ICC-ES Evaluation Report

ESR-4565

Reissued January 2026

Subject to renewal December 2026

This report also contains:

- City of LA Supplement
- CA Supplement w/ DSA and OSHPD

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DIVISION: 22 00 00—PLUMBING **Section: 22 63 00—Medical Gas Systems** **DIVISION: 23 00 00—HEATING, VENTILATION AND AIR CONDITIONING** **Section: 23 11 00—Facility Fuel Piping** **Section: 23 12 00—Natural Gas Piping**	**REPORT HOLDER:** **OMEGAFLEX, INC.**	**EVALUATION SUBJECT:** **MEDITRAC®, TRACPIPE® COUNTERSTRIKE®, TRACPIPE® PS-II AND DOUBLETRAC® FLEXIBLE PIPING SYSTEMS**	

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2024, 2021 and 2018 *International Building Code®* (IBC)
- 2024, 2021 and 2018 *International Fire Code®* (IFC)
- 2024, 2021 and 2018 International Mechanical Code® (IMC)
- 2024, 2021 and 2018 International Fuel Gas Code® (IFGC)
- 2024, 2021 and 2018 Uniform Mechanical Code (UMC)
- 2021 and 2018 Uniform Plumbing Code (UPC)

Compliance with the following code referenced standards:

- 2024, 2021 and 2018 Health Care Facilities Code® (NFPA 99)
- 2024 and 2021 Flammable and Combustible Liquids Code® (NFPA 30)

Property evaluated:

- Structural—Seismic Performance

2.0 USES

The flexible piping systems described in this report are used for distribution of medical gas, fuel gas and combustible/flammable liquid, as applicable, both underground and in structures having a component importance factor, I_p of 1.5 and located in Seismic Design Categories C, D, E and F when evaluated in accordance with Section 13.2.6 of ASCE 7-22 (for the 2024 IBC) and Section 13.2.5 of ASCE 7-16 (for the 2021 and 2018 IBC).

3.0 DESCRIPTION

3.1 General:

The flexible piping systems are composed of corrugated metal tubing material with a protective jacket, tubing fittings and pipe supports (vertical and bracing). See Figure 1 for product depictions.

3.2 MediTrac®: MediTrac® is a flexible corrugated medical gas piping system consisting of a corrugated copper alloy tubing with external polymer jacket and axially swaged brass fittings equipped with a stainless steel anti-tamper sleeve and copper tube stub. The tubing comes in diameters ranging from ½-inch to 2 inches (12.7 to 51 mm).

3.3 TracPipe® CounterStrike®: TracPipe® CounterStrike® is a flexible fuel-gas piping system for natural or propane gas consisting of corrugated stainless steel tubing with external polyethylene jacket, and proprietary mechanical fittings. The tubing comes in diameters ranging from 3/8-inch to 2 inches (9.5 to 51 mm). TracPipe® CounterStrike® is listed in PMG-1046.

3.4 TracPipe® PS-II: TracPipe® PS-II is a factory-assembled encasement system, for below grade applications, consisting of TracPipe® CounterStrike® and fittings inside a ribbed polyethylene sleeve with gas tight end caps to capture any fuel gas escaping from the tubing. TracPipe® PS-II is listed in PMG-1052.

3.5 DoubleTrac®: DoubleTrac® is a flexible combustible/flammable liquid piping system which consists of corrugated stainless steel tubing with external polymer fuel-containment system, and stainless steel fittings. The pipe comes in diameters ranging from 1-inch to 2 inches (25.4 to 51 mm).

3.6 Pipe Supports:

3.6.1 Vertical: The vertical pipe hangers and supports must comply with Section 308 of the IPC, Section 305 of the IMC, Section 407 of the IFGC, Section 313 of the UMC, Section 313 of the UPC, NFPA 99 and NFPA 30, as applicable. The IPC is referenced in Section 2901 of the IBC. The IMC and IFGC are referenced in Section 2801 of the IBC. NFPA 99 is referenced in Sections 407.11, 422.6 and 425.1 of the IBC. NFPA 30 is referenced in Sections 415.6 and 507.8 of the IBC.

