

DIVISION 23 (HVAC) PREFERRED MANUFACTURERS

GENERAL INFORMATION

- 1.1 Manufacturers on this list fall into two categories:
 - a. Preferred Manufacturers: indicated in highlighted text, these products are pre-approved.
 - b. Conditional Approval: Manufacturers approved for certain projects. Contact Columbia University Facilities (CUF) for approval to use on new projects.
- 1.2 This list is intended to cover major equipment vendors listed in the Specification sections. Often, ancillary vendors used to construct the equipment are listed within the specification sections (e.g. pipe and duct sealants, firestopping, etc.). This list does not absolve the Consultant from reading and complying with the requirements set forth in the Specification Sections and sound engineering practices.
- 1.3 Corrections/Substitutions: If there are errors in model numbers or manufacturers listed, or if a model is no longer available, notify Columbia University Facilities in writing for a clarification. A response regarding the Correction or Substitution will be provided.

DESIGN REQUIREMENTS

23 05 16 – EXPANSION JOINTS AND LOOPS

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| <ol style="list-style-type: none"> 1. Expansion Joints - Bellow Type (Packless) <ol style="list-style-type: none"> a. Badger Company Series 300 b. Adsco Company 2. Expansion Joints - Slip Joint (Packed) For Steam Piping <ol style="list-style-type: none"> a. Advanced Thermal Systems b. Adsco Company c. Hyspan | <ol style="list-style-type: none"> 2. Anchor and Guides <ol style="list-style-type: none"> a. Grinnell b. Metraflex |
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23 05 29 - HANGERS AND SUPPORTS FOR PIPING AND EQUIPMENT

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| <ol style="list-style-type: none"> 1. Pipe Hangers, Inserts, Saddles, Beam Clamps <ol style="list-style-type: none"> a. B-line Systems, Inc. b. Carpenter & Patterson, Inc. c. Grinnell Corp. 2. Channel Support Systems <ol style="list-style-type: none"> a. B-Line Systems, Inc. b. Grinnell Corp.; Power-Strut Unit c. Thomas & Betts Corp. d. Unistrut Corp. 3. Thermal-Hanger Shield Inserts | <ol style="list-style-type: none"> a. Carpenter & Patterson, Inc. b. Pipe Shields, Inc. c. Value Engineered Products, Inc. 4. Expansion Shield <ol style="list-style-type: none"> a. Grinnell b. Hilti, Inc. c. Pipe Shields Inc. 5. Pre-Insulated Pipe Supports - Pipe Shields, Inc. 6. Pre-Insulated Riser Clamps - Pipe Shields, Inc. |
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7. Sleeves - Link Seal - Century Line Sleeve,
Thunderline Corp.

23 07 00 - MECHANICAL INSULATION

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| <ol style="list-style-type: none"> 1. Pipe Insulation Type A - Calcium Silicate -
Manville, Thermo 12 2. Pipe Insulation Types B and C - Glass Fiber <ol style="list-style-type: none"> a. Owens-Corning, Evolution Pipe
Insulation with ASJ b. Knauf - Pipe Insulation With ASJ c. Certainteed - Type 500 Snap-on with
ASJ d. Manville - Micro-Lok 650 With A-T Plus
Jacket 3. Pipe Insulation Type D - Foam <ol style="list-style-type: none"> a. Armstrong - Type AP ARMAFLEX b. Nomaco, Inc. - Type THERMA-CEL 4. Pipe Inserts <ol style="list-style-type: none"> a. Grinnell b. B-Line 5. PVC Covering (Elbows and Fittings) <ol style="list-style-type: none"> a. Zeston b. Proto c. Ceel-co 6. Pipe Shields - Grinnell Figure 186 | <ol style="list-style-type: none"> 7. Duct Insulation - Flexible Glass Fiber <ol style="list-style-type: none"> a. Owens-Corning Fiberglass - Foil-faced
duct wrap. b. Knauf - Type ECOSE with foil face c. Certainteed – Softouch with foil face 8. Duct Insulation - Rigid Glass Fiber <ol style="list-style-type: none"> a. Owens-Corning - Type ASJ-705 b. Knauf – Duct board with ECOSE c. Certainteed - Certapro 9. High Temperature Applications - Calcium
Silicate <ol style="list-style-type: none"> a. Manville b. Industrial Insulation Group 10. Tank Enclosures and Accessories - Semi-
Rigid Glass Fiber <ol style="list-style-type: none"> a. Owens-Corning - Type 703 b. Certainteed – Crimp wrap c. Knauf – Kwik Flex d. Manville - Microflex 11. Pump Enclosures - Rigid Glass Fiber <ol style="list-style-type: none"> a. Owens-Corning - Type 705 b. Manville - Type 800 c. Certainteed - Certapro |
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23 09 00 – BUILDING AUTOMATION SYSTEMS (BAS)

