

ALCAN CABLE WIREMAN'S GUIDE

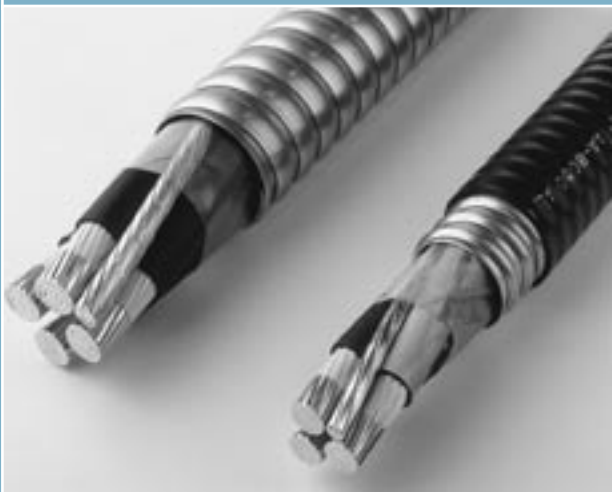


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ABOUT ALCAN CABLE

Alcan Cable is a division of Alcan Products Corporation, a worldwide producer and fully integrated supplier of aluminum. Alcan Cable is a leading manufacturer of transmission and distribution cable, service cable and building wire. Product offerings include a full range of bare and insulated conductors as well as modular wiring systems to the electric utility, commercial and industrial markets.

This catalog is intended to provide technical data to aid the correct selection of wire and cable for permanent installation. Wire and cable products supplied by Alcan comply with the codes, standards and product specifications as indicated in this catalog. Weights and measures are subject to manufacturing tolerances and product design changes. Consequently, Alcan does not accept responsibility for costs incurred by a purchase as a result of weights and measurements not conforming exactly to those indicated.

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INTRODUCTION

This Guide was developed to help the installer properly install STABILOY[®] cables. The guide covers pulling the conductors, proper end preparation, terminating the conductors on both mechanical and compression lugs, and installing MC Cable. The guide is intended as a reference tool for the contractor & electrician and engineer to answer the most common installation and product questions.

STABILOY[®] CONDUCTORS

STABILOY[®] conductors have been reliably operating in many installations for over 35 years. The development of the AA-8030 aluminum alloy conductor in combination with the dual-rated mechanical connector means that connections made with STABILOY[®] AA-8030 are as reliable and perform equal to or better than the connections made with copper conductors.

STABILOY[®] AA-8030 aluminum alloy conductors have been listed since 1972 and are recognized by the NEC in Section 310.14. Connections made with STABILOY[®] conductors offer equal or better thermal stability compared to connections made with copper building wire. When compared to equivalent ampacity copper, STABILOY[®] requires less force to bend and has lower springback characteristics.

In addition to the invention of the much improved STABILOY[®] AA-8030 series conductor, the revised Standards for connectors have been rewritten to insure that aluminum is a safe, reliable choice.

- In August 1978, Underwriters Laboratories published UL486B, a new standard entitled “Connectors for Use with Aluminum Wire,” a more stringent standard than the previous one. For example, while the old requirement consisted of a 42-cycle test, the new standard features a 500-cycle process.
- In August of 1983, the UL Standard was passed regarding single-hole connectors. They now must be marked “AL7CU” or “AL9CU” for connectors rated at 75°C or 90°C, respectively. (October 1986 for multiple-hole)
- To ensure the safety and reliability of electrical equipment, major testing laboratories such as UL now require equipment manufacturers to label their equipment with recommended torque values.
- Since Section 110.3(B) (NEC) states that listed and labeled products must be used in accordance with their listing and labeling, all connections should be torqued to the values indicated. Torque specifications are established by product and equipment manufacturers through research and development. Using an accurate torque wrench correctly is the best and most practical way of eliminating the cause of most electrical failures – an improper termination.

FACTS ABOUT ALUMINUM ALLOY CONDUCTORS

Misconception: Aluminum conductors are stiff and tend to fracture if bent repeatedly, for instance during a difficult installation.

Facts:

- The aluminum conductors used in the 1960s and 1970s were relatively stiff compared to copper. That conductor – EC1350 – is still used by utilities, but a new alloy – designated AA-8000 series – has replaced EC1350 for building wire applications.
- AA-8000 series conductor was first required in the 1981 NEC for branch circuits and the 1987 NEC for all aluminum conductors 12 AWG to 1000 kcmil. The 2005 NEC continues to provide that recognition in Section 310.14.
- AA-8000 series aluminum alloy is much more flexible than copper and is equal in its ability to withstand multiple bends.

Misconception: Terminations with aluminum conductors are not reliable.

Facts:

- When first employed in the 1960s and 1970s, the aluminum conductor was occasionally terminated to connectors that were suitable only for copper. Due to improper installation and the higher thermal expansion of aluminum than the metals used in those connections, these connections could loosen over time and reduce termination reliability. It was a common maintenance requirement to re-tighten mechanical connections.
- UL486B is the standard for connectors to be used with aluminum conductors. The standard was published in 1978 to provide for reliable connections using aluminum. Currently, UL486A and UL486B are joint standards for both aluminum and copper terminations.

- Utilizing the appropriate connectors – these are marked AL7CU or AL9CU – with the AA-8000 series conductors will result in connections that are as reliable as copper. Retightening properly installed mechanical connections is not required; the practice is discouraged due to the possibility of overtightening the connection.
- A study was conducted by the Georgia Power Research Center (now known as “NEETRAC”) to test the reliability of the connections – both STABILOY® and equal ampacity copper – with severe heat cycling. The test concluded that connections made with Alcan’s STABILOY® “... matches or exceeds the performance of copper connections in electrical circuits governed by code requirements.”

Misconception: Aluminum conductors are difficult to install.

Facts:

- Most aspects of installing aluminum alloy conductors are in fact easier than copper: It is about half the weight for equal ampacity, and the AA-8030 conductors are 25% more flexible and have 40% less springback.
- The concern about installation usually focuses on the recommendation that the conductor should be wire-brushed and a joint compound applied prior to termination. This practice is recommended for both copper and aluminum alloy conductors.

Misconception: The larger diameter of aluminum cables increases the conduit size.

Facts:

- Aluminum conductor cables are larger than copper conductor cables of similar ampacity ratings.
- Alcan Cable reduces the size disadvantage of aluminum conductors by compacting the strands and utilizing high performance insulation for an XHHW construction. As a result, in actual application, larger conduits are needed in only a small percentage of the common configurations. Software is available to compare conduit sizing.

Misconception: Aluminum conductor corrodes.


Facts:

- Both aluminum and copper cables will corrode if the insulation is punctured and the cable is underground (i.e., in a wet location and absence of oxygen).
- Both aluminum and copper terminations will corrode if installed in corrosive environments.

Misconception: Contractors are unfamiliar with working with aluminum conductor.

Facts:

- Most contractors now have experience with aluminum alloy conductors. NECA publishes a National Electrical Installation Standard that provides recommended industry practices.
- Alcan Cable provides field application assistance where needed.



Misconception: Electrical engineers are unfamiliar with working with aluminum conductor.

Facts:

- There is little difference in designing circuits with aluminum conductors, and from an electrical performance perspective there is none.
- Alcan Cable provides software that assists in comparing copper and aluminum conductors for specific applications. Additionally, application engineering assistance is available as necessary.
- Recommended language for specifying both aluminum conductors and the appropriate connectors is available from Alcan Cable.

STABILOY® Building Wire Products Overview

STABILOY® MC CABLE

Used for both above-ground and underground feeder application and services, MC Cable offers significant labor savings over traditional wiring methods. Available with PVC jacketing for direct burial, concrete-encased, wet location and sunlight resistant applications.

STABILOY® XHHW-2

XHHW-2 offers smaller diameters than THHN, RHH and RHW-2 conductors for the same applications, plus excellent electrical characteristics and opportunities for reduced installation costs.

STABILOY® USE-2/RHH/RHW-2

Primarily used as Type USE-2 direct-buried underground service entrance, this product is also listed for RHH or RHW-2 application in general purpose lighting and power.

STABILOY® SE Style U

Meets most above-ground service entrance requirements, can also be used for interior wiring under local codes that permit the use of a bare neutral.

STABILOY® SE Style R

For above-ground service entrance when a separate grounding conductor is needed, also used for branch circuits with the same requirement.

Alcan Cable also offers a variety of sizes of Mobile Home Feeder Cable and Tray Cable. Contact your local Alcan Cable Sales Representatives or visit our website www.cable.alcan.com for more details.

Note: The suffix -2 indicates that these wire types can be used at a continuous 90°C operating temperature in wet and dry locations.





MODEX™ Modular Wiring Systems

MODEX™ brand factory assembled modular wiring systems are designed for quick and easy on-site installation in commercial construction applications. The clean, fast and simple installation of MODEX™ systems translates into total installed cost savings to the contractor.

The MODEX™ product line consists of Prewired, Pigtailed and Hardwired systems along with rough-ins and brackets. All MODEX™ systems are UL Listed and custom designed to meet your branch circuit wiring specifications. Contact your local Alcan Cable Sales Representatives or visit our website www.cable.alcan.com for more details.



STABILOY® MC CABLE

Alcan interlocked aluminum armor Type MC Cable is designed for above ground application. The cable is also available with a jacket over the armor, listed for direct burial, for application in cable tray and for sunlight resistance. The cable is also available with a jacket and is listed for direct burial, concrete encasement, sunlight resistant and wet locations. STABILOY® MC Cable meets the requirements of UL Standard #1569, Metal-Clad Cables. Insulated conductors within the cable meet the requirements of UL-44, Type XHHW-2. STABILOY® MC Cable is approved for use in accordance with applicable portions of the National Electrical Code. STABILOY® alloy conductor is recognized by ASTM in Standards B800, B801, B836 and B901.

Alcan Cable manufactures aluminum STABILOY® MC Cable in feeder sizes 6 AWG - 900 kcmil with or without a PVC jacket. As with all of Alcan's products, STABILOY® MC Cable is superior in quality and is a respected brand throughout the electrical industry.

