



CSI: DIVISION: 23 00 00—HEATING, VENTILATING, AND AIR-CONDITIONING
Section: 23 11 00—Facility Fuel 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.

Product: WARDFLEX® II and WARDFLEX® MAX Conductive Jacketed Corrugated Stainless-Steel Tubing

Listee: ASC ENGINEERING SOLUTIONS
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PORTMOUTH, NH 03801
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Compliance with the following codes:

2024, 2021, 2018, 2015, 2012 and 2009 *International Fuel Gas Code*® (IFGC)
2024, 2021, 2018, 2015, 2012 and 2009 *International Mechanical Code*® (IMC)
2024, 2021, 2018, 2015, 2012 and 2009 *International Residential Code*® (IRC)
2024, 2021, 2018, 2015, 2012 and 2009 *Uniform Plumbing Code*® (UPC)*
2024, 2021, 2018, 2015, 2012 and 2009 *Uniform Mechanical Code*® (UMC)*

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Compliance with the following standards:

ANSI LC 1-2023/CSA 6.26-2023, Fuel Gas Piping Systems Using Corrugated Stainless-Steel Tubing (CSST)
NFPA 54-2024, National Fuel Gas Code
ICC-ES LC1024-2016, PMG Listing Criteria for Conductive Jacketed Corrugated Stainless-Steel Tubing
ESR-1879, WARDFLEX® Flexible Fuel Gas Piping System

Identification:

Tubing: Each 2 feet (610 mm) of tube bears the trade names WARDFLEX® II or WARDFLEX® MAX, part number, rated pressure [25 psi (172 kPa)], equivalent hydraulic diameter (EHD), the words "Fuel Gas", "ANSI LC1 CSA 6.26", "Arc-Resistant" or "AR" and the ICC-ES PMG listing mark.

Components: Fittings, termination outlets and distribution manifolds are stamped with the WARDFLEX® logo, the part number and a date code of at least four consecutive digits (first two for the year, last two for the week).

Installation:

General: Installation must be in accordance with the WARDFLEX® Flexible Gas Piping Guide and Installation Instructions, IFGC Section 404, IRC Section 2415, UMC Section 1309 and UPC Section 1211, as applicable. The system installation consists of CSST distribution lines installed between the point of delivery and fuel gas appliances. The use and system installation must be in accordance with ICC-ES PMG-1100.

Plenum Installation: Per manufacturer’s installation requirements, product must not be installed in plenum applications.

Electrical Bonding: The WARDFLEX® II and WARDFLEX® MAX Conductive Jacketed Corrugated Stainless-Steel Tubing (CSST) System are electrically continuous and are considered to be bonded where it is connected to appliances that are connected to the equipment grounding conductor of the circuit supplying that appliance. Additional bonding prescribed by IFGC Section 310.1.1 is not required for WARDFLEX® II or WARDFLEX® MAX Conductive Jacketed Corrugated Stainless-Steel Tubing when it is installed in accordance with this listing.

Models:

The WARDFLEX® II and WARDFLEX® MAX Conductive Jacketed CSST System consists of three parts: (1) a black conductive exterior jacket; (2) corrugated stainless steel tubing which is recognized in ESR-1879 as conforming to ANSI LC-1; and (3) mechanical fittings designed for use only with the WARDFLEX® CSSTs. Mechanical fittings utilize a metal-to-metal seal and secondary gasket seal, and include mechanical fittings, distribution manifolds, shutoff valves, termination outlet devices, pressure regulators and protection devices.

TABLE 1—PART NUMBERS FOR WARDFLEX II and WARDFLEX MAX TUBING

TUBING SIZE (inches)	PART NUMBER
1/2	15C
3/4	20C
1	25C
1 1/4	32C
1 1/2	38C
2	50C

For **SI**: 1 inch = 25.4 mm.

XXX: Length of tubing in feet.

Conditions of Listing:

- WARDFLEX® II and WARDFLEX® MAX have been tested (in accordance with LC1024) and shown to resist a transient arc of 1000 amps minimum peak delivering 4.5 coulombs within 20 milliseconds (0.020 seconds). Assumed energy associated with a transient arc from lightning inside a building is less than 2.0 coulombs, providing a factor of safety of 2.25 for WARDFLEX II and WARDFLEX® MAX. Evaluation of this product for an arc exceeding this level or a direct strike from lightning is outside the scope of this listing.
- The CSST piping system must not be used as a grounding electrode for an electrical system.
- Additional information and requirements are defined in ICC-ES ESR-1879.
- WARDFLEX® II and WARDFLEX® MAX are under a quality control program with semi-annual surveillance inspections by ICC-ES.