1. Building Automation Systems - Note: BAS selected MUST match existing Building BAS if used in renovation work.
 - a. Andover
 - b. Siemens Building Technologies

23 21 16 - HYDRONIC PIPING SPECIALTIES AND PIPING GUIDELINES

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| <ol style="list-style-type: none"> 1. Manual Air Vents <ol style="list-style-type: none"> a. Bell and Gossett - No. 4V b. Taco, Inc. - 417 c. Armstrong Pumps, Inc. - #72 2. Automatic Air Vents <ol style="list-style-type: none"> a. Bell and Gossett - #107 High Capacity
Air Vent b. Taco, Inc. - Hy-vent c. Spirax/Sarco - 13WS 3. Diaphragm-type Expansion Tanks <ol style="list-style-type: none"> a. Bell and Gossett – Series B or Series D | <ol style="list-style-type: none"> b. Taco, Inc. - CA Series c. Armstrong Pumps, Inc. - Series AX 4. Air Separators <ol style="list-style-type: none"> a. Bell and Gossett - Rolairtrol b. Taco, Inc. - Air Separator 5. Relief Valves <ol style="list-style-type: none"> a. Bell and Gossett b. Amtrol c. Armstrong d. McDonnell and Miller |
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SECTION 23 99 00

DESIGN REQUIREMENTS

6. Suction Diffusers
 - a. Bell & Gossett
 - b. Armstrong
7. Backflow Preventers - Double Check Type
 - a. Watts No. 709
 - b. Hersey
8. Backflow Preventers - Reduced Pressure Type
 - a. Watts 909
 - b. Hersey

9. Dielectric Fittings - Union Type - EPCO with Epconite No.1
10. Dielectric Fittings - Nipple Type
 - a. ClearFlow
 - b. EPCO
11. "Y" Type Strainers
 - a. Sarco
 - b. Armstrong
 - c. Mueller

23 09 05 - METERS AND GAUGES

1. Thermometers
 - a. Marsh
 - b. Trerice - B Series
 - c. Weiss
 - d. Weksler
2. Pressure Gauges
 - a. Ashcroft - Duragauge Series
 - b. Marsh
 - c. Weiss - PG Series
 - d. Weksler - AAT Series
 - e. WIKA
 - f. U.S. Gauge
 - g. Trerice - 500X Series
3. Air Flow Gauges (Magnehelic) - Dwyer
4. Test Plugs (Requires University Approval)
 - a. Peterson - Petes Plug
 - b. Weksler
 - c. Trerice
5. Steam Meter - Emco
6. Chilled Water Meter - Siemens (Controlotron)

23 21 23 - HYDRONIC PUMPS

1. In-Line Circulators:
 - a. Armstrong Pumps, Inc.
 - b. Bell & Gossett ITT (Series 60 and 80)
 - c. Grundfos Pumps Corp.
2. Compact In-Line Circulators
 - a. Armstrong Pumps, Inc.
 - b. Bell & Gossett ITT
 - c. Grundfos Pumps Corp.
 - d. PACO Pumps
 - e. Taco
3. Vertical In-line Pumps:
 - a. Armstrong Pumps, Inc.
 - b. Bell & Gossett IIT
 - c. Goulds Pumps, Inc.
 - d. Grundfos Pumps Corp.
 - e. PACO Pumps
 - f. Peerless Pump Co.
 - g. Taco
4. Flexible-Coupled, End-Suction Pumps:
 - a. Goulds Pumps, Inc.
 - b. Ingersoll-Dresser Pump Co.
 - c. PACO Pumps.
 - d. Taco
 - e. Weil Pump Company, Inc.
5. Flexible-Coupled, Double Suction Pumps:
 - a. Bell & Gossett ITT
 - b. Goulds Pumps, Inc.
 - c. Ingersoll-Dresser Pump Co.
 - d. PACO Pumps.
 - e. Peerless Pump Co.
 - f. Taco
 - g. Fairbanks Morse Pump Corp.
6. Steam Condensate Pump Units:
 - a. Federal Pump

SECTION 23 99 00
DESIGN REQUIREMENTS

- b. Bell & Gossett ITT
- c. Roth Pump Company
- d. Sarco Pumps
- 7. Condensate Drainage Pump Units:

- a. Hartell Div.; Milton Roy Co.
- b. Little Giant Pump Co.
- c. Marsh Manufacturing, Inc.

