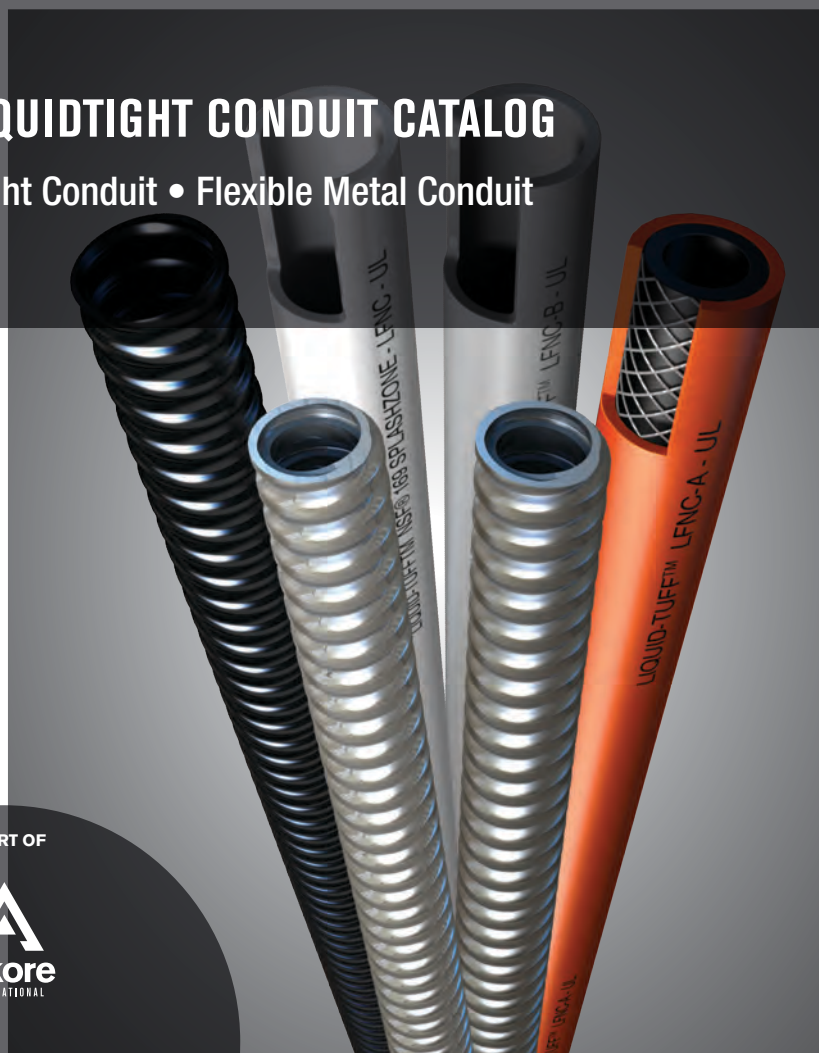
CATALOG

KAF-TECH®

LIQUID-TUFF™ FLEXIBLE LIQUIDTIGHT CONDUIT CATALOG

Industrial & Commercial Liquidtight Conduit • Flexible Metal Conduit



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Kaf-Tech® – American Flexible Conduit

- **Atkore Value** – Kaf-Tech® is part of Atkore International, a market leading manufacturer of electrical raceway and mechanical products and solutions. Atkore's flagship brands and innovative products, combined with a one-order-one-invoice capability offer a compelling value proposition for users and distributors alike.
- **USA Made** – Kaf-Tech® manufactures its LIQUID-TUFF™ and other flexible conduits and cables in state-of-the-art facilities, right here in the United States.
- **Superior Packaging and Labelling** - LIQUID-TUFF™ packaging features reinforced handhold knockouts, easy to read labeling with product color coding, and high visibility printed put up and trade sizes. This packaging allows for easy handling and storage at any jobsite.

- **Long-Length Reels** – Longer lengths without joints, provide inventory efficiencies, reduced waste, and allow for longer system runs. Non-metallic Liquidtight in ½, ¾ and 1 trade sizes is produced on our "continuous line" which means we can offer reel lengths up to 3,500ft, 2,500ft and 1,000ft respectively. Flexible Metal Conduit can be produced in trade sizes 1½ to 4 without solder joints. Maximum lengths are limited only by reel capacity and vary by size from 200ft for trade size 4 right up to 600ft for trade size 1½.
- **Renewable Energy Applications** – Kaf-Tech® offers UL listed Hi-Low Temp liquidtight flexible steel conduit (LFMC) that is also weather and sunlight resistant and recommended for use in solar arrays. For higher ambient temperatures, Kaf-Tech® also offers non-UL Extreme Temp LFMC, with a Thermo-Plastic Resin (TPR) jacket that elevates temperature and sunlight resistance to even higher levels. See Pages 28-29
- **Data Center Applications** – Kaf-Tech® 's Computer Blue LFMC is color-coded and recommended for use in raised floor computer rooms per the requirements of NEC® 645.5(E)(2)
- **Food Industry Applications** - Kaf-Tech® UL listed, NSF® 169 compliant Liquidtight Conduits are recommended for use in Splash Zones with equipment and other devices associated with food production. Kaf-Tech® Splash Zone conduit inhibits bacteria growth and won't degrade due to exposure to bleach for cleaning and sterilization. Available in Gray, Black, Red, Orange, Yellow, Green or Blue in addition to the standard White. See pages 30-31 and 40-41

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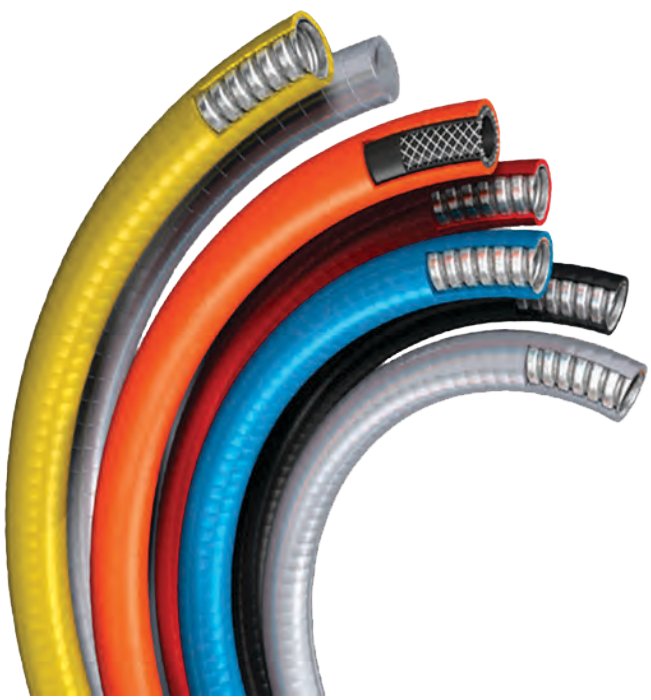

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PRODUCT COMPARISON CHART

Brand	Product	Halogen Free	Oil Resistant	Acid Resistant	Sun Resistant	Direct Burial	Size Range	Working Temperature	Listings	
General Purpose Listed Products										
Kaf-Tech®	UL LFMC		✔	✔	✔	✔	3/8" - 4"	-40°C/80°C Dry - 70°C Oil	UL/CSA	Direct burial all sizes
Kaf-Tech®	UL Computer Blue		✔	✔	✔	✔	3/8" - 4"	-40°C/75°C Dry - 70°C Oil	UL/CSA	Direct burial all sizes
Kaf-Tech®	CSA LFMC		✔	✔	✔	✔	3/8" - 4"	-40°C/75°C Dry - 60°C Oil	CSA	Direct burial all sizes, No Bond Wire
Electri-Flex	LA		✔	✔	✔	✔	3/8" - 4"	-30°C/80°C Dry - 70°C Oil	UL/CSA	
Electri-Flex	CSA		✔	✔	✔		3/8" - 4"	-40°C/75°C Dry - NL Oil	CSA	No Bond wire
Electri-Flex	LA/Blu		✔	✔	✔	✔	3/8" - 4"	-30°C/80°C Dry - 70°C Oil	UL/CSA	
Anamet	UA		✔	✔	✔	✔	3/8" - 4"	-40°C/60°C Dry - 60°C Oil	UL/CSA	
Southwire	UL		✔	✔	✔	✔	3/8" - 4"	-50°C/80°C Dry - 60°C Oil	UL/CSA	
Southwire	CB		✔	✔	✔	✔	3/8" - 4"	-50°C/80°C Dry - 60°C Oil	UL/CSA	
Splash Zone Products										
Kaf-Tech®/KT	Food Grade		✔	✔	✔		3/8" - 4"	-40°C/80°C Dry - 70°C Oil	UL/CSA	NSF® 169 Component
Electri-Flex	LAFG		✔	✔			3/8" - 2"	-20°C/60°C Dry - NL Oil	UL	NSF® 169 Component
Anamet	FG						3/8" - 2"	-20°C/60°C Dry - 60°C Oil		NSF® 169 Component
All Temperature Products										
Kaf-Tech®	Hi-Lo Temp		✔	✔	✔	✔	3/8" - 4"	-55°C/105°C Dry - 70°C Oil	UL	Direct burial all sizes
Electri-Flex	ATLA		✔	✔	✔	✔	3/8" - 4"	-55°C/105°C Dry - 70°C Oil	UL/CSA	
Anamet	HTUA		✔	✔	Not Listed	✔	3/8" - 4"	-46°C/105°C Dry - NL Oil	UL	
Southwire	HC		✔	✔	✔	✔	3/8" - 4"	-40°C/105°C Dry - NL Oil		
Low Smoke Zero Halogen Products										
Kaf-Tech®	LSZH	✔	✔		✔	✔	3/8" - 4"	-40°C/80°C Dry - 70°C Oil		
Kaf-Tech®	UL LSZH	✔	✔		✔	✔	3/8" - 4"	-40°C/80°C Dry - 70°C Oil	UL	
Electri-Flex	ZHLA	✔	✔		✔	✔	3/8" - 4"	-40°C/80°C Dry - 70°C Oil	UL	
Anamet	ZHUA	✔	✔		✔	✔	3/8" - 4"	-30°C/80°C Dry - 70°C Oil	UL	
Southwire	NH	✔	✔	✔	✔		3/8" - 4"	-10°C/80°C Dry - 60°C Oil		
Oil Resistant Products										
Kaf-Tech®	High Temp/OR		✔	✔	✔		3/8" - 4"	-30°C/80°C Dry -70°C Oil		PVC
Electri-Flex	LOR		✔	✔	✔	Not Listed	3/8" - 6"	-20°C/60°C Dry - NL Oil		PVC
Anamet	OR		✔	✔	✔	Not Listed	3/8" - 6"	-23°C/105°C Dry - NL Oil		PVC
Extra Flexible Products										
Kaf-Tech®	Non-UL LFMC		✔	✔	✔		3/8" - 4"	-20°C/60°C Dry - 60°C Oil		
Electri-Flex	LT		✔	✔	✔		5/16" - 6"	-20°C/80°C Dry - NL Oil		
Electri-Flex	EF		✔	✔	Not Listed		3/8" - 2"	-20°C/80°C Dry - 60°C Oil		
Anamet	EFST		✔	✔	✔		3/8" - 6"	-20°C/60°C Dry - 60°C Oil		
Anamet	LD/EF		✔	✔	✔		3/8" - 2"	-20°C/60°C Dry - 60°C Oil		
Anamet	EF		✔	✔	✔		3/8" - 2"	-20°C/60°C Dry - 60°C Oil		
Southwire	EF		✔	✔	✔		3/8" - 4"	-10°C/60°C Dry - 60°C Oil		
Additional Non-Listed Products										
Kaf-Tech®	LSZH	✔	✔		✔	✔	3/8" - 4"	-40°C/80°C Dry - 70°C Oil		TPU
Kaf-Tech®	Extreme Temp	✔	✔		✔	Not Listed	3/8" - 4"	-60°C/150°C Dry - NL Oil		TPE
Electri-Flex	ATX	✔	✔		✔	Not Listed	3/8" - 4"	-60°C/150°C Dry - NL Oil		TPE
Electri-Flex	CEA	✔	✔		✔	Not Listed	3/8" - 6"	-40°C/80°C Dry - NL Oil		TPU

Note: All brand names, product names and trademarks are the property of their respective holders.

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SUBJECT: Safety Data Sheets (SDS) Kaf-Tech® LIQUID-TUFF™ Flexible Conduits

An official notice from OSHA confirms that the electrical products (cables, conduits, fittings, modular wiring, etc.) manufactured by Kaf-Tech® come under the classification of "Articles" under the Hazard Communication Standard. By definition, an Article is defined as a product that does not "release or otherwise result in exposure to hazardous chemicals under normal conditions of use." Consequently, the electrical products manufactured by Kaf-Tech® do not require Safety Data Sheets.

The lubricants used in the manufacturing of conduits and cables are also covered by OSHA as non-hazardous and are primarily vegetable based materials.

Please contact us if you have any additional questions.

Jacket Material Key

PVC = Polyvinyl Chloride
TPE = Thermoplastic Elastomer
TPU = Thermoplastic Polyurethane

Rating Key

E = Resistant: Good for continuous exposure
G = Good for intermittent exposure
F = Use only where limited life is acceptable
X = Do not use

Chemical	%	Jacket Material PVC	TPE	TPU
A				
ASTM® Fuel A		F	G	G
ASTM® Fuel B		X	F	F
ASTM® Fuel C			F	F
ASTM® Oil No. 1		G	G	G
ASTM® Oil No. 2				G
ASTM® Oil No. 3		F		G
Acetaldehyde				
Acetamide				
Acetate Solvents		X		
Acetic Acid (Glacial)		F		G
Acetic Acid	40	G	E	G
Acetic Acid	10	G	E	G
Acetic Anhydride		X		
Acetone		X		X
Acetyl Bromide				
Acetyl Chloride				
Acetylene				
Acrylonitrite		E	E	
Adipic Acid				
Alcohols				
Alcohols (Aliphatic)		F		
Alkalies		E		
Allyl Alcohol				
Aluminum Salts		E		
Aluminum Chloride		E		G
Aluminum Sulfate (Alums)		E		
Aluminum Sulfide				
Alums				
Ammonia				G
Ammonia (Dry Gas)		E		G
Ammonia (Anhydrous Liquids)		X		
Ammonia (Aqueous)		E		
Ammoniated Latex		E		
Ammonium Acetate				
Ammonium Carbonate				
Ammonium Chloride		E		G
Ammonium Chloride	10	E		
Ammonium Hydroxide		E		
Ammonium Nitrate				

Chemical	%	Jacket Material PVC	TPE	TPU
A				
Ammonium Persulfate				
Ammonium Salts				
Ammonium Sulfate				
Ammonium Sulfide				
Ammonium Thicyanide				
Amyl Acetate		X		
Amyl Alcohol				
Amyl Chloride				
Aniline		E		X
Aniline Hydrochloride				
Aniline Oils		X		
Animal Fats & Oils		E		
Aniseed Oil				
Anthracene		X		
Antifreeze Compounds	50/50		E	
Antimony Salts				
Aqua Regia				
Aromatic Fuels		X		
Aromatic Hydrocarbons		X		
Arsenic Salts				
Asphalt		X		
Attar of Roses				
B				
Banana Oil X		X		
Barium Carbonate				
Barium Chloride		E		
Barium Hydroxide		E		
Barium Salts				
Barium Sulfide		E		
Battery Acid				
Benzaldehyde				
Benzaldehyde				
Benzene		X	X	X
Benzine (Petroleum Ether)		F		
Benzoic Acid				
Benzole				
Benzyl				X
Bitumen				
Borax		E		
Bordeaux Mixture		E		
Boric Acid		E		G

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Chemical	%	Jacket Material PVC	TPE	TPU
B				
Brake Fluid			E	
Brake Fluid A				X
Brine		E		
Bromine		X	X	
Bromobenzene			X	
Bunker Oil				
Butane				G
Butanol				
Butyl Acetate		X	E	X
Butyl Alcohol		G		X
Butylene Glycol				
Butyric Acid				
C				
Calcium Carbonate				
Calcium Chloride	20	E	E	G
Calcium Chloride	10	E	E	G
Calcium Hydroxide		E		
Calcium Hypochlorite		E		
Calcium Nitrate				
Calcium Sulfate				
Camphor				
Carbolic Acid (Phenol)		G		
Carbon Dioxide		E		
Carbon Disulfide		X		
Carbon Tetrachloride		X		X
Carbonic Acid		E		
Casein		E		
Castor Oil		E		
Catechol				
Caustic Soda		E		E
Cello-Solv X				
Chlorinated Hydrocarbons X				
Chlorinated Lime				
Chlorine				X
Chlorine (water solution)	40	F		G
Chlorine Gas (dry & wet)		X		
Chloroacetic Acid				
Chlorobenzene		X		X
Chlorobromomethane				
Chloroform		X		X
Chrome Baths				

Chemical	%	Jacket Material PVC	TPE	TPU
C				
Chromic Acid	40	F		X
Chromic Acid	10	G		
Chromic Acid	1	E		
Chromium Potassium Sulfate				
Chromium Salts				
Citric Acid		E		
Coal Tar		X		
Coconut Oil		F		
Copper Salts				
Corn Oil		E		
Cottonseed Oil		F		
Creosote		X		
Cresol		F		
Cresylic Acid		X		
Cupric Chloride				
Cupric Nitrate				
Cupric Sulfate				
Cyclohexane		G	X	X
Cyclohexanol				
Cyclohexanone		G		
D				
DDT Weed Killer		E		
DOP				
DTE Oil				
Decalin				
Degreasing Fluids		X		
Detergents (dish washing)		E	E	
Di Iso Cyante		F		
Di Methyl Formamide		X		
Di Methyl Hydrazine		X		
Di-isodecyl Phthalate		X		
Dibutyl Ether				
Dibutyl Phthalate		X		
Dichlorobenzene				
Dichloroethylene		X		
Diesel Fuel		X		G
Diesel Oils		F		
Diester Oil				
Diethyl Ether		E	E	

