

# Electrical Nonmetallic Tubing & Fittings



**COR-LINE**<sup>®</sup>  
ELECTRICAL NONMETALLIC TUBING

**KWIKON**<sup>®</sup>  
ELECTRICAL NONMETALLIC FITTINGS



ELECTRICAL SYSTEMS

## ELECTRICAL NONMETALLIC TUBING & FITTINGS

- Easy installation
- Complete concrete-tight system
- Approved for use in fire-rated floor/ceiling assemblies

We build tough products for tough environments<sup>®</sup>

  
**IPEX**

# AN INTEGRATED ENT SYSTEM THAT SAVES TIME

We designed Cor-Line Electrical Nonmetallic Tubing (ENT), and Kwikon fittings, slab boxes and accessories with two goals. Firstly, we set out to create an integrated ENT system tough enough to meet the rugged day-to-day challenges of the construction industry. More importantly, we wanted to make a system that saves time and money on the job site. People who work with it daily insist we got it right on both counts.

The best alternative to heavy and labor-intensive 10 ft. lengths of metal conduit, Cor-Line was made for fast, easy installation, saving valuable man-hours on any construction site. As the toughest non-corroding, non-conducting ENT system on the market, its durability—even under tons of concrete—ensures years of reliable use for savings over the long run.

Saving contractors time, money and worry, this integrated ENT system makes sure the job gets done right.



**COR-LINE**





## TUBING

Noncorroding and nonconducting, Cor-Line Electrical Nonmetallic Tubing and Kwikon fittings are designed "For the Long Run". Encased in concrete, concealed in walls or ceilings, or for direct burial, Cor-Line is your best choice for today's demanding raceway applications.

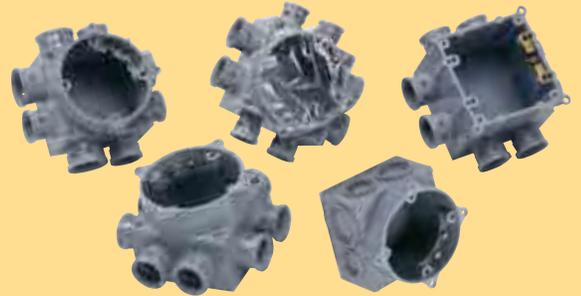
## FITTINGS

Kwikon offers the industry's most complete line of ENT fittings for all ENT sizes and transition needs – bridge gaps from ENT to EMT or to metallic slab boxes or to Rigid PVC. Made rugged and concrete-tight, our fittings require no solvent welding or tape, and can be joined to any CSA certified ENT.



## SLAB BOXES

Available in a variety of styles, Kwikon slab boxes are engineered tough and completely concrete-tight. No more stuffing boxes with paper to keep concrete out.



## FORM STUBBIES

Kwikon stubbies are used to hold conduit ends firmly in place until concrete is poured and cured. They eliminate the need to drill holes in plywood forms, and they protect the ENT from possible breakage during the removal of wood forms after the concrete has set.



## ACCESSORIES

To compliment our integrated ENT system, tools and accessories are available to complete the installation.



# THE ENT SYSTEM CONTRACTORS DEPEND ON

Since its introduction in 1986, Cor-Line ENT and Kwikon fittings has been trusted by electricians, engineers, building owners and general contractors across North America. Thanks largely to its rugged reliability and quick, easy installation, Cor-Line ENT and Kwikon fittings has established itself as the market leader.

While metal was the industry's material of choice in the past, Cor-Line has proved itself a more versatile, flexible and affordable improvement. Coiled in long convenient reels, it's simple and fast to measure, cut and fit—no special tools or training are needed. Cor-Line's corrugated construction is so flexible it can be bent easily by hand. And our patented Kwikon couplings and connectors, with their six locking tab design, provide an instant snap-on, lock-in fit that easily meets CSA requirements for conduit pullout.

What's more, it comes backed by a national sales network of specialists dedicated to making sure every job you do turns out right. No wonder so many contractors agree Cor-Line is number one.

