

Freeze Block Coil Specification Data

Fluid (Chilled Water or Hot Water) with Freeze Block Technology specifications

- Provide a fluid coil with Cooney Freeze Block Technology. Coil shall be manufactured with an expansion relief header that is brazed into each and every return bend.
- A combination relief valve that operates by pressure and temperature, (designed to re-seat after activation) shall be affixed to the expansion relief header to protect the coil during freezing conditions.
 - The pressure relief set point to be 200 psi.
 - The temperature relief set point to be 35 degrees.
 - All Freeze Block Valves shall be situated above a drain pan.
- The coils shall be manufactured utilizing:
 - Tubes:
 - 1/2 inch diameter copper tubes – a minimum tube wall thickness of 0.025”.
 - 5/8 inch diameter copper tubes – a minimum tube wall thickness of 0.020”.
 - Return bend wall thickness to match or exceed tube wall thickness
 - Hairpin return bends not permitted
- All coils equipped with Cooney Freeze Block Technology to be installed inside of any air handling unit must be equipped with access doors at all relief valve locations. These access doors must be large enough to perform any and all necessary maintenance to the relief valve sections of the coil.
- All pressure boundary joints to be brazed by personnel certified to ASME Section IX
- Coils to be cleaned using a solvent degreasing method, either submerged or vapor, using perchloroethylene or similar solvent.
- This technology shall be wind tunnel, climate room and field tested with a minimum of 5 years of industry usage.
- Return bends with freeze relief plugs/ caps and/or copper membrane rupture discs will not be permitted due to increased risk of flooding after coil is exposed to freezing conditions. Use of said materials will not be an approved method for relief and freeze protection.

Freeze Block Coil Specification Data

Steam Coil with Freeze Block Technology specifications

- Provide a steam coil with Freeze Block Technology. Coil shall be manufactured with an expansion relief header that is brazed into every tube.
- A combination relief valve that operates by pressure and temperature, (designed to re-seat after activation) shall be affixed to the header to protect the coil during freezing conditions.
 - The pressure relief set point to be 200 psi.
 - The temperature relief set point to be 35 degrees.
 - All Freeze Block valves shall be situated above a drain pan.
- The coils shall be manufactured utilizing:
 - Tubes:
 - 5/8 inch diameter copper tubes – a minimum tube wall thickness of 0.035”.
 - 1 inch diameter copper tubes – a minimum tube wall thickness of 0.035”.
 - Fins:
 - Aluminum, minimum 0.008” thick
 - Casing
 - Galvanized steel, minimum 16 gauge
- All cases to be pitched to promote condensate drainage.
- All coils equipped with Cooney Freeze Block Technology to be installed inside of any air handling unit must be equipped with access doors at all relief valve locations. These access doors must be large enough to perform any and all necessary maintenance to the relief valve sections of the coil.
- A low crack pressure vacuum breaker to be preinstalled on the expansion relief header at the high point on the back of the coil to ensure optimal condensate drainage.
- This technology shall be wind tunnel, climate room and field tested with a minimum of 5 years of industry usage.
- Return bends with freeze relief plugs/ caps and/or copper membrane rupture discs will not be permitted due to increased risk of flooding after coil is exposed to freezing conditions. Use of said materials will not be an approved method for relief and freeze protection.

Smart Coil Specification Data

Only applicable for Fluid and Steam Coils with Cooney Freeze Block Technology

- Provide fluid or steam coil with Cooney Freeze Block Technology
- An adapter fitting will be attached to the bottom of every Cooney Freeze Block relief valve (plain end or hose barb)
 - Material designed to handle temperatures from -40F to 300F
 - Material must be non-conductive
 - Adapter fitting will house a conductivity sensor designed to sense when the Cooney Freeze Block relief valve discharges during a freezing event
 - Must be designed to only sense water from valve discharge and not from environment
 - Must not hold water after valve deployment
- Sensor is wired to the supplied control box terminal strip
- Standard NEMA 4 rated Control box to allow an input voltage range of 24 – 305 VAC single phase
- Output shall be through a relay switch to the Building Automation System and/or Air handling unit controls
- BAS (Building Automation System) to then be programmed to perform, but not limited to, the following sequence of operations:
 - Turn off power to the fan
 - Close Outside Air Dampers
 - Activate steam or water flow to preheat coil – where applicable
 - Send alarm to control center to notify maintenance personnel
 - Local Audible/Visual Alarm (optional)