3.6.2 Seismic Bracing: Transverse and longitudinal seismic bracing systems must comply with the Bracing for Piping Systems: Seismic—Wind—Dynamic Design, Selection and Application (MSS SP- 127-2014a) or as determined by a registered design professional and authority having jurisdiction in accordance with Section 308.2 of the IPC, Section 301.18 of the IMC, Section 301.12 of the IFGC and Section 1613 of the IBC.

4.0 DESIGN AND INSTALLATION

4.1 Design:

4.1.1 General:

The vertical and bracing support systems installed with the flexible piping systems must be designed by a registered design professional in accordance with Chapter 13 of ASCE 7, as adopted by the authority having jurisdiction, and must comply with Sections 3.6, 4.1, 4.2 and 4.3 of this report. The scope of this report covers installation in structures assigned a component importance factor, I_p of 1.5 in Seismic Design Categories C, D, E and F.

4.1.2 Seismic Design Factors: Since Corrugated Metal Tubing (CMT) systems described in this report are not expressly listed in Chapter 13 of ASCE 7-16 or ASCE 7-22, CMT described in this report are permitted to use the seismic design factors for distribution systems of piping in accordance with ASME B31, listed in the applicable edition of ASCE 7. The following seismic design factors must be used:

- For installation of CMT with mechanical or welded connections between two braced points and an unbraced length not exceeding 40 feet (12.2 m), use the seismic design factors specified by the applicable ASCE 7 for ASME B31 piping with mechanical or welded joints that is braced between braced points.
- For installation of CMT without mechanical or welded connections between two points that are each restrained by transverse seismic braces, and with an unbraced length not exceeding 40 feet (12.2 m), use the seismic design factors specified by the applicable ASCE 7 for ASME B31 piping without joints between braced points.
- The appropriate seismic design factors listed in Chapter 13 of applicable ASCE 7 must be selected, where ASCE 7 differentiates by support condition at or below grade plane versus above grade plane supported by a structure.

4.1.3 Horizontal Seismic Design Force: The horizontal seismic design force determined in accordance with Section 13.3 of the applicable ASCE 7 shall be permitted to be reduced by 10 percent when justified by analysis or test data.

4.1.4 Support Condition Mapping: For editions of ASCE 7 that differentiate piping by support condition, the designer must apply seismic design factors consistent with the following:

- For CMT installed at or below grade plane, use seismic design factors listed in the applicable ASCE 7 that applies to ASME B31 piping supported at or below grade plane.
- For CMT installed above grade plane by a structure, use seismic design factors listed in the applicable ASCE 7 that applies to ASME B31 piping supported above grade plane by a structure.

4.1.5 Bracing configuration dependent factors for above-grade runs: Where ASCE 7 requires component strength or overstrength factors based on connection and bracing configuration, use the following:

- For flexible piping installed with mechanical or welded connections between two braced points with an unbraced length not exceeding 40 feet (12.2 m), use the lower strength or overstrength factor permitted by ASCE 7 for such braced, connected runs.
- For flexible piping installed without mechanical or welded connections between two points restrained by transverse seismic braces with an unbraced length not exceeding 40 feet (12.2 m), use the higher strength or overstrength factor permitted by ASCE 7 for such unconnected runs.

4.1.6 Spacing and Clearances: Maximum spacing of transverse and longitudinal braces must not exceed 40 feet (12.2 m). Minimum clearances to critical building systems must comply with Section 3.6 and the figures in this report. Where ASCE 7 permits interpolation or height-dependent amplification, the registered design professional must determine the required clearances accordingly.

4.1.7 Documentation: Calculations must identify the governing edition of ASCE 7, the support condition category applied under Section 4.1.4, and the bracing configuration applied under Section 4.1.5. Calculations and drawings must be submitted to and approved by the authority having jurisdiction.

4.2 Installation:

Installation of the flexible piping systems must be in accordance with this report, the approved plans and the manufacturer's published installation instructions. In the event of a conflict between this report, the approved plans and the manufacturer's published installation instructions, the more restrictive requirement governs.