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Chemical	%	Jacket Material PVC	TPE	TPU
D				
Diethylene Glycol		G		
Dimethyl Acetamide				
Dimethyl Formamide			E	
Dioctyl Phthalate (DOP)		X	E	E
Dioxane			E	
Dodeayl Mercaptan				
Dow General Weed Killer (H20)		G		
Dow General Weed Killer (Phenol)		X		
Dowtherm				
E				
Edible Fats and Oils				
Esters		X		
Ether		X		X
Ethyl Acetate		X		X
Ethyl Alcohol (Ethanol)		F	E	X
Ethyl Bromide				
Ethyl Chloride				
Ethylene Chloride				G
Ethylene Dichloride		X		
Ethylene Glycol	50	G		G
Ethylene Oxide		X		
F				
Fatty Acids		E		
Ferric Chloride		E		G
Ferric Nitrate				
Ferric Sulfate		E		
Ferrous Chloride		E		
Ferrous Sulfate		E		
Flourochlorohydrocarbons				
Formaldehyde	40	X		
Formalin				
Formamide				
Formic Acid	85			X
Formic Acid	40			X
Formic Acid	10	E		X
Freon			F	X
Freon 12				X
Freons		X		
Fuel Oil		G		
Furfurol		F		

Chemical	%	Jacket Material PVC	TPE	TPU
G				
Gallic Acid		E		
Gasoline - 100 Octane		F		X
Glycerine		E	E	E
Glycol				E
Glycolic Acid				
Grease		E	G	E
Green Sulfate Liquor		E		
H				
Heptachlor in Petroleum Solvents		E		
Heptane		F		G
Hexane		F	G	G
Hydfaulic Fluids - Ester Base		X		
Hydraulic Fluids - Petroleum Base		F		
Hdrazine				
Hydrobromic Acid		E		
Hydrocarbon Oil				
Hydrochloric Acid (Muriatic)	40	F		
Hydrochloric Acid	10	G	E	
Hydrochloric Acid	1	E	E	
Hydrocyanic Acid				
Hydrofluoric Acid	70	X		
Hydrofluoric Acid 10	10			
Hydrofluoroboric Acid	40	F		
Hydrofluoroboric Acid	10	G		
Hydrogen				
Hydrogen Chloride				G
Hydrogen Chloride				G
Hydrogen Fluoride				
Hydrogen Peroxide	30	G		
Hydrogen Peroxide	10	E		
Hydrogen Peroxide	2	E		E
Hydrogen Sulfide				
Hydrolic Fluid				G
Hydrolodic Acid				
I				
Ink				
Iodine Solution X				X
Iron Salts - Acid Soln.				
Iron Salts - Neut. Soln.				
Isooctane		F		
Isopropanal				

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Chemical	%	Jacket Material PVC	TPE	TPU
I				
Isopropyl Acetate		X		
Isopropyl Alcohol		G		X
J				
JP-4 Oil				
Jet Fuels (JP-3, 4, and 5)		F		
K				
Kerosene		F		G
Ketones		X		
L				
Lacquer Thinners		X		
Lactic Acid	90			F
Lactic Acid	50			F
Lactic Acid	5			F
Lanolin				
Lead Acetate				
Lead Salts				
Linseed Oil		E		
Lox				
Lubricating Oils, Greases, Soaps		E		
M				
MIL-D-5606 Oil				
MIL-L-7808 Oil				
Magnesium Chloride		E		G
Magnesium Hydroxide	10	E		
Magnesium Salts				
Magnesium Sulfate		E		
Malathion 50 in Aromatics		X		
Malic Acid		E		
Mercury				
Mercury Salts				
Methanol	10			X
Methyl Acetate		X		X
Methyl Alcohol		F		
Methyl Bromide		X		
Methylene Chloride		X		X
Methyl Ethyl Ketone		X	E	X
Methyl Glycol				X
Methyl Isobutyl Ketone		X		
Mineral Oil		E		G
Monochlorobenzene		X		
Motor Fuels				
Motor Oil 20W				G

Chemical	%	Jacket Material PVC	TPE	TPU
M				
Muriatic Acid (See Hydrochloric Acid)				
N				
Naphtha		F		E
Naphthalene		X		
Natural Gas				
Nickel Salts				
Nitric Acid		X		X
Nitric Acid	70	F		X
Nitric Acid	35	G		X
Nitric Acid	10	E		X
Nitrobenzene		X	E	
Nitrogen				
Nitromethane				
Nitropropane		X		
N-Methyl Pyrrolidone				X
O				
Octane				
Oil of Turpentine				
Oleic Acid		E		
Oleum		X		
Oxalic Acid		E		
Oxygen				
Oxygen - Liquid				
Ozone				
P				
Paint		X		
Paint Thinners		X		
Palmitic Acid		E		
Paper Chemicals				
Paraffin Oil				G
Pentachlorophenolin Oil		G		
Pentane		F		
Perchloric Acid	70	X		
Perchloric Acid	10	E		
Perchloroethylene		X		X
Petroleum				G
Petroleum Ether		F		
Petroleum Spirits				
Phenol		G		

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P				
Phenyl Ethyl Alcohol				
Phosphoric Acid	85	E		X
Phosphoric Acid	50	E		X
Phosphoric Acid	10	E		X
Photographic Developer		E		
Phthalates		X		
Pitch		G		
Plasticizers (Phthalates,Phosphates)				
Polyester Resin with Styrene				
Potash				
Potassium Bromide				
Potassium Chlorate				
Potassium Chloride	40			G
Potassium Cyanide				
Potassium Hydroxide	50	E		G
Potassium Hydroxide	10	E	E	G
Potassium Iodide				
Potassium Nitrate				
Potassium Permanganate	5			X
Potassium Salts				
Potassium Sulfate				
Power Steering Fluid		X		
Propane		E		
Propanol			E	
Propyl Alcohol		G		
Propylene Glycol		E		
Pydraul		X		
Pydraul Oil			G	
Pyridine			E	X
R				
Resorcinol				
Ritchfield "A" Weed Killer		F		
S				
SEA No. 10 Oil				
Salicylic Acid				
Salt				
Seawater		E	E	E
Silicic Acid				
Silicone Oil		E		

Chemical	%	Jacket Material PVC	TPE	TPU
S				
Silver Nitrate		F		
Silver Salts				
Skydrol Oil - Type B		X	E	X
Soap				
Soap Solution				
Sodium Acetate				
Sodium Bicarbonate				
Sodium Bisulfite				
Sodium Borate				
Sodium Bromide				
Sodium Carbonate				
Sodium Carbonate				
Sodium Chlorate				
Sodium Chloride	15		E	G
Sodium Chlorite				
Sodium Cyanide		E		
Sodium Dichromate				
Sodium Ferrocyanide				
Sodium Fluride				
Sodium Hydrosulfite				
Sodium Hydroxide		G		X
Sodium Hydroxide	50	E	E	X
Sodium Hydroxide	10	E	E	G
Sodium Hypochlorite	PH13	G		E
Sodium Nitrate				
Sodium Nitrate				
Sodium Nitrite				
Sodium Perborate				
Sodium Phosphate				
Sodium Silicate				
Sodium Sulfate				
Sodium Sulfide				
Sodium Sulfite				
Sodium Thiosulfite				
Solvent Naphtha				
Solvesso		X		
Soybean Oil		F		
Stoddard Solvent		X		
Styrene		X		
Sulfur				
Sulfur Dioxide				

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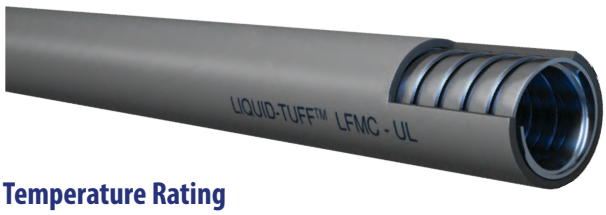
Chemical	%	Jacket Material PVC	TPE	TPU
S				
Sulfur Dioxide (Liquid)		X		
Sulfuric Acid		X	E	X
Sulfuric Acid	75	F	E	X
Sulfuric Acid	60	G	E	X
Sulfuric Acid	40	E	E	X
Sulfuric Acid	25	E	E	F
Sulfuric Acid	10	E	E	G
Sulfurous Acid	40	G		
T				
Tall Oil X		X		
Tallow				
Tannic Acid		E		
Tar				
Tartaric Acid				
Tea				
Tetra Ethyl Lead		X		
Tetra Hydro Furan		X		X
Tetrachloroethlene				X
Tetraline				
Thionyl Chloride				
Tin Salts				
Titanium Salts				
Toluene		X		X
Toluol		X		
Transformer Oil				
Transmission Oil			F	
Trichlorethane		X		
Trichlorethylene		X	X	X
Trichloroacctic Acid				
Tricresyl Phosphate				
Tricresyl Phosphate (Skydrol)		X		X
Triethanol Amine		F		
Trisodium Phosphate		E		
Tung Oil		F		
Turpentine		F	F	G
U				
Urea				
V				
Varnish				
Varsol		X		
Vaseline				

Chemical	%	Jacket Material PVC	TPE	TPU
V				
Vegetable Oils and Juices		E		
Vinegar		E		
Vinyl Chloride		X		
W				
Water		E	E	
Water 23° C				
Water 70° C				
Wax				
Wood Preservatives		X		
X				
Xylene		X	F	X
Xylols X		X		
Z				
Zinc Chloride		E	E	
Zinc Sulfate		E		

Liquidtight Flexible Metal Conduit

- UL and CSA Type LFMC (6200 Series) 13-16
- UL and CSA Computer Blue Type LFMC (6400 Series) 17-18
- Non-UL Very Flexible (6100 Series) 19-20
- UL Low Smoke Zero Halogen Type LFMC (6700 Series) 21-23
- Non-UL Low Smoke Zero Halogen (6750 Series) 24-25
- UL Hi-Low Temperature Type LFMC (6900 Series) 26-27
- Non-UL Extreme Temperature (6800 Series) 28-29
- UL & CSA NSF® 169 Component for Splash Zones (SZ Series) 30-31
- Non-UL Oil Resistant/High Temperature (5900 Series)... 32-33

UL and CSA Type LFMC (6200 Series)



Scope

This specification covers Kaf-Tech® UL LIQUID-TUFF™ Liquidtight Flexible Steel Conduit designed for use as a raceway for power, control and communication cables in accordance with Article 350 of the National Electrical Code. The product is Underwriters Laboratories Inc. (UL) Listed for 80°C (176°F) in a dry location, 60°C (140°F) in a wet location and 70°C (158°F) in an oily location. It is also UL Listed in all trade sizes for direct burial in either earth or concrete encasement, outdoor use and sunlight resistance. In addition the product is CSA certified for use at 75°C (167°F) in dry and oily locations and for minus -30°C (22°F) low temperature applications. This Liquidtight Flexible Steel Conduit is manufactured and tested in accordance with Underwriters Laboratories Inc. Standard UL 360 and CSA Group Standard CSA C22.2 Number 56. The product carries the UL Listing Mark and the CSA Certification Mark.

Construction

The Type LFMC (UL) Liquidtight Flexible Steel Conduit shall be formed from a zinc coated galvanized low carbon steel strip having a uniform width and thickness. The 3/8 through 1-1/4 Trade Sizes are manufactured with square-lock profile that contains a continuous bonding strip. The 1-1/2 through 4 Trade Sizes are manufactured with a fully interlocked "S" profile without a bonding strip. The construction shall be in accordance with UL 360 and CSA C22.2 Number 56 requirements. The finished Type LFMC dimensions shall be in accordance with Table 5.1 of UL 360 and Table 2 of CSA C22.2 No. 56 which are summarized in Table 1.

Grounding

Permanent circuit ground protection is provided through the continuous bonding strip built into the conduit core in sizes 3/8 through 1-1/4. A separate grounding conductor is required by the NEC® for trade sizes 1-1/2 and larger. The Canadian Electric Code requires a grounding conductor for all trade sizes of Liquidtight Flexible Steel Conduit.

Jacket - PVC

A rugged moisture, oil and sunlight resistant polyvinyl chloride (PVC) jacket shall be applied directly over the flexible metal conduit with a wall thickness in accordance with Table 4.1 of UL 360 and Table 4 of CSA C22.2 No.56 which are summarized in Table 1. Jacket Color: Gray, Black, Red, Orange, Yellow, or Green

Markings

The surface of the outer jacket shall be clearly marked with a legible print legend in compliance with UL 360, and CSA C22.2 No. 56.

Performance Tests

In accordance with UL 360 and CSA C22.2 No. 56, the completed UL LIQUID-TUFF™ Liquidtight Flexible Steel Conduit shall meet all of the performance requirements outlined in Appendix A.

Description

- UL bonding strip 3/8 – 1-1/4 for grounding
- UL Liquidtight all sizes
- Sunlight resistant
- Flame retardant PVC jacket
- Hot dipped zinc galvanized low carbon steel core
- Available in Gray, Black, Red, Orange, Yellow or Green. Specialty colors available upon request
- Available with FT-4 PVC upon request

Temperature Rating

- 80°C/176°F DRY
- 60°C/140°F WET
- 70°C/158°F OIL
- UL Listed for -40C/-40F LOW TEMPERATURE

Applications

Suitable for use in:

- NEC® 350 Liquidtight Flexible Metal Conduit Type LFMC
- Wet Locations
- Direct Burial in earth
- Concrete Embedment
- Exposure to Sunlight and Weather
- Grounding in 3/8 to 1-1/4 trade sizes per NEC® 250.118(6)
- Flexible Connections in Hazardous Locations: Class I Div 2 NEC® 501.10(B)(2)(4), Class II Div 1 NEC® 502.10(A)(2)(2), Class II Div 2 NEC® 502.10(B)(2), Class III Div 1 NEC® 503.10(A)(3)(2) and Class III Div 2 NEC® 503.10(B).
- Raised Computer Room Floors per NEC® 645.5(E)(1)(b)(11)
- Service Entrance Wiring up to 6 feet per NEC® 230.43(15)
- Marinas and Boatyards per NEC® 555.13(A)(1)
- Electric signs and Outdoor Lighting per NEC® 600.31(A) and 600.32(A)(1)
- Flexible Connections for hoists and cranes per NEC® 610.11(C)
- Wiring Elevators, Dumbwaiters, Escalators, Moving Walks, Platforms and Stairway Chairlifts per NEC® 620.21
- Motors for Permanently Installed Pools where Flexible Connections are required per NEC® 680.21(A)(2)
- Spas and Hot Tubs where Flexible Connections are required per NEC® 680.42(A)(1)
- Feeders for Natural and Artificially Made Bodies of Water where Flexible Connections are required per NEC® 682.13
- Solar Photovoltaic (PV) Systems per NEC® 690.31(A)
- Fire Pump Wiring per NEC® 695.6(D)
- Electric Fire Pump Control Wiring per NEC® 695.14(E)

References & Ratings

• Underwriters Laboratories Inc.	Standard: UL 360	File: E26540
• CSA Group:	Standard: C22.2 No. 56	File: 51593
• NFPA 70	NEC® Article 350	

- Canadian Electric Code (CEC) Part I Clause 12-1300
- UL Listed in all Trade Sizes for Direct Burial which includes Concrete Encasement
- Conduit in Trade Sizes 1-1/2 and larger require an equipment grounding conductor per NEC® 350.60

TABLE 1.

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS			
Product Code	Trade Size	Metric Designator	Coil Length (ft)	Reel Length (ft)	Approx. Weight 100 feet (pounds)	Min. Average Thickness of Jacket (Inches)	Internal Diameter (min/max) (inches)	Over Jacket (min/max) (inches)	Bend Radius (inches)
GRAY									
6201-30-00	3/8	12	100	–	24	0.03	0.484/0.504	0.690/0.710	2
6201-45-00	3/8	12	–	500	24	0.03	0.484/0.504	0.690/0.710	2
6201-60-00	3/8	12	–	1000	24	0.03	0.484/0.504	0.690/0.710	2
6201-65-00	3/8	12	–	2500	24	0.03	0.484/0.504	0.690/0.710	2
6202-30-00	1/2	16	100	–	31	0.03	0.622/0.642	0.820/0.840	3.25
6202-45-00	1/2	16	–	500	31	0.03	0.622/0.642	0.820/0.840	3.25
6202-60-00	1/2	16	–	1000	31	0.03	0.622/0.642	0.820/0.840	3.25
6202-68-00	1/2	16	–	3500	31	0.03	0.622/0.642	0.820/0.840	3.25
6203-30-00	3/4	21	100	–	49	0.035	0.820/0.840	1.030/1.050	4.25
6203-45-00	3/4	21	–	500	49	0.035	0.820/0.840	1.030/1.050	4.25
6203-60-00	3/4	21	–	1000	49	0.035	0.820/0.840	1.030/1.050	4.25
6203-66-00	3/4	21	–	2000	49	0.035	0.820/0.840	1.030/1.050	4.25
6204-30-00	1	27	100	–	79	0.035	1.041/1.066	1.290/1.315	6.5
6204-41-00	1	27	–	400	79	0.035	1.041/1.066	1.290/1.315	6.5
6204-64-00	1	27	–	1250	79	0.035	1.041/1.066	1.290/1.315	6.5
6205-24-00	1-1/4	35	50	–	103	0.035	1.380/1.410	1.630/1.660	8
6205-40-00	1-1/4	35	–	200	103	0.035	1.380/1.410	1.630/1.660	8
6205-47-00	1-1/2	35	–	750	103	0.035	1.380/1.410	1.630/1.660	8
6206-24-00	1-1/2	41	50	–	109	0.04	1.575/1.600	1.865/1.900	9
6206-35-00	1-1/2	41	–	150	109	0.04	1.575/1.600	1.865/1.900	9
6206-62-00	1-1/2	41	–	600	109	0.04	1.575/1.600	1.865/1.900	9
6207-24-00	2	53	50	–	146	0.04	2.020/2.045	2.340/2.375	11.12
6207-30-00	2	53	–	100	146	0.04	2.020/2.045	2.340/2.375	11.12
6207-80-00	2	53	–	300	146	0.04	2.020/2.045	2.340/2.375	11.12
6208-22-00	2-1/2	63	25	–	169	0.05	2.480/2.505	2.840/2.875	14.62
6208-79-00	2-1/2	63	–	275	169	0.05	2.480/2.505	2.840/2.875	14.62
6209-22-00	3	78	25	–	195	0.05	3.070/3.100	3.460/3.500	17.5
6209-56-00	3	78	–	175	195	0.05	3.070/3.100	3.460/3.500	17.5
6220-22-00	3-1/2	91	25	–	230	0.06	3.500/3.540	3.960/4.000	20
6220-56-00	3-1/2	91	–	175	230	0.06	3.500/3.540	3.960/4.000	20
6210-22-00	4	103	25	–	250	0.06	4.000/4.040	4.460/4.500	24
6210-30-00	4	103	–	100	250	0.06	4.000/4.040	4.460/4.500	24

NOTE: All dimensions and weights are subject to normal manufacturing tolerances.
Review NEC® 350.60 and 250.118(6) for grounding requirements.
Made in USA of US and/or imported materials.