## INSLAB FLOORS

*With its concrete-tight design and easy-to-install angled stubbies, Cor-Line and Kwikon offer the perfect ENT solution for inslab floors.*

## MARKETS

- Residential  
(Low or High Rise)
- Commercial  
(Low or High Rise)
- Institutional  
(Prisons, Schools, Universities)
- Hospitals and Nursing Homes  
(Only in nonpatient care areas)
- Stadiums and Arenas





### **WALLS**

*Cor-Line's flexibility and ease of handling in metal, wood or block walls reduce the time and labor needed to install electrical raceways.*



### **FLOOR / CEILING ASSEMBLIES**

*Cor-Line's light weight and versatility make it perfect for slab applications. Integrated with our slab boxes, it can be used to install lights and ceiling fans.*



### **A CLEAN CONNECTION**

*Kwikon ENT Stubbies provide a clean 1-1/2" stub of ENT to make your connection while protecting the ENT from the traditional breakage that can occur when the forms are removed.*

# TOUGHER THAN ANY OTHER ENT SYSTEM ON

As everyone knows, accidents happen...especially on construction sites. Workers trip, knock over equipment, drop tools. A good measure of an ENT's strength is how it performs on the job site. Made of heavy-duty, impact-resistant PVC, Cor-Line is tough enough to withstand the day-to-day bumps and knocks of any job site. As a result, Cor-Line reduces costly construction site damage and saves money by reducing waste.

Yet a bigger test of an ENT system's strength is how it holds up to being encased in concrete. Cor-Line is completely non-corroding and concrete-tight, ensuring years of rugged durability once encased in concrete or enclosed behind walls or ceilings. Cor-Line's strength saves you from the worry – and costs – of future repairs or maintenance.



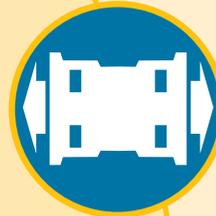


## CONCRETE-TIGHT



Every contractor's worst nightmare is a product that doesn't work or hold up in poured concrete; the costs of replacement and repair can be tremendous. Cor-Line ENT and Kwikon fittings are concrete-tight, requiring no solvent welding or tape around the connections, or paper stuffed inside.

## PULL RESISTANT



Once a length of Cor-Line tubing is connected to a coupling or connector, it stays connected, thanks to our unique six locking tab design. With a pull-out resistance of up to 175 lbs., our patented snap-on, lock-in system provides a seal that easily meets CSA requirements for conduit pullout.

## FIRE RESISTANT



Cor-Line ENT tubing and Kwikon fittings and slab boxes are approved for use in noncombustible 2 hour and 4 hour fire-rated floor/ceiling assemblies.

## IMPACT RESISTANT



Cor-Line ENT is made of impact resistant PVC, so it won't break or crack if an object is dropped on it or someone steps on it.

■ Strong, solid fittings meeting all CSA requirements

■ Patented "six locking tab" design creates a strong, pull-out resistant and concrete tight seal

■ Flexible enough to be bent by hand, yet tough enough to withstand crushing and breaking

# FASTER AND EASIER TO INSTALL THAN EMT

With its convenient coil and reel lengths of up to 1500 ft. and snap-on fittings, Cor-line uses fewer couplings over long spans than metal conduit and eliminates the need for time-intensive set-screw couplings. And compared to other conduit systems, connecting Cor-Line ENT to a Kwikon slab box is as quick and easy as fitting tubing into a coupling—it's a snap!

Unlike metal conduit which has to be cut and bent, using specialized equipment, to navigate turns and corners, Kwikon can be bent and twisted by hand, saving hours of construction site time. When it does have to be cut, no special tools or equipment are needed—a standard hack saw will get the job done, but we recommend our Kwikon ENT cutter for clean square cuts.

