

Concrete Encasement Guidelines

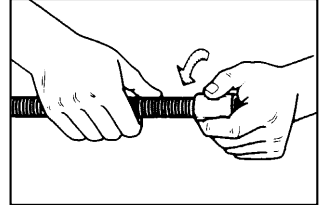
Carlson new quick connect one piece fittings are approved for concrete-tight installations. For sizes larger than 1" the use of standard Carlson® solvent weld fittings with the proper ENT cement is recommended.

1. Cut ENT square and cleanly.
2. Insert end into fitting, making sure two (2) full corrugations are snapped into fitting beyond flexible tabs (2 clicks).
3. ENT should be tied to rebar at 2-3 foot intervals to prevent flotation. Keep ENT straight. Small deflections over a long run may accumulate significant degrees of bend which will affect conductor installation. Suitable materials include wire, tie wraps, and tape.
4. When using UL solvent weld fittings for concrete tight performance:



- A. Do not use chemical primer or cleaner.
- B. Apply a light, uniform coat of cement labeled for use with ENT on the coupling and ENT.
- C. Do not use a dauber.
- D. Brush excess cement out of ENT grooves.

- E. Promptly insert ENT into fitting while cement is wet, until the stop is reached, and give a quarter turn.
- F. Do not disturb until joint is set.



Specifications for ENT (Electrical Nonmetallic Tubing)

- 1.1 Electrical Nonmetallic Tubing (ENT), is designed to replace EMT, flexible metal conduit or other raceway or cable systems, for installation in accordance with Article 331 of the National Electrical Code, other applicable sections of the Code, and local codes.
- 1.2 Any ENT used shall meet the requirements of UL Standard UL 1653 and shall be listed by Underwriters Laboratories, Inc., as suitable for its intended purpose.
- 1.3 ENT shall be recognized by a CABO National Evaluation Report for use in 1-hour and 2-hour rated construction.
- 1.4 Penetration of fire rated walls, floors or ceilings shall use classified Through-Penetration Firestop Systems described in the current Underwriters Laboratories Fire Resistance Directory.
- 1.5 Fittings and outlet boxes shall be designed for use with ENT and listed by Underwriters Laboratories. All fittings, boxes and accessories shall be from one manufacturer.
- 1.6 Only Carlson ENT Blue cement recommended specifically for use with ENT shall be used.
- 1.7 Unless indicated differently on drawings, ENT systems shall be color coded: BLUE for branch and feeder circuit wiring, YELLOW for communications, and RED for fire alarm and emergency systems.
- 1.8 ENT, fittings, and accessories shall be manufactured by Carlson.

ELECTRICAL NONMETALLIC TUBING (ENT)

SPECIFICATION FOR ENT:

- Electrical Nonmetallic Tubing (ENT) is designed to replace EMT, flexible metal conduit or other raceway systems in accordance with Article 331 of the National Electrical Code, other applicable sections of the Code and local codes.
- Any ENT used shall meet the requirements of UL 1653 and NEMA TC-13 and shall be listed by Underwriters Laboratories, Inc.
- ENT shall be recognized by The National Evaluation Service, Inc. for use in fire resistive construction.
- Penetration of fire rated walls, floors or ceilings shall use classified Through-Penetration Firestop Systems described in the current Underwriters Laboratories Fire Resistance Directory.
- Fittings and outlet boxes shall be designed for use with ENT and listed by Underwriters Laboratories. All fittings, boxes and accessories shall be manufactured by CARLON.
- Only CARLON ENT Blue cement recommended specifically for use with ENT shall be used.
- Unless indicated differently on drawings, ENT systems shall be color coded: BLUE for branch wiring, YELLOW for communications wiring, and RED for fire alarm and emergency systems.

FEATURES:

- UL Listed, Trade Sizes (1/2" to 2")
- UL recognizes the use of PVC Schedule 40 cement type fittings with all sizes of ENT
- ENT ambient temperature range -4 deg F (installation) to 122 deg F
- ENT rated for 90 deg C conductors
- One piece ENT Coupling, Threaded Terminator and Schedule 40 Transition Fitting are rated concrete tight without tape by UL Recognized in current NEC ref. Article 331
- Recognized for use in 2-hour fire resistive nonload bearing and load bearing wall assemblies per NER-290
- Recognized for use in 1-hour fire resistive nonload bearing wall assemblies per NER-290
- Recognized for use in a fire resistive ceiling assembly (up to 3 hours) per NER-290
- Recognized for Through-Penetration Firestop systems as classified by UL to meet BOCA, SBCCI and ICBO codes.
- Nonconductive /noncorrosive pliable raceway system
- Packaged in sticks, coils and reels
- Available in three colors: Blue, Yellow and Red for color coding
- Complete line of fittings & accessories specifically designed for use with ENT
- Hand bendable - does not require special tools*
- Easy to cut length needed for installation - reduces scrap*
- Conductors easily push through the raceway (up to approximately 50 feet)*
- Lightweight makes it easy to handle on the job*

*Speed of installation keeps the job on schedule despite unexpected obstacles. Lower installation costs allow for savings to be reallocated to upgrade other areas, such as; lighting, dimming, etc.

APPROVED USES:

- Concrete slab ref. current NEC Article 331
- Walls - wood stud, masonry and metal stud ref. current NEC Article 331.
- Ceilings - permanent or dropped (free air only) ref. current NEC Article 331.
- Exposed - buildings not in excess of 3 stories ref. current NEC Article 331, concealed for floors above 3 stories, ref. 15 minute finish rating
- Public Assembly ref. current NEC Section 518-4, in nonfire rated and certain five rated structures
- Prewired, current NEC Article 331
- Classified by UL 1479 for Through Penetration Firestop Systems in UL Guide Category XHEZ and current UL Fire Resistance Directory
- Three hour rated floor/ceiling assemble

TYPICAL APPLICATIONS:

- Residential: Low or high rise - multi or single family
- Commercial: Low or high rise - office, retail, hotel/motel, restaurant, etc.
- Nursing Homes/Hospitals in nonpatient care areas only
- Schools, classrooms, dormitories, offices
- Fire Alarm Systems
- Recreational vehicles and parks
- Solar Photovoltaic systems
- Marinas and boatyards
- Other uses per the current NEC