Description

STABILOY® MC Cable's construction consists of either three or four insulated phase-identified conductors plus a bare equipment-grounding conductor inside interlocked aluminum alloy armor. All conductors are STABILOY® (AA-8030 electrical grade alloy) with type XHHW-2 insulation.

Marking

The cable assembly is identified with a marker tape placed under the wrapping tape. The legend on the marker tape includes the following: ALCAN TYPE MC ST1 STABILOY® AA-8030 AL 600 V (UL) FOR CT USE (NOT "ST1" ON JACKETED MC UNLESS SO MARKED) NOM ANCE (SEQUENTIAL FOOTAGE). STABILOY® MC Cable with jacket is available upon request.



STABILOY[®] MC CABLE

Applications

Feeder size STABILOY[®] is a better alternative to the traditional pipe and wire method because it dramatically reduces installation time. For further details on installed cost savings, see the Time and Motion Study conducted by RS Means located on our website. STABILOY[®] MC Cable is approved in Article 330 of the NEC for use in many applications including exposed or concealed circuits, installed in cable tray, power, lighting and signal circuits as well as in hazardous locations as permitted in articles 501, 502, 503 and 504. Ideal applications include:

Hotels	Hospitals
Casinos	Commercial Buildings
Condominiums/Apartments/	Schools
Loft Buildings	Renovations
Sports Arenas	

The following are the NEC permitted uses of STABILOY[®] MC Cable:

330.10 Uses Permitted

(A) General Uses Type MC Cable shall be permitted as follows:

- 1) For services, feeders, and branch circuits
- 2) For power, lighting, control, and signal circuits
- 3) Indoors or outdoors
- 4) Exposed or concealed
- 5) To be direct buried where identified for such use
- 6) In cable tray where identified for such use
- 7) In any raceway
- 8) As aerial cable on a messenger
- 9) In hazardous (classified) locations as permitted
- 10) In dry locations and embedded in plaster finish on brick or other masonry except in damp or wet locations

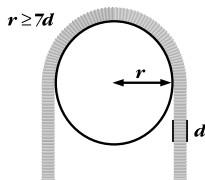
- 11) In wet locations where any of the following conditions are met:
 - a. The metallic covering is impervious to moisture.
 - b. A lead sheath or moisture-impervious jacket is provided under the metal covering.
 - c. The insulated conductors under the metallic covering are listed for use in wet locations.
- 12) Where single-conductor cables are used, all phase conductors and, where used, the neutral conductor shall be grouped together to minimize induced voltage on the sheath.

Installation and Complementary Accessories

Fittings

STABILOY[®] MC Cable works well with a number of listed MC fittings. Please refer to the chart on pages 17-18 for suggested fittings for non-PVC jacketed STABILOY[®] MC Cable.

Please consult your local Alcan Manufacturer Representative or an Alcan Field Application Engineer for more information on installation methods and accessories.



Minimum Acceptable Bend Radius for Interlocked Armor

Minimum radius = (7) x (diameter of metallic sheath)

Example:

STABILOY[®] MC - 750 MCM - 4 conductor with 3/0 ground

- Overall diameter of metallic sheath = 2.93"
- Minimum bend radius = (7) x (2.93") = 20.51"
- Minimum diameter of wheel = (2)(20.51") = 41.02"

Use wheel with 42" diameter or larger



Jacketed STABILOY® MC CABLE

With the added durability of a PVC jacket, Jacketed STABILOY® MC Cable is a better choice, for some applications. A prime example is for utilization in single phase feeder applications within multi-family residential and similar commercial constructions. Additional applications for STABILOY® MC Cable with PVC jacket over armor include:

- Outdoors
- In wet locations (Type XHHW-2 conductors)
- Direct burial
- Encased in concrete
- Exterior/Interior temporary power
- As aerial cable on a messenger
- Hazardous locations Class 1, Div. 2 and below

Through-Penetration Fire Stop Systems

UL SYSTEMS #W-L-3041

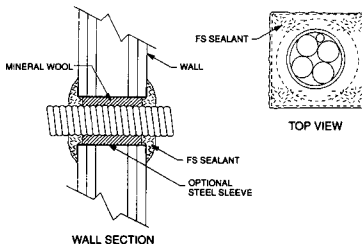
Fire Rating: 2 hours

Temperature Rating: 1/2 hour

Assembly: Wall assembly, 2 hour gypsum wall board

Penetrating Item: STABILOY® Type MC Cable – with or without PVC jacket

Firestop Product: 3M Company. Fire Stop Sealant Types FB-2000 or FB 2000+ as applicable



Alcan Cable stocks a selection of sizes of Jacketed and Unjacketed STABILOY® MC Cable for immediate availability.

Flammability Properties:

STABILOY® MC Cable with and without jacket are listed for use on through-penetrating product along with listed through-penetrating fire stop systems per UL Fire Stop Systems C-AJ-3041 and W-L-3041. These are just a few examples of acceptable fire stop systems that can be used with Alcan Cable's MC Cable. Consult the fire stop manufacturers' information for additional acceptable systems.

Unjacketed STABILOY® MC Cable constructions meet the requirements for Limited Smoke rating per FT4/IEEE 1202 procedure per UL Standard 1685, Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables.

Through-Penetration Fire Stop Systems

UL SYSTEMS #C-AJ-3041

Fire Rating: 3 hours

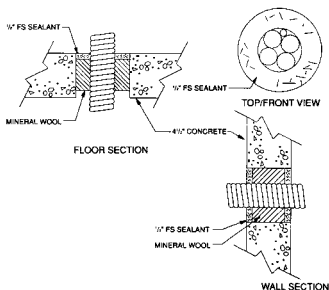
Temperature Rating: 1/2 hour

Assembly: Floor or wall assembly, 4 1/2" light or normal weight concrete or block wall

Penetrating Item: STABILOY® Type MC Cable – with or without PVC jacket

Firestop Product:

3M Company
Fire Stop Sealant types
FB-2000, FB-2000+,
or FB 2003 (floors only)
as applicable





STABILOY[®] MC CABLE

Three Conductor with Ground										
CONDUCTOR SIZE ¹ (AWG/kcmil)	DIAMETER (Inches)			LENGTH (Feet)	REEL SIZE		WEIGHT (LBS/MFT)		RATING OF OC DEVICE ⁵ (75 °C) (AMP)	RATED AMPACITY (75 °C) (AMP)
	SUB- ASSEMBLY ²	W/O JKT. ³	JKT. ⁴		W/O JKT.	JKT.	W/O JKT.	JKT.		
6-6-6-6	0.63	0.83	0.93	1000	36.22.18	36.22.18	237	320	50	50
4-4-4-6	0.72	0.93	1.03	1000	36.22.18	36.22.18	308	399	70	65
2-2-2-6	0.81	1.03	1.13	1000	38.22.20	42.28.20	402	503	90	90
1-1-1-4	0.94	1.16	1.26	1000	42.28.20	42.28.20	504	617	100	100
1/0-1/0-1/0-4	1.00	1.23	1.33	1000	42.28.20	42.28.20	584	703	125	120
2/0-2/0-2/0-4	1.05	1.28	1.38	1000	42.28.20	48.24.24	674	798	150	135
3/0-3/0-3/0-4	1.13	1.36	1.46	1000	48.28.24	48.28.24	796	928	175	155
4/0-4/0-4/0-2	1.27	1.51	1.63	1000	60.28.28	60.28.28	1005	1181	200	180
250-250-250-2	1.38	1.63	1.75	500	48.28.30	48.28.30	1166	1355	225	205
300-300-300-2	1.47	1.72	1.84	500	48.28.30	48.28.30	1337	1536	250	230
350-350-350-2	1.54	1.80	1.92	500	48.28.30	48.28.36	1505	1713	250	250
400-400-400-1	1.64	1.91	2.03	500	48.28.30	60.28.30	1692	1913	300	270
500-500-500-1	1.77	2.04	2.16	500	60.28.36	60.28.36	2023	2258	350	310
600-600-600-1	1.96	2.24	2.36	500	60.28.36	60.28.36	2416	2674	350	340
700-700-700-1/0	2.10	2.39	2.53	500	66.32.42	66.32.42	2765	3115	400	375
750-750-750-1/0	2.15	2.44	2.59	500	55.32.42	66.32.42	2926	3278	400	385
Four Conductor with Ground										
6-6-6-6-6	0.70	0.92	1.02	1000	36.22.18	38.22.20	286	377	50	50
4-4-4-4-6	0.77	1.04	1.14	1000	38.22.20	42.28.20	373	474	70	65
2-2-2-2-6	0.93	1.17	1.27	1000	42.28.20	42.28.20	503	617	90	90
1-1-1-1-4	1.07	1.31	1.41	1000	42.28.20	42.28.20	630	757	100	100
1/0-1/0-1/0-1/0-4	1.15	1.40	1.50	1000	42.28.20	48.28.24	736	871	125	120
2/0-2/0-2/0-2/0-4	1.26	1.47	1.64	1000	48.28.20	48.28.24	887	1071	150	135
3/0-3/0-3/0-3/0-4	1.32	1.58	1.70	1000	48.28.24	60.28.28	1051	1235	175	155
4/0-4/0-4/0-4/0-2	1.46	1.73	1.85	1000	60.28.28	60.28.28	1280	1480	200	180
250-250-250-250-1	1.62	1.89	2.01	500	48.28.30	60.28.36	1510	1730	225	205
300-300-300-300-1	1.73	2.01	2.13	500	60.28.36	60.28.36	1738	1970	250	230
350-350-350-350-1/0	1.85	2.13	2.25	500	60.28.36	60.28.36	1985	2231	250	250
400-400-400-400-1/0	1.94	2.23	2.35	500	60.28.36	60.28.36	2207	2468	300	270
500-500-500-500-2/0	2.13	2.43	2.58	500	60.28.36	60.28.36	2677	3028	350	310
500-500-500-500-250	2.21	2.51	2.66	500	60.28.36	60.28.36	2798	3166	350	310
600-600-600-600-2/0	2.37	2.68	2.83	500	66.32.42	66.32.42	3199	3591	350	340
600-600-600-600-400	2.52	2.84	2.99	500	66.32.42	66.32.42	3473	3886	350	340
700-700-700-700-2/0	2.50	2.83	2.98	500	66.32.42	-	3630	4043	400	375
750-750-750-750-3/0	2.60	2.93	3.08	500	66.32.42	-	3880	4300	400	385
750-750-750-750-750	2.86	3.20	3.37	500	66.32.42	-	4469	4998	400	385



Unique from Alcan Cable

Four Conductor with Ground (For Parallel Runs)			
CONDUCTOR SIZE ¹ (AWG/kcmil)	RATING OF OC DEVICE ⁵ (75° C) (AMP)	CONDUCTOR SIZE ¹ (AWG/kcmil)	RATING OF OC DEVICE ⁵ (75° C) (AMP)
250-250-250-250-1	400 (2)	600-600-600-600-400	1000 (3) 1600 (5) 2000 (6)
500-500-500-500-2/0	600 (2)	750-750-750-750-3/0	800 (2)
500-500-500-500-250	600 (2) 1200 (4)	750-750-750-750-750	2500 (7) 3000 (8) 4000 (11)

¹ Sizes shown in bold are in-stock items.