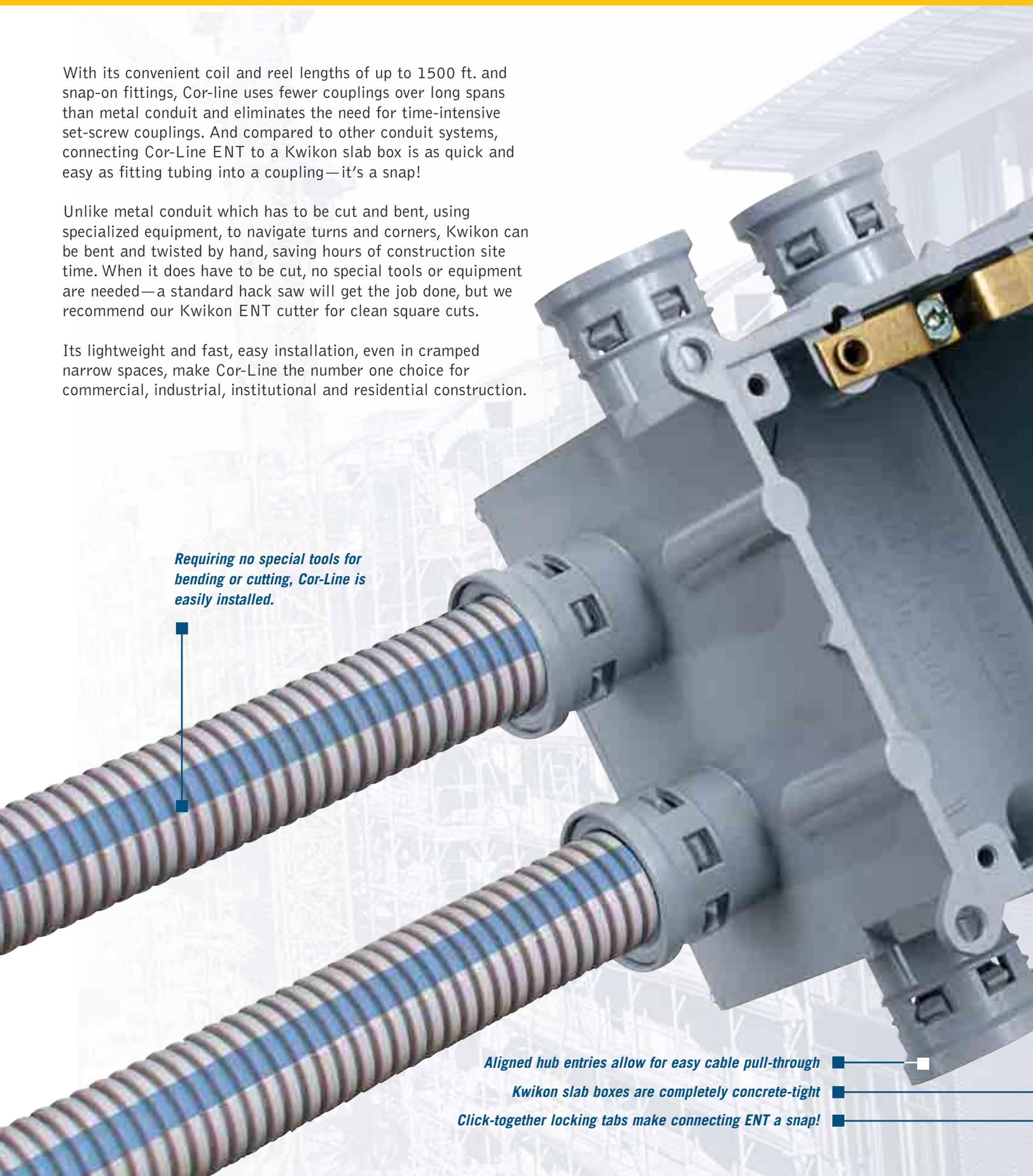
Its lightweight and fast, easy installation, even in cramped narrow spaces, make Cor-Line the number one choice for commercial, industrial, institutional and residential construction.