TABLE 1. (continued)

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS			
Product Code	Trade Size (inches)	Trade Size (mm)	Coil Length (feet)	Reel Length (feet)	Approx. Weight 100 feet (pounds)	Min. Average Thickness of Jacket (inches)	Internal Diameter (min/max) (inches)	Over Jacket (min/max) (inches)	Bend Radius (inches)
BLACK									
6201-30-BK	3/8	12	100	–	24	0.03	0.484/0.504	0.690/0.710	2
6202-30-BK	1/2	16	100	–	31	0.03	0.622/0.642	0.820/0.840	3.25
6202-45-BK	1/2	16	–	500	31	0.03	0.622/0.642	0.820/0.840	3.25
6202-60-BK	1/2	16	–	1000	31	0.03	0.622/0.642	0.820/0.840	3.25
6203-30-BK	3/4	21	100	–	49	0.035	0.820/0.840	1.030/1.050	4.25
6203-45-BK	3/4	21	–	500	49	0.035	0.820/0.840	1.030/1.050	4.25
6203-60-BK	3/4	21	–	1000	49	0.035	0.820/0.840	1.030/1.050	4.25
6204-30-BK	1	27	100	–	79	0.035	1.041/1.066	1.290/1.315	6.5
6204-80-BK	1	27	–	400	79	0.035	1.041/1.066	1.290/1.315	6.5
6205-24-BK	1-1/4	35	50	–	103	0.035	1.380/1.410	1.630/1.660	8
6205-40-BK	1-1/4	35	–	200	103	0.035	1.380/1.410	1.630/1.660	8
6206-24-BK*	1-1/2	41	50	–	109	0.04	1.575/1.600	1.865/1.900	9
6206-35-BK*	1-1/2	41	–	150	109	0.04	1.575/1.600	1.865/1.900	9
6207-30-BK*	2	53	–	100	146	0.04	2.020/2.045	2.340/2.375	11.12
NOTE: All dimensions and weights are subject to normal manufacturing tolerances. **Review NEC® 350.60 and 250.118(6) for grounding requirements, conduit sizes 1-1/2" and larger.**									
RED*									
6202-30-RD	1/2	16	100	–	31	0.03	0.622/0.642	0.820/0.840	3.25
6202-60-RD	1/2	16	–	1000	31	0.03	0.622/0.642	0.820/0.840	3.25
6203-30-RD	3/4	21	100	–	49	0.03	0.820/0.840	1.030/1.050	4.25
6203-45-RD	3/4	21	–	500	49	0.03	0.820/0.840	1.030/1.050	4.25
ORANGE*									
6202-30-OE	1/2	16	100	–	31	0.03	0.622/0.642	0.820/0.840	3.25
6202-60-OE	1/2	16	–	1000	31	0.03	0.622/0.642	0.820/0.840	3.25
6203-30-OE	3/4	21	100	–	49	0.03	0.820/0.840	1.030/1.050	4.25
6203-45-OE	3/4	21	–	500	49	0.03	0.820/0.840	1.030/1.050	4.25
YELLOW*									
6202-30-YW	1/2	16	100	–	31	0.03	0.622/0.642	0.820/0.840	3.25
6202-60-YW	1/2	16	–	1000	31	0.03	0.622/0.642	0.820/0.840	3.25
6203-30-YW	3/4	21	100	–	49	0.03	0.820/0.840	1.030/1.050	4.25
6203-45-YW	3/4	21	–	500	49	0.03	0.820/0.840	1.030/1.050	4.25
GREEN*									
6202-30-GN	1/2	16	100	–	31	0.03	0.622/0.642	0.820/0.840	3.25
6202-60-GN	1/2	16	–	1000	31	0.03	0.622/0.642	0.820/0.840	3.25
6203-30-GN	3/4	21	100	–	49	0.03	0.820/0.840	1.030/1.050	4.25
6203-45-GN	3/4	21	–	500 †	49	0.03	0.820/0.840	1.030/1.050	4.25

NOTE: All dimensions and weights are subject to normal manufacturing tolerances. Made in USA of US and/or imported materials. **Review NEC® 350.60 and 250.118(6) for grounding requirements.**

† 3/4" available on 1000' reels. Call for details.

*** Minimum order quantity required.**

Appendix A	
UL Performance Tests	**CSA Performance Tests**
UL 360 Standard	**CSA C22.2 NO. 56 STANDARD**
RESISTANCE TEST	-
FAULT CURRENT	-
IMPACT	-
-	COLD IMPACT
TENSION	TENSION
CRUSHING	-
PIPE STIFFNESS for DIRECT BURIAL	-
ROOM TEMPERATURE FLEXIBILITY	-
LOW TEMPERATURE FLEXIBILITY	LOW TEMPERATURE FLEXIBILITY
ZINC COATING	ZINC COATING
VERTICAL FLAME	VERTICAL FLAME
PHYSICAL PROPERTIES of JACKET	PHYSICAL PROPERTIES of JACKET
ORIGINAL TENSILE and ELONGATION	ORIGINAL TENSILE and ELONGATION
AIR OVEN AGING TESTS	AIR OVEN AGING TESTS
OIL IMMERSION in AIR OVEN TESTS	OIL IMMERSION in AIR OVEN TESTS
DEFORMATION TEST	DEFORMATION TEST
MECHANICAL WATER ABSORPTION	-
MOISTURE PENETRATION	-
SUNLIGHT RESISTANCE	-
TEST for SECURENESS of FITTINGS	COMPATIBILITY with CONNECTORS
TEST for DURABILITY of INK PRINTING	-
-	PINHOLE TEST

Reference Standards	
UL 360	Standard for Liquidtight Flexible Metal Conduit
CSA C22.2 No. 56	Standard for Flexible Metal Conduit and Liquidtight Flexible Metal Conduit
UL 514B	Standard for Conduit, Tubing and Cable Fittings
NFPA 70	National Electric Code (NEC®) Articles 250, 350, 390, 501, 502, 503, 504, 511, 620, 645, 680 and 690
NEMA RV 3	Application and Installation Guidelines for Flexible and Liquidtight Flexible Metal Conduits
Department of Defense Adopted UL 360 on October 1, 1987	

UL and CSA Computer Blue Type LFMC (6400 Series)

Scope

This specification covers Kaf-Tech® UL LIQUID-TUFF™ Computer Blue Liquidtight Flexible Steel Conduit designed for use as a raceway for power, control and communication cables in accordance with Article 350 of the National Electrical Code. The product is Underwriters Laboratories Inc. (UL) Listed for 80°C (176°F) in a dry location, 60°C (140°F) in a wet location and 70°C (158°F) in an oily location. It is also UL Listed in all trade sizes for direct burial in either earth or concrete encasement, outdoor use and sunlight resistance. In addition the product is CSA certified for use at 75°C (167°F) in dry and oily locations and for minus -30°C (22°F) low temperature applications. This Liquidtight Flexible Steel Conduit is manufactured and tested in accordance with Underwriters Laboratories Inc. Standard UL 360 and CSA Group Standard CSA C22.2 Number 56. The product carries the UL Listing Mark and the CSA Certification Mark.

Construction

The Type LFMC (UL) Liquidtight Flexible Steel Conduit shall be formed from a zinc coated galvanized low carbon steel strip having a uniform width and thickness. The 3/8 through 1-1/4 Trade Sizes are manufactured with square-lock profile that contains a continuous bonding strip. The 1-1/2 through 4 Trade Sizes are manufactured with a fully interlocked "S" profile without a bonding strip. The construction shall be in accordance with UL 360 and CSA C22.2 Number 56 requirements. The finished Type LFMC dimensions shall be in accordance with Table 5.1 of UL 360 and Table 2 of CSA C22.2 No. 56 which are summarized in Table 1.

Jacket - PVC

A rugged moisture, oil and sunlight resistant polyvinyl chloride (PVC-colored Blue) jacket shall be applied directly over the flexible metal conduit with a wall thickness in accordance with Table 4.1 of UL 360 and Table 4 of CSA C22.2 No. 56 which are summarized in Table 1. Jacket: Blue

Grounding

Permanent circuit ground protection is provided through the continuous bonding strip built into the conduit core in sizes 3/8 through 1-1/4. A separate grounding conductor is required by the NEC® for trade sizes 1-1/2and larger. The Canadian Electric Code requires a grounding conductor for all trade sizes of Liquidtight Flexible Metal Computer Blue Conduit.

Markings

The surface of the outer jacket shall be clearly marked with a legible print legend in compliance with UL 360 and CSA C22.2 No. 56.

Performance Tests

In accordance with UL 360 and CSA C22.2 No. 56, the completed UL LIQUID-TUFF™ Computer Blue Liquidtight Flexible Steel Conduit shall meet all of the performance requirements outlined in Appendix A.

Description

- UL bonding strip 3/8 – 1-1/4 for grounding
- UL Liquidtight all sizes
- Sunlight resistant
- Flame retardant PVC jacket
- Hot dipped zinc galvanized low carbon steel core
- Blue PVC jacket

Temperature Rating

- 80°C (176°F) DRY
- 60°C (140°F) WET
- 70°C (158°F) OIL
- UL Listed for -40C/-40F LOW TEMPERATURE

Applications

Suitable for use in:

- NEC® 350 Liquidtight Flexible Metal Conduit Type LFMC
- Wet Locations
- Direct Burial in earth
- Concrete Embedment
- Exposure to Sunlight and Weather
- Grounding in 3/8 to 1-¼ trade sizes per NEC® 250.118(6)
- Flexible Connections in Hazardous Locations: Class I Div 2 NEC® 501.10(B)(2)(4), Class II Div 1 NEC® 502.10(A)(2)(2), Class II Div 2 NEC® 502.10(B)(2), Class III Div 1 NEC® 503.10(A)(3)(2) and Class III Div 2 NEC® 503.10(B).
- Raised Computer Room Floors per NEC® 645.5(E)(1)(b)(11)
- Service Entrance Wiring up to 6 feet per NEC® 230.43(15)
- Marinas and Boatyards per NEC® 555.13(A)(1)
- Electric signs and Outdoor Lighting per NEC® 600.31(A) and 600.32(A)(1)
- Flexible Connections for hoists and cranes per NEC® 610.11(C)
- Wiring Elevators, Dumbwaiters, Escalators, Moving Walks, Platforms and Stairway Chairlifts per NEC® 620.21
- Motors for Permanently Installed Pools where Flexible Connections are required per NEC® 680.21(A)(2)
- Spas and Hot Tubs where Flexible Connections are required per NEC® 680.42(A)(1)
- Feeders for Natural and Artificially Made Bodies of Water where Flexible Connections are required per NEC® 682.13
- Solar Photovoltaic (PV) Systems per NEC® 690.31(A)
- Fire Pump Wiring per NEC® 695.6(D)
- Electric Fire Pump Control Wiring per NEC® 695.14(E)

References & Ratings

• Underwriters Laboratories Inc.	Standard: UL 360	File: E26540
• CSA Group:	Standard: C22.2 No. 56	File: 51593
• NFPA 70	NEC® Article 350	

- Canadian Electric Code (CEC) Part I Clause 12-1300
- UL Listed in all Trade Sizes for Direct Burial which includes Concrete Encasement
- Conduit in Trade Sizes 1-1/2 and larger require an equipment grounding conductor per NEC® 350.60

TABLE 1.

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS			
Product Code	Trade Size (inches)	Trade Size (mm)	Coil Length (feet)	Reel Length (feet)	Approx. Weight 100 feet (pounds)	Min. Average Thickness of Jacket (inches)	Internal Diameter (min/max) (inches)	Over Jacket (min/max) (inches)	Bend Radius (inches)
6402-30-00	1/2	16	100	–	31	0.03	0.622/0.642	0.820/0.840	3.25
6402-45-00	1/2	16	–	500	31	0.03	0.622/0.642	0.820/0.840	3.25
6402-60-00	1/2	16	–	1000	31	0.03	0.622/0.642	0.820/0.840	3.25
6403-30-00	3/4	21	100	–	49	0.035	0.820/0.840	1.030/1.050	4.25
6403-45-00	3/4	21	–	500	49	0.035	0.820/0.840	1.030/1.050	4.25
6403-66-00	3/4	21	–	2000	49	0.035	0.820/0.840	1.030/1.050	4.25
6404-30-00	1	27	100	–	79	0.035	1.041/1.066	1.290/1.315	6.5
6404-41-00	1	27	–	400	79	0.035	1.041/1.066	1.290/1.315	6.5
6405-24-00	1-1/4	35	50	–	103	0.035	1.380/1.410	1.630/1.660	8
6405-40-00	1-1/4	35	–	200	103	0.035	1.380/1.410	1.630/1.660	8
6406-24-00	1-1/2	41	50	–	90	0.04	1.575/1.600	1.865/1.900	9
6406-35-00	1-1/2	41	–	150	90	0.04	1.575/1.600	1.865/1.900	9
6407-24-00	2	53	50	–	120	0.04	2.020/2.045	2.340/2.375	11.12
6407-30-00	2	53	–	100	120	0.04	2.020/2.045	2.340/2.375	11.12
6408-22-00	2-1/2	63	25	–	121	0.05	2.480/2.505	2.840/2.875	14.62
6408-79-00	2-1/2	63	–	275	121	0.05	2.480/2.505	2.840/2.875	14.62
6409-22-00	3	78	25	–	145	0.05	3.070/3.100	3.460/3.500	17.5
6409-56-00	3	78	–	175	145	0.05	3.070/3.100	3.460/3.500	17.5

NOTE: All dimensions and weights are subject to normal manufacturing tolerances. **Review NEC® 350.60 and 250.118(6) for grounding requirements.**

Appendix A	
UL Performance Tests	**CSA Performance Tests**
UL 360 Standard	**CSA C22.2 NO. 56 STANDARD**
RESISTANCE TEST	-
FAULT CURRENT	-
IMPACT	-
	COLD IMPACT
TENSION	TENSION
CRUSHING	-
PIPE STIFFNESS for DIRECT BURIAL	-
ROOM TEMPERATURE FLEXIBILITY	-
LOW TEMPERATURE FLEXIBILITY	LOW TEMPERATURE FLEXIBILITY
ZINC COATING	ZINC COATING
VERTICAL FLAME	VERTICAL FLAME
PHYSICAL PROPERTIES of JACKET	PHYSICAL PROPERTIES of JACKET
ORIGINAL TENSILE and ELONGATION	ORIGINAL TENSILE and ELONGATION
AIR OVEN AGING TESTS	AIR OVEN AGING TESTS
OIL IMMERSION in AIR OVEN TESTS	OIL IMMERSION in AIR OVEN TESTS
DEFORMATION TEST	DEFORMATION TEST
MECHANICAL WATER ABSORPTION	-
MOISTURE PENETRATION	-
SUNLIGHT RESISTANCE	-
TEST for SECURENESS of FITTINGS	COMPATIBILITY with CONNECTORS
TEST for DURABILITY of INK PRINTING	-
	PINHOLE TEST

Reference Standards	
UL 360	Standard for Liquidtight Flexible Metal Conduit
CSA C22.2 No. 56	Standard for Flexible metal Conduit and Liquidtight Flexible Metal Conduit
UL 514B	Standard for Conduit, Tubing and Cable Fittings
NFPA 70	National Electric Code (NEC®) Articles 250, 350, 390, 501, 502, 503, 504, 511, 620, 645, 680 and 690
NEMA RV 3	Application and Installation Guidelines for Flexible and Liquidtight Flexible Metal Conduits

Non-UL Very Flexible (6100 Series)

Scope

This specification covers Kaf-Tech® LIQUID-TUFF™ Liquidtight, Flexible Steel Conduit, VF designed for use in specific applications where Underwriters Laboratories Inc. (UL) or other agency approvals are not required, but when flexibility is required. The product is appropriate for use at 60°C (140°F) in a dry location, 60°C in a wet location or 60°C in an oily location. SUNLIGHT RESISTANT in all trade sizes. The product has no agency listing or certification.

Construction

The LIQUID-TUFF™ Liquidtight, Flexible Steel Conduit, VF core shall be formed into an interlocked steel conduit from a zinc coated galvanized low carbon steel strip having a uniform width and thickness. The convolutions of the interlock shall be filled with a fibrous material designed to promote flexibility.

Jacket - PVC

A rugged moisture, oil and sunlight resistant polyvinyl chloride (PVC) jacket shall be extruded directly over the interlocked flexible steel core with a wall thickness in conformance with Table 1. Jacket: Gray

Markings

The outer surface of the jacket shall be clearly marked with the applicable print legend.

Performance Tests

The completed LIQUID-TUFF™ Liquidtight, Flexible Steel Conduit, VF shall meet all of the performance requirements prescribed by applicable manufacturing standards.

Description

- Mechanical and moisture protection for conductors
- Sunlight resistant
- Flame retardant PVC jacket – Gray
- Hot dipped zinc galvanized low carbon steel core
- Very flexible

Temperature Rating

- 60°C (140°F) DRY
- 60°C (140°F) WET
- 60°C (140°F) OIL RESISTANT
- -20°C (-4°F) LOW TEMPERATURE

Applications

- 600 volt and lower circuits
- Vibration and movement absorbing
- Made in USA of US and/or imported materials

TABLE 1.

