opening.

#### B.) For applications with <15’ throws / <16’ installation heights

Provide **Inject® Ventilation System** by KE Fibertec or approved equal. Approved equals must be able to provide system with laser cut orifices (no larger than 1/8” diameter) and non prorated 10 year warranty. Product substitutions must be pre-approved, in writing, by the project engineer and/or architect, at least ten days prior to bid opening.

#### C.) For applications with <15’ throws / <16’ installation heights

Provide **Inject-flex® Ventilation System** by KE Fibertec or approved equal. Approved equals must be able to provide system with laser cut orifices (Multiple hole sizes from ¼” through 2¾”) available) and non prorated 10 year warranty. Product substitutions must be pre-approved, in writing, by the project engineer and/or architect, at least ten days prior to bid opening.

#### D.) For cooling or ventilation applications only (low velocity)

Provide **Low Impulse® Ventilation System** by KE Fibertec or approved equal. Approved equals must be able to provide system with permeable material as specified and non prorated 10 year warranty. Product substitutions must be pre-approved, in writing, by the project engineer and/or architect, at least ten days prior to bid opening.

Fabric duct shall be \*\*\*\*\*Choose one: ROUND/HALF ROUND/QUARTER ROUND\*\*\*\* constructed of a permeable (to prevent condensation and dust buildup) GreenWeave (Trevira® CS) or Multiweave polyester or a material of equivalent quality and dust holding capacity, non permeable ducts will not be accepted.

1. 100% flame retardant and shall be UL classified as an air distribution device in accordance with the flammability requirements of UL 2518.
2. Nozzles/holes specified above shall be mounted in fabric at angles specified by engineer or recommended by manufacturer.
3. Fabric shall be heat set and permeability stabilized, and not shrink more than 0.5% when washed in accordance with manufacturer's maintenance instructions.
4. Weight: 6.9 - 11.8 oz/yd2
5. Air permeability:+/- 1, 2, 4, 8, 11, 18, 27, 43, OR 76 cfm /sq ft
6. Color: Provide duct system in dark blue, white, light gray, dark gray, red, yellow, light blue, black, or custom color as specified by project architect. Optional : Logos.
7. Provide system in sections optimized to fit in commercial washing machine (less than 20ft sections for diameters larger than 28”), connected by zippers. Zippers must provide closure completely around the circumference, with min. 1” overlap to prevent leakage..

## Performance

1. Provide fabric ducts that have, as minimum, throw and/or near zone velocity ratings, and static and inlet velocity pressure ratings for each fabric duct as shown on drawings and/or schedules.
2. Use fabric ducts for positive pressure applications only.
3. Do not use fabric ducts in concealed locations.
4. Systems should be designed from .25” water grade minimum in order to keep ducts fully inflated. Maximum 3.0”, however, most applications should be designed around .50” water grade.

## Mounting Hardware

**\*\*\*\*\*\*\*\*\* Specifier choose one of the following, delete unwanted suspension types \*\*\*\*\*\*\*\*\*\*\***

A.)

Provide KE Fibertec SafeTrack® mounting hardware system (single row). Mounting rails to be of extruded aluminum 10 mil anodized. Single length of rail shall be as shown on drawings, or as required to mount fabric ducts. Factory shall cut rails to required length, providing sections for field assembly and installation. Rails shall suspend fabric ducts by means of an integral flexible cord, which slides into the extruded aluminum rails. Rails shall be suspended by means of a snap-on suspension piece, which is in turn mounted to the ceiling,by an adjustable cable assembly (Gripple or coated cable for aggressive environments) **Ducts greater than 36” diameter shall be suspended by dual SafeTrack, with integral cords sewn into the duct at 3:00 and 9:00**.

B.)

Provide KE Fibertec SafeTrack 360° ® mounting hardware system (single row track with internal 360° ring support every 40” to keep system inflated when unit is off). Mounting rails to be of extruded aluminum 10 mil anodized. Single length of rail shall be as shown on drawings, or as required to mount fabric ducts. Factory shall cut rails to required length, providing sections for field assembly and installation. Rails shall suspend fabric ducts by means of an integral flexible cord, which slides into the extruded aluminum rails, plastic gliders not acceptable. Rails shall be suspended by means of a snap-on suspension piece, which is in turn mounted to the ceiling,by an adjustable cable assembly (Gripple or coated cable for aggressive environments) (for diameters from 8”).

C.)

Provide single cable suspension mounting hardware system. Single horizontal nylon coated cable at 12 o’clock position, ducts to have clips to snap on to cable. Intermittent vertical supports of nylon coated cable shall be supplied by manufacturer**. Two row cable suspension shall be provided for diameters over 28”**. Provide duct inlet clamp, constructed of stainless steel. Ducts shall be freely suspended from mounting hardware to prevent contact with piping, light fixtures, etc.

D.)

Provide KE Fibertec SafeTrack Arch® three point mounting system (for diameters 16” – 48”). Mounting rail to be of extruded aluminum 10 mil anodized. Single length of rail shall be at the 12 o’clock position with intermittent duct support at 10 and 2 from an aluminum support bracket which clips to the safe track. Similar cable based systems shall not be accepted as an equal. Factory shall cut rails to required length, providing sections for field assembly and installation. Rail shall suspend fabric ducts by means of an integral flexible cord, which slides into the extruded aluminum rails. Rails shall be suspended by means of a snap-on suspension piece, which is in turn mounted to the ceiling, by an adjustable cable assembly (Gripple or coated cable for aggressive environments).

**Provide soft-start option on air handler supplying fabric duct (VFD etc.) , with ramp-up time (Min 30 sec.) adjusted as necessary to prevent objectionable start-up noise and popping.**

# EXECUTION

## INSPECTION

Examine areas and conditions under which fabric are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected.

## INSTALLATION

Install air outlets and inlets in accordance with manufacturer’s written instructions and in accordance with recognized industry practices to ensure that products serve intended functions.

Coordinate with other work, including ductwork and duct accessories, as necessary to interface installation of fabric ducts with other work.

Locate fabric duct systems as indicated on general construction ‘Reflected Ceiling Plans’, unless otherwise indicated.

\*\*\*\* End of Guide Specification \*\*\*\*

Specification guidelines for KE Fibertec products - subject to change without notice. (v. 04/20)

For more information, contact:

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