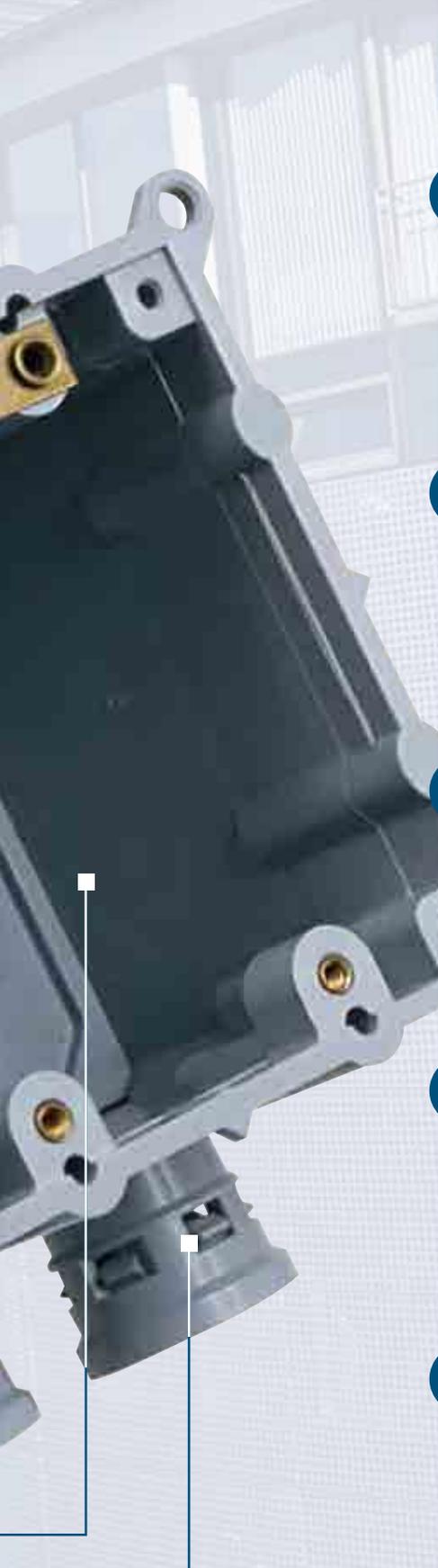
*Requiring no special tools for bending or cutting, Cor-Line is easily installed.*

*Aligned hub entries allow for easy cable pull-through*

*Kwikon slab boxes are completely concrete-tight*

*Click-together locking tabs make connecting ENT a snap!*





## INSTALLING IS THIS EASY

1

### UNROLL COR-LINE TO DESIRED LENGTH

Available in convenient coil and reel lengths up to 1,500 ft., Cor-Line gives you the flexibility to measure out exactly the amount of tubing you need. Cor-Line requires fewer couplings for long spans than metal conduit. It's recommended ENT be securely fastened at 2 – 3 ft. intervals.



2

### CUT COR-LINE WITH AN ENT CUTTER

For straight cuts every time use the Kwikon scissor-style cutting tool. However, no special tools or cutting equipment are necessary. Cor-Line can even be cut with a standard utility knife.



3

### MAKE BENDS AND TURNS BY HAND

Unlike metal which has to be cut to fit tight spaces, Cor-Line can be bent, turned and manipulated by hand to wind around irregular curves and corners. When bending, ensure the radius of the curve is at least six times the diameter of the tubing.



4

### SIMPLY SNAP CONNECTIONS TOGETHER

With no special tools or equipment needed, Kwikon's unique snap-on fittings quickly and easily join or terminate Cor-Line ENT and provide a concrete-tight connection.



5

### PULL CABLE THROUGH COR-LINE

Cor-Line's interior corrugated surface significantly reduces the amount of friction when pulling cables through long runs, even in runs with 90° bends. With Cor-Line, you can pull longer runs of cable without worrying about damage.



## IPEX COR-LINE ENT USE IN CANADA

IPEX Cor-Line Electrical Nonmetallic Tubing (ENT) and Kwikon Fittings can be used in a wide range of applications as defined in the 2005 National Building Code of Canada (NBC) and the 2006 Canadian Electrical Code, Part 1 – C22.1-02 (CEC).

IPEX Corline ENT and Kwikon Fittings are CSA certified to CSA Standards C22.2, No. 227.1 and C22.2 No. 85 under file numbers 083255-0-000, 083258-0-000, and 060286-0-000. Detailed listings can be viewed at [www.csa-international.org](http://www.csa-international.org).