Lengths cut to order. Other sizes and configurations available upon request.

^{2,3,4} Diameter of conductor assembly without armor, Diameter of cable with armor, and Diameter of cable with PVC jacket over armor.

⁵ The rating of the overcurrent device shown above is in accordance with the NEC. See 240-3 and 240-6. Also, see 110.14 and Table 310.16 of the NEC.

Available Fittings for Non-PVC Jacketed STABILOY® MC Cable

THREE CONDUCTOR WITH GROUND							
Size	Subassembly*	O.D.	American	Arlington		O-Z/Gedney	Thomas & Betts
				Squeeze	Cable		
6-6-6-6	0.63	0.83	(***)-090-075	-	8403	PK101;PK101A	ST075-467
4-4-4-6	0.72	0.93	(***)-097-100	-	8403	PK101;PK101A	ST075-467
2-2-2-6	0.81	1.03	(***)-111-100	-	8403	PK125;PK125A	ST075-468
1-1-1-4	0.94	1.16	(***)-125-125	-	8404	PK125;PK125A	ST100-469
1/0-1/0-1/0-4	1.00	1.23	(***)-132-125	-	8404	PK125;PK125A	ST100-469
2/0-2/0-2/0-4	1.05	1.28	(***)-132-125	-	-	PK150;PK150A	ST125-470
3/0-3/0-3/0-4	1.13	1.36	(***)-139-125	-	-	PK150;PK150A	ST125-470
4/0-4/0-4/0-2	1.27	1.51	(***)-157-150	-	8405	PK200;PK200A	ST125-550
250-250-250-2	1.38	1.63	(***)-166-150	-	8407	PK200;PK200A	ST150-472
300-300-300-2	1.47	1.72	(***)-175-200	-	8407	PK200;PK200A	ST150-472
350-350-350-2	1.54	1.80	(***)-184-200	-	8407	PK250;PK250A	ST150-472
400-400-400-1	1.64	1.91	(***)-202-200	-	84075	PK250;PK250A	ST200-551
500-500-500-1	1.77	2.04	(***)-213-250-F	-	8408	PK250;PK250A	ST200-474
600-600-600-1	1.96	2.24	(***)-235-250-F	-	-	PK300;PK300A	ST200-474
700-700-700-1/0	2.10	2.39	(***)-246-250-F	-	-	PK300;PK300A	ST250-477
750-750-750-1/0	2.15	2.44	(***)-257-250-F	-	8409	PK300;PK300A	ST250-477
FOUR CONDUCTOR WITH GROUND							
Size	Subassembly*	O.D.	American	Arlington		O-Z/Gedney	Thomas & Betts
				Squeeze	Cable		
6-6-6-6-6	0.70	0.92	(***)-097-100	-	8403	PK125;PK125A	ST075-467
4-4-4-4-6	0.77	1.04	(***)-111-100	-	-	PK125;PK125A	ST075-468
2-2-2-2-6	0.93	1.17	(***)-125-125	-	8404	PK125;PK125A	ST100-469
1-1-1-1-4	1.07	1.31	(***)-139-125	-	-	PK150;PK150A	ST125-470
1/0-1/0-1/0-1/0-4	1.15	1.40	(***)-148-150	-	-	PK150;PK150A	ST125-470
2/0-2/0-2/0-2/0-4	1.26	1.47	(***)-157-150	-	8405	PK200;PK200A	ST125-550
3/0-3/0-3/0-3/0-4	1.32	1.58	(***)-166-150	-	8405	PK200;PK200A	ST125-550
4/0-4/0-4/0-4/0-2	1.46	1.73	(***)-184-200	-	8407	PK200;PK200A	ST150-472
250-250-250-250-1	1.62	1.89	(***)-193-200	-	-	PK250;PK250A	ST200-551
300-300-300-300-1	1.73	2.01	(***)-213-200-F	-	8408	PK250;PK250A	ST200-474
350-350-350-350-1/0	1.85	2.13	(***)-224-250-F	-	8408	PK250;PK250A	ST200-474
400-400-400-400-1/0	1.94	2.23	(***)-235-250-F	-	-	PK250;PK250A	ST200-474
500-500-500-500-2/0	2.13	2.43	(***)-246-250-F	-	8409	PK300;PK300A	ST250-477
500-500-500-500-250	2.21	2.51	(***)-257-250-F	-	8409	PK300;PK300A	ST250-477
600-600-600-600-2/0	2.37	2.68	(***)-270-300-F	-	-	PK300;PK300A	ST250-478
600-600-600-600-400	2.52	2.84	(***)-299-300-F	-	-	PK300;PK300A	ST300-479
700-700-700-700-2/0	2.50	2.83	(***)-299-300-F	-	-	PK350;PK350A	ST300-479
750-750-750-750-3/0	2.60	2.93	(***)-299-300-F	-	8410	PK350;PK350A	ST300-479
750-750-750-750-750	2.86	3.2	(***)-328-350-F	L428	-	PK350;PK350A	ST300-480

* Diameter of cable without armor.

Consult accessory manufacturer for details. This information is suggested for guidance only and should be verified with the fitting manufacturer prior to installation.

THREE CONDUCTOR WITH GROUND						
Size	Subassembly*	O.D.	ADALET-PLM	Appleton	Crouse-Hinds	Bridgeport
6-6-6-6	0.63	0.83	AC10	TMC8875	TMC3112	683-DC12
4-4-4-6	0.72	0.93	AC10	TMC8875	TMC3112	683-DC2
2-2-2-6	0.81	1.03	AC12	TMC118100	TMC3112	683-DC2
1-1-1-4	0.94	1.16	AC12	TMC118100	TMC4140	684-DC2
1/0-1/0-1/0-4	1.00	1.23	AC12	TMC140125	TMC4140	684-DC2
2/0-2/0-2/0-4	1.05	1.28	AC14	TMC140125	TMC4140	685-DC2
3/0-3/0-3/0-4	1.13	1.36	AC14	TMC166150	TMC5161	685-DC2
4/0-4/0-4/0-2	1.27	1.51	AC16	TMC166150	TMC5161	-
250-250-250-2	1.38	1.63	AC16	TMC206200	TMC6206	-
300-300-300-2	1.47	1.72	AC18	TMC206200	TMC6206	-
350-350-350-2	1.54	1.80	AC18	TMC206200	TMC6206	686-DC2
400-400-400-1	1.64	1.91	AC20	TMC206200	TMC6206	686-DC2
500-500-500-1	1.77	2.04	AC20	TMC251250	TMC7247	687-DC2
600-600-600-1	1.96	2.24	AC22	TMC251250	TMC7247	-
700-700-700-1/0	2.10	2.39	AC24	TMC251250	TMC7247	-
750-750-750-1/0	2.15	2.44	AC24	TMC251250	TMC7247	688-DC2
FOUR CONDUCTOR WITH GROUND						
Size	Subassembly*	O.D.	ADALET-PLM	Appleton	Crouse-Hinds	Bridgeport
6-6-6-6-6	0.70	0.92	AC10	TMC118100	TMC3112	683-DC2
4-4-4-4-6	0.77	1.04	AC10	TMC118100	TMC3112	683-DC2
2-2-2-2-6	0.93	1.17	AC12	TMC140125	TMC4140	684-DC2
1-1-1-1-4	1.07	1.31	AC14	TMC140125	TMC4140	685-DC2
1/0-1/0-1/0-1/0-4	1.15	1.40	AC14	TMC166150	TMC5161	685-DC2
2/0-2/0-2/0-2/0-4	1.26	1.47	AC16	TMC166150	TMC5161	-
3/0-3/0-3/0-3/0-4	1.32	1.58	AC16	TMC166150	TMC6206	-
4/0-4/0-4/0-4/0-2	1.46	1.73	AC18	TMC206200	TMC6206	-
250-250-250-250-1	1.62	1.89	AC20	TMC206200	TMC6206	686-DC2
300-300-300-300-1	1.73	2.01	AC20	TMC251250	TMC7247	687-DC2
350-350-350-350-1/0	1.85	2.13	AC22	TMC251250	TMC7247	687-DC2
400-400-400-400-1/0	1.94	2.23	AC22	TMC251250	TMC7247	-
500-500-500-500-2/0	2.13	2.43	AC24	TMC251250	TMC7247	688-DC2
500-500-500-500-250	2.21	2.51	AC26	TMC304300	TMC8302	688-DC2
600-600-600-600-2/0	2.37	2.68	AC28	TMC304300	TMC8302	688-DC2
600-600-600-600-400	2.52	2.84	AC28	TMC304300	TMC8302	-
700-700-700-700-2/0	2.50	2.83	AC28	TMC304300	TMC8302	-
750-750-750-750-3/0	2.60	2.93	AC30	TMC304300	TMC8302	689-DC2
750-750-750-750-750	2.86	3.2	AC32	TMC359350	TMC9352	689-DC2

NOTICE:

This information is presented in good faith but no warranty, express or implied, is given nor is freedom from any patent owned by Alcan or by others to be inferred. While reference is made to procedures and practices of the National Electrical Code and other specifying agencies, the appropriate local codes must be reviewed prior to any electrical contractor installations.