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS			
Product Code	Trade Size (inches)	Trade Size (mm)	Coil Length (feet)	Reel Length (feet)	Approx. Weight 100 feet (pounds)	Over Jacket (min) (inches)	Over Jacket (max) (inches)	Internal Diameter (min/max) (inches)	Bend Radius (inches)
6101-30-00	3/8	12	100'	–	22	0.690	0.710	0.484/0.504	2
6101-45-00	3/8	12	–	500'	22	0.690	0.710	0.484/0.504	2
6101-60-00	3/8	12	–	1000'	22	0.690	0.710	0.484/0.504	2
6101-65-00	3/8	12	–	2500'	22	0.690	0.710	0.484/0.504	2
6102-30-00	1/2	16	100'	–	26	0.820	0.840	0.622/0.642	3.25
6102-45-00	1/2	16	–	500'	26	0.820	0.840	0.622/0.642	3.25
6102-60-00	1/2	16	–	1000'	26	0.820	0.840	0.622/0.642	3.25
6102-68-00	1/2	16	–	3500'	26	0.820	0.840	0.622/0.642	3.25
6103-30-00	3/4	21	100'	–	33	1.030	1.050	0.820/0.840	4.25
6103-45-00	3/4	21	–	500'	33	1.030	1.050	0.820/0.840	4.25
6103-60-00	3/4	21	–	1000'	33	1.030	1.050	0.820/0.840	4.25
6103-66-00	3/4	21	–	2000'	33	1.030	1.050	0.820/0.840	4.25
6104-30-00	1	27	100'	–	45	1.290	1.315	1.041/1.066	6.5
6104-41-00	1	27	–	400'	45	1.290	1.315	1.041/1.066	6.5
6105-24-00	1-1/4	35	50'	–	60	1.630	1.660	1.380/1.410	8
6105-40-00	1-1/4	35	–	200'	60	1.630	1.660	1.380/1.410	8
6105-47-00	1-1/4	35	–	750'	60	1.630	1.660	1.380/1.410	8
6106-24-00	1-1/2	41	50'	–	90	1.865	1.900	1.575/1.600	9
6106-35-00	1-1/2	41	–	150'	90	1.865	1.900	1.575/1.600	9
6106-62-00	1-1/2	41	–	600'	90	1.865	1.900	1.575/1.600	9
6107-24-00	2	53	50'	–	120	2.340	2.375	2.020/2.045	11.12
6107-30-00	2	53	–	100'	120	2.340	2.375	2.020/2.045	11.12
6107-80-00	2	53	–	300'	120	2.340	2.375	2.020/2.045	11.12
6108-22-00	2-1/2	63	25'	–	121	2.840	2.875	2.480/2.505	14.62
6108-79-00	2-1/2	63	–	275'	121	2.840	2.875	2.480/2.505	14.62
6109-22-00	3	78	25'	–	145	3.460	3.500	3.070/3.100	17.5
6109-56-00	3	78	–	175'	145	3.460	3.500	3.070/3.100	17.5
6120-22-00	3-1/2	91	25'	–	200	3.960	4.000	3.500/3.540	20
6120-56-00	3-1/2	91	–	175'	200	3.960	4.000	3.500/3.540	20
6110-22-00	4	103	25'	–	250	4.460	4.500	4.000/4.040	24
6110-30-00	4	103	–	100'	250	4.460	4.500	4.000/4.040	24

NOTE: All dimensions and weights are subject to normal manufacturing tolerances. **Not for grounding.**

UL and CSA Low Smoke Zero Halogen Type LFMC (6700 Series)

Scope

This specification covers Kaf-Tech® LIQUID-TUFF™ LOW SMOKE ZERO HALOGEN (LSZH) UL Liquidtight Flexible Metal Conduit designed for use as a raceway for power, control and communication cables in accordance with Article 350 of the National Electric Code. The product is intended for applications where limiting smoke and toxic materials of combustion are important considerations. The product is Underwriters Laboratories Inc. (UL) Listed for use at 80°C (176°F) in a dry location, 60°C (140°F) in a wet location and 70°C (158°F) in an oily location. It is also UL Listed for direct burial, outdoor use, sunlight resistance and for -40°C (-40°F) low temperature applications.
In addition the product is CSA certified for use at 75°C (167°F) in dry and oily locations and for minus -40°C (-40°F) low temperature applications. This Liquidtight Flexible Steel Conduit is manufactured and tested in accordance with Underwriters Laboratories Inc. Standard UL 360 and CSA Group Standard CSA C22.2 Number 56. The product carries the UL Listing Mark and the CSA Certification Mark. Underwriters Laboratories Inc. does not list any manufacturers Liquidtight Flexible Metal Conduit as being low smoke zero halogen.

Construction

The LIQUID-TUFF™ LSZH Liquidtight Flexible Metal Conduit shall be formed from zinc coated galvanized low carbon steel strip having a uniform width and thickness. There shall be a continuous bonding strip built into the conduit core for the 3/8 through 1-1/4 trade sizes. The construction shall be in accordance with UL 360 and CSA C22.2 Number 56 requirements. The finished LIQUID-TUFF™ LSZH Liquidtight Flexible Metal Conduit Type LFMC dimensions shall be in accordance with Table 5.1 of UL 360 and Table 2 of CSA C22.2 No. 56 which is summarized in Table 1.
CSA Certification pending

Jacket – TPU

A rugged low-smoke, moisture, oil, sunlight resistant and flame retardant thermoplastic polyurethane jacket shall be applied directly over the flexible metal conduit. The physical properties of the jacket material shall comply with the UL 360 Standard. The Low Smoke Zero Halogen jacket shall be tested to and comply with ASTM® E162 – Flame Spread Index, ASTM® E662 – Smoke Density Generation and Bombardier SMP-800C – Toxic Gas Generation. The test results are summarized in Table 2. Underwriters Laboratories Inc. (UL) does not list any manufacturers jacket compound as being low smoke zero halogen. The jacket wall thickness shall be in accordance with Table 4.1 of UL 360 and Table 4 of CSA C22.2 No.56 which is summarized in Table 1.
Jacket: Black.

Grounding

Permanent circuit ground protection is provided through the continuous bonding strip built into the conduit core in trade sizes 3/8 through 1-1/4. A separate grounding conductor is required by the NEC® for all trade sizes 1-1/2 and larger. The Canadian Electric Code requires a grounding conductor for all trade sizes of Liquidtight Flexible Steel Conduit.

Markings

The surface of the outer jacket shall be clearly marked with a legible print legend in compliance with the UL 360 Standard and CSA C22.2 No. 56.

Performance Tests

In accordance with UL 360 and CSA C22.2 No. 56, the completed UL LIQUID-TUFF™ LSZH Liquidtight Flexible Steel Conduit shall meet all of the performance requirements outlined in Appendix A.

Description

- Low smoke, zero halogen raceway
- Low toxicity generation characteristics
- Hot dipped zinc galvanized low carbon steel core
- Excellent temperature ratings
- Black thermoplastic polyurethane jacket
- UL bonding strip 3/8 – 1-1/4 for grounding
- Sunlight resistant
- Flame retardant TPU jacket

Temperature Rating

- 80°C (176°F) DRY
- 60°C (140°F) WET
- 70°C (158°F) OIL RESISTANT
- -40°C (-40°F) LOW TEMPERATURE

Applications

Suitable for use in:

- NEC® 350 Liquidtight Flexible Metal Conduit Type LFMC
- Wet Locations
- Direct Burial in earth
- Concrete Embedment
- Exposure to Sunlight and Weather
- Grounding in 3/8 to 1-1/4 trade sizes per NEC® 250.118(6)
- Service Entrance Wiring up to 6 feet per NEC® 230.43(15)
- Connections to Cabinets and Wall Outlets in Underfloor Raceways per NEC® 390.15
- Cable Trays per NEC® 392.10(A) and Table 392.10(A) Wiring Methods
- Flexible Connections in Hazardous Locations: Class I Div 2 NEC® 501.10(B)(2)(4), Class II Div 1 NEC® 502.10(A)(2)(2), Class II Div 2 NEC® 502.10(B)(2), Class III Div 1 NEC® 503.10(A)(3)(2) and Class III Div 2 NEC® 503.10(B)
- Wiring in Spaces Above Class I Locations per NEC® 511.7(A)(1)
- Raised Computer Room Floors per NEC® 645.5(E)(1)(b)(11)
- Feeders and services where flexible connections are required in Floating Buildings per NEC® 553.7(B)
- Marinas and Boatyards per NEC® 555.13(A)(1)
- Electric Signs and Outdoor Lighting per NEC® 600.31(A) and 600.32(A)(1)
- Flexible Connections for hoists and cranes per NEC® 610.11(C)
- Wiring Elevators, Dumbwaiters, Escalators, Moving Walks, Platforms and Stairway Chairlifts per NEC® 620.21
- Motors for Permanently Installed Pools where Flexible Connections are required per NEC® 680.21(A)(2)
- Spas and Hot Tubs where Flexible Connections are required per NEC® 680.42(A)(1)
- Feeders for Natural and Artificially Made Bodies of Water where Flexible Connections are required per NEC® 682.13
- Solar Photovoltaic (PV) Systems per NEC® 690.31(A)
- Fire Pump Wiring per NEC® 695.6(D)
- Electric Fire Pump Control Wiring per NEC® 695.14(E)
- Non-plenum applications where reduced smoke and toxic materials of combustion is required

References & Ratings

- Underwriters Laboratories Inc. Standard: UL 360 File: E26540
- CSA Group: Standard: C22.2 No. 56 Master Contract No. 157782
- NFPA 70 NEC® Article 350
- UL Listed in all Trade Sizes for Direct Burial which includes Concrete Encasement
- Conduit in Trade Sizes 1 ½ and larger require an equipment grounding conductor per NEC® 350.60
- Compound meets UL 94 with a V-0 Rating and No Flaming Drips
- Meets the requirements of the UL 360 Vertical Flame Test
- Meets the requirements of ASTM® E 162 Flame Spread Index passing with No Flaming Drips
- Meets the requirements of ASTM® E 662 Flaming and Non-Flaming Smoke Generation passing with No Flaming Drips
- Meets Bombardier SMP-800C requirements for Toxic Gas Generation

CSA Certification pending

Reference Standards

UL 360	Standard for Liquidtight Flexible Metal Conduit
CSA C22.2 No. 56	Standard for Flexible Metal Conduit and Liquidtight Flexible Metal Conduit
UL 514B	Standard for Conduit, Tubing and Cable Fittings
UL 94	Standard Tests for Flammability of Plastic Materials for Parts in Devices and Appliances
NFPA 70	National Electric Code (NEC®) Articles 250, 230, 350, 390, 392, 501, 502, 503, 511, 553, 555, 600, 610, 620, 645, 680, 682, 690 and 695
NEMA RV 3	Application and Installation Guidelines for Flexible and Liquidtight Flexible Metal Conduits
ASTM® E162	Standard Test Method for Surface Flammability
ASTM® E 662	Standard Test Method for Specific Optical Density
SMP 800-C	Bombardier Toxic Gas Generation

TABLE 1.

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS			
Product Code	Trade Size	Metric Designator	Coil Length (feet)	Reel Length (feet)	Approx. Weight/ 100 feet (pounds)	Min. Average Thickness of Jacket (inches)	Internal Diameter (min/max) inches	Over Jacket (min/max) (inches)	Bend Radius (inches)
6701-30-00	3/8	12	100	–	24	0.03	0.484/0.504	0.690/0.710	2
6702-30-00	1/2	16	100	–	31	0.03	0.622/0.642	0.820/0.840	3.25
6702-45-00	1/2	16	–	500	31	0.03	0.622/0.642	0.820/0.840	3.25
6702-60-00	1/2	16	–	1000	31	0.03	0.622/0.642	0.820/0.840	3.25
6703-30-00	3/4	21	100	–	47	0.035	0.820/0.840	1.030/1.050	4.25
6703-45-00	3/4	21	–	500	47	0.035	0.820/0.840	1.030/1.050	4.25
6703-60-00	3/4	21	–	1000	47	0.035	0.820/0.840	1.030/1.050	4.25
6704-30-00	1	27	100	–	78	0.035	1.041/1.066	1.290/1.315	6.5
6704-41-00	1	27	–	400	78	0.035	1.041/1.066	1.290/1.315	6.5
6705-24-00	1-1/4	35	50	–	102	0.035	1.380/1.410	1.630/1.660	8
6705-40-00	1-1/4	35	–	200	102	0.035	1.380/1.410	1.630/1.660	8
6706-24-00	1-1/2	41	50	–	107	0.04	1.575/1.600	1.865/1.900	9
6707-24-00	2	53	50	–	144	0.04	2.020/2.045	2.340/2.375	11.12

NOTE: All dimensions and weights are subject to normal manufacturing tolerances. Not listed for grounding.
Larger trade sizes and other colors are available. Please inquire.

Table 2. LIQUID-TUFF™ LSZH Combustion and Flammability Properties

Property	Test	Results
Vertical Burn (Material)	UL 94	UL Listed: V-O Rating No Flaming Drips
Vertical Burn (Conduit)	UL 360	UL Listed: Passed
Oxygen Index % (Material)	ASTM® D 2863	25%
Flame Spread Index	ASTM® E-162	Passed No Flaming Drips
Smoke Generation (Flaming)	ASTM® E662 (NFPA-258)	Ds=13 @ 1.5 min Ds=57 @ 4.0 min No Flaming Drips
Smoke Generation (Non-flaming)	ASTM® E662 (NFPA-258)	Ds=1 @ 1.5 min Ds=8 @ 4.0 min No Flaming Drips
Toxic Gas Generation	Bombardier SMP-800C	Pass

Testing performed by independent test laboratory. Test results available upon request.

Appendix A

UL Performance Tests	CSA Performance Tests
UL 360 Standard	**CSA C22.2 NO. 56 STANDARD**
RESISTANCE TEST	-
FAULT CURRENT	-
IMPACT	-
	COLD IMPACT
TENSION	TENSION
CRUSHING	-
PIPE STIFFNESS for DIRECT BURIAL	PIPE STIFFNESS for DIRECT BURIAL
ROOM TEMPERATURE FLEXIBILITY	-
LOW TEMPERATURE FLEXIBILITY	LOW TEMPERATURE FLEXIBILITY
ZINC COATING	ZINC COATING
VERTICAL FLAME	VERTICAL FLAME
PHYSICAL PROPERTIES of JACKET	PHYSICAL PROPERTIES of JACKET
ORIGINAL TENSILE and ELONGATION	ORIGINAL TENSILE and ELONGATION
AIR OVEN AGING TESTS	AIR OVEN AGING TESTS
OIL IMMERSION in AIR OVEN TESTS	OIL IMMERSION in AIR OVEN TESTS
DEFORMATION TEST	DEFORMATION TEST
MECHANICAL WATER ABSORPTION	-
MOISTURE PENETRATION	-
SUNLIGHT RESISTANCE	-
TEST for SECURENESS of FITTINGS	COMPATIBILITY with CONNECTORS
TEST for DURABILITY of INK PRINTING	-
	PINHOLE TEST

Non-UL Low Smoke Zero Halogen (6750 Series)

Scope

This specification covers Kaf-Tech® LIQUID-TUFF™ Non-UL LOW SMOKE ZERO HALOGEN (LSZH) Liquidtight Flexible Metal Conduit designed for use where limiting smoke and toxic materials of combustion are important considerations. The product is intended for use at 80°C (176°F) in a dry location, 60°C (140°F) in a wet location and 70°C (158°F) in an oily location. It is also acceptable for outdoor use at -40°C (-40°F) low temperatures and is sunlight resistant. This Liquidtight Flexible Metal Conduit is manufactured and tested in accordance with generally accepted industry practices. The product is designed to be used for specific applications where Underwriters Laboratories Inc. (UL) or other agency approvals are not required.

Construction

The LIQUID-TUFF™ LSZH Liquidtight Flexible Metal Conduit shall be formed from zinc coated galvanized low carbon steel strip having a uniform width and thickness. The finished LIQUID-TUFF™ LSZH Liquidtight Flexible Metal Conduit dimensions shall be in accordance with Table 1.

Jacket – TPU

A rugged low-smoke, moisture, oil, sunlight resistant and flame retardant thermoplastic polyurethane jacket shall be applied directly over the flexible metal conduit. The Low Smoke Zero Halogen jacket shall be tested to and comply with ASTM® E162 – Flame Spread Index, ASTM® E662 – Smoke Density Generation and Bombardier SMP-800C – Toxic Gas Generation. The test results are summarized in Table 2. Standard Jacket Color: Black.

*Additional colors available upon request.

Grounding

A separate grounding conductor is required for all trade sizes.

Markings

The surface of the outer jacket shall be clearly marked with the applicable print legend.

Performance Tests

The completed LIQUID-TUFF™ LSZH Non-UL Liquidtight Flexible Metal Conduit shall meet all of the performance requirements outlined in Appendix A.

Description

- Low smoke, zero halogen raceway
- Low toxicity generation characteristics
- Hot dipped zinc galvanized low carbon steel core
- Excellent temperature ratings
- Black thermoplastic polyurethane jacket
- Sunlight resistant
- Flame retardant TPU jacket

Temperature Rating

- 80°C (176°F) DRY
- 60°C (140°F) WET
- 70°C (158°F) OIL RESISTANT
- -40 C (40°F) LOW TEMPERATURES

Applications

- Wherever limiting toxic material of combustion is needed

References & Ratings

- Non-UL core
- ASTM® E 162 Flame Spread Index
- ASTM® E 662 Smoke Density Generation
- Bombardier SMP-800C Toxic Gas Generation
- UL 94 Tests for Flammability of Plastic Materials for Parts
- Made in USA of US and/or imported materials

Reference Standards	
ASTM® E 162	Flame Spread Index
ASTM® E 662	Smoke Density Generation
Bombardier SMP-800C	Toxic Gas Generation
UL 94	Tests for Flammability of Plastic Materials for Parts

TABLE 1.

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS			
Product Code	Trade Size	Metric Designator	Coil Length (feet)	Reel Length (feet)	Approx. Weight/ 100 feet (pounds)	Min. Average Thickness of Jacket (inches)	Internal Diameter (min/max) (inches)	Over Jacket (min/max) (inches)	Bend Radius (inches)
6751-30-00	3/8	12	100	–	21	0.03	0.484/0.504	0.690/0.710	2
6752-30-00	1/2	16	100	–	25	0.03	0.622/0.642	0.820/0.840	3.25
6752-45-00	1/2	16	–	500	25	0.03	0.622/0.642	0.820/0.840	3.25
6752-60-00	1/2	16	–	1000	25	0.03	0.622/0.642	0.820/0.840	3.25
6753-30-00	3/4	21	100	–	32	0.035	0.820/0.840	1.030/1.050	4.25
6753-45-00	3/4	21	–	500	32	0.035	0.820/0.840	1.030/1.050	4.25
6753-60-00	3/4	21	–	1000	32	0.035	0.820/0.840	1.030/1.050	43.25
6754-30-00	1	27	100	–	43	0.035	1.041/1.066	1.290/1.315	6.5
6754-41-00	1	27	–	400	43	0.035	1.041/1.066	1.290/1.315	6.5
6755-24-00	1-1⁄4	35	50	–	57	0.035	1.380/1.410	1.630/1.660	8
6755-40-00	1-1⁄4	35	–	200	57	0.35	1.380/1.410	1.630/1.660	8
6756-24-00	1-1⁄2	41	50	–	85	0.04	1.575/1.600	1.865/1.900	9
6757-24-00	2	53	50	–	112	0.04	2.020/2.045	2.340/2.375	11.12

NOTE: All dimensions and weights are subject to normal manufacturing tolerances. **Not listed for grounding**.