IPEX Cor-Line ENT and Kwikon Fittings are permitted in the following applications:

## USE FOR DIRECT BURIAL

The applicable sections of the CEC related to Direct Burial include 12-012, 12-1500, 12-1502 and 12-1510

The 2005 CEC clause 12-1500 states that IPEX COR-LINE ENT can be installed underground in accordance with clause 12-012.

Clause 12-012 lists requirements for cover and mechanical protection for all direct buried conductors, cables or raceways.

Clause 12-1510 states when placed underground, ENT must have solvent cemented joints.

IPEX Cor-line ENT is approved for Direct Burial provided that the joints are solvent cemented or if there are no buried joints.

## USE FOR ENCASED IN CONCRETE

The Code does not list any restrictions on the use of ENT encased in concrete. ENT is permitted to be encased in concrete.

## USE IN FRAMEWALL CONSTRUCTION

IPEX COR-LINE ENT is permitted in all Framewall construction and enclosed in insulation.

## USE IN BUILDINGS OF NON-COMBUSTIBLE CONSTRUCTION

The applicable clauses of the NBC include 3.1.5.18, 3.1.5.20 and 3.1.9.3.

Clause 3.1.5.18 - Optical fibre cables and electrical wires and cables are permitted for use in a building required to be of non combustible construction in a number of different installation scenarios including totally enclosed IPEX Cor-Line ENT.

Clause 3.1.5.20 - IPEX Cor-Line ENT is FT-4 rated in accordance with CSA C22.2 No. 211.0 and is permitted to be used in buildings required to be of non combustible construction in sizes up to 175mm (6"). IPEX Cor-Line ENT can be used exposed or concealed in a wall or a concrete slab for any height (high-rise) non-combustible building. IPEX Cor-Line ENT can be used in a plenum air handling space except in British Columbia and Ontario due to local codes that require FT-6 rated (plenum) products.

Clause 3.1.9.3 - IPEX Cor-Line ENT, up to 25mm (1") diameter, enclosing optical fibre cables, and electrical wires and cables is permitted to penetrate an assembly required to have a fire resistance rating without being incorporated into the assembly at the time of testing.

The above noted requirements are applicable in most Provinces. All code requirements are not listed. In addition, there are some exceptions and local code authorities should be consulted to confirm permitted uses.

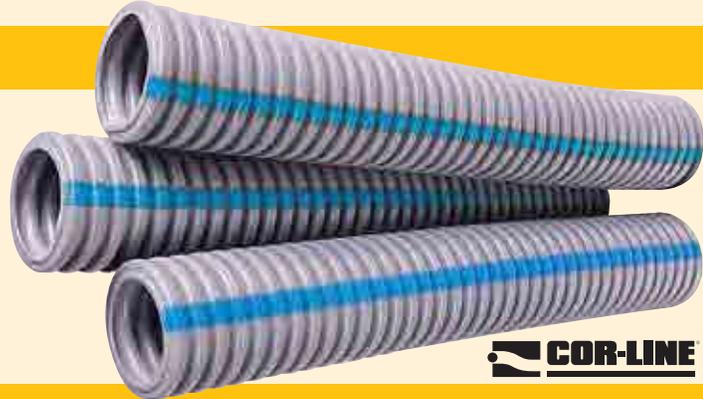
# SUGGESTED SPECIFICATIONS

## Section 16110 Electrical Raceway Systems

### PART 1: GENERAL

#### 1.1 REFERENCES

- A. Standards referred to in this section are:
1. CSA Standards C22.2, No. 227.1 and C22.2 No. 85.
  2. NEMA TC-13 Electrical Nonmetallic Tubing.