STABILOY® XHHW-2

Alcan manufactures STABILOY® XHHW-2 cables which are intended for use in general purpose wiring in residential, commercial and industrial construction. As with all STABILOY® building wire, these products are high quality, dependable and offer tremendous flexibility. In addition, STABILOY® XHHW-2 conductors meet the requirements of UL-44, and are approved for use in accordance with the recommendations of the National Electrical Code. STABILOY® alloy conductor is recognized by ASTM in Standards B800, B801, B836 and B901.

Description

STABILOY® XHHW-2 is a compact stranded conductor with black cross-linked polyethylene (XLPE) insulation.

Application

Installed in raceways for general-purpose wiring for up to 600V rated service and feeder circuits in residential, commercial, institutional and industrial buildings. Also, used in messenger supported wiring applications.

Marking

Conductors will bear the following surface marking: ALCAN (PLANT OF MFG.) (SIZE) (AWG / MM²) COMPACT STABILOY® AA-8030 AL XLPE 600V XHHW-2 SUN-RES (UL) YEAR NOM ANCE

Available Options

Contact Alcan Cable for: 600V XHHW-2 conductors rated for “CT USE” and other markings.

Size AWG or kcmil	NOMINAL DIMENSIONS					NOMINAL WEIGHT (LBS./1000FT.)		STANDARD PACKAGE	
	Insulation Thickness (Mils)	BARE Conductor Diameter (Inches)	XHHW-2 Conductor Diameter (Inches)	Bare Conductor Area (Sq. Inches)	XHHW-2 Conductor Area (Sq. Inches)	STABILOY	Total	Length	Reel
6	45	.169	.260	.0224	.0530	25	39	1000'	NRC 16.15
4	45	.213	.305	.0356	.0730	39	57	1000'	NRC 16.15
2	45	.268	.360	.0564	.1017	62	84	1000'	NRC 21.15
1	55	.299	.415	.0702	.1352	79	108	1000'	NRC 21.15
1/0	55	.336	.450	.0887	.1590	99	132	1000'	NRC 21.15
2/0	55	.376	.490	.1110	.1885	125	161	1000'	NRC 21.18
3/0	55	.423	.540	.1405	.2290	157	198	1000'	NRC 24.15
4/0	55	.475	.590	.1772	.2733	199	244	1000'	NRC 24.18
250	65	.520	.655	.2124	.3370	235	292	1000'	NRC 27.18
300	65	.570	.705	.2552	.3904	282	344	1000'	NRC 30.18
350	65	.616	.750	.2980	.4418	329	396	1000'	NRC 30.24
400	65	.659	.795	.3411	.4964	376	448	1000'	NRC 32.24
500	65	.736	.870	.4254	.5945	469	550	1000'	NRC 32.24
600	80	.813	.980	.5191	.7542	563	671	1000'	NRC 36.24
700	80	.877	1.040	.6041	.8494	657	774	1000'	NRC 40.24
750	80	.908	1.075	.6475	.9076	704	824	1000'	NRC 40.24
900	80	.999	1.169	.7838	1.0733	847	983	1000'	NRC 42.26
1000	80	1.060	1.230	.8825	1.1882	939	1079	1000'	NRC 48.25

NOTES:

1. Data are approximate and subject to normal manufacturing tolerances.
2. Standard lengths are subject to normal manufacturing tolerances of $\pm 10\%$.
3. Two, three or four conductors can be paralleled on a reel.
4. The suffix -2 indicates that these wire types can be used at a continuous 90°C operating temperature in wet and dry locations.



STABILOY® USE-2/RHH/RHW-2

Alcan manufactures STABILOY® USE-2/RHH/RHW-2 cables, which are intended for use in general purpose wiring in residential, commercial and industrial construction. This cable is specifically designed for use in underground power distribution and network systems including burial directly in the earth. STABILOY® USE-2/RHH/RHW - 2 conductors exceed the requirements of the Underwriters Laboratories, Inc., Standard UL-854, and are approved for use in accordance with the recommendations of the National Electrical Code. STABILOY® is recognized by ASTM in Standards B800, B801, B836 and B901.

Description

STABILOY® USE - 2/RHH/RHW-2 is a compact stranded conductor with black cross-linked polyethylene (XLPE) insulation.

Application

Primarily used as Type USE-2 direct-buried underground service entrance, but is also listed for RHH or RHW-2 making it suitable for interior applications in raceways for general purpose lighting and power circuits. This multiple listing offers a unique advantage to the installer to purchase one product that is suitable for installation on both sides of the service point and where the service point is located within the envelope of the building.

Marking

Conductors will bear the following surface marking:

Three conductor cables with ground will bare the following surface marking: ALCAN (PLANT OF MFG.) (SIZE) (AWG / MM2)
COMPACT STABILOY® AA-8030 AL XLPE 600V USE-2 OR
RHH OR RHW-2 SUN-RES (UL) YEAR

Available Options

Contact Alcan Cable for:

1. 600V RHH or RHW-2 conductors rated for “CT USE” and other markings.
2. 2000V RHH or RHW-2 conductors
3. 2000V RHH or RHW-2 conductors rated for “CT USE” and other markings.

Size AWG or kcmil	NOMINAL DIMENSIONS			NOMINAL WEIGHT (lbs./1000 ft.)		STANDARD PACKAGE	
	Insulation Thickness (Mils)	Conductor Diameter (Inches)	USE-2 Conductor Diameter (Inches)	STABILOY	Total	Length	Reel
6	60	.169	.290	25	44	1000'	NRC 16.15
4	60	.213	.335	39	63	1000'	NRC 16.15
2	60	.268	.390	62	92	1000'	NRC 21.15
1	80	.299	.460	79	122	1000'	NRC 21.15
1/0	80	.336	.500	99	148	1000'	NRC 21.18
2/0	80	.376	.540	125	179	1000'	NRC 24.15
3/0	80	.423	.590	157	217	1000'	NRC 24.18
4/0	80	.475	.635	199	265	1000'	NRC 27.18
250	95	.520	.710	235	320	1000'	NRC 30.18
300	95	.570	.760	282	374	1000'	NRC 30.24
350	95	.616	.810	329	428	1000'	NRC 30.24
400	95	.659	.850	376	482	1000'	NRC 32.24
500	95	.736	.930	469	588	1000'	NRC 32.24
600	110	.813	1.035	563	713	1000'	NRC 36.24
700	110	.877	1.100	657	818	1000'	NRC 40.24
750	110	.908	1.130	704	870	1000'	NRC 40.24
900	110	.999	1.239	847	1042	1000'	NRC 48.28
1000	110	1.060	1.280	939	1132	1000'	NRC 48.28

NOTES:

1. Data are approximate and subject to normal manufacturing tolerances.
2. Standard lengths are subject to normal manufacturing tolerances of $\pm 10\%$.
3. Two, three or four conductors can be paralleled on a reel.
4. The suffix -2 indicates that these wire types can be used at a continuous 90°C operating temperature in wet and dry locations.



STABILOY® Service Entrance Cable Type SE Style R

Alcan manufactures SE Style R (SER) Service Entrance Cable which can be used for both above ground and interior wiring applications. As with all STABILOY® products, SER cable is high quality, dependable and offers tremendous flexibility. In addition, all STABILOY® SE type cable exceeds the requirements of the Underwriters Laboratories, Inc., Standard UL-854, and is approved for use in accordance with the recommendations of the National Electrical Code. STABILOY® alloy conductor is recognized by ASTM in Standards B800, B801, B836 and B901.

Description

The insulated conductors in SER cable are phase-identified. One insulated conductor has a single longitudinal red stripe, one is painted completely white or with three continuous white stripes and the last conductor is black. If applicable, a fourth insulated conductor has a single longitudinal blue stripe. The conductors are twisted together and wrapped with a glass-reinforced tape. The PVC jacket is then extruded over the assembly for a completed product.

Application

SER is used for above ground service entrance, feeders and branch circuits in residential and commercial installations. May be used in direct sunlight or installed in conduit.

Marking

Conductors will bear the following surface marking:

Three conductor cables with ground will bare the following surface marking: ALCAN (PLANT OF MFG.) STABILOY® AA-8030

AL TYPE SE CABLE STYLE R XHHW-2 600V 3 CDRS (SIZE)

(AWG / MM2) 1 CDR (SIZE) (AWG / MM2) SUN-RES (UL) YEAR

STABILOY® SER Specifications

Two Conductor SER with a Bare Ground						
INSULATED CONDUCTOR Size/AWG	BARE CONDUCTOR Stranding	NOMINAL DIAMETER (Inches)	NOMINAL WEIGHT (lbs./1000 ft.)		STANDARD PACKAGE	
			STABILOY	Total	Length	Reel
8	8	0.488	46	97	1000'	24x15
6	6	0.574	74	138	1000'	24x18
4	6	0.632	104	177	1000'	27x18
4	4	0.669	118	193	1000'	27x18
2	4	0.748	165	254	1000'	30x18
2	2	0.788	188	280	1000'	30x18
1	1	0.884	237	349	1000'	30x24
1/0	2	0.915	237	384	500'	24x18
1/0	1/0	0.964	299	423	500'	27x18
2/0	1	0.951	330	459	500'	27x18
2/0	2/0	1.050	377	513	500'	30x18
4/0	2/0	1.193	526	690	500'	30x24
4/0	4/0	1.264	599	766	500'	30x24
Three Conductor SER with a Bare Ground						
8	8	0.571	61	128	1000'	24x18
6	6	0.650	99	182	1000'	27x18
4	6	0.736	143	240	1000'	30x24
2	4	0.863	228	346	1000'	30x24
1	3	0.973	287	435	1000'	34x26
1/0	2	1.061	362	526	500'	30x24
2/0	1	1.164	456	637	500'	30x24
3/0	1/0	1.274	576	776	500'	32x24
4/0	2/0	1.390	726	948	500'	36x24
250	3/0	1.601	868	1106	500'	40x24
300	4/0	1.741	1052	1311	500'	42x26
Four Conductor SER with a Bare Ground						
2	4	0.973	291	438	1000'	36x24
2/0	1	1.299	581	807	500'	36x24
4/0	2/0	1.557	926	1204	500'	40x24
250	3/0	1.798	1105	1404	500'	42x26
300	4/0	1.950	1335	1662	500'	42x28

NOTES:

1. Data are approximate and subject to normal manufacturing tolerances.

2. Standard lengths are subject to normal manufacturing tolerances of $\pm 10\%$.

*Also available in two conductor with ground and four conductor with ground cable assemblies.