4.2.1 Interior Application:

For interior installations, the maximum spacing of vertical supports must be determined in accordance with Section 3.6.1 of this report. The maximum spacing of transverse and longitudinal bracing must not exceed 40 feet (12.2 m) and must be determined by a registered design professional and approved by the authority having jurisdiction. The minimum clearance between OmegaFlex flexible piping systems and critical building systems (e.g. fire sprinkler systems) must be 15 inches (381 mm) for every 20 feet (6.1 m) of unbraced length. For bracing lengths between 20 and 40 feet (6.1 to 12.2 m), extrapolation must be used to determine the clearance distance. See Figures 2 and 3 for typical installation details.

4.2.2 Below Grade Application:

Below grade installations include direct burial under soil, under pavement or concrete slab and beneath buildings either as single run or multiple runs of piping as permitted by the code. In addition, the following requirements apply:

TracPipe®: When installed below grade, TracPipe® CounterStrike® may be used and must be installed inside a watertight non-metallic conduit, or as an integral part of a listed encasement system such as TracPipe® PS-II. The conduit shall be designed or specified to withstand the imposed load.

MediTrac®: When installed below grade, MediTrac® may be used and must be installed inside a watertight non-metallic conduit designed or specified to withstand the imposed load.

DoubleTrac®: DoubleTrac® is listed as a metallic/non-metallic composite piping system that includes a secondary containment for installation underground without the need for a separate watertight non-metallic conduit.

4.3 Special Inspection:

Periodic special inspection is required in accordance with IBC Section 1705.13.6. The special inspector must conduct periodic inspections during installation of the flexible piping system connections, verification of components supplied by others and adherence to the manufacturer's published installation instructions.

5.0 CONDITIONS OF USE:

The MediTrac®, TracPipe® CounterStrike®, TracPipe® PS-II and DoubleTrac® flexible piping systems described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 The flexible piping systems must be manufactured, marked and installed in accordance with this report, the applicable listing standard(s), and the manufacturer's published installation instructions. A copy of the instructions must be available at the jobsite at all times during installation.

5.2 The vertical and bracing supports must comply with Sections 3.6 and 4.1 of this evaluation report.

5.3 The scope of this evaluation report is for the installation of OmegaFlex flexible piping systems in Seismic Design Categories C, D, E and F and structures assigned an I_p of 1.5.

5.4 The MediTrac® flexible piping system must comply with the applicable provisions of the NFPA 99, UPC and IPC. The TracPipe® CounterStrike® and TracPipe® PS-II flexible piping system must comply with the applicable provisions of the IMC, IFGC, UPC and UMC. The DoubleTrac® must comply with applicable provisions of IFC, IMC, UMC and NFPA 30.

5.5 Special inspection must be conducted in accordance with Section 4.3.

5.6 The MediTrac®, TracPipe® CounterStrike®, TracPipe® PS-II and DoubleTrac® flexible piping systems are manufactured under an approved quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with ICC-ES Acceptance Criteria for Seismic Certification by Shake-Table Testing of Nonstructural Components AC156 (24) 2nd Edition, Published April 2025.

6.2 Analysis of shake table test data.

6.3 Quality control documentation.

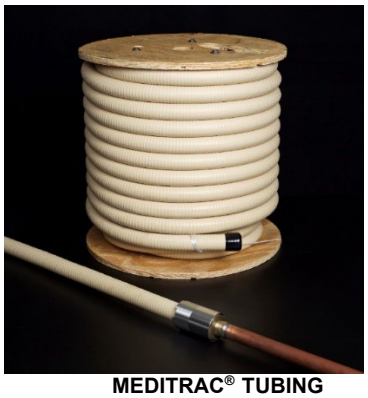
7.0 IDENTIFICATION

7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-4565) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.

7.2 In addition, the MediTrac®, TracPipe® CounterStrike®, TracPipe® PS-II and DoubleTrac® flexible piping systems described in this report must be marked with the model number and the company name and the ICC-ES evaluation report number (ESR-4565). The manufacturer may include the following optional marking: Seismically Qualified per ICC-ES AC156 Testing Protocol.