**COR-LINE**

### PART 2: PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable manufacturers are listed below
1. Electrical Nonmetallic Tubing:
    - a. Cor-Line by IPEX
  2. Electrical Nonmetallic Tubing Fittings:
    - a. Kwikon by IPEX
  3. Electrical Nonmetallic Tubing Boxes:
    - a. Kwikon by IPEX
- B. All ENT tubing, ENT fittings, ENT boxes and accessories shall be manufactured by the same company so as to form a complete ENT system.
- C. ENT systems shall be approved for use in fire resistance rated concrete floor-ceiling assemblies with fire resistance ratings up to 4 hours.

#### 2.2 RACEWAYS

- B. ENT raceway shall be listed to CSA C22.2 No. 227.1 and manufactured in accordance with NEMA TC-13.

#### 2.3 FITTINGS

- A. ENT Fittings shall be manufactured of high-impact PVC
- B. ENT Fittings shall meet the following requirements:
1. Six locking tabs located every 60° providing 360° contact.
  2. Locking tabs shall provide a conduit pullout of a minimum 175 ft-lb force.
  3. Concrete tight without the need for taping.
  4. When transitioning to EMT conduit, the transition fitting shall have six locking tabs for ENT connection and set-screw connection for EMT.

#### 2.4 BOXES

- A. ENT boxes shall be manufactured of high-impact PVC
- B. ENT Slab Box and Wall Box requirements:
1. Slab Boxes shall be approved for the purpose and concrete-tight.
  2. Round Slab Boxes shall be approved for use with luminaires up to 50 lbs and ceiling fans up to 35 lbs.
  3. Round Slab Boxes shall have threaded brass inserts for the attachment of luminaires or ceiling fans.
  4. Slab Boxes shall have eight (8) integrally molded ENT hub connectors with six locking tabs for ENT raceway connection.

### PART 3: INSTALLATION

#### 3.1 INSTALLATION

- A. ENT raceways, fittings, boxes and accessories shall be installed in accordance with the 2002 Canadian Electrical Code, Part 1 – C22.1-02 (CEC) and the 1995 National Building Code of Canada (NBC).
- B. Where ENT penetrates a fire-rated wall, floor or ceiling assembly, an approved firestop system is CSA certified to CSA Standards C22.2, No. 211.0.

See Codes & Standards for additional installation information.



**KWIKON**

## COR-LINE ENT TUBING

### Cor-Line ENT Coils – Blue Stripe

Size (inches)	ID (inches)	OD (inches)	Length (feet)	Product Code
1/2	0.578	0.840	370	012000
3/4	0.778	1.050	240	012008
1	1.000	1.315	160	012018
1-1/4	1.345	1.660	500	012046
1-1/2	1.574	1.900	300	012032
2	2.025	2.375	225	012043



### Cor-Line ENT Reels – Blue Stripe

Size (inches)	ID (inches)	OD (inches)	Length (feet)	Product Code
1/2	0.578	0.840	1500	012004
3/4	0.778	1.050	1000	012009
1	1.000	1.315	750	012019
1-1/4	1.345	1.660	1000	012047
1-1/2	1.574	1.900	750	012033
2	2.025	2.375	500	012044



### Cor-Line ENT 10' Sticks – Blue Stripe

Size (inches)	Length (feet)	Product Code	Crate Size
1/2	10	012005	3600
3/4	10	012006	2200
1	10	012007	1800



### Storage of Cor-Line ENT Tubing

Manufacturer recommends that ENT tubing should not be stored outdoors where subjected to direct sunlight without protective covering, i.e. packaging or tarps.

## KWIKON ENT FORM STUBBIES

Ease and convenience were a priority in the design of Kwikon ENT form stubbies. Contractors use our stubbies to create conduit stub-downs in concrete without needing to drill holes in the plywood form. Available in the original stubby design, the angled version and the Multi-Link, Kwikon form stubbies also protect the ENT from potential damage during the removal of wood forms.

The angled stubby gives you the advantage of positioning the ENT at a lower profile within the slab. It's available in all sizes of ENT up to 1-1/2".

The Multi-Link form stubby is designed in convenient rows of three and feature a snap-together design which enables them to be configured in a variety of tightly grouped formations. It also features a thin removable film over the drop opening that prevents concrete slurry from seeping under the stubby during the concrete pour.