Table 2. LIQUID-TUFF™ LSZH-VF Combustion and Flammability Properties

Property	Test	Results
Vertical Burn (Material)	UL 94	UL Listed: V-0 Rating No Flaming Drips
Vertical Burn (Conduit)	UL 360	Passed
Oxygen Index % (Material)	ASTM® D 2863	25%
Flame Spread Index	ASTM® E-162	Passed No Flaming Drips
Smoke Generation (Flaming)	ASTM® E662 (NFPA-258)	Ds=13 @ 1.5 min Ds=57 @ 4.0 min No Flaming Drips
Smoke Generation (Non-flaming)	ASTM® E662 (NFPA-258)	Ds=1 @ 1.5 min Ds=8 @ 4.0 min No Flaming Drips
Toxic Gas Generation	Bombardier SMP-800C	Pass

Testing performed by independent test laboratory. Test results available upon request.

Appendix A

Performance Tests

Flexibility	Moisture Penetration
Low Temperature Flexibility	Mechanical Water Absorption
Vertical Flame	Sunlight Resistance
Physical Properties	Test for Durability of Ink Printing
Deformation	

UL Hi-Low Temperature Type LFMC (6900 Series)

Scope

This specification covers Kaf-Tech® UL Listed LIQUID-TUFF™ Hi-Low Liquidtight Flexible Steel Conduit designed for use as a raceway for power, control and communication cables in accordance with Article 350 of the National Electrical Code. The product is Underwriters Laboratories Inc. (UL) Listed for 105°C (221°F) in a dry location, 60°C (140°F) in a wet location and 70°C (158°F) in an oily location. It is also UL Listed in all trade sizes for direct burial, outdoor use and sunlight resistance. THE LIQUID-TUFF™ HI-LOW IS UL LISTED FOR -55°C (-67°F) LOW TEMPERATURE APPLICATIONS. This Liquidtight Flexible Steel Conduit is manufactured and tested in accordance with Underwriters Laboratories Inc. Standard UL 360. The product carries the UL Listing Mark.

Construction

The Type LFMC (UL) Liquidtight Flexible Steel Conduit shall be formed from a zinc coated galvanized low carbon steel strip having a uniform width and thickness. The 3/8 through 1-1/4 Trade Sizes are manufactured with square-lock profile that contains a continuous bonding strip. The 1-1/2 through 4 Trade Sizes are manufactured with a fully interlocked "S" profile without a bonding strip. The construction shall be in accordance with UL 360 and CSA C22.2 Number 56 requirements. The finished Type LFMC dimensions shall be in accordance with Table 5.1 of UL 360 and Table 2 of CSA C22.2 No. 56 which are summarized in Table 1.

Jacket – PVC

A rugged moisture, oil and sunlight resistant polyvinyl chloride (PVC) jacket shall be applied directly over the flexible metal conduit with a wall thickness in accordance with Table 4.1 of UL 360 which is summarized in Table 1. Jacket: Gray. Additional colors available upon request.

Grounding

Permanent circuit ground protection is provided through the continuous bonding strip built into the conduit core in trade sizes 3/8 through 1-1/4. A separate grounding conductor is required by the NEC® for trade sizes 1-1⁄2 and larger.

Markings

The surface of the outer jacket shall be clearly marked with a legible print legend in compliance with UL 360.

Performance Tests

In accordance with UL 360, the completed LIQUID-TUFF™ Hi-Low Liquidtight Flexible Steel Conduit shall meet all of the performance requirements outlined in Appendix A.

Description

- Superior temperature ratings
- Hot dipped zinc galvanized low carbon steel core
- UL bonding strip 3/8 – 1-1/4 for grounding
- Sunlight resistant
- Flame retardant PVC jacket – Gray

Temperature Rating

- 105°C (221°F) DRY
- 60°C (140°F) WET
- 70°C (158°F) OIL RESISTANT
- -55°C (-67°F) LOW TEMPERATURE

Applications

Suitable for use in:

- NEC® 350 Liquidtight Flexible Metal Conduit Type LFMC Machine tool wiring applications
- Wet Locations
- Direct Burial in earth
- Concrete Embedment
- Exposure to Sunlight and Weather
- Installation at low temperatures
- Grounding in 3/8 to 1 ¼ trade sizes per NEC® 250.118(6)
- Flexible Connections in Hazardous Locations: Class I Div 2 NEC 501.10(B)(2)(4), Class II Div 1 NEC 502.10(A)(2)(2), Class II Div 2 NEC 502.10(B)(2), Class III Div 1 NEC 503.10(A)(3)(2) and Class III Div 2 NEC 503.10(B).
- Raised Computer Room Floors per NEC 645.5(E)(1)(b)(11)
- Service Entrance Wiring up to 6 feet per NEC 230.43(15)
- Feeders and services where flexible connections are required in Floating Buildings per NEC 553.7(B)
- Marinas and Boatyards per NEC 555.13(A)(1)
- Electric signs and Outdoor Lighting per NEC 600.31(A)(1) and 600.32(A)(1)
- Flexible Connections for hoists and cranes per NEC 610.11(C)
- Wiring Elevators, Dumbwaiters, Escalators, Moving Walks, Platforms and Stairway Chairlifts per NEC 620.21
- Motors for Permanently Installed Pools where Flexible Connections are required per NEC680.21(A)(2)
- Spas and Hot Tubs where Flexible Connections are required per NEC 680.42(A)(1)
- Feeders for Natural and Artificially Made Bodies of Water where Flexible Connections are required per NEC 682.13
- Solar Photovoltaic (PV) Systems per NEC 690.31(A)
- Fire Pump Wiring per NEC 695.6(D)
- Electric Fire Pump Control Wiring per NEC 695.14(E)

Ratings

- Underwriters Laboratories Inc. Standard: UL 360 File: E26540
- UL LISTED for 105°C (221°F)
- UL LISTED for -55°C (67°F)
- NFPA 70 NEC® Article 350
- UL LISTED in all Trade Sizes for DIRECT BURIAL which includes Concrete Encasement
- Conduit in Trade Sizes 1-1/2 and larger require an equipment grounding conductor per NEC 350.60

TABLE 1.

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS			
Product Code	Trade Size	Metric Designator	Coil Length (feet)	Reel Length (feet)	Approx. Weight/ 100 feet (pounds)	Min Average Thickness of Jacket (Average)	Internal Diameter (min/max) (inches)	Over Jacket (min/max) (min/max)	Bend Radius (inches)
6901-30-00	3/8	12	100	–	25	0.03	0.484/0.504	0.690/0.710	2
6902-30-00	1/2	16	100	–	31	0.03	0.622/0.642	0.820/0.840	3.25
6902-45-00	1/2	16	–	500	31	0.03	0.622/0.642	0.820/0.840	3.25
6902-60-00	1/2	16	–	1000	31	0.03	0.622/0.642	0.820/0.840	3.25
6903-30-00	3/4	21	100	–	48	0.035	0.820/0.840	1.030/1.050	4.25
6903-45-00	3/4	21	–	500	48	0.035	0.820/0.840	1.030/1.050	4.25
6903-60-00	3/4	21	–	1000	48	0.035	0.820/0.840	1.030/1.050	4.25
6904-30-00	1	27	100	–	80	0.035	1.041/1.066	1.290/1.315	6.5
6904-41-00	1	27	–	400	80	0.035	1.041/1.066	1.290/1.315	6.5
6905-24-00	1-1/4	35	50	–	105	0.035	1.380/1.410	1.630/1.660	8
6906-24-00	1-1/4	41	50	–	110	0.04	1.575/1.600	1.865/1.900	9
6907-24-00	2	53	50	–	147	0.04	2.020/2.045	2.340/2.375	11.12
6908-22-00	2-1/2	63	25	–	172	0.04	2.480/2.505	2.840/2.875	14.62
6909-22-00	3	78	25	–	200	0.05	3.070/3.100	3.460/3.500	17.5
6910-22-00	3-1/2	91	25	–	235	0.06	3.500/3.540	3.960/4.000	20
6911-22-00	4	103	25	–	256	0.06	4.000/4.040	4.460/4.500	24

NOTE: All dimensions and weights are subject to normal manufacturing tolerances. **Review NEC® 350.60 and 250.118(6) for grounding requirements.**

Appendix A

UL Performance Tests

Resistance and High Current	Flexibility	Mechanical Water Absorption
Fault Current	Low Temperature Flexibility	Moisture Penetration
Impact	Zinc Coating	Sunlight Resistance
Tension	Vertical Flame	Test for Secureness of Fittings
Crushing	Physical Properties	Test for Durability of Ink Printing
Pipe Stiffness	Deformation	

Reference Standards

UL 360	Standard for Liquidtight Flexible Metal Conduit
UL 514B	UL Standard for Conduit, Tubing and Cable Fittings
NFPA 70	National Electric Code (NEC) Articles 250, 350, 390, 501, 502, 503, 504, 511, 620, 645, 680 and 690
NEMA RV 3	Application and Installation Guidelines for Flexible and Liquidtight Flexible Metal Conduits

Non-UL Extreme Temperature (6800 Series)

Scope

This specification covers Kaf-Tech® LIQUID-TUFF™ Non-UL EXTREME TEMPERATURE Liquidtight, Flexible Metal Conduit designed for use where operation at a high temperature is required. The product is appropriate for use at 150°C continuous use in a dry location, 60°C (140°F) in a wet location or 70°C (158°F) in an oily location. The LIQUID-TUFF™ EXTREME TEMPERATURE jacket material is halogen-free, meets UL 94HB flammability requirements and has a low temperature brittle point of -60°C (-76°F).

The product is designed to be used for specific applications where Underwriters Laboratories Inc. (UL) or other agency approvals are not required.

Construction

The Non-UL EXTREME TEMPERATURE Liquidtight, Flexible Steel Conduit core shall be formed into a very flexible interlocked steel conduit from a zinc coated galvanized low carbon steel strip having a uniform width and thickness. The convolutions of the interlock shall be filed with a fibrous material designed to promote flexibility.

Jacket – TPE

A rugged moisture, oil and ozone resistant thermoplastic elastomer jacket shall be extruded directly over the interlocked very flexible steel core. The jacket is halogen free, has a UL 94HB Flammability Rating and has a -60°C (-76°F) Low Temperature Brittle Point when tested in accordance with ASTM® D746. The wall thickness is in conformance with Table 1. The Black Jacket complies with 720-Hour Xenon-Arc sunlight/weather resistance test - ASTM® D2565 and ASTM® G155.

Grounding

A separate grounding conductor is required for all trade sizes.

Markings

The outer surface of the jacket shall be clearly marked with the applicable print legend.

Performance Tests

The completed LIQUID-TUFF™ Non-UL EXTREME TEMPERATURE Liquidtight Flexible Steel Conduit shall meet all of the applicable performance requirements.

Description

- High quality thermoplastic rubber jacket – Black
- Ability to withstand extremes in temperature
- Hot dipped zinc galvanized low carbon steel core
- Halogen free
- Oil and ozone resistant
- Superior flexibility

Temperature Rating

- 150°C (302°F) DRY - CONTINUOUS USE
- 60°C (140°F) WET
- 70°C (150°F) OIL
- -60°C (-76°F) LOW TEMPERATURE BRITTLE POINT

Applications

- Superior UV and Ozone resistance
- Resists extremes in temperature
- Very high operating temperatures
- For location requiring halogen free conduits
- Industrial applications
- Indoor or outdoor locations
- Provides mechanical protection for conductors

References & Ratings

- Non-UL
- Meets UL 94HB flammability requirements
- Meets ASTM® D746 low temperature brittle point -60°(-76°F)
- Separate grounding conductor is required for all trade sizes
- Made in USA of US and/or imported materials

TABLE 1.

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS			
Product Code	Trade Size (inches)	Trade Size (mm)	Coil Length (feet)	Reel Length (feet)	Approx. Weight/100 feet (pounds)	Min. Average Thickness of Jacket (inches)	Internal Diameter (min/max) (inches)	Over Jacket (min/max) (inches)	Bend Radius (inches)
6801-30-00	3/8	12	100	–	19	0.030	0.484/0.504	0.690/0.710	2
6802-30-00	1/2	16	100	–	23	0.030	0.622/0.642	0.820/0.840	3.25
6802-45-00	1/2	16	–	500	23	0.030	0.622/0.642	0.820/0.840	3.25
6802-60-00	1/2	16	–	1000	23	0.030	0.622/0.642	0.820/0.840	3.25
6803-30-00	3/4	21	100	–	29	0.035	0.820/0.840	1.030/1.050	4.25
6803-45-00	3/4	21	–	500	29	0.035	0.820/0.840	1.030/1.050	4.25
6803-60-00	3/4	21	–	1000	29	0.035	0.820/0.840	1.030/1.050	4.25
6804-30-00	1	27	100	–	40	0.035	1.041/1.066	1.290/1.315	6.5
6804-41-00	1	27	–	400	40	0.035	1.041/1.066	1.290/1.315	6.5
6805-24-00	1-1⁄4	35	50	–	52	0.035	1.380/1.410	1.630/1.660	8
6805-40-00	1-1⁄4	35	–	200	52	0.035	1.380/1.410	1.630/1.660	8
6806-24-00	1-1⁄2	41	50	–	81	0.040	1.575/1.600	1.865/1.900	9
6807-24-00	2	53	50	–	106	0.040	2.020/2.045	2.340/2.375	11.12
6808-22-00	2-1⁄2	63	25	–	108	0.050	2.480/2.505	2.840/2.875	14.62
6809-22-00	3	78	25	–	130	0.050	3.070/3.100	3.460/3.500	17.5
6810-22-00	3-1⁄2	91	25	–	178	0.060	3.500/3.540	3.960/4.000	20
6811-22-00	4	103	25	–	225	0.060	4.000/4.040	4.460/4.500	24

NOTE: All dimensions and weights are subject to normal manufacturing tolerances. **Not for grounding**.

UL and CSA NSF® 169 Component for Splash Zones (SZ Series)

Scope

This specification covers Kaf-Tech® UL Liquid-Tuff™ Liquidtight Flexible Steel Conduit designed for use as a raceway for NSF® 169 Component Special Purpose Food Equipment and Devices, meat packing, restaurants, food processing, poultry packing, pharmaceutical facilities, as well as, power, control and communications cables in accordance with Article 350 of the National Electrical Code. Temperature ranges: 80°C (176°F) Dry, 60°C (140°F) Wet, 70°C (158°F) Oily, -40°C (-40°F) Low Temperature. PVC jacket designed to inhibit bacteria growth and to withstand 'wash down/splash zones' with bleach agents. This Liquidtight Flexible Steel Conduit is manufactured and tested in accordance with Underwriters Laboratories Inc. Standard UL 360 and carries the UL Listing Mark. It is further certified to NSF® 169 Component, CSA C22.2 Number 56. The product carries the UL Listing Mark, CSA Certification Mark, and NSF® 169 Component Certification Logo.

Construction

The Type LFMC (UL) Liquidtight Flexible Steel Conduit shall be formed from a zinc coated galvanized low carbon steel strip having a uniform width and thickness. The 3/8 through 1-1/4 Trade Sizes are manufactured with square-lock profile that contains a continuous bonding strip. The 1-1/2 through 4 Trade Sizes are manufactured with a fully interlocked "S" profile without a bonding strip. The construction shall be in accordance with UL 360 and CSA C22.2 Number 56 requirements. The finished Type LFMC dimensions shall be in accordance with Table 5.1 of UL 360 and Table 2 of CSA C22.2 No. 56 which are summarized in Table 1.

Jacket - PVC

White PVC jacket* inhibits bacteria growth. Rugged moisture, oil and sunlight resistant polyvinyl chloride (PVC) jacket shall be applied directly over the flexible metal conduit with a wall thickness in accordance with Table 4.1 of UL 360. May be cleaned without degradation to the jacket with bleaching agents. Jacket Color: Stocked in white

*Additional colors available upon request

Markings

The surface of the outer jacket shall be clearly marked with a legible print legend in compliance with UL 360, CSA C22.2 No. 56 and NSF® 169 Component.

Performance Tests

In accordance with UL 360 and CSA C 22.2 No. 56, the completed UL Liquid-Tuff Liquidtight Flexible Conduit shall meet all of the performance requirements outlined in Appendix A for Type LFMC.

Description

- NSF® 169 Component for "splash zones" in food production areas
- NSF® 169 Component Special Purpose Food Equipment and Devices
- PVC jacket inhibits bacteria growth – color White
- Ease of cleaning/sterilization using bleach – no degradation of jacket
- Flexible rugged moisture, oil & sunlight resistant PVC jacket
- Hot dipped zinc galvanized low carbon steel core
- Excellent temperature range
- UL bonding strip 3/8 – 1-1/4 for grounding

Temperature Rating

- 80°C (176°F) DRY
- 60°C (140°F) WET
- 70°C (158°F) OIL
- UL Listed for -40°C (-40°F) LOW TEMPERATURE

Applications & References

Suitable for use in:

- NEC® 350 Liquidtight Flexible Metal Conduit Type LFMC
- Wet Locations
- Direct Burial in earth
- Concrete Embedment
- Exposure to Sunlight and Weather
- Service Entrance Wiring up to 6 feet per NEC® 230.43(15)
- Grounding in 3/8 to 1 ¼ trade sizes per NEC® 250.118(6)
- Connections to Cabinets and Wall Outlets in Underfloor Raceways per NEC® 390.15
- Cable Trays per NEC® 392.10(A) and Table 392.10(A) Wiring Methods
- Flexible Connections in Hazardous Locations: Class I Div 2 NEC® 501.10(B)(2)(4), Class II Div 1 NEC® 502.10(A)(2)(2), Class II Div 2 NEC® 502.10(B)(2), Class III Div 1 NEC® 503.10(A)(3)(2) and Class III Div 2 NEC® 503.10(B)
- Wiring in Spaces Above Class I Locations per NEC® 511.7(A(1)
- Use in Agricultural Buildings where Flexible Connections are required per NEC® 547.5(D)
- Marinas and Boatyards per NEC® 555.13(A)(1)
- Electric signs and Outdoor Lighting per NEC® 600.31(A)(1) and 600.32(A)(1)
- Flexible Connections for hoists and cranes per NEC® 610.11(C)
- Wiring Elevators, Dumbwaiters, Escalators, Moving Walks, Platforms and Stairway Chairlifts per NEC® 620.21
- Raised Computer Room Floors per NEC® 645.5(E)(1)(b)(11)
- Motors for Permanently Installed Pools where Flexible Connections are required per NEC® 680.21(A)(2)
- Spas and Hot Tubs where Flexible Connections are required per NEC® 680.42(A)(1)
- Feeders for Natural and Artificially Made Bodies of Water where Flexible Connections are required per NEC® 682.13
- Solar Photovoltaic (PV) Systems per NEC® 690.31(A)
- Fire Pump Wiring per NEC® 695.6(D)
- Electric Fire Pump Control Wiring per NEC® 695.14(E)
- "Splash Zones" contiguous to food production and wash down areas as defined in NSF® 51 Component and NSF® 170 Component Standards
- Food equipment and other devices associated with food production where not in contact with the food

Ratings

- Underwriters Laboratories Inc. Standard: UL 360 File: E26540
- CSA Group: Standard: C22.2 No. 56 File: 51593
- NFPA 70 NEC® Article 350
- Canadian Electric Code (CEC) Part I Clause 12-1300
- UL Listed in all Trade Sizes for Direct Burial which includes Concrete Encasement
- Conduit in Trade Sizes 1 ½ and larger require an equipment grounding conductor per NEC® 350.60
- NSF® International certified as complying with NSF®/ANSI 169 and all applicable requirements

Reference Standards	
UL 360	Standard for Liquidtight Flexible Metal Conduit
CSA C22.2 No. 56	Standard for Flexible Metal Conduit and Liquidtight Flexible Metal Conduit
File Reference(s):	UL E26540; CSA 51593
NEC®Articles	NEC® 250, 350, 390, 501.10(B)(2)(4), 502.10(A)(2)(2), 502.10(B)(2), 503.10(A)(3)(2), 503.10(B), 504.20, 553.7(B), 600.13(A), 600.32(A)(1), 610.11(C), 620.21(A)(1)(c)(2), 620.21(A)(2)(a), 620.21(A)(2)(d)(2), 620.21(A)(3)(a), 620.21(A)(4)(2), 620.21(B)(1), 620.21(C)(1), 645.5(E)(2), 680.42(A)(1), 682.13, 690.31(A), 695.6(D), 695.14(E)
Department of Defense Adopted UL 360 on October 1, 1987	
NSF®/ANSI 169	Special Purpose Food Equipment and Devices

TABLE 1.