7.3 The report holder's contact information is the following:

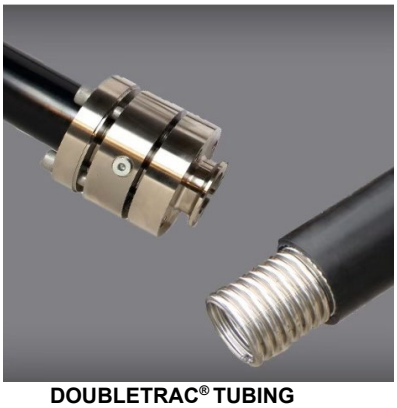
OMEGAFLEX, INC.
451 CREAMERY WAY
EXTON, PENNSYLVANIA 19341
(610) 280-4145
www.omegaflex.com



MEDITRAC® TUBING

TRACPIPE® COUNTERSTRIKE® TUBING

TRACPIPE® PS-II TUBING



DOUBLETRAC® TUBING

FIGURE 1—MEDITRAC®, TRACPIPE® COUNTERSTRIKE® AND DOUBLETRAC® FLEXIBLE PIPING SYSTEMS

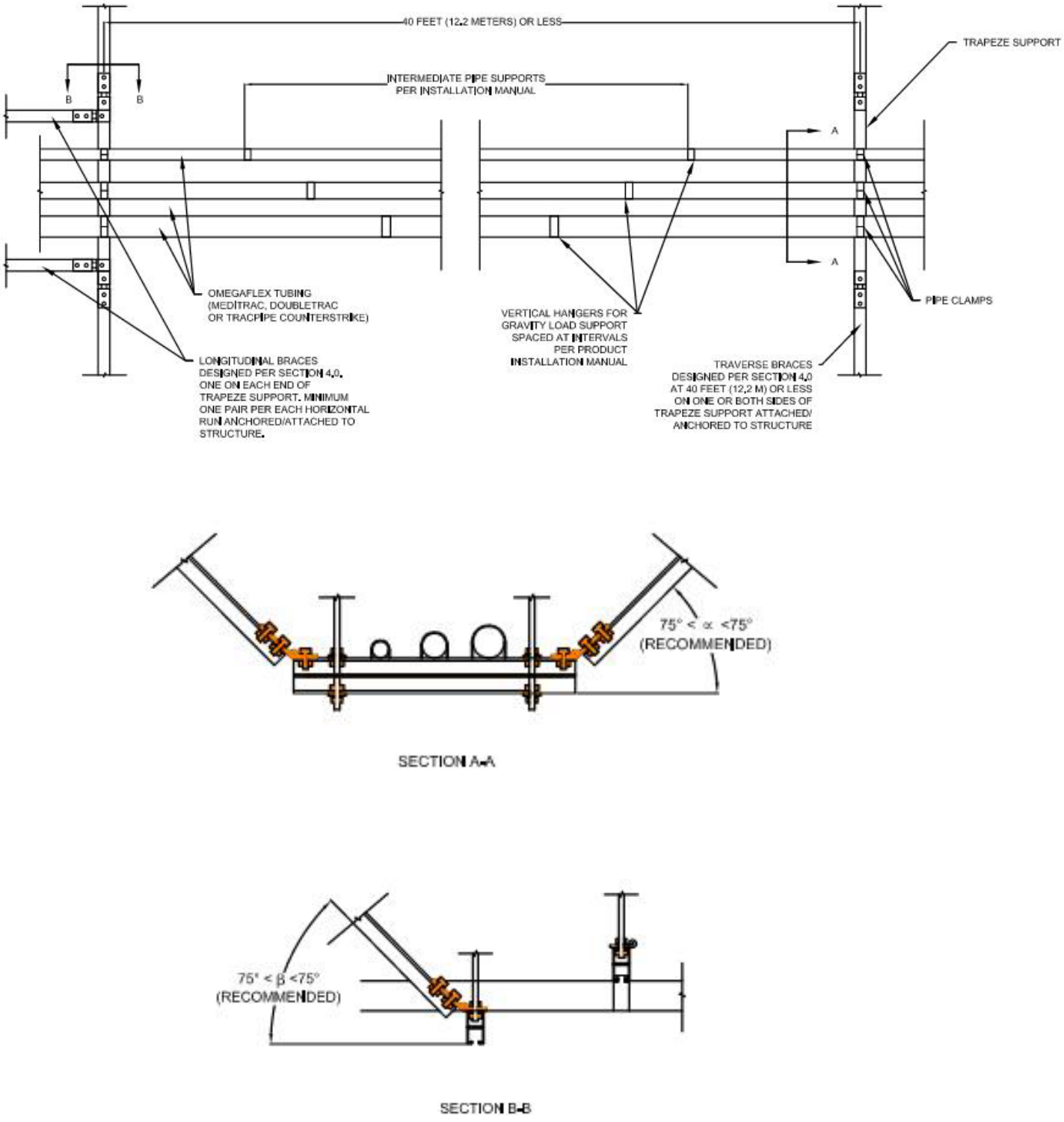
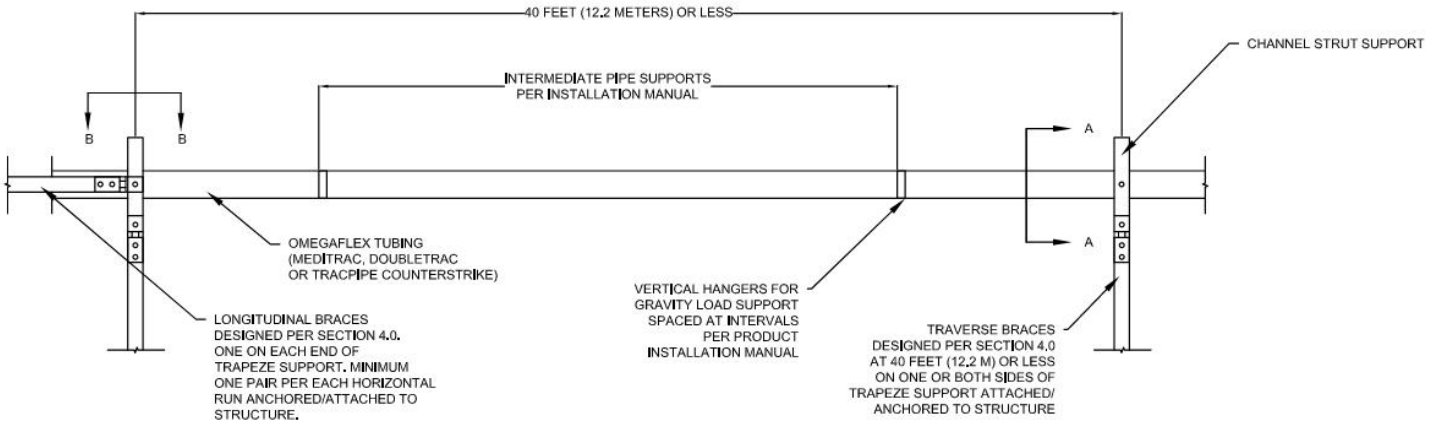
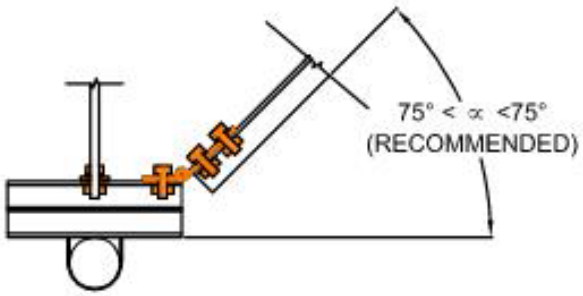
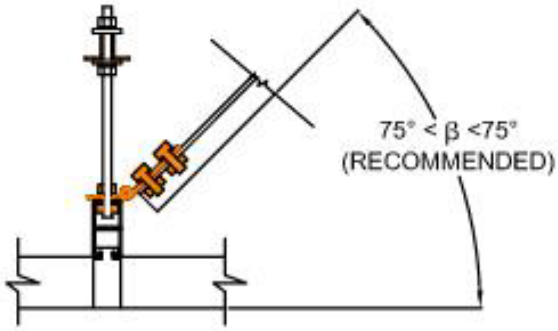