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STABILOY® Service Entrance Cable Type SE Style U

Alcan manufactures SE Style U (SEU) Service Entrance Cable which can be used for both above ground and interior wiring applications. As with all STABILOY® products, SEU cable is high quality, dependable and offers tremendous flexibility. In addition, all STABILOY® SE type cable exceed the requirements of the Underwriters Laboratories, Inc., Standard UL854, and are approved for use in accordance with the recommendations of the National Electrical Code. STABILOY® alloy conductor is recognized by ASTM in Standards B800, B801, B836 and B901.

Description

The insulated conductors in SEU cable are phase-identified. One insulated conductor has a single longitudinal red stripe, while the second is all black. The bare conductor strands are then helically wound around the two paralleled insulated conductors then wrapped with a glass-reinforced tape. The PVC jacket is then extruded over the assembly for a completed product.

Application

SEU is used for above ground service entrance, feeders and branch circuits in residential and commercial installations. May be used in direct sunlight or installed in conduit.

Marking:

ALCAN (PLANT OF MFG.) STABILOY® AA-8030 AL TYPE SE
CABLE STYLE U XHHW-2 600V 3 CDRS (SIZE) (AWG / MM2)
1 CDR (SIZE) (AWG / MM2) SUN-RES (UL) YEAR

STABILOY® SEU Specifications

Two Conductor SEU with a Bare Ground						
INSULATED CONDUCTOR Size/AWG	BARE CONDUCTOR Stranding	NOMINAL DIAMETER (Inches)	NOMINAL WEIGHT (lbs./1000 ft.)		STANDARD PACKAGE	
			STABILOY	Total	Length	Reel
8	8	0.407 x 0.626	47	104	1000'	24x15
6	6	0.458 x 0.720	75	143	1000'	24x18
4	6	0.502 x 0.808	104	184	1000'	27x18
4	4	0.505 x 0.811	118	198	1000'	27x18
2	4	0.559 x 0.919	165	259	1000'	30x18
2	2	0.559 x 0.919	188	282	1000'	30x18
1	1	0.625 x 1.037	236	353	1000'	30x24
1/0	2	0.647 x 1.095	261	387	500'	27x18
1/0	1/0	0.661 x 1.095	298	438	500'	27x18
2/0	1	0.702 x 1.190	329	467	500'	27x18
2/0	2/0	0.719 x 1.208	376	516	500'	27x18
4/0	2/0	0.818 x 1.406	524	692	500'	30x24
4/0	4/0	0.857 x 1.445	598	770	500'	30x24

NOTES:

1. Data are approximate and subject to normal manufacturing tolerances.

2. Standard lengths are subject to normal manufacturing tolerances of $\pm 10\%$.

*Also available in two conductor with ground and four conductor with ground cable assemblies.

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STABILOY XHHW-2 vs. Copper THWN & THHN Ampacities and Correction Factors

Conductor Size AWG or kcmil	AMPACITIES (AMPS) [†]				Conductor Size AWG or kcmil
	COPPER		STABILOY		
	THWN (75°C)	THHN, THHN-2 (90°C)	XHHW (75°C)	XHHW-2 (90°C)	
6	65	75	50	60	6
4	85	95	65	75	4
2	115	130	90	100	2
1	130	150	100	115	1
1/0	150	170	120	135	1/0
2/0	175	195	135	150	2/0
3/0	200	225	155	175	3/0
4/0	230	260	180	205	4/0
250	255	290	205	230	250
300	285	320	230	255	300
350	310	350	250	280	350
400	335	380	270	305	400
500	380	430	310	350	500
600	420	475	340	385	600
700	460	520	375	420	700
750	475	535	385	435	750
900	520	585	425	480	900

NOTES:

1. Based on NEC Table 310.16.

† See termination provisions for conductor sizing as given in Underwriters Laboratories Electrical Construction Materials Directory, "Equipment for Use in Ordinary Locations."

Allowable Ampacities[†] **30°C (86°F) Ambient Temperature**

Ampacities are based on conductor operating temperatures only and do not take voltage drop into consideration.

When the number of current carrying conductors in a raceway or cable exceeds three, the allowable ampacity of each conductor shall be reduced to the following percentages of tabular values:

4 to 6	80%
7 to 9	70%
10 to 20	50%
21 to 30	45%
31 to 40	40%

In dwelling units, NEC 310.15 (B)(6) conductors are permitted to be utilized as 120/240 volt, 3-wire, single-phase service entrance conductors and feeder conductors in raceway or cable with or without an equipment grounding conductor. The allowable ampacity for Types XHHW-2, RHW-2 and RHH aluminum conductors are:

Size	Amps	Size	Amps	Size	Amps
#2AWG	100	3/0	175	350kcmil	300
1	110	4/0	200	500kcmil	350
1/0	125	250kcmil	225	600kcmil	400
2/0	150	300kcmil	250		

STABILOY[®] Type XHHW-2 and Type USE-2/RHH/RHW-2 conductors can be operated at 90°C in dry AND wet locations. This characteristic is advantageous when derating of conductor ampacity is required, for example, when there are four or more current carrying conductors in a raceway or cable in a wet location. In this instance one can begin with the 90°C ampacity from which to derate.

System design loads falling between values listed in this table for copper THHN often permit the use of a smaller STABILOY[®] conductor than would be necessary based on the maximum ampacity of the copper conductor required.

Example:

For a design load of 380 amps, the required 500 kcmil copper THHN conductor would have to be replaced by a 750 kcmil STABILOY[®] conductor (75°C, wet location). However, if the design load was between 336 and 375 amps (still requiring 500 kcmil copper), a 700 kcmil STABILOY[®] conductor would be adequate.

STABILOY Ampacities and Correction Factors

Size AWG or kcmil	NOT MORE THAN THREE* SINGLE INSULATED		SINGLE INSULATED CONDUCTOR IN FREE AIR**		Size AWG or kcmil
	CONDUCTORS IN A RACEWAY IN FREE AIR**		SINGLE INSULATED CONDUCTOR IN FREE AIR**		
	75°C (167°F) XHHW, RHH, RHW, USE	90°C (194°F) XHHW-2, RHH, RHW-2, USE-2	75°C (167°F) XHHW, RHH, RHW, USE	90°C (194°F) XHHW-2, RHH, RHW-2, USE-2	
8	40	45	55	60	8
6	50	60	75	80	6
4	65	75	100	110	4
2 [†]	90	100	135	150	2 [†]
1 [†]	100	115	155	175	1 [†]
1/0 [†]	120	135	180	205	1/0 [†]
2/0 [†]	135	150	210	235	2/0 [†]
3/0 [†]	155	175	240	275	3/0 [†]
4/0 [†]	180	205	280	315	4/0 [†]
250	205	230	315	355	250
300	230	255	350	395	300
350	250	280	395	445	350
400	270	305	425	480	400
500	310	350	485	545	500
600	340	385	540	615	600
700	375	420	595	675	700
750	385	435	620	700	750
900	425	480	700	785	900

NOTES:

1. Ampacities are based on conductor operating temperatures only and do not take voltage drop into consideration.
2. A neutral conductor which carries only the unbalanced current from other conductors, as in the case of normally balanced circuits of three or more conductors, shall not be counted in determining Ampacity Adjustment Factors. But in a three-wire circuit consisting of two phase wires and the neutral of a four-wire three-phase Wye-connected system, a common conductor carries approximately the same current as the other conductors and shall be counted in determining ampacities.
3. Based on Ambient Air Temperature of 30°C (86°F).

* See 310.15(B)(4)

** See termination provisions for conductor sizing as given in Underwriters Laboratories Electrical Construction Materials Directory, "Equipment for Use in Ordinary Locations."

† In dwelling units, conductors shall be permitted to be utilized as 120/240 volt, 3-wire, single-phase service entrance conductors and feeder conductors in raceway or cable with or without an equipment grounding conductor. The allowable ampacity for Types XHHW-2, RHW-2 and RHH aluminum conductors shall be:

Size	Amps	Size	Amps	Size	Amps
#2AWG	100	3/0	175	350kcmil	300
1	110	4/0	200	500kcmil	350
1/0	125	250kcmil	225	600kcmil	400
2/0	150	300kcmil	250		

AMPACITY CORRECTION FACTORS

Ambient Temp. °C	For ambient temperatures other than 30°C (86°F), multiply the ampacities shown above by the appropriate factor shown below.		Ambient Temp. °F
	75°C	90°C	
21–25	1.05	1.04	70–77
26–30	1.00	1.00	79–86
31–35	.94	.96	88–95
36–40	.88	.91	97–104
41–45	.82	.87	106–113
46–50	.75	.82	115–122
51–55	.67	.76	124–131
56–60	.58	.71	133–140
61–70	.33	.58	142–158
71–80	–	.41	160–176