23 22 16 - STEAM AND CONDENSATE PIPING SPECIALTIES

- 1. Steam Traps - Thermostatic - Spirax/Sarco TA-125, TH-125
- 2. Steam Traps - Float and Thermostatic - Spirax/Sarco FT -30
- 3. Steam Traps - Inverted Bucket Trap - Spirax/Sarco B Series
- 4. Air Vents
 - a. Spirax/Sarco VS206 (steam)
 - b. Spirax/Sarco 13WS (condensate)
- 5. Vacuum Breakers - Spirax/Sarco VB14
- 6. Pressure Regulating Valves
 - a. Leslie
 - b. Spence Engineering Co. Type ED

- 7. Safety Shutoff Valves
 - a. Spence
 - b. Leslie
- 8. Safety Relief Valves
 - a. O.C. Keckley Bronze Series 40
 - b. Spence Engineering Bronze Series 41
 - c. Spirax/Sarco
- 9. "Y" Type Strainers
 - a. Sarco Type
 - b. Armstrong
 - c. Mueller

23 31 00 - HVAC Ducts and Casings

- 1. Flexible Ductwork
 - a. Clevaflex
 - b. Thermaflex
 - c. Flexmaster
- 2. Volume Dampers - Single Blade (Rectangular)
 - a. Air Balance AC-111
 - b. Greenheck
 - c. Ruskin MD25
- 3. Volume Dampers - Single Blade (Round)
 - a. Air Balance AC-112
 - b. Greenheck MBDR50
 - c. Ruskin MORS25
- 4. Volume Dampers - Multiple Blade - Note: Opposed Blade Type ONLY
 - a. Air Balance AC-2
 - b. Greenheck MBD-15
 - c. Ruskin
- 5. Fire Damper - Fusible Link
 - a. Air Balance Inc. Series D19
 - b. Imperial
 - c. Prefco Products Series 5500
 - d. Ruskin
- 6. Smoke Damper - Airflow Blade

- a. Air Balance Inc. SA 1
- b. Greenheck SD33
- c. Ruskin SD60
- d. Imperial 7. Combination Fire/Smoke Damper
 - a. Ruskin FSD60
- 8. Duct Sealant
 - a. 3M Fastbond 900
 - b. Foster 32-14
 - c. MEI44-52
 - d. Hardcast Sure Grip 404, Hardcast Iron Grip 601
- 9. Louvers
 - a. Ruskin
 - b. Arrow
 - c. Air Balance
- 10. Access Doors in Walls and Ceilings
 - a. Cesco
 - b. J L Industries
 - c. Karp
 - d. Milcor
- 11. Filters
 - a. AAF International
 - b. Farr Company

SECTION 23 99 00
DESIGN REQUIREMENTS

c. Flanders Filters, Inc.

d. Koch Filter Corporation

23 34 00 - HVAC Fans

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| <ol style="list-style-type: none"> 1. Cabinet and Ceiling Fans <ol style="list-style-type: none"> a. Cook Gemini Series b. Greenheck Model SP, CSP and BCF c. Penn Zephyr Series 2. Square In-Line Centrifugal <ol style="list-style-type: none"> a. Cook SQI or SQN Series b. Greenheck Model SQ or BSQ c. Penn Centrex Inliner SX 3. Tubular Centrifugal <ol style="list-style-type: none"> a. Greenheck TCS Series b. Loren Cook 4. Centrifugal Utility Fans <ol style="list-style-type: none"> a. Greenheck b. Belted Utility Vent Sets c. Loren Cook | <ol style="list-style-type: none"> 5. Belted Utility Vent Sets - Laboratory Exhaust <ol style="list-style-type: none"> a. Loren Cook b. Buffalo Air 6. Roof/Wall Exhaust <ol style="list-style-type: none"> a. Cook AC Series b. Greenheck Models G, GB and C Series c. Penn Domex, Fumex 7. Axial Propeller Wall Fan <ol style="list-style-type: none"> a. Cook S Series Wall Ventilators b. Greenheck SB and S Series c. Penn Breezeway Series 8. Vaneaxial <ol style="list-style-type: none"> a. Greenheck VAB Series b. Cook Series VA Series |
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23 36 00 - Air Terminal Units