FIGURE 2—TYPICAL MULTIPLE FLEXIBLE PIPE INSTALLATION (TRANSVERSE AND LATERAL BRACING SUPPORTS)





SECTION A-A



SECTION B-B

FIGURE 3- TYPICAL SINGLE FLEXIBLE PIPE INSTALLATION (TRANSVERSE AND LATERAL BRACING SUPPORTS)

ICC-ES Evaluation Report ESR-4565 City of LA Supplement

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DIVISION: 22 00 00—PLUMBING
Section: 22 63 00—Medical Gas Systems

DIVISION: 23 00 00—HEATING, VENTILATION AND AIR CONDITIONING
Section: 23 11 00—Facility Fuel Piping

DIVISION: 23 00 00—HEATING, VENTILATION AND AIR CONDITIONING
Section: 23 12 00—Natural Gas Piping

REPORT HOLDER:

OMEGAFLEX, INC.

EVALUATION SUBJECT:

MEDITRAC®, TRACPIPE® COUNTERSTRIKE®, TRACPIPE® PS-II AND DOUBLETRAC® FLEXIBLE PIPING SYSTEMS

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the flexible piping systems, described in ICC-ES evaluation report ESR-4565, have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code edition*(s)*:

- 2023 *City of Los Angeles Building Code* (LABC)
- 2023 *City of Los Angeles Plumbing Code* (LAPC)
- 2023 *City of Los Angeles Mechanical Code* (LAMC)

2.0 CONCLUSIONS

The flexible piping systems, described in Sections 2.0 through 7.0 of the evaluation report ESR-4565, comply with the LABC, LAPC and LAMC and are subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE:

The flexible piping systems described in the evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report ESR-4565.
- The design, installation, conditions of use and identification of the flexible piping systems are in accordance with the 2021 International Building Code (IBC), 2021 IAPMO *Uniform Plumbing Code®* (IAPMO UPC) and 2021 IAPMO *Uniform Mechanical Code®* (IAPMO UMC) provisions noted in the evaluation report ESR-4565.
- The design, installation, and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, LAPC and LAMC, as applicable.

This supplement expires concurrently with the evaluation report, reissued January 2026.

DIVISION: 22 00 00—PLUMBING
Section: 22 63 00—Medical Gas Systems

DIVISION: 23 00 00—HEATING, VENTILATION AND AIR CONDITIONING
Section: 23 11 00—Facility Fuel Piping

DIVISION: 23 00 00—HEATING, VENTILATION AND AIR CONDITIONING
Section: 23 12 00—Natural Gas Piping

REPORT HOLDER:

OMEGAFLEX, INC.

EVALUATION SUBJECT:

MEDITRAC®, TRACPIPE® COUNTERSTRIKE®, TRACPIPE® PS-II AND DOUBLETRAC® FLEXIBLE PIPING SYSTEMS

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the flexible piping systems, described in ICC-ES evaluation report ESR-4565, have also been evaluated for compliance with the codes noted below.

Applicable code edition*(s)*:

- 2022 *California Building Code* (CBC)
- 2022 *California Plumbing Code (CPC)*
- 2022 *California Mechanical Code (CMC)*

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) now known as the California Department of Health Care Access and Information (HCAI) and the Division of State Architects (DSA), see Sections 2.1.1 and 2.1.2 below.

2.0 CONCLUSIONS

2.1 CBC:

The flexible piping systems, described in Sections 2.0 through 7.0 of the evaluation report ESR-4565, comply with CBC Chapter 16, provided the design and installation are in accordance with the 2021 *International Building Code®* (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 16 and 17, as applicable.