MAXIMUM NUMBER OF TYPE XHHW-2 COMPACT STABLOY®

CONDUCTOR SIZE AWG/KCMIL	TABLE C7A												TABLE C9A				
	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT												RIGID PVC				
	TRADE SIZES IN INCHES												TRADE				
	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	1/2	3/4	1	1 1/4	1 1/2	
6	1	2	4	6	11	15	24	37	56	73	95	1	3	5	9	13	
4	1	1	3	4	8	11	17	26	41	53	69	1	1	3	6	9	
2	1	1	1	3	6	7	12	19	29	38	50	1	1	2	5	6	
1	0	1	1	2	4	6	9	14	22	28	37	1	1	1	3	5	
1/0	0	1	1	1	4	5	8	12	19	24	32	0	1	1	3	4	
2/0	0	1	1	1	3	4	7	10	16	20	27	0	1	1	2	3	
3/0	0	0	1	1	2	3	5	8	13	17	22	0	1	1	1	3	
4/0	0	0	1	1	1	3	4	7	11	14	18	0	0	1	1	2	
250	0	0	1	1	1	1	3	5	8	11	15	0	0	1	1	1	
300	0	0	0	1	1	1	3	5	7	9	12	0	0	1	1	1	
350	0	0	0	1	1	1	3	4	6	8	11	0	0	1	1	1	
400	0	0	0	1	1	1	2	4	6	7	10	0	0	0	1	1	
500	0	0	0	0	1	1	1	3	5	6	8	0	0	0	1	1	
600	0	0	0	0	1	1	1	2	4	5	6	0	0	0	1	1	
700	0	0	0	0	1	1	1	1	3	4	6	0	0	0	0	1	
750	0	0	0	0	1	1	1	1	3	4	5	0	0	0	0	1	
900	0	0	0	0	0	1	1	2	2	3	4	0	0	0	0	1	
1000	0	0	0	0	0	1	1	1	2	3	4	0	0	0	0	0	

CONDUCTOR SIZE AWG/KCMIL	TABLE C8A												TABLE C10A		
	RIGID METALLIC CONDUIT												RIGID PVC		
	TRADE SIZES IN INCHES												TRADE		
	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	1/2	3/4	1
6	2	4	6	11	15	25	36	56	75	97	152	220	1	4	6
4	1	3	5	8	11	18	26	41	55	70	110	159	1	2	4
2	1	1	3	6	8	13	19	29	39	50	79	114	1	1	3
1	1	1	2	4	6	10	14	22	29	38	60	86	1	1	2
1/0	1	1	1	4	5	8	12	19	25	32	51	73	1	1	1
2/0	1	1	1	3	4	7	10	16	21	27	43	62	1	1	1
3/0	0	1	1	2	3	6	8	13	17	22	35	51	0	1	1
4/0	0	1	1	1	3	5	7	11	14	19	29	42	0	1	1
250	0	1	1	1	2	4	5	8	11	15	23	34	0	0	1
300	0	0	1	1	1	3	5	7	10	13	20	29	0	0	1
350	0	0	1	1	1	3	4	6	9	11	18	25	0	0	1
400	0	0	1	1	1	2	4	6	8	10	16	23	0	0	1
500	0	0	0	1	1	1	3	5	6	8	13	19	0	0	0
600	0	0	0	1	1	1	2	4	5	7	10	15	0	0	0
700	0	0	0	1	1	1	1	3	4	6	9	13	0	0	0
750	0	0	0	1	1	1	1	3	4	5	8	12	0	0	0
900	0	0	0	0	1	1	2	2	3	5	7	10	0	0	0
1000	0	0	0	0	1	1	1	2	3	4	7	10	0	0	0

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ALUMINUM ALLOY CONDUCTORS IN CONDUIT

								TABLE C11A									
CONDUIT, Schedule 80								Type A RIGID PVC CONDUIT									
SIZES IN INCHES								TRADE SIZES IN INCHES									
2	2 1/2	3	3 1/2	4	5	6		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
21	31	48	65	85	134	193		3	5	8	13	17	27	41	62	80	103
15	22	35	47	61	98	140		1	3	6	9	12	20	30	45	58	75
11	16	25	34	44	70	100		1	2	4	7	9	14	21	32	42	54
8	12	19	25	33	53	75		1	1	3	5	7	10	16	24	31	40
7	10	16	22	28	45	64		1	1	2	4	6	9	13	20	27	34
6	8	13	18	24	38	54		1	1	1	3	5	7	11	17	22	29
5	7	11	15	19	31	44		1	1	1	3	4	6	9	14	18	24
4	6	9	12	16	26	37		0	1	1	2	3	5	8	12	15	20
3	5	7	10	13	21	30		0	1	1	1	2	4	6	9	12	16
3	4	6	8	11	17	25		0	1	1	1	1	3	5	8	10	13
2	3	5	7	10	15	22		0	0	1	1	1	3	5	7	9	12
1	3	5	7	9	14	20		0	0	1	1	1	3	4	6	8	11
1	2	4	5	7	11	17		0	0	1	1	1	2	3	5	7	9
1	1	3	4	6	9	13		0	0	0	1	1	1	3	4	5	7
1	1	3	4	5	8	12		0	0	0	1	1	1	2	3	5	6
1	1	2	3	5	7	11		0	0	0	1	1	1	2	3	4	6
1	1	2	3	4	6	8		0	0	0	1	1	1	2	3	4	5
1	1	1	3	3	6	8		0	0	0	0	1	1	1	2	3	4

										TABLE C12A					
CONDUIT, Schedule 40										Type EB, PVC CONDUIT					
SIZES IN INCHES										TRADE SIZES IN INCHES					
1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6		2	3	3 1/2	4	5	6
11	15	25	35	55	73	94	149	215		29	65	85	109	167	238
8	11	18	25	40	53	68	108	156		21	47	62	79	121	172
5	8	13	18	28	38	49	77	112		15	34	44	57	87	124
4	6	9	14	21	29	37	58	84		11	25	33	42	65	93
3	5	8	12	18	24	31	49	72		9	22	28	36	56	79
3	4	7	10	15	20	26	42	60		8	18	24	30	47	67
2	3	5	8	12	17	22	34	50		6	15	20	25	38	55
1	3	5	7	10	14	18	29	42		5	12	16	21	32	46
1	1	4	5	8	11	14	23	33		4	10	13	17	26	37
1	1	3	4	7	9	12	19	28		4	8	11	14	22	31
1	1	3	4	6	8	11	17	25		3	7	10	12	19	28
1	1	2	3	5	7	10	15	22		3	7	9	11	17	25
1	1	1	3	4	6	8	13	18		2	5	7	9	14	20
1	1	1	2	4	5	6	10	15		1	4	6	7	11	16
1	1	1	1	3	4	5	9	13		1	4	5	6	10	14
1	1	1	1	3	4	5	8	12		1	3	5	6	9	13
0	1	1	1	2	3	4	6	9		1	3	4	5	7	10
0	1	1	1	2	3	4	6	9		1	3	4	5	7	10

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MAXIMUM NUMBER OF TYPE XHHW-2 COMPACT STABILOY®

CONDUCTOR SIZE AWG/KCMIL	TABLE C1A										TABLE C3A			
	ELECTRICAL METALLIC TUBING										FLEXIBLE			
	TRADE SIZES IN INCHES										TRADE			
	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	1/2	3/4	1	1 1/4
6	1	4	6	11	15	25	44	66	87	111	2	4	6	9
4	1	3	4	8	11	18	32	48	63	81	1	3	4	7
2	1	1	3	6	8	13	23	34	45	58	1	1	3	5
1	1	1	2	4	6	10	17	26	34	43	1	1	2	3
1/0	1	1	1	3	5	8	14	22	29	37	1	1	1	3
2/0	1	1	1	3	4	7	12	18	24	31	1	1	1	2
3/0	0	1	1	2	3	6	10	15	20	25	0	1	1	1
4/0	0	1	1	1	3	5	8	13	17	21	0	1	1	1
250	0	1	1	1	2	4	7	10	13	17	0	1	1	1
300	0	0	1	1	1	3	6	9	11	14	0	0	1	1
350	0	0	1	1	1	3	5	8	10	13	0	0	1	1
400	0	0	1	1	1	2	4	7	9	11	0	0	1	1
500	0	0	0	1	1	1	4	6	7	9	0	0	0	1
600	0	0	0	1	1	1	3	4	6	8	0	0	0	1
700	0	0	0	1	1	1	2	4	5	7	0	0	0	0
750	0	0	0	1	1	1	2	3	5	6	0	0	0	0
900	0	0	0	0	1	1	2	3	4	5	0	0	0	0
1000	0	0	0	0	1	1	1	3	4	5	0	0	0	0

CONDUCTOR SIZE AWG/KCMIL	TABLE C2A						TABLE C4A							
	ELECTRICAL NONMETALLIC TUBING						INTERMEDIATE METALLIC CONDUIT							
	TRADE SIZES IN INCHES						TRADE SIZES IN INCHES							
	1/2	3/4	1	1 1/4	1 1/2	2	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
6	1	3	6	10	14	24	2	4	7	12	16	27	38	59
4	1	2	4	7	10	17	1	3	5	9	12	20	28	43
2	1	1	3	5	7	12	1	1	3	6	8	14	20	31
1	1	1	2	4	5	9	1	1	3	5	6	10	15	23
1/0	1	1	1	3	5	8	1	1	1	4	5	9	13	20
2/0	0	1	1	3	4	7	1	1	1	3	4	7	11	17
3/0	0	1	1	2	3	5	0	1	1	3	4	6	9	14
4/0	0	1	1	1	3	4	0	1	1	2	3	5	7	11
250	0	0	1	1	1	3	0	1	1	1	2	4	6	9
300	0	0	1	1	1	3	0	0	1	1	1	3	5	8
350	0	0	1	1	1	3	0	0	1	1	1	3	4	7
400	0	0	1	1	1	2	0	0	1	1	1	3	4	6
500	0	0	0	1	1	1	0	0	0	1	1	2	3	5
600	0	0	0	1	1	1	0	0	0	1	1	1	2	4
700	0	0	0	1	1	1	0	0	0	1	1	1	2	3
750	0	0	0	1	1	1	0	0	0	1	1	1	1	3
900	0	0	0	0	1	1	0	0	0	0	1	1	2	3
1000	0	0	0	0	1	1	0	0	0	0	1	1	1	2

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ALUMINUM ALLOY CONDUCTORS IN CONDUIT