### Kwikon ENT Multi-Link Form Stubby

Size (inches)	Part Number	Product Code
1/2	MSTB-10	089031
3/4	MSTB-15	089026
1	MSTB-20	089025



### Kwikon ENT Form Stubby

Size (inches)	Part Number	Product Code
1/2	KSTB-10	089330
3/4	KSTB-15	089331
1	KSTB-20	089332
1-1/4	KSTB-25	089333



### Kwikon ENT Angled Form Stubby

Size (inches)	Part Number	Product Code
1/2	KASTB-10	089233
3/4	KASTB-15	089234
1	KASTB-20	089235
1-1/4	KASTB-25	089236
1-1/2	KASTB-30	089238



# KWIKON FITTINGS

## Kwikon Coupling

Size (inches)	Part Number	Product Code
1/2	KC10	089000
3/4	KC15	089001
1	KC20	089002
1-1/4	KC25	189670
1-1/2	KC30	189671
2	KC35	189672



## Kwikon Connector (for Concrete Encasement) \*

Size (inches)	Part Number	Product Code
1/2	KTA10	089006
3/4	KTA15	089007
1	KTA20	089008
1-1/4	KTA25	189680
1-1/2	KTA30	189681
2	KTA35	189682

\*KTA connectors are supplied with locknuts.



## Kwikon Snap-in Connector

Size (inches)	Part Number	Product Code
1/2	KTS10	089146
3/4	KTS15	089147
1	KTS20	089148



## Kwikon Transition Coupling

Size (inches)	Part Number	Product Code
1/2	KTC10	089012
3/4	KTC15	089013
1	KTC20	089014



Both styles of stub down fittings are designed for direct connection to ENT on the horizontal by means of our patented six locking tab concrete-tight Kwikon connection. The flanged base of the threaded 90° stub down offers contractors a NPSC threaded hub connection on the vertical – at the exit point of the slab, allowing for the direct transition to other raceway products.

With our unique Kwikon x Kwikon stub down fitting, the user creates a stub down of ENT without penetrating the form. After the concrete pour the permanently encased fitting will be flush with the bottom of the slab deck, ready to accept the connection of ENT raceway.

Designed to offer the optimal balance of bend radius and overall height in the slab, these fittings provide a bend radius of 2-1/2" while standing less than 3-3/8" tall.

## Kwikon (KT90) Stub Down Fittings (Kwikon x Threaded)

Size (inches)	Part Number	Product Code
1/2	KT90-10	089060
3/4	KT90-15	089059
1	KT90-20	089058



## Kwikon (KK90) Stub Down Fittings (Kwikon x Kwikon)

Size (inches)	Part Number	Product Code
1/2	KK90-10	089055
3/4	KK90-15	089056
1	KK90-20	089057

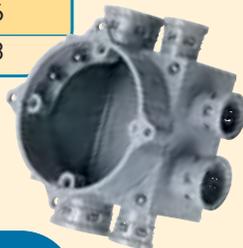


## KWIKON SLAB BOXES

### KWIKON STANDARD SLAB BOXES

Kwikon Slab Boxes with Molded Connectors – Volume 44 cu in.

Size (inches)	Part Number	Product Code
8 x 1/2	SMB-H-10	089455
8 x 3/4	SMB-H-15	089459
4 x 1/2, 4 x 3/4	SMB-H-10/15	089457
4 x 1/2, 2 x 3/4, 2 x 1	SMB-H-10/20	089456
4 x 3/4, 4 x 1	SMB-H-15/20	089463



### Kwikon Slab Box with Knockouts

(without Molded Connectors) – Volume 44 cu in.