1. Air Terminal Units
 - a. Anemostat
 - b. Titus
 - c. Environmental Technologies
 - d. Krueger

23 37 00 - Air Outlets and Inlets

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| <ol style="list-style-type: none"> 1. Directional Ceiling Supply Air Diffuser - Type "A" <ol style="list-style-type: none"> a. Titus TDC, with AG-65S damper and equalizer grid b. Krueger Series SH, with 5-11 damper and equalizer grid c. Anemostat SD, with DOB or DED damper and equalizer grid 2. Fixed Ceiling Supply Air Diffuser - Type "B" <ol style="list-style-type: none"> a. Titus TMS, with AG-65 damper and equalizer grid b. Krueger Series 1400, with R-11 damper and equalizer grid c. Anemostat E, with Columbia University-1 damper and equalizer grid | <ol style="list-style-type: none"> 3. Perforated Ceiling Supply Air Diffuser - Type "C" <ol style="list-style-type: none"> a. Titus PAS, with AG-65 damper and equalizer grid b. Krueger Series 1100, with R-11 damper and equalizer grid c. Anemostat PR 4. Fixed Ceiling Supply Air Diffuser - Type "D" <ol style="list-style-type: none"> a. Titus TMS, with AG-65 damper and equalizer grid b. Krueger Series 1400, with R-11 damper and equalizer grid c. Anemostat E, with Columbia University-1 damper and equalizer grid |
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SECTION 23 99 00

DESIGN REQUIREMENTS

5. Ceiling Supply Air Linear Diffuser - Type "E"
 - a. Titus ML-37, ML-38, or ML-39
 - b. Krueger Series 1500-1600
 - c. Anemostat AL
6. Sidewall, Sill, Or Floor Supply Linear Air Diffuser - Type "F"
 - a. Titus CT -480 or CT -481
 - b. Krueger Series 1500-1600
 - c. Anemostat AL
7. Fixed Supply Air Register - Type "G"
 - a. Titus 300RS with AG-15 damper
 - b. Krueger 880V with OBD damper
 - c. Anemostat S2VO
8. Perforated Ceiling Return Air Diffuser - Type "H"
 - a. Titus PAR
 - b. Krueger Series 1190
 - c. Anemostat 3P
9. Ceiling Return Linear Air Diffuser - Type "I"
 - a. Titus ML-37, ML-38, or ML-39
 - b. Krueger Series 1900
 - c. Anemostat SLAD
10. Return, Exhaust, Or Transfer Fixed Air Register – Type "J"
 - a. Titus 300RS with AG-15 damper
 - b. Krueger S80H with OBD damper
 - c. Anemostat S30D
11. Perforated Return, Exhaust, Or Transfer Air Register - Type "K"
 - a. Titus 8F with AG-35 damper
 - b. Krueger S80P with OPO damper
12. Laboratory Perforated - Ceiling Supply and Diffuser - Type OIL"
 - a. Titus Tritec
13. Return, Exhaust, Or Transfer Fixed Air Grille - Type "M"
 - a. Titus 350RL
 - b. Krueger S80H
 - c. Anemostat S3HD
14. Return, Exhaust, Or Transfer Perforated Air Grille - Type "N"
 - a. Titus 8F
 - b. Krueger S80P
15. Return, Exhaust, Or Transfer Eggcrate Air Grille - Type "O"
 - a. Titus 50P
 - b. Krueger EGC-5
 - c. Anemostat GC5
16. Filter Return Grille - Type "P"
 - a. Titus 4FF
 - b. Krueger S80P5FF-1
 - c. Anemostat 35HQ
17. Ducted HEPA Filter Supply Terminal- Type "Q"
 - a. Flanders Filter Company Model 22.

23 57 00 - Heat Exchangers for HVAC

1. U- Tube Heat Exchangers (Steam to Water)
 - a. Bell & Gossett ITT - Type 'SU'
 - b. Taco, Inc. - 'Steam to Liquid Heat Exchanger.'
2. U-Tube Heat Exchangers (Water to Water)
 - a. Bell & Gossett ITT - Type 'WU'
 - b. Taco, Inc. - 'Liquid to Liquid Heat Exchanger.'
3. Plate and Frame Heat Exchangers
 - a. Alfa Laval
 - b. Tranter
 - c. American Vicarb
4. Steam-to-Steam Heat Exchangers (Clean Steam Generators)
 - a. Cemline
 - b. Patterson-Kelly

23 73 00 - Air Handling Units

1. Modular AHUs
 - a. Trane Modular Series
 - b. Carrier
 - c. York
2. Custom AHUs
 - a. Buffalo Air
 - b. Climate Craft