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS			
Product Code	Trade Size (inches)	Trade Size (mm)	Coil Length	Approx. Weight 100 feet (pounds)	Min. Average Thickness of Jacket (inches)	Over Conduit (min/max)	Over Jacket (min/max)	Internal Diameter (min/max) (inches)	Bend Radius (inches)
SZ01-30-00	3/8	12	**100**	24	0.03	0.594/0.614	0.690/0.710	0.484/0.504	2
SZ02-30-00	1/2	16	100	31	0.03	0.732/0.765	0.820/0.840	0.622/0.642	3.25
SZ03-30-00	3/4	21	100	49	0.035	0.930/0.960	1.030/1.050	0.820/0.840	4.25
SZ04-30-00	1	27	100	79	0.035	1.201/1.226	1.290/1.315	1.041/1.066	6.5
SZ05-24-00	1-1/4	35	50	103	0.035	1.540/1.570	1.630/1.660	1.380/1.410	8
SZ06-24-00	1-1/2	41	50	109	0.04	1.735/1.770	1.865/1.900	1.575/1.600	9
SZ07-24-00	2	53	50	146	0.04	2.180/2.215	2.340/2.375	2.020/2.045	11.12

NOTE: All dimensions and weights are subject to normal manufacturing tolerances. **Review NEC® 350.60 and 250.118(6) for grounding requirements.**
Additional trade sizes up to 4" available upon request

Non-UL Oil Resistant/High Temperature (5900 Series)

Scope

This specification covers Kaf-Tech® LIQUID-TUFF™ Non-UL Oil Resistant/High Temperature Liquidtight Flexible Steel Conduit designed for use in high temperature oily applications. The product is intended for use at 105°C (221°F) in a dry location, 60°C (140°F) in a wet location, 70°C (158°F) in an oily location and at -26°C (-15°F) in a low temperature application. The product is rated for outdoor and sunlight resistant use in dark colors.

The product is designed to be used for specific applications where Underwriters Laboratories Inc. (UL) or other agency approvals are not required.

Construction

Non-UL Oil Resistant/High Temperature Liquidtight Flexible Steel Conduit shall be formed from a zinc coated galvanized low carbon steel strip having a uniform width and thickness. The convolutions of the interlock shall be filled with a fibrous material designed to promote flexibility.

Jacket – PVC

A rugged moisture, oil and sunlight resistant polyvinyl chloride (PVC) jacket shall be applied directly over the flexible metal conduit with a wall thickness in accordance with Table 1. Jacket: Gray

Grounding

A separate grounding conductor is required for all trade sizes.

Markings

The surface of the outer jacket shall be clearly marked with the applicable legible print legend.

Performance Tests

The completed LIQUID-TUFF™ Non-UL Oil Resistant/High Temperature Liquidtight Flexible Steel Conduit shall meet all of the performance requirements outlined in Appendix A.

Description

- High-quality PVC jacket for oil resistance and high temperatures – Gray
- Hot dipped zinc galvanized low carbon steel core
- Excellent flexibility
- Non-UL Liquidtight electrical raceway

Temperature Rating

- 105°C (221°F) DRY
- 60°C (140°F) WET
- 70°C (158°F) OIL RESISTANT
- -30°C (-22°F) LOW TEMPERATURE

Applications

Suitable for use in:

- Oily and harsh chemical environments
- UV resistant
- Excellent flexibility
- Industrial applications
- Indoor or outdoor locations
- Provides mechanical protection for conductors

References & Ratings

- Non-UL
- Separate grounding conductor required in all sizes
- Made in USA of US and/or imported materials

TABLE 1.

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS			
Product Code	Trade Size	Metric Designator	Coil Length (feet)	Reel Length (feet)	Approx. Weight/ 100 feet (pounds)	Min. Average Jacket Thickness (inches)	Internal Diameter (min/max) (inches)	Over Jacket (min/max) (inches)	Bend Radius (inches)
5901-30-00	3/8	12	100	–	22	0.03	0.484/0.504	0.690/0.710	2
5901-45-00	3/8	12	–	500	22	0.03	0.484/0.504	0.690/0.710	2
5901-60-00	3/8	12	–	1000	22	0.03	0.484/0.504	0.690/0.710	2
5902-30-00	1/2	16	100	–	26	0.03	0.622/0.642	0.820/0.840	3.25
5902-45-00	1/2	16	–	500	26	0.03	0.622/0.642	0.820/0.840	3.25
5902-60-00	1/2	16	–	1000	26	0.03	0.622/0.642	0.820/0.840	3.25
5903-30-00	3/4	21	100	–	34	0.035	0.820/0.840	1.030/1.050	4.25
5903-45-00	3/4	21	–	500	34	0.035	0.820/0.840	1.030/1.050	4.25
5903-60-00	3/4	21	–	1000	34	0.035	0.820/0.840	1.030/1.050	4.25
5904-30-00	1	27	100	–	46	0.035	1.041/1.066	1.290/1.315	6.5
5904-41-00	1	27	–	400	46	0.035	1.041/1.066	1.290/1.315	6.5
5905-24-00	1-1⁄4	35	50	–	62	0.035	1.380/1.410	1.630/1.660	8
5905-40-00	1-1⁄4	35	–	200	62	0.035	1.380/1.410	1.630/1.660	8
5906-24-00	1-1⁄2	41	50	–	91	0.035	1.575/1.600	1.865/1.900	9
5907-24-00	2	53	50	–	120	0.04	2.020/2.045	2.340/2.375	11.12
5908-22-00	2-1⁄2	63	25	–	122	0.05	2.480/2.505	2.840/2.875	14.62
5909-22-00	3	78	25	–	148	0.05	3.070/3.100	3.460/3.500	17.5
5910-22-00	3-1⁄2	91	25	–	202	0.06	3.500/3.540	3.960/4.000	20
5911-22-00	4	103	25	–	255	0.06	4.000/4.040	4.460/4.500	24

NOTE: All dimensions and weights are subject to normal manufacturing tolerances.

Appendix A

Performance Tests

Flexibility	Moisture Penetration
Low Temperature Flexibility	Mechanical Water Absorption
Vertical Flame	Sunlight Resistance
Physical Properties	

Built to Protect and Defend.

Kaf-Tech Liquid-Tuff™ Conduits

Whether you need to protect wiring from extreme temperatures, harsh environmental conditions, or halogen free requirements, Kaf-Tech has the right solution for your job. This completely re-engineered line of industrial and commercial liquid-tight flexible metal and non-metallic conduits offer variety, strength, and flexibility to shield wiring in any condition. **Learn more at kaf-tech.com**

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Liquidtight Flexible Non-Metallic Conduit

- UL & CSA Type LFNC-B (6000 Series) 36-37
- UL & CSA NSF® 169 Component for Splash Zones LFNC-B (NSZ Series) 38-39
- UL Orange Type LFNC-A (6500 Series) 40-41
- UL Ultraflex™ Liquidtight Non-Metallic Mechanical Protection Tubing NMPT-B (160 Series) 42-43
- Notes 44

UL and CSA Type LFNC-B (6000 Series)

Scope

This specification covers Kaf-Tech® UL LIQUID-TUFF™ Integral Liquidtight Flexible Nonmetallic Conduit, Type LFNC-B designed for use in wet, dry or oily locations as a flame resistant, Nonmetallic raceway for power, control and communications cables in compliance with Article 356 of the National Electrical Code. The product is UL Listed for 80°C (176°F) in a dry location, 60°C (140°F) in a wet location and 70°C (158°F) in an oily location. It is also UL Listed through 2-inch trade sizes for direct burial, outdoor use and sunlight resistance. In addition the product is CSA certified for use at 75°C (167°F) in dry and oily locations and for minus 18°C (0°F) low temperature applications. This Liquidtight Flexible Nonmetallic Conduit is manufactured and tested in accordance with the harmonized Underwriters Laboratories Inc. Standard UL 1660 and CSA International Standard CSA C22.2 Number 227.2.1. The product carries the UL Listing Mark and the CSA Certification Mark.

Construction

Liquidtight Flexible Nonmetallic Conduit, Type LFNC-B is a raceway of circular cross section with a smooth polyvinyl chloride (PVC) inner surface and an integral rigid PVC reinforcing member within the conduit wall. The wall thicknesses and dimensions of the integral conduit shall comply with Table 3 of harmonized UL 1660/CSA No. 227.2.1 which are summarized in Table 1.

A rugged moisture, oil and sunlight resistant flexible polyvinyl chloride (PVC) jacket shall be extruded directly over the integral rigid PVC core with a wall thickness in conformance with Product Information below. Jacket: Gray

Grounding

A separate Grounding conductor is required by both the National Electrical Code and the Canadian Electrical Code for all trade sizes.

Markings

The surface of the outer jacket shall be clearly marked with a legible print legend in compliance with UL 1660 and CSA C22.2 No. 227.2.1.

Performance Tests

The completed UL LIQUID-TUFF™ Liquidtight Flexible Nonmetallic Conduit, Type LFNC-B shall meet all of the performance requirements contained in UL 1660 and CSA C22.2 No. 227.2.1 and outlined in Appendix A.

Description

- UL Listed and CSA certified
- Rugged Nonmetallic PVC
- Interior integral reinforced member within conduit wall
- Integral Type B construction per NEC® 356.2(2)
- Rigid PVC spiral core for strength
- Outdoor applications including direct burial
- Rated for concrete embedment
- Sunlight and oil resistant
- Non-conductive raceway

Temperature Rating

- 80°C (176°F) DRY
- 60°C (140°F) WET
- 70°C (158°F) OIL
- -18°C (0°F) LOW TEMPERATURE

Applications & References

Suitable for use in:

- NEC® 356.2(2) Liquidtight Flexible Nonmetallic Conduit Type LFNC-B
- Wet Locations
- Direct Burial in earth
- Concrete Embedment
- Exposure to Sunlight and Weather
- Flexible Connections in Hazardous Locations: Class I Div 2 NEC® 501.10(B)(2)(5), Class II Div 1 NEC® 502.10(A)(2)(3), Class II Div 2 NEC® 502.10(B)(2), Class III Div 1 NEC® 503.10(A)(3)(3) and Class III Div 2 NEC® 503.10(B).
- Raised Computer Room Floors per NEC® 645.5(E)(1)(b)(12)
- Service Entrance Wiring per NEC® 230.43(16)
- Marinas and Boatyards per NEC® 555.13(A)(1)
- Electric signs and Outdoor Lighting per NEC® 600.31(A) and 600.32(A)(1)
- Flexible Connections for hoists and cranes per NEC® 610.11(C)
- Wiring Elevators, Dumbwaiters, Escalators, Moving Walks, Platforms and Stairway Chairlifts per NEC® 620.21
- Motors for Permanently Installed Pools where Flexible Connections are required per NEC® 680.21(A)(2)
- Spas and Hot Tubs where Flexible Connections are required per NEC® 680.42(A)(1)
- Feeders for Natural and Artificially Made Bodies of Water where Flexible Connections are required per NEC® 682.13
- Solar Photovoltaic (PV) Systems per NEC® 690.31(A)
- Fire Pump Wiring per NEC® 695.6(D)
- Electric Fire Pump Control Wiring per NEC® 695.14(E)

Ratings

- Underwriters Laboratories Inc. Standard: UL 1660 File: E123464
- CSA Group: Standard: C22.2 No. 227.2.1 File: 69271 MC# 15778
- NFPA 70 NEC® Article 356
- Canadian Electric Code (CEC) Part I Clause 12-1300
- UL Listed in all Trade Sizes for Direct Burial which includes Concrete Encasement
- All Trade Sizes require an equipment grounding conductor per NEC® 356.60
- All Trade Sizes require a bonding conductor per CEC Rule 12-1306

TABLE 1.

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS		
Product Code	Trade Size (inches)	Trade Size (mm)	Coil Length (feet)	Reel Length (feet)*	Approx. Weight 100 feet (pounds)	Internal Diameter (min/max) inches	External Diameter (min/max) inches	Bend Radius (inches)
6001-30-00	3/8	12	100	–	12	0.484/0.504	0.690/0.710	2
6002-30-00	1/2	16	100'	–	13	0.622/0.642	0.820/0.840	3.25
6002-60-00	1/2	16	–	1000	13	0.622/0.642	0.820/0.840	3.25
6003-30-00	3/4	21	100	–	18	0.820/0.840	1.030/1.050	4.25
6003-46-00	3/4	21	–	700	18	0.820/0.840	1.030/1.050	4.25
6004-30-00	1	27	100	–	27	1.041/1.066	1.290/1.315	6.5
6004-45-00	1	27	–	500	27	1.041/1.066	1.290/1.315	6.5
6005-24-00	1-1⁄4	35	50	–	35	1.380/1.410	1.630/1.660	8
6006-24-00	1-1⁄2	41	50	–	48	1.575/1.600	1.865/1.900	9
6007-24-00	2	53	50	–	70	2.020/2.045	2.340/2.375	11.1

NOTE: All dimensions and weights are subject to normal manufacturing tolerances.
* Continuous lengths available in 1/2 – 1

Appendix A

UL Performance Tests	CSA Performance Tests
Physical Properties: • Original Tensile and Elongation • Air Oven Aging Test • Oil Immersion Test • Deformation Test	Physical Properties: • Original Tensile and Elongation • Air Oven Aging Test • Oil Immersion Test • Deformation
Tension	Tension
Cold Flexibility	Cold Flexibility
Vertical Flame	Vertical Flame
Cold Impact	Cold Impact
Secureness (of Fittings)	Fitting Pull-Out
Mechanical Water Absorption	Secureness (of Fitting)
Moisture Penetration Test	Moisture Penetration Test
Durability of Ink	Durability of Ink
Weather Resistance	Weather Resistance
Resistance to Deflections (Crush)	–
Pipe Stiffness for Direct Burial	–

Reference Standards

UL 1660/ CSA C22.2 No. 227.2.1	Harmonized Standard for Liquidtight Flexible Nonmetallic Conduit
UL514B	Standard for Conduit, Tubing and Cable Fittings
NFPA 70	National Electric Code (NEC®) Articles 250, 356, 390, 501, 502, 503, 504, 511, 620, 645, 680 and 690

UL and CSA NSF® 169 Component for Splash Zones LFNC-B (NSZ Series)

Scope

This specification covers Kaf-Tech® UL LIQUID-TUFF™ Liquidtight Flexible Nonmetallic Conduit designed for use as a raceway for NSF® 169 Special Purpose Food Equipment and Devices, meat packing, restaurants, food processing, poultry packing, pharmaceutical facilities. Temperature ranges: 80°C (176°F) Dry, 60°C (140°F) Wet, 70°C (158°F) Oily. PVC jacket designed to inhibit bacteria growth and to withstand "wash down/splash zones" with bleach agents. This Liquidtight Flexible Non-Metallic Conduit is manufactured and tested in accordance with Harmonized Underwriters Laboratories Inc. Standard UL 1660 and CSA International Standard CSA C22.2 Number 227.2.1. The product carries the UL Listing Mark and the CSA Certification Mark and NSF® 169 Component Certification Logo.

Construction

Liquidtight Flexible Non-Metallic Conduit, Type LFNC-B is a raceway of circular cross section with a smooth polyvinyl chloride (PVC) inner surface and an integral rigid PVC reinforcing member within the conduit wall. White* PVC jacket inhibits bacteria growth. Rugged moisture, oil and sunlight resistant polyvinyl chloride (PVC). May be cleaned without degradation to the jacket with bleaching agents. Jacket Color: Stocked in white.

Grounding

A separate Grounding conductor is required by both the National Electrical Code and the Canadian Electrical Code for all trade sizes.

Markings

The outer surface of the conduit shall be clearly marked with a legible print legend in accordance with UL 1660 and CSA C22.2 No. 227.2.1 and NSF® 169.

Description

- NSF® 169 Component for "splash zones" in food production areas
- NSF® 169 Component Special Purpose Food Equipment and Devices
- PVC jacket inhibits bacteria growth – color white
- Ease of cleaning/sterilization using bleach – no degradation of jacket
- Rugged nonmetallic PVC construction
- Non-conductive - non-corrosive

Temperature Rating

- 80°C (176°F) DRY
- 60°C (140°F) WET
- 70°C (158°F) OILY
- -18°C (0°F) LOW TEMPERATURE

Applications & References

Suitable for use in:

- Food equipment & other devices associated with food production
- NSF® 169 Component compliant
- For use in "splash zones" contiguous to food production – wash down areas
- PVC jacket does not promote the growth of bacteria
- Meat packing, restaurants, food processing, poultry packing, pharmaceutical facilities

Ratings

- UL 1660, UL File E123464
- CSA C 22.2 No. 227.2.1
- CSA File 69271
- NSF® 169 Special Purpose Food Equipment and Devices
- NEC® 356, 390.15, 501.10(B)(2), 502.10(A)(2), 503.10(A)(2), 511.7(A)(1), 620.21, 680.21, 680.23, 680.25, 680.27, 680.42, 695.6(E), and 695.14(E)
- Made in USA of US and/or imported materials
- Food equipment and other devices associated with food production where not in contact with the food

TABLE 1.

