



CSI: DIVISION: 23 00 00—HEATING, VENTILATING AND AIR CONDITIONING (HVAC)
Section: 23 20 00—HVAC Piping

Product certification system:

The ICC-ES product certification system includes testing samples taken from the market or supplier's stock, or a combination of both, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the supplier's quality system.

Products: PERT-AL-PERT Type II Pipe and Fittings for Refrigeration

Listee: Grupo Holtec S.A. de C.V.
Carr. A San Isidro Mazatepec 5215
Col. Santa Cruz de Las Flores
Tlajomulco de Zuñiga, Jalisco, Mexico 45640
www.uflexacr.com

Additional Listee:

Cube Energy GMBH
Burgundenstrasse 27
49479 Ibbenbüren
Deutschland
www.cubeenergy.de

Compliance with the following codes:

2024, 2021, 2018, 2015, 2012, 2009 and 2006 *International Mechanical Code*® (IMC)
2024, 2021, 2018, 2015, 2012, 2009 and 2006 *International Residential Code*® (IRC)
2024, 2021, 2018, 2015, 2012, 2009 and 2006 *Uniform Mechanical Code*® (UMC)*
2022, 2019, 2016 and 2013 *California Mechanical Code*® (CMC)*
2020 and 2015 *Minnesota Mechanical and Fuel Gas Code*®
2023, 2020 and 2017 *Florida Mechanical Code*®

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Compliance with the following standards:

ASTM F3346-2024, Specification for Polyethylene of Raised Temperature/Aluminum/Polyethylene of Raised Temperature (PERT/AL/PE-RT) Composite Pressure Pipe

Identification:

The UFLEX PERT-AL-PERT Type II pipe is marked every 1.0 meter (3.28 feet) with the following: manufacturer's name, nominal pipe size, material designation (PERT-AL-PERT), temperature and pressure ratings, production code, and the ICC-ES PMG listing mark.

Installation:

The UFLEX PERT-AL-PERT Type II pipe and UFLEX brass compression fittings must be installed in accordance with the manufacturer's published installation instructions, the applicable codes and this listing.

Mechanical joints shall not be used on annealed temper copper tube in sizes larger than $7/8$ -inch (25 mm) OD size per IMC and $3/4$ " of an inch nominal size per UMC.

Note: The 2024, 2021 and 2018 IMC, IRC and UMC permit for press-connect joints listed for refrigeration piping.

Installation of UFLEX refrigerant piping is limited to line-set applications in direct expansion split systems for residential and light commercial use and for single DX Evaporator and Air Handler of 5 Tons or less, and shall not exceed the maximum pressure of 650 psi (45 bar). UFLEX refrigeration piping shall not be used inside factory built equipment.

Models:

The UFLEX PERT-AL-PERT Type II pipe is manufactured from polyethylene and aluminum materials satisfying ASTM F3346.

The pipe is available in a nominally (ASTM B-280), 1/4, 3/8, 1/2, 5/8, 3/4, and 7/8 inch outside diameter (12, 14, 16, 18, 20, and 25 mm) and in coils.

The UFLEX PERT-AL-PERT Type II pipe and UFLEX brass compression fittings used in refrigeration applications shall have a temperature range of -40 to 167°F (-40 to 75°C) and a maximum short-term temperature of 185°F (85°C) for all systems (heat pump and VRF/VFV systems).

- For diameter sizes 1/4, 3/8 and 1/2 inch (12, 14, and 16 mm) a maximum working pressure of 580 psi (40 bar) and maximum short-term overload pressure is 650 psi (45 bar).

- For diameter size 5/8 inch (18 mm) a maximum working pressure of 550 psi (38 bar) and maximum short-term overload pressure is 650 psi (45 bar).

- For diameter sizes 3/4 and 7/8 inch (20 and 25 mm) a Maximum working pressure of 464 psi (32 bar) and maximum short-term overload pressure is 650 psi (45 bar).

Conditions of Listing:

1. The pipe must be used with only the following refrigerants: R22, R32, R134a, R404a, R407c, R410A and R507.
2. Installation of UFLEX refrigerant piping is limited to line-set applications in direct expansion split systems for residential and light commercial use and for single DX Evaporator and Air Handler of 5 Tons or less, and shall not exceed the maximum pressure of 650 psi (45 bar). UFLEX refrigeration piping shall not be used inside factory built equipment.
3. Mechanical joints shall not be used on annealed temper copper tube in sizes larger than $7/8$ -inch (25 mm) OD size per IMC and $3/4$ " of an inch nominal size per UMC.
Note: The 2024, 2021 and 2018 IMC, IRC and UMC permit for press-connect joints listed for refrigeration piping.
4. The pipe installation must be pressure-tested for leaks in the presence of the code official or the code official's designated representative. Refrigeration system shall include safety device to limit pressure to 650 psi.
5. When installation is in fire-resistance-rated assemblies, evidence must be provided to the code official of compliance with *International Building Code*® (IBC) Section 713 (penetrations).
6. The pipe must not be used as a source of electrical ground.

7. Pipe bends must be installed in accordance with the manufacturer's published installation instructions.
8. When the system is embedded in concrete, pipe must be covered with a minimum of $\frac{3}{4}$ inches (19.1 mm) of concrete and installation must comply with IBC Section 1906.3 or UBC Section 1906.3, as applicable.
9. The pipe is manufactured under a quality control program with surveillance inspections by ICC-ES.