Size (inches)	Part Number	Product Code
8 x 1/2	SMB-10	089450
4 x 1/2, 2 x 3/4, 2 x 1	SMB-10/20	089451

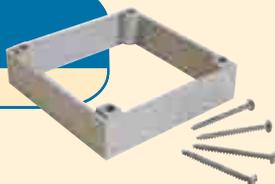
### STANDARD SLAB BOX FEATURES

- Approved for support of ceiling fans up to 35 lbs. and luminaires up to 50 lbs.
- Concrete-tight.
- All molded connectors have 360° locking tabs that exceed CSA requirements for pull-out.
- Manufactured from high-impact PVC.
- Nonmetallic/non-conducting/non-corroding.
- Threaded brass inserts. (<sup>10</sup>/<sub>32</sub> for ceiling fans, <sup>8</sup>/<sub>32</sub> for luminaires).
- Supplied as a fully assembled one piece unit.

### KWIKON SLAB BOX EXTENSION RING

Adjusts height of SMB/SMBH series slab boxes by 1"

Part Number	Product Code
SMBR	089494



### EXTENSION RING FEATURES

- Easily installed.
- Quickly adjusts to new height.

### KWIKON SHALLOW SLAB BOXES

Kwikon Shallow Slab Box with Molded Connectors – Volume 36 cu in.

Size (inches)	Part Number	Product Code
8 x 1/2	SMBS-H-10	089485
8 x 3/4	SMBS-H-15	089487
4 x 1/2, 4 x 3/4	SMBS-H-10/15	089486
4 x 1/2, 2 x 3/4, 2 x 1	SMBS-H-10/20	089488
4 x 3/4, 4 x 1	SMBS-H-15/20	089489



### SHALLOW SLAB BOX FEATURES

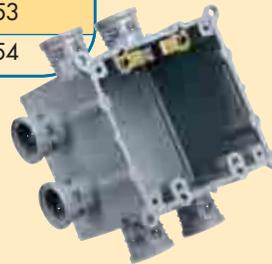
- Threaded brass inserts (<sup>10</sup>/<sub>32</sub> for ceiling fans, <sup>8</sup>/<sub>32</sub> for luminaires).
- Approval for support of ceiling fans up to 35 lbs and luminaires up to 50 lbs.
- A polyester film sealing the box opening to prevent possible concrete infiltration during the pour.
- Overall height of box (<sup>27</sup>/<sub>8</sub>" ) allows for use in thinner slabs.

# KWIKON SLAB BOXES

## KWIKON SQUARE SLAB BOXES

Kwikon Square Slab Box with Molded Connectors – Volume 44 cu in.

Size (inches)	Part Number	Product Code
8 x 1/2	SSBH-10	089452
8 x 3/4	SSBH-15	089453
4 x 1/2, 4 x 3/4	SSBH-10/15	089454



### SQUARE SLAB BOX FEATURES

- Direct mounting of 4" devices and 4" square cover plates.
- Mounting feet are located on corners for quicker positioning and securing to form.
- Standard dimension 2-gang cover plates cover all exposed surfaces.

## KWIKON ACCESSORIES

### ENT TAPERED PLUGS, CUTTING TOOLS AND COVERS

PART NUMBER	DESCRIPTION	PRODUCT CODE
<b>COVER</b>		
KWBC-10	Square Flat Cover, 1/2" KO	089500
<b>CUTTING TOOL</b>		
CLC20	Cutting Tool 1/2" – 1"	088210
CLC35	Cutting Tool 1/2" – 2"	088915
SSB	Replacement Blade for CLC20	088211
SB35	Replacement Blade for CLC35	088916
<b>TAPERED PLUG</b>		
TP10	Tapered Plug 1/2"	089003
TP15	Tapered Plug 3/4"	089004
TP20	Tapered Plug 1"	089005



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As leading suppliers of thermoplastic piping systems, the IPEX Group of Companies provides our customers with some of the world's largest and most comprehensive product lines. All IPEX products are backed by more than 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers across North America, we have established a reputation for product innovation, quality, end-user focus and performance.

Markets served by IPEX group products are:

- Electrical systems
- Telecommunications and utility piping systems
- PVC, CPVC, PP, ABS, PEX, FR-PVDF and PE pipe and fittings (1/4" to 48")
- Industrial process piping systems
- Municipal pressure and gravity piping systems
- Plumbing and mechanical piping systems
- PE Electrofusion systems for gas and water
- Industrial, plumbing and electrical cements
- Irrigation systems

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