2.1.1 OSHPD:

The flexible piping systems, described in Sections 2.0 through 7.0 of the evaluation report ESR-4565, comply with CBC, provided the design and installation are in accordance with the 2021 *International Building Code®* (IBC) provisions noted in the evaluation report and the additional requirements in CBC amended Chapter 16 and 17 [OSHPD 1R, 2 and 5] and CBC Chapters 16A and 17A [OSHPD 1 and 4], as applicable.

2.1.2 DSA:

The flexible piping systems, described in Sections 2.0 through 7.0 of the evaluation report ESR-4565, comply with CBC, provided the design and installation are in accordance with the 2021 *International Building Code®* (IBC) provisions noted in the evaluation report and the additional requirements in CBC amended Chapter 16 [DSA-SS/CC], CBC Chapter 16A [DSA-SS] and CBC Chapter 17A [DSA-SS and DSA-SS/CC], as applicable.

2.2 CPC:

The flexible piping systems, described in Sections 2.0 through 7.0 of the evaluation report ESR-4565, comply with Chapter 3 of the CPC, provided the design and installation are in accordance with the 2021 *Uniform Plumbing Code*® (UPC) provisions noted in the evaluation report and the additional requirements in CBC Chapters 16 and 17 and CPC Chapter 3, as applicable.

2.2.1 OSHPD:

The flexible piping systems, described in Sections 2.0 through 7.0 of the evaluation report ESR-4565, comply with amended Chapter 3 of the CPC, provided the design and installation are in accordance with the 2021 *Uniform Plumbing Code*® (UPC) provisions noted in the evaluation report and the additional requirements in CBC amended Chapters 16 and 17 [OSHPD 1R, 2 and 5], CBC Chapters 16A and 17A [OSHPD 1 and 4] and CPC amended Chapter 3 [OSHPD 1, 1R, 2, 3, 4 and 5], as applicable.

2.2.2 DSA:

The flexible piping systems, described in Sections 2.0 through 7.0 of the evaluation report ESR-4565, comply with amended Chapter 3 of the CPC, provided the design and installation are in accordance with the 2021 *Uniform Plumbing Code*® (UPC) provisions noted in the evaluation report and the additional requirements in CBC amended Chapter 16 [DSA-SS/CC], CBC Chapters 16A [DSA-SS], CBC Chapter 17A [DSA-SS and DSA-SS/CC] and CPC amended Chapter 3 [DSA-SS and DSA-SS/CC], as applicable.

2.3 CMC:

The flexible piping systems, described in Sections 2.0 through 7.0 of the evaluation report ESR-4565, comply with Chapter 3 of the CMC, provided the design and installation are in accordance with the 2021 *Uniform Mechanical Code*® (UMC) provisions noted in the evaluation report and the additional requirements in CBC Chapters 16 and 17 and CMC Chapter 3, as applicable.

2.3.1 OSHPD:

The flexible piping systems, described in Sections 2.0 through 7.0 of the evaluation report ESR-4565, comply with amended Chapter 3 of the CMC, provided the design and installation are in accordance with the 2021 *Uniform Mechanical Code*® (UMC) provisions noted in the evaluation report and the additional requirements in CBC amended Chapters 16 and 17 [OSHPD 1R, 2 and 5], CBC Chapters 16A and 17A [OSHPD 1 and 4] and CMC amended Chapter 3 [OSHPD 1, 1R, 2, 3, 4 and 5], as applicable.

2.3.2 DSA:

The flexible piping systems, described in Sections 2.0 through 7.0 of the evaluation report ESR-4565, comply with amended Chapter 3 of the CMC, provided the design and installation are in accordance with the 2021 *Uniform Mechanical Code*® (UMC) provisions noted in the evaluation report and the additional requirements in CBC amended Chapter 16 [DSA-SS/CC], CBC Chapters 16A [DSA-SS], CBC Chapter 17A [DSA-SS and DSA-SS/CC] and CMC amended Chapter 3 [DSA-SS and DSA-SS/CC], as applicable.

This supplement expires concurrently with the evaluation report, reissued January 2026.