ORDERING INFORMATION					PRODUCT DIMENSIONS/BEND RADIUS		
Product Code	Trade Size (inches)	Trade Size (mm)	Coil Length (feet)	Approx. Weight 100 feet (pounds)	Internal Diameter (min/max) inches	External Diameter (min/max) inches	Bend Radius (inches)
NSZ1-30-00	3/8	12	100′	12	0.484/0.504	0.690/0.710	2
NSZ2-30-00	1/2	16	100′	13	0.622/0.642	0.820/0.840	3.25
NSZ3-30-00	3/4	21	100′	18	0.820/0.840	1.030/1.050	4.25
NSZ4-30-00	1	27	100′	27	1.041/1.066	1.290/1.315	6.5
NSZ5-24-00	1-1/4	35	50′	35	1.380/1.410	1.630/1.660	8
NSZ6-24-00	1-1/2	41	50′	48	1.575/1.600	1.865/1.900	9
NSZ7-24-00	2	53	50′	76	2.020/2.045	2.340/2.375	11.12

NOTE: All dimensions and weights are subject to normal manufacturing tolerances.

Reference Standards	
UL 1660	Standard for Liquidtight Flexible Non-Metallic Conduit
CSA C22.2 No. 227.2.1	Standard for Flexible Liquidtight Non-Metallic Conduit
NSF®/ANSI 169	Special Purpose Food Equipment and Devices
File References	UL File E123464; CSA 69271
NEC® Articles	NEC® 356, 390.15, 501.10(B)(2), 502.10(A)(2), 503.10(A)(2), 511.7(A)(1), 620.21, 645.5(D)(2), 680.21, 680.23, 680.25, 680.27, 680.42, 695.6(E) and 695.14(E)

UL Orange Type LFNC-A (6500 Series)

Scope

This specification covers Kaf-Tech® LIQUID-TUFF™ Layered Liquidtight Flexible Nonmetallic Conduit, designed for use in wet, dry or oily locations as a flame resistant, Nonmetallic raceway for power, control and communications cables where repetitive motion and constant flexing is required. It is intended for applications where abrasion and physical abuse may occur. It complies with Article 356 of the NEC® regarding layered conduit Type LFNC-A. The product is UL Listed for 80°C (176°F) in a dry location, 60°C (140°F) in a wet location and 60°C (140°F) in a oily location. It is also UL Listed through 2-inch trade sizes for outdoor use and sunlight resistance. This Liquidtight Flexible Nonmetallic Conduit is manufactured and tested in accordance with Harmonized Underwriters Laboratories Inc. Standard UL 1660. The product carries the UL Listing Mark for US and Canada.

Construction

Liquidtight Flexible Nonmetallic Conduit Type LFNC-A is a layered raceway of circular cross section with a smooth flexible polyvinyl chloride (PVC) inner layer with a reinforcing layer covered with a flexible polyvinyl chloride (PVC) jacket. The wall thicknesses and dimensions of the layered conduit shall comply with Table1 of harmonized UL 1660/CSA C22.2 No. 227.2.1 of UL 1660 which is summarized in Table 1. Color: Orange

Grounding

A separate Grounding conductor is required by both the National Electrical Code and Canadian Electrical Code for all trade sizes.

Markings

The outer surface of the conduit shall be clearly marked with a legible print legend in accordance with harmonized UL 1660/CSA C22.2 No. 227.2.1.

Performance Tests

The completed LIQUID-TUFF™ Liquidtight Flexible Nonmetallic Conduit Type A shall meet all of the performance requirements contained in UL 1660 outlined in Appendix A.

Description

- Layered Type A construction per NEC® 356.2(1)
- Nylon reinforced braid between two layers of PVC for strength and flexibility
- Flame retardant compound
- Sunlight resistant
- Oil resistant
- Mild acid resistance
- Non-conductive raceway

Temperature Rating

- 80°C (176°F) DRY
- 60°C (140°F) WET
- 60°C (140°F) OIL

Applications

Suitable for use in:

- NEC® 356.2(1) Liquidtight Flexible Nonmetallic Conduit Type LFNC-A
- Wet Locations
- Outdoor use to include exposure to Sunlight and Weather
- Service Entrance Wiring per NEC® 230.43(16)
- Connections to Cabinets and Wall Outlets in Underfloor Raceways per NEC® 390.15
- Cable Trays per NEC® 392.10(A) and Table 392.10(A) Wiring Methods
- Flexible Connections in Hazardous Locations: Class I Div 2 NEC® 501.10(B)(2)(5), Class II Div 1 NEC® 502.10(A)(2)(3), Class II Div 2 NEC® 502.10(B)(2), Class III Div 1 NEC® 503.10(A)(3)(3) and Class III Div 2 NEC® 503.10(B).
- Wiring in Spaces Above Class I Locations per NEC® 511.7(A)(1).
- Agricultural Buildings where Flexible Connections are required per NEC® 547.5(D)
- Marinas and Boatyards per NEC® 555.13(A)(1)
- Electric Signs and Outdoor Lighting for Neon Secondary-Circuit Wiring of 1000V or Less per NEC® 600.31(A)
- Electric Signs and Outdoor Lighting for Neon Secondary-Circuit Wiring of More Than 1000V per NEC® 600.32(A)(1)
- Flexible Connections for Hoists and Cranes per NEC® 610.11(C)
- Wiring Elevators, Dumbwaiters, Escalators, Moving Walks, Platforms and Stairway Chairlifts per NEC® 620.21
- Raised Computer Room Floors per NEC® 645.5(E)(1)(b)(12)
- Motors for Permanently Installed Pools where Flexible Connections are required per NEC® 680.21(A)(2)
- Spas and Hot Tubs where Flexible Connections are required per NEC® 680.42(A)(1)
- Feeders for Natural and Artificially Made Bodies of Water where Flexible Connections are required per NEC® 682.13
- Solar Photovoltaic (PV) Systems per NEC® 690.31(A)
- Applications where constant flexing motion is required

Ratings

- Underwriters Laboratories Inc. Standard: UL 1660 File: E123464
- cUL Certified for Canada
- NFPA 70 NEC® Article 356
- Canadian Electric Code (CEC) Part I Clause 12-1300
- All Trade Sizes require an equipment grounding conductor per NEC® 356.60
- All Trade Sizes require a bonding conductor per CEC Rule 12-1306

TABLE 1.

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS			
Product Code	Trade Size	Metric Designator	Coil Length (feet)	Reel Length (feet)	Approx. Weight 100 feet (pounds)	Min. Average Wall Thickness	Internal Diameter (min/max) (inches)	External Diameter (min/max) (inches)	Bend Radius (inches)
6501-30-00	3/8	12	100	–	14	0.045	0.475/0.515	0.745/0.785	2
6502-30-00	1/2	16	100	–	16	0.045	0.610/0.650	0.900/0.940	3.25
6502-60-00	1/2	16	–	1000	16	0.045	0.610/0.650	0.900/0.940	3.25
6503-30-00	3/4	21	100	–	18	0.050	0.805/0.845	1.140/1.180	4.25
6504-30-00	1	27	100	–	29	0.050	1.020/1.065	1.400/1.450	6.5
6504-45-00	1	27	–	500	29	0.050	1.020/1.065	1.400/1.450	6.5
6505-24-00	1-1/4	35	50	–	40	0.055	1.360/1.405	1.790/1.835	8
6506-24-00	1-1/2	41	50	–	83	0.055	1.575/1.630	2.035/2.090	9
6507-24-00	2	53	50	–	140	0.055	2.035/2.090	2.595/2.650	11.1

NOTE: All dimensions and weights are subject to normal manufacturing tolerances.

Appendix A

UL Performance Tests

Physical Properties: • Original Tensile and Elongation • Air Oven Aging Test • Oil Immersion Test • Deformation	Cold Impact	Durability of Ink Printing
Tension	Secureness of Fittings	Weather Resistance
Flexibility (Low Temperature)	Mechanical Water Absorption	Resistance to Deflection (Crush) Test
Vertical Flame	Moisture Penetration Test	

Reference Standards

UL 1660/ CSA C22.2 No. 227.2.1	Harmonized Standard for Liquidtight Flexible Nonmetallic Conduit
UL 514B	Standard for Conduit, Tubing and Cable Fittings
NFPA 70	National Electric Code (NEC®) Articles 250, 356, 390, 501, 502, 503, 504, 511, 620, 645, 680 and 690

UL Ultraflex™ Liquidtight Non-Metallic Mechanical Protection Tubing NMPT-B (160 Series)

Scope

This specification covers Kaf-Tech® LIQUID-TUFF™ Liquidtight ULTRAFLEX™ (1) c UL us RECOGNIZED COMPONENT EXTRA-FLEXIBLE NONMETALLIC MECHANICAL PROTECTION TUBING. (1) LIQUID-TUFF™ Liquidtight ULTRAFLEX™ c UL us RECOGNIZED COMPONENT EXTRA FLEXIBLE NONMETALLIC MECHANICAL PROTECTION TUBING is designed for use in connection with the support of and protection of insulated wires, placed within the tubing, that are used to interconnect separate component assemblies or consoles of electrical apparatus, such as x-ray equipment. Use of the combination is to be determined by Underwriters Laboratories Inc. The acceptable use of this material is limited to the following conditions:

1. This tubing may be used for the routing of internal wiring between electrical components of electrical equipment. The protection afforded to the internal wiring by the tubing may be considered equivalent to the protection afforded the internal conductors by the jacket of a Type SJT flexible cord.
2. The tubing is suitable for use at a maximum temperature of 60°C.
3. The tubing and manufacturer's supplied fittings were not tested to determine flammability rating per UL 224.
4. The tubing shall be terminated at each end of the consoles or appliances to which connected to provide strain relief to withstand a 35-pound pull for 1.0 minute. Fittings available from the manufacturer met this requirement.
5. The percent fill of the tubing with conductors shall not exceed 75% where percent fill is defined as: Percent Fill = Area of Enclosed Conductors x 100/Internal Area of Tubing Fill Factor.
6. The minimum bend radius shall not be less than the outside diameter of the tubing.
7. The manufacturer's fittings were subjected to the Oil Spray Test in accordance with UL 514B.
8. As this tubing and manufacturer supplied fittings are to be Recognized as a Component, final acceptance will be determined in terms of the combination of component and appliance as determined by Underwriters Laboratories Inc., regarding such characteristics as flammability; degree of bending or flexing; resistance to water, oil and abrasion; and physical strength.

LIQUID-TUFF™ Liquidtight ULTRAFLEX™ EXTRA-FLEXIBLE Nonmetallic tubing is designed for use in wet, dry or oily locations as a flame resistant, Nonmetallic raceway for power, control and communications cables. The product is intended for use at 60°C (140°F) in a dry location, 60°C (140°F) in a wet location and 60°C (140°F) in a oily location. It is sunlight resistant.

Construction

LIQUID-TUFF™ Liquidtight ULTRAFLEX™ MECHANICAL PROTECTION TUBING has a circular cross section with a smooth polyvinyl chloride (PVC) inner surface and an integral reinforcing member within the conduit wall. The dimensions of the integral tubing/conduit shall comply with Table 1. Color: Black.

Grounding

Where applicable a separate grounding conductor is required for all trade sizes.

Markings

The product marking is contained on the outer carton.

Performance Tests

The completed LIQUID-TUFF™ Liquidtight ULTRAFLEX™ TUBING shall meet the performance requirements outlined in Appendix A.

Standards

- Harmonized UL 1696/cUL Listed
- Nonmetallic Mechanical Protection Tubing
- To maintain the Recognized Component Certification, the tubing and fittings must be from the same manufacturer. The components are not interchangeable. For fittings, please see Table 2.

File

UL E79977

Description

- c UL us component, extra-flexible Nonmetallic mechanical protection tubing
- Corrugated flame resistant PVC with integral reinforcing member
- Non-conductive raceway – black

Temperature Rating

- 60°C DRY
- 60°C WET AND OILY

Applications

- c UL us recognized component for use in protection of insulated wire in assemblies or consoles of electrical apparatus. Use is to be determined by Underwriters Laboratories Inc.

References & Ratings

- c UL us recognized component Liquidtight Mechanical Protection Tubing under UL File Number E79977
- UL1696 Standard for Nonmetallic Mechanical Protection Tubing
- UL Certified to CSA C22.2 No. 227.3
- Made in USA of US and/or imported materials

TABLE 1.

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS		
Product Code	Trade Size (inches)	Trade Size (mm)	Coil Length (feet)	Reel Length (feet)	Approx. Weight 100 feet (pounds)	Internal Diameter (min/max) inches	External Diameter (min/max) inches	Bend Radius (inches)
160-012	3/8	12	100	–	5	0.484/0.504	0.695/0.705	0.49
160-016	1/2	16	100	–	8	0.622/0.642	0.825/0.835	0.63
160-021	3/4	21	100	–	11	0.820/0.840	1.035/1.045	0.83
160-026	1	27	100	–	16	1.041/1.066	1.297/1.308	1.10
160-035	1-1/4	35	100	–	21	1.380/1.410	1.640/1.650	1.40
160-040	1-1/2	41	100	–	26	1.575/1.600	1.877/1.888	1.59
160-051	2	53	100	–	33	2.020/2.045	2.352/2.363	2.04

NOTE: All dimensions and weights are subject to normal manufacturing tolerances.

Appendix A
Performance Requirements
Heat Aging Test
Cold Bend Test
Heat Shock Test
Crush Test
Impact Test
Oil Spray Test

Table 2.

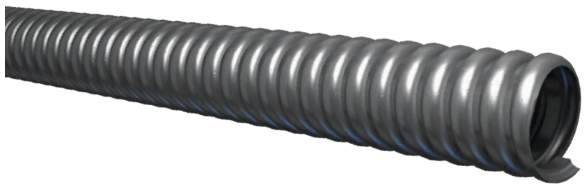
Size (IN)	Straight Designations	90 Degree Designations	Colors
3/8	0921-PP-GY	0981-PP-GY	Gray
1/2	0922-PP-BK/0922-PP-GY	0982-PP-BK/0982-PP-GY	Black/Gray
3/4	0923-PP-BK/0923-PP-GY	0983-PP-BK/0983-PP-GY	Black/Gray
1	0924-PP-BK/0924-PP-GY	0984-PP-BK/0984-PP-GY	Black/Gray
1-1/4	0925-PP-BK/0925-PP-GY	0985-PP-BK/0985-PP-GY	Black/Gray
1-1/2	0926-PP-BK/0926-PP-GY	0986-PP-BK/0986-PP-GY	Black/Gray
2	0927-PP-BK/0927-PP-GY	0987-PP-BK/0987-PP-GY	Black/Gray

Kaf-Tech® Notes:

Flexible Metal Conduit - Aluminum

- UL Reduced Wall Aluminum Type RW FAC (5600 Series).....46-47

UL Reduced Wall Aluminum Type RW FAC (5600 Series)



Description

- Lightweight Reduced Wall Aluminum Flexible Conduit
- Premium aluminum alloy
- Interlocking design
- Proprietary lubricant and process providing a non-oil surface and product with extra flexibility
- Trade sizes 1-1/2 through 4 are made with no solder joints

Applications

Suitable for use in:

- Flexible Aluminum Conduit (FAC): A raceway of circular cross-section made of helically wound, interlocked aluminum strip
- Accordance with NEC® Article 348 Flexible Metal Conduit Type FMC
- Exposed and concealed locations
- Utilization equipment per NEC® 348.20(A)(2)(a)
- Part of a listed assembly per NEC® 348.20(A)(2)(b)
- Equipment ground in accordance with NEC® 250.118(5)
- Other Spaces Used for Environmental Air (Plenums) per NEC® 300.22(C)
- Use in Cable Trays per NEC® 392.10(A) and Table 392.10(A)
- Raceway for Tap Conductors for Luminaires per NEC® 348.20(A)(2)(c) and 410.117(C)
- Connection to a motor terminal enclosure per NEC® 430.223
- Class I Division 2 per NEC® 501.10(B)(2)(2)
- Neon Secondary-Circuit Wiring 1000V or Less per NEC® 600.31(A)
- Neon Secondary-Circuit Wiring Over 1000V per NEC® 600.32(A)(1)
- Manufactured Wiring Systems per 604.100(A)(2)
- Elevators, Dumbwaiters, Escalators, Moving walks, Platform and Stairway Chairlifts per NEC® 620.21
- Under Raised Floors per NEC® 645.5(E)(1)(b)(10)
- Solar Photovoltaic (PV) Systems per NEC® 690.31(A)
- Fuel Cell Systems per NEC® 692.31
- Wind Electric Systems per NEC® 694.30(A)
- Critical Operations Power Systems (COPS) where flexibility is required per NEC® 708.10(C)(1)(3)(b)
- Optical Fiber Cables for installation within buildings per NEC® 770.110(A)(1)
- Communications Circuit Wires and Cables for installation within buildings per NEC® 800.110(A)(1)
- Community Antenna Television and Radio Coaxial Cables for installation within buildings per NEC® 820.110(A)(1)
- Low and Medium Power Network-Powered Broadband Cables for installation within buildings per NEC® 830.110(A)(1)

Ratings

- NFPA 70 — National Electric Code (NEC®) Articles 348, 250, 300, 392, 410, 423, 430, 501, 600, 604, 620, 645, 690, 692, 694, 708, 770, 800, 820 and 830
- UL 1 — Standard for Flexible Metal Conduit — UL File Number E11831
  Federal Specification WW-C-566C superseded by UL 1
- UL 1479 — Fire Tests of Through-Penetration Firestops — UL File Number R14141
  UL Classified Through-Penetrating Product for Use in Through-Penetration Firestop Systems
- NEMA RV 3 — Application and Installation Guidelines for Flexible and Liquidtight Flexible Metal Conduits
- C22.2 No. 56 — CSA Standard for Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit
  The 3/8 Trade Size is the only Type RW FMC that is CSA Certified
- RR 93227 — City of Los Angeles Electrical Testing Laboratory Research Report Number 93227
  Permits the use of 1/2 and 3/4 Trade Sizes of Type RW Flexible Aluminum Conduit in long lengths per the Report