						TABLE C5A						
METALLIC CONDUIT						LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT (FNMC-B)						
SIZES IN INCHES						TRADE SIZES IN INCHES						
1 1/2	2	2 1/2	3	3 1/2	4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
14	24	37	53	72	95	1	2	4	6	11	15	24
10	18	27	38	52	69	1	1	3	4	8	11	17
7	13	19	28	38	49	1	1	1	3	6	7	12
5	9	14	21	28	37	0	1	1	2	4	6	9
4	8	12	17	24	31	0	1	1	1	4	5	8
4	7	10	15	20	26	0	1	1	1	3	4	7
3	5	8	12	17	22	0	0	1	1	2	3	5
2	4	7	10	14	18	0	0	1	1	1	3	4
1	4	5	8	11	14	0	0	1	1	1	1	3
1	3	5	7	9	12	0	0	0	1	1	1	3
1	3	4	6	8	11	0	0	0	1	1	1	3
1	2	4	5	7	10	0	0	0	1	1	1	2
1	1	3	4	6	8	0	0	0	0	1	1	1
1	1	2	3	5	6	0	0	0	0	1	1	1
1	1	1	3	4	6	0	0	0	0	1	1	1
1	1	1	3	4	5	0	0	0	0	1	1	1
1	1	2	2	3	4	0	0	0	0	0	1	1
1	1	1	2	3	4	0	0	0	0	0	1	1

TABLE C6A									
LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT (FNMC-A)									
TRADE SIZES IN INCHES									
3 1/2	4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	
80	103	1	2	4	6	11	15	25	
58	74	1	1	3	4	8	11	18	
41	53	1	1	1	3	6	8	13	
31	40	0	1	1	2	4	6	10	
26	34	0	1	1	1	3	5	8	
22	29	0	1	1	1	3	4	7	
18	24	0	0	1	1	2	3	6	
15	20	0	0	1	1	1	3	5	
12	16	0	0	1	1	1	2	4	
10	13	0	0	0	1	1	1	3	
9	12	0	0	0	1	1	1	3	
8	11	0	0	0	1	1	1	2	
7	9	0	0	0	0	1	1	1	
5	7	0	0	0	0	1	1	1	
5	6	0	0	0	0	1	1	1	
4	6	0	0	0	0	1	1	1	
4	5	0	0	0	0	0	1	1	
3	4	0	0	0	0	0	1	1	

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Installing Connectors

Follow these basic guidelines for a successful installation of mechanical and compression connectors of aluminum STABILOY®. The key to a successful project lies in proper connector sizing and sound installation techniques.

UL Listed connectors are available for both mechanical and compression type connectors. Connectors are sized according to the conductor's AWG size or circular mil size.



Underwriter's Laboratories Standard 486B designates connectors for use with either aluminum or copper conductors with mark AL7CU or AL9CU stamped or printed on the body of the connector. The aluminum-bodied connector to be used with aluminum conductors generally has an electrically conductive coating such as tin. Never wire-brush the connector itself.

Installing Mechanical Lugs



1. Select a STABILOY[®] conductor with a correct ampacity and insulation for your application.



2. Strip the insulation to the proper distance for the fitting. Remove the separator, if present. Do not score a ring around the conductor, but instead, whittle it as you would sharpen a pencil.



3. There are special tools for stripping insulation, but a hook-bladed knife is usually sufficient.



4. This is how the stripped conductor should appear.



5. Wire-brush the conductor or clean as recommended by the connector manufacturer.



6. Apply a listed oxide-inhibiting joint compound.

Installing Mechanical Lugs (continued)



7. Insert the conductor into the connector, making certain the conductor makes contact with the entire length of the connector collar.



8. Apply the recommended torque. Once the set screw has been tightened according to the connector manufacturer's instructions, it should not have to be retightened during the life of the installation.

Installing Compression Lugs



1. Measure the length of the compression connector and mark it carefully using a nonconductive marker.



2. Strip insulation from the conductor (and separator, if present) to match the fitting.



3. There are special tools for stripping insulation, but a hook-bladed knife is usually sufficient.



4. This is how the stripped conductor should appear.



5. Wire-brush the conductor. This cleans the strands and removes any excess oxide from the surface of the conductor. Wire-brush the conductor or clean as recommended by the connector manufacturer.



6. Some compression lugs contain pre-filled joint compound. If not, apply joint compound to the exposed cable.



7. Insert cable into compression lug as far as it will go.



8. Crimp the lug as recommended by the manufacturer, selecting the right size die. If a dieless compression tool is being used, follow the lug manufacturer's recommendation for installation. (Compression tool must be recommended by lug manufacturer to meet listing requirements.)

Installing Compression Lugs (continued)



9. Wipe away any excess joint compound and the job is finished.



10. This is a completed compression lug.

Summary

Some basic rules help ensure simple, reliable connections with aluminum cables.

1. Use a connector listed for aluminum.
Look for the AL7CU or AL9CU mark.
2. Size connector according to conductor size, not diameter or apparent diameter.
3. Do not ring conductor when stripping insulation.
4. Wire-brush bare cable, apply compound (if lug is not prefilled), insert.
5. Tighten set screw according to instructions.
6. Install compression connectors with the tooling and procedure recommended by the lug manufacturer.

Recommended Torque Tables

If the connector is a mechanical screw type, apply the manufacturer's recommended torque. In absence of specific torque recommendations, use UL 486A-486B torque values.

It is often advantageous to change a torque specification from inch-pounds to foot-pounds or vice-versa.

To convert from foot- to inch-pounds, remember that the conversion is based on the fact that there are twelve inches to a foot. Therefore, one-foot pound equals twelve inch-pounds and the following formulas may be written:

Foot-Pounds X 12 = Inch-Pounds

Inch-Pounds ÷ 12 = Foot-Pounds

Tightening Torque For Screws*					
Wire Size AWG or kcmil	Torque, Pounds-Inches				AWG or kcmil
	Slotted Head No. 10 and Larger** Slot Width In Inches To 3/64 Slot Length In Inches To 1/4	Hexagonal Head External Drive Over 3/64 Split-Bolt Over 1/4	Socket Wrench		
			Other Connectors	Wire Size Connectors	
	8	25	40	80	
6	35	45	165	110	6
4	--	45	165	110	4
3	--	50	275	150	3
2	40	50	275	150	2
1	40	50	275	150	1
1/0	40	50	385	180	1/0
2/0	40	50	385	180	2/0
3/0	40	50	500	250	3/0
4/0	40	50	500	250	4/0
250	40	50	650	325	250
300	40	50	650	325	300
350	40	50	650	325	350
400	40	50	825	325	400
500	40	50	825	375	500
600	40	0	1000	375	600
700	40	50	1000	375	700
750	40	50	1000	375	750
800	40	50	1100	500	800
900	40	50	1100	500	900
1000	40	50	1100	500	1000

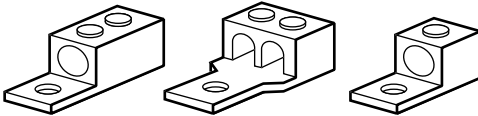
Recommended Torque Tables (continued)

Torque For Socket Head Screws			
Socket Size Across Flats	Torque, Pound	Socket Size Across Flats	Torque, Pound
1/8"	45"	5/16"	275"
5/32"	100"	3/8"	375"
3/16"	120"	1/2"	500"
7/32"	150"	9/16"	600"
1/4"	200"		

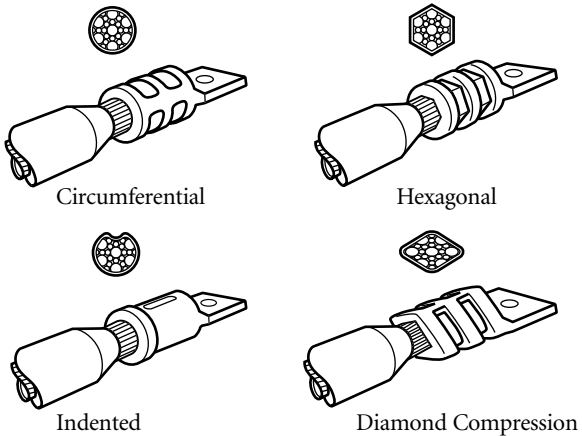
Terminating

Typical plated aluminum terminal lugs come in a variety of styles.

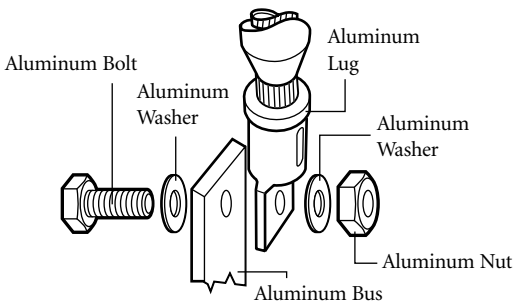
SCREW-TYPE TERMINAL LUGS



COMPRESSION TERMINAL LUGS



When all components are aluminum, all-aluminum hardware should be used and installed as below.



Splicing

Splicing is the technique used to join the ends of two conductors. Always use a splicing connector listed for use with aluminum. To splice two lengths of STABILOY® conductor using an aluminum compression type splicing connector, the first step is to strip back the insulation from the end of each conductor using the method described earlier. Strip back far enough so that the conductor will go fully into the connector, taking care to insure that the insulation will fit closely to the conductor.

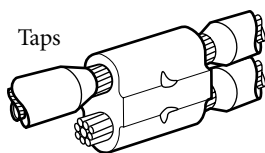
Wire-brush the surface of each conductor end thoroughly to insure good metal-to-metal contact. Brush in the direction of the conductor strands, and not across the wires. Apply a coating of joint compound to the end of each conductor. [If the selected connector comes with compound pre-installed, the conductor does not require the additional application].

Insert the stripped end of the conductor into the end of the connector as far as it will go, then apply the crimping tool and crimp in accordance with the connector manufacturer's instructions. Always use the crimping tool recommended by the connector manufacturer for the type of connector you are using.

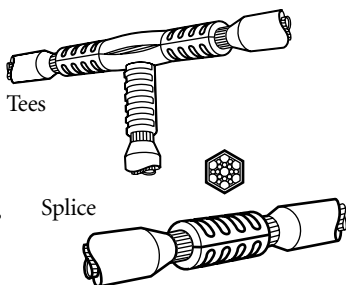
Finally, wipe off any excess compound. Insulate the connector and exposed conductor with electrical tape, heat shrinkable tubing, or other approved insulating material.

To splice two lengths of STABILOY® conductor using an aluminum mechanical type splicing connector, follow the connector manufacturer's instructions.

Common Splicing Variations



Typical connectors for "tapping," "teeing" and "splicing" conductors.