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS		
Product Code	Trade Size (inches)	Trade Size (mm)	Coil Length (feet)	Reel Length (feet)	Approx. Weight/ 100 feet (pounds)	Internal Diameter (min/max) inches	External Diameter (min/max) inches	Bend Radius inches
5601-22-00*	3/8	12	25	–	6	0.375/0.393	0.560/0.610	2
5601-24-00*	3/8	12	50	–	6	0.375/0.393	0.560/0.610	2
5601-30-00*	3/8	12	100	–	6	0.375/0.393	0.560/0.610	2
5601-42-00*	3/8	12	250	–	6	0.375/0.393	0.560/0.610	2
5601-45-00*	3/8	12	–	500	6	0.375/0.393	0.560/0.610	2
5601-60-00*	3/8	12	–	1000	6	0.375/0.393	0.560/0.610	2
5602-22-00	1/2	16	25	–	10	0.625/0.645	0.860/0.920	3
5602-24-00	1/2	16	50	–	10	0.625/0.645	0.860/0.920	3
5602-30-00	1/2	16	100	–	10	0.625/0.645	0.860/0.920	3
5602-45-00	1/2	16	–	500	10	0.625/0.645	0.860/0.920	3
5602-60-00	1/2	16	–	1000	10	0.625/0.645	0.860/0.920	3
5603-22-00	3/4	21	25	–	12	0.812/0.835	1.045/1.105	4
5603-24-00	3/4	21	50	–	12	0.812/0.835	1.045/1.105	4
5603-30-00	3/4	21	100	–	12	0.812/0.835	1.045/1.105	4
5603-45-00	3/4	21	–	500	12	0.812/0.835	1.045/1.105	4
5603-60-00	3/4	21	–	1000	12	0.812/0.835	1.045/1.105	4
5604-24-00	1	27	50	–	18	1.000/1.040	1.300/1.380	5
5604-80-00	1	27	–	300	18	1.000/1.040	1.300/1.380	5
5605-24-00	1-1/4	35	50	–	22	1.250/1.300	1.550/1.630	6.25
5605-40-00	1-1/4	35	–	200	22	1.250/1.300	1.550/1.630	6.25
5606-22-00	1-1/2	41	25	–	26	1.500/1.575	1.850/1.950	7.50
5606-35-00	1-1/2	41	–	150	26	1.500/1.575	1.850/1.950	7.50
5606-80-00	1-1/2	41	–	300	26	1.500/1.575	1.850/1.950	7.50
5607-22-00	2	53	25	–	35	2.000/2.080	2.350/2.450	10
5607-30-00	2	53	–	100	35	2.000/2.080	2.350/2.450	10
5607-35-00	2	53	–	150	35	2.000/2.080	2.350/2.450	10
5608-22-00	2-1/2	63	25	–	57	2.500/–	2.860/3.060	12.50
5608-35-00	2-1/2	63	–	150	57	2.500/–	2.860/3.060	12.50
5609-22-00	3	78	25	–	68	3.000/–	3.360/3.560	15
5609-30-00	3	78	–	100	68	3.000/–	3.360/3.560	15
5610-22-00	3-1/2	91	25	–	80	3.500/–	3.860/4.060	17.50
5610-30-00	3-1/2	91	–	100	80	3.500/–	3.860/4.060	17.50
5611-22-00	4	103	25	–	91	4.000/–	4.360/4.560	20
5611-30-00	4	103	–	100	90	4.000/–	4.360/4.560	20

NOTE: All dimensions and weights are subject to normal manufacturing tolerances. *CSA certified. Review NEC® 348.60 and 250.118(5) for grounding requirements.
Review NEC® 348.60 and 250.118(5) for grounding requirements.

Flexible Metal Conduit - Steel

- UL Reduced Wall Steel Type RW FSC (5500 Series)..... 49 - 50
- Non UL "Extra-Flexible" Steel (5200 Series)..... 51
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UL Reduced Wall Steel Type RW FSC (5500 Series)

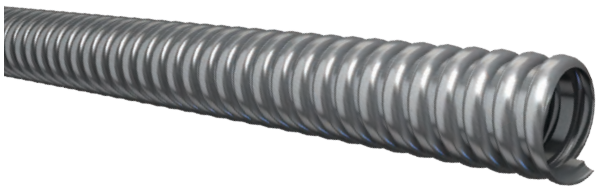
Description

- Reduced Wall Flexible Steel Conduit
- High grade hot dipped zinc galvanized low carbon steel
- Interlocking design
- Corrosion resistant
- Trade sizes 1-1/2 through 4 are made with no solder joints

Applications

Suitable for use in:

- Flexible Steel Conduit (FSC): A raceway of circular cross-section made of helically wound, interlocked galvanized steel strip.
- Accordance with NEC® Article 348 Flexible Metal Conduit Type FMC
- Exposed and concealed locations
- Utilization equipment per NEC® 348.20(A)(2)(a)
- Suitable as part of a listed assembly per NEC® 348.20(A)(2)(b)
- Equipment ground in accordance with NEC® 250.118(5)
- Other Spaces Used for Environmental Air (Plenums) per NEC® 300.22(C)
- Cable Trays per NEC® 392.10(A) and Table 392.10(A)
- Raceway for Tap Conductors for Luminaires per NEC® 348.20(A)(2)(c) and 410.117(C)
- Connection to a motor terminal enclosure per NEC® 430.223
- Class I Division 2 per NEC® 501.10(B)(2)(2)
- Neon Secondary-Circuit Wiring 1000V or Less per NEC® 600.31(A)
- Neon Secondary-Circuit Wiring Over 1000V per NEC® 600.32(A)(1)
- Manufactured Wiring Systems per 604.100(A)(2)
- Elevators, Dumbwaiters, Escalators, Moving walks, Platform and Stairway Chairlifts per NEC® 620.21
- Under Raised Floors per NEC® 645.5(E)(1)(b)(10)
- Solar Photovoltaic (PV) Systems per NEC® 690.31(A)
- Fuel Cell Systems per NEC® 692.31
- Wind Electric Systems per NEC® 694.30(A)
- Critical Operations Power Systems (COPS) where flexibility is required per NEC® 708.10(C)(1)(3)(b)
- Optical Fiber Cables for installation within buildings per NEC® 770.110(A)(1)
- Communications Circuit Wires and Cables for installation within buildings per NEC® 800.110(A)(1)
- Community Antenna Television and Radio Coaxial Cables for installation within buildings per NEC® 820.110(A)(1)
- Low and Medium Power Network-Powered Broadband Cables for installation within buildings per NEC® 830.110(A)(1)



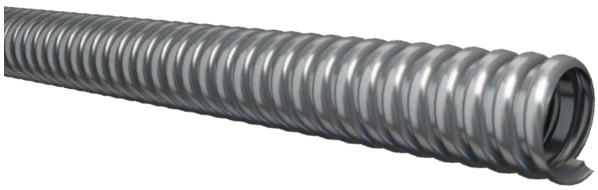
References & Ratings

- NFPA 70 — National Electric Code (NEC®) Articles 348, 250, 300, 392, 410, 423, 430, 501, 600, 604, 620, 645, 690, 692, 694, 708, 770, 800, 820 and 830
- UL 1 — Standard for Flexible Metal Conduit — UL File Number E11831
  Federal Specification WW-C-566C superseded by UL 1
- UL 1479 — Fire Tests of Through-Penetration Firestops — UL File Number R14141
  UL Classified Through-Penetrating Product for Use in Through-Penetration Firestop Systems
- NEMA RV 3 — Application and Installation Guidelines for Flexible and Liquidtight Flexible Metal Conduits
- C22.2 No. 56 — CSA Standard for Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit
  The 3/8 Trade Size is the only Type RW FMC that is CSA Certified

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS		
Product Code	Trade Size (inches)	Trade Size (mm)	Coil Length (feet)	Reel Length (feet)	Approx. Weight/ 100 feet (pounds)	Internal Diameter (min/max) (inches)	External Diameter (min/max) (inches)	Bend Radius inches
5501-22-00*	3/8	12	25	–	17	0.375/0.393	0.560/0.610	2
5501-24-00*	3/8	12	50	–	17	0.375/0.393	0.560/0.610	2
5501-30-00*	3/8	12	100	–	17	0.375/0.393	0.560/0.610	2
5501-42-00*	3/8	12	250	–	17	0.375/0.393	0.560/0.610	2
5501-45-00*	3/8	12	–	500	17	0.375/0.393	0.560/0.610	2
5501-60-00*	3/8	12	–	1000	17	0.375/0.393	0.560/0.610	2
5502-22-00	1/2	16	25	–	27	0.625/0.645	0.860/0.920	3
5502-24-00	1/2	16	50	–	27	0.625/0.645	0.860/0.920	3
5502-30-00	1/2	16	100	–	27	0.625/0.645	0.860/0.920	3
5502-45-00	1/2	16	–	500	27	0.625/0.645	0.860/0.920	3
5502-60-00	1/2	16	–	1000	27	0.625/0.645	0.860/0.920	3
5503-22-00	3/4	21	25	–	35	0.812/0.835	1.045/1.105	4
5503-24-00	3/4	21	50	–	35	0.812/0.835	1.045/1.105	4
5503-30-00	3/4	21	100	–	35	0.812/0.835	1.045/1.105	4
5503-45-00	3/4	21	–	500	35	0.812/0.835	1.045/1.105	4
5503-60-00	3/4	21	–	1000	35	0.812/0.835	1.045/1.105	4
5504-24-00	1	27	50	–	51	1.000/1.040	1.300/1.380	5
5504-80-00	1	27	–	300	51	1.000/1.040	1.300/1.380	5
5505-24-00	1-1/4	35	50	–	63	1.250/1.300	1.550/1.630	6.25
5505-40-00	1-1/4	35	–	200	63	1.250/1.300	1.550/1.630	6.25
5506-22-00	1-1/2	41	25	–	76	1.500/1.575	1.850/1.950	7.50
5506-35-00	1-1/2	41	–	150	76	1.500/1.575	1.850/1.950	7.50
5506-80-00	1-1/2	41	–	300	76	1.500/1.575	1.850/1.950	7.50
5507-22-00	2	53	25	–	100	2.000/2.080	2.350/2.450	10
5507-30-00	2	53	–	100	100	2.000/2.080	2.350/2.450	10
5507-35-00	2	53	–	150	100	2.000/2.080	2.350/2.450	10
5508-22-00	2-1/2	63	25	–	165	2.500/–	2.860/3.060	12.5
5508-35-00	2-1/2	63	–	150	165	2.500/–	2.860/3.060	12.5
5509-22-00	3	78	25	–	197	3.000/–	3.360/3.560	15
5509-30-00	3	78	–	100	197	3.000/–	3.360/3.560	15
5510-22-00	3-1/2	91	25	–	230	3.500/–	3.860/4.060	17.5
5510-30-00	3-1/2	91	–	100	230	3.500/–	3.860/4.060	17.5
5511-22-00	4	103	25	–	263	4.000/–	4.360/4.560	20
5511-30-00	4	103	–	100	263	4.000/–	4.360/4.560	20

NOTE: All dimensions and weights are subject to normal manufacturing tolerances. *CSA certified. Review NEC® 348.60 and 250.118(5) for grounding requirements.
Continuous length reels with no solder joints or connectors are available on sizes.
Review NEC® 348.60 and 250.118(5) for grounding requirements.

Non UL "Extra-Flexible" Steel (5200 Series)



Description

- Non-UL Extra Flexible Steel Conduit
- High grade galvanized low carbon steel
- Interlocking design
- Corrosion resistant

Applications

- Flexible metal raceway for specific applications where UL and other agency approvals are not required
- Motor leads
- Made in USA of US and/or imported materials

ORDERING INFORMATION						PRODUCT DIMENSIONS/BEND RADIUS		
Product Code	Trade Size (inches)	Trade Size (mm)	Coil Length (feet)	Reel Length (feet)	Approx. Weight/ 100 feet (pounds)	Internal Diameter (min/max) inches	External Diameter (min/max) inches	Bend Radius inches
5201-42-00	3/8	12	250	–	8	0.375/0.393	0.560/0.610	2
5201-45-00	3/8	12	–	500	8	0.375/0.393	0.560/0.610	2
5201-60-00	3/8	12	–	1000	8	0.375/0.393	0.560/0.610	2
5203-30-00	1/2	16	100	–	16	0.625/0.645	0.860/0.920	3
5203-45-00	1/2	16	–	500	16	0.625/0.645	0.860/0.920	3
5203-60-00	1/2	16	–	1000	16	0.625/0.645	0.860/0.920	3
5204-30-00	3/4	21	100	–	21	0.812/0.835	1.045/1.105	4
5205-24-00	1	27	50	–	34	1.000/1.040	1.300/1.380	5
5206-24-00	1-1/4	35	50	–	42	1.250/1.300	1.550/1.630	6.25
5207-22-00	1-1/2	41	25	–	63	1.500/1.575	1.850/1.950	7.50
5208-22-00	2	53	25	–	84	2.000/2.080	2.350/2.450	10
5209-22-00	2-1/2	63	25	–	104	2.500/–	2.860/3.060	12.5
5210-22-00	3	78	25	–	125	3.000/–	3.360/3.560	15
5211-22-00	3-1/2	91	25	–	145	3.500/–	3.860/4.060	17.5
5212-22-00	4	103	25	–	165	4.000/–	4.360/4.560	20

NOTE: All dimensions and weights are subject to normal manufacturing tolerances.

Non UL Flexcon™ Super-Flexible Steel (5100 Series)

Description

Kaf-Tech® FLEXCON EXTRA-FLEXIBLE STEEL CONDUIT is manufactured from one continuous length of high grade steel, hot dipped in a zinc bath for protection against the normal effects of corrosion. The steel strip is formed into interlocking convolutions firmly joined to assure a rugged yet very flexible conduit which provides exceptional flexibility for tight U-bend applications. The convolutions are manufactured to insure smoother interior and exterior surfaces, which facilitate both cable and conduit pulling. The FlexCon installs easily with standard armored cable or flexible metal conduit connectors. The product is designed to be used for specific applications where Underwriters Laboratories Inc. or other agency approvals are not required.

- Made in USA of US and/or imported materials

ORDERING INFORMATION					PRODUCT DIMENSIONS/BEND RADIUS		
Product Code	Trade Size (inches)	Trade Size (mm)	Coil Length (feet)	Approx. Weight/ 100 feet (pounds)	Internal Diameter (min/max) inches	External Diameter (min/max) inches	Bend Radius inches (mm)
5101-24-00	3/8	12	50	11.8	0.375/0.400	0.520/0.540	1.250
5101-30-00	3/8	12	100	11.8	0.375/0.400	0.520/0.540	1.250
5101-42-00	3/8	12	250	11.8	0.375/0.400	0.520/0.540	1.250
5102-24-00	1/2	16	50	14.3	0.500/0.525	0.640/0.665	1.750
5102-30-00	1/2	16	100	14.3	0.500/0.525	0.640/0.665	1.750
5103-24-00	3/4	21	50	19.9	0.750/0.775	0.890/0.915	2.000
5103-30-00	3/4	21	100	19.9	0.750/0.775	0.890/0.915	2.000

NOTE: All dimensions and weights are subject to normal manufacturing tolerances.

Kaf-Tech® Notes:

RACEWAY. YOUR WAY.™

Conduit Systems

Steel Conduit
- E-Z Pull® & True Color™ EMT
- EMT Elbows
- IMC
- Rigid (GRC)
- GRC Elbows, Nipples & Couplings

Kwik Products
- Kwik-Fit® EMT (built-in set-screw coupling)
- Super Kwik-Couple™ IMC/GRC (built-in rotating coupling)
- Kwik-Fit® Compression EMT

Aluminum Conduit
- Rigid
- Aluminum Elbows
- Aluminum Couplings

PVC
- Schedule - 40 & 80 Rigid PVC
- EB/DB Duct
- PVC Elbows
- Fittings, Spacers & Accessories

Cable Systems

AC & MC Cable
- MC Luminary Cable®
- MC Luminary Jacketed Cable®
- MC Luminary Multizone Lite™ Cable
- MC Luminary HCF™ Lite Cable
- MC TUFF® Lightweight Steel (MC) Cable
- MC TUFF® IG (MC) Cable with Isolated Ground
- MC Lite® Metal Clad Aluminum (MC) Cable
- MC-Quik® (MC) Cable
- MC-Stat® (MC) Cable
- MC-Plus® (MC) Cable
- HCF-90® & HCF-Lite™
- AC-90® & AC-Lite™
- Fire Alarm® Cable
- Home Run Cable®
- Parking Deck/Lot Cable®
- Super Neutral Cable®

Flexible Conduit
- LIQUID-TUFF® Liquid-Tight Flexible Conduit
- Full and Reduced Wall Flexible Metal Conduit

AFC Accessories
- Light, Power, & Appliance Whips
- Bare Armored Ground
- Pack N Roll™
- MC Snapit™
- Tripod
- Hand Cart

Cable Tray Systems

Aluminum Tray
- Aluminum Ladder Tray
- Aluminum Trof Tray
- Aluminum Channel
- Aluminum Fittings

Steel Tray
- Steel Ladder Tray
- Steel Trof Tray
- Steel Channel
- Steel Fittings

I-Beam™ Cable Tray
- I-BEAM™ Aluminum Tray
- I-BEAM™ Accessories

Fiberglass Tray
- Cope-glas™ Fiberglass Tray
- Fiberglass Fittings
- Fiberglass Support Systems

Other Cope Products
- Covers
- Barrier Strips
- Grounding Equipment
- Seismic Hold-Downs
- Support Systems

Wire Basket
- Wire Basket Tray
- Wire Basket Accessories

Framing Systems

Channel
- Steel Channel
- Aluminum Channel
- Stainless Steel Channel
- Fiberglass Channel
- Junior Channel

Fittings & Accessories
- Beam Clamps
- Channel Fittings
- Pipe & Conduit Clamps
- Threaded Rods
- Fiberglass Fittings
- Electrical Fittings
- Concrete Inserts
- Trolley Systems

Finishes
- Pre-Galvanized Channel
- Green Channel
- Hot-Dip Galv. Channel
- Gold Channel
- Unistrut Defender™ Channel

Gratings
Roof Walks
Solar Products
Telestrut® Telescoping Strut System
UniPier® Rooftop Supports

Conduit Systems Canada

All items listed above, plus
- Aluminum Nipples

and **except** for the following:
- IMC
- Kwik-Couple IMC
- PVC

Modular Wiring Systems

ACS/Uni-Fab
- Modular Lighting Systems
- Raised Floor Assemblies
- Pre-Fab Assemblies

PVC

PVC
- Schedule - 40 & 80 Rigid PVC
- EB/DB Duct
- PVC Elbows
- Fittings, Spacers & Accessories

Fittings

Fittings
- Universal Super Fitting™
- EMT Steel Compression & Set-Screw Fittings
- Liquid-Tight Metallic & Non-Metallic Fittings
- MC/AC Cable Connectors

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