Installing Cable in Raceway

The following procedures are applicable to raceways of all types including aluminum:

1. Be sure that the raceway is sized in accordance with the requirements of the NEC and planned conductor additions in the future. In most cases, there is no need to change the size of the raceway while using aluminum alloy building wire conductors which are commonly compact stranded.¹
2. Run a “fish” line through the raceway. This may be done by attaching the line to a piston-type device which is propelled through the raceway by compressed air. Another method is to push a round flexible speedometer type steel wire through the raceway. Polyethylene fish tapes may be used for shorter runs – up to about 100 feet.
3. Attach a clean-out brush to the fish line and behind it attach the pull line, then pull both through the conduit by means of a fish line.
4. Attach the pull line to the conductor or conductors. A basket grip over the insulation may be used for this purpose.
5. Where conductors are pulled with a rope, stagger the conductor ends and anchor in position with tape, to provide maximum flexibility around bends.
6. Try to feed conductors into raceway end closest to the sharpest bend, to reduce pulling tension.
7. Have pulling equipment with adequate power available to make a steady pull on the cables without “jerks” during the pulling operations.
8. Use a Listed pulling compound to assure compatibility with the conductor insulation as the conductors are fed into the raceway, to reduce coefficient of friction and required pulling tension.
9. For single conductors on a reel, stagger reels, one behind the other, while feeding in raceway, to maintain equal pulling tensions and prevent conductors from “crossing over” and jamming in the raceway.
10. Where possible, pull conductors in a downward direction, to allow gravity to assist in pulling with reduced tension.

Note: ¹Aluminum alloy building wire conductors are generally made using compact conductors and their overall diameter is comparable to the equivalent ampacity copper conductors which are generally compressed or concentric stranded.



Installing MC Cable

- Prepare the end of the cable by stripping the armor back to expose the conductors. One method of stripping the armor is to cut a ring around the cable with an armored cable cutter being careful to not cut deep enough to damage the insulation on the conductors. Another method is to cut two adjacent ribs of the armor utilizing a rotary cutter or a hacksaw tilted at a 60-degree angle (being careful not to cut deep enough to damage the insulation on the conductors) and slide the armor off the conductors.
- Slide a basket grip over the conductor MC assembly and then tape the basket, conductors and armor together. The pulling force is to be applied to the conductors and not the armor.
- Prepare the route of the cable pull by placing sheave wheels, pulleys or equivalent equipment at adequate distances to pull the cable without damage. Short distance pulls may not require wheels or pulleys but only a smooth surface with which to pull the cable over. Pulling MC Cable over hard edges such as angle iron can damage the armor. The armor must not separate enough to expose the cable interior. The route of the pull may include many turns, vertical and horizontal distances, but always pull the cable by the conductors and not the armor.
- The bending requirement for interlocked armor Type MC Cable is “seven times the external diameter of the metallic sheath” as stated in Section 330-24(B) of the NEC. For example, if you have a two-inch diameter MC Cable the radius of the curve of the inner edge of the bend shall not be less than 14 inches.
- Section 330.30 of the NEC requires the cable be supported and secured at intervals not exceeding 6-ft. (1.83 m). There are many ways to support MC Cable, including strut, trapeze, rack or cable tray. Generally, the same support systems utilized for metal conduit are used for MC Cable except at distances of

6 ft. instead of 10 ft. as required for conduit installations. The MC Cable can be secured by an assortment of clamps used for conduit. Section 330.30(B) Unsupported Cables states, “Type MC Cable shall be permitted to be unsupported where the cable: (1) Is fished between access points through concealed spaces in finished buildings or structures and supporting is impractical. An example is fishing MC Cable down the inside of an existing wall and supporting where accessible.

- Once the MC Cable is supported and secured, prepare to terminate the conductors.
- An adequate length of MC Cable armor should be removed as described earlier (again making sure not to damage the insulation on the conductors) in order to terminate the conductors. There should be no sharp edges in the fitting or on the armor which could damage the insulation on the conductors.
- Square the end of the armor to provide a flush fit with the end stop of the fitting. Section 330.40 requires fittings used for connecting Type MC Cable to boxes, cabinets, or other equipment be listed and identified for such use.
- One major difference between fittings for Type AC Cable and Type MC Cable is that AC Cable in Section 320.40 requires anti-short bushings. Type MC Cable does not require anti-short bushings (reference NEMA bulletin #90). The primary function of the fitting is to provide mechanical connection between the cable and the enclosure and ensure that the armor is properly grounded.
- Selecting the correct size fitting requires that the installer know the dimensions of the MC Cable conductor assembly, the armor diameter, the fitting dimensions of the throat opening for the conductors, and the clamping range for securing the MC Cable armor in the fitting. The fittings listed for MC Cable by design may not require an insulating bushing or may have a bushing included in the fitting. The installer should note the instructions with the fitting to determine if a bushing is included with the fitting. The fitting manufacturer may have listed the fitting as usable with Type AC or Type MC Cable, and thus a bushing is included with the fitting. The bushing in this case may not be required for MC Cable, but verify with the fitting manufacturer if the fitting was listed with or without the bushing for Type MC Cable.

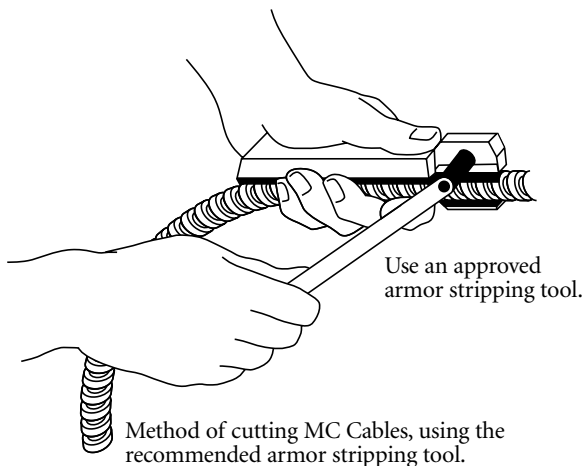
Stripping MC Armor

MC Cable armor can be removed with a special metallic-sheathed armor stripping tool, a hacksaw or other cutting tools. The “armor stripping tool” has many advantages. The nicking or cutting of the conductors within the metallic sheath is more easily avoided, plus the armor cuts can be made more quickly and the chance of someone accidentally cutting themselves during the cutting process is also reduced.

Note: The different methods of cutting MC Cables are discussed because of industry practices.

A “pair of dikes” is sometimes used to cut through one spiral convolution of the armored cable and remove the cut sheath enclosing the conductors. Cable must be broken first.

When a “hacksaw” is utilized to cut the sheath of the armored cable, care must be taken to assure that the conductors are not cut or nicked. The hacksaw should be held at approximately a 60 degree angle to the cable armor. This procedure of cutting the cable sheath allows for a complete cutting of one spiral convolution without cutting and damaging the conductors.



Important NEC Sections to Consider

90.4 Enforcement.

250.122 Size of Equipment Grounding Conductors.

250.4 General Requirements for Grounding and Bonding.

Article 310 – Conductors for General Wiring

310.1 Scope.

310.2 Conductors.

310.3 Stranded Conductors.

310.4 Conductors in Parallel.

310.5 Minimum Size of Conductors.

310.6 Shielding.

310.7 Direct Burial Conductors.

310.8 Locations.

310.9 Corrosive Conditions.

310.10 Temperature Limitation of Conductors.

310.11 Marking.

310.12 Conductor Identification.

310.13 Conductor Constructions and Applications.

310.14 Aluminum Conductor Material

Article 330 – Metal-Clad Cable: Type MC

I. General

330.2 Definition

II. Installation

330.10 Uses Permitted

330.12 Uses Not Permitted

330.24 Bending Radius

Interlocked-type Armor or corrugated Sheath

(seven times the external diameter of the metallic sheath)

330.30 Securing and Supporting

330.40 Boxes and Fittings

330.80 Ampacity

III. Construction Specifications

A. Conductors

B. Equipment Grounding

C. Insulation

D. Metallic Sheath

Article 338 – Service Entrance Cable: Type SE and USE

338.2 Definition

338.10 (A) Uses Permitted as Service Entrance Conductors

338.10 (B) Uses Permitted as Branch Circuit or Feeders

338.10 (B) (4) Installation Methods for Branch Circuits and Feeders

338.24 Bending Radius

338.120 Marking

Manufacturers of UL-Listed Wire-Pulling Compounds*

UL Product Category Code – ZOKZ

Wire-pulling compounds are for use as lubricants in installing electrical conductors in raceways. Listed compounds have been investigated to determine their compatibility with conductor insulation and coverings.

* Check the UL Electrical Construction Material Directory for manufacturers.

Manufacturers of UL-Listed Conductor Termination Compound (Joint Compound)*

UL Product Category Code – DVYW

Conductor termination compounds (joint compounds) are for use on splice and termination connection of aluminum, copper-clad aluminum and copper conductors where used to retard oxidation at the conductor/connector interface. These compounds do not have a deleterious effect on conductor metal, insulation or equipment when used in accordance with the manufacturer's installation instructions.

* Check the UL Electrical Construction Material Directory for manufacturers.

Manufacturers of UL-Listed – Metal-Clad Connectors

Type MC UL Product Category Code – PJOX

This category covers fitting for use with metal-clad cable, Type MC, employing (a) interlocking aluminum or steel tape, (b) smooth aluminum tube or (c) corrugated aluminum or copper tape.

* Check the UL Electrical Construction Material Directory for manufacturers. Markings, such as AL/CU, AL7CU or AL9CU identify the connectors and lugs that are suitable for use with copper and aluminum conductors.

STABILOY[®], like any building wire, must be installed in accordance with the appropriate UL Standard and the NEC. For STABILOY[®], use UL Standard 486 A-B connectors marked “AL7CU” or “AL9CU”.

NOTICE: This information is presented in good faith but no warranty, expressed or implied, is given nor is freedom from any patent owned by Alcan or by others to be inferred. While reference is made to procedures and practices of the National Electrical Code and other specifying agencies, the appropriate local codes must be reviewed prior to any electrical conductor installations.

NEC and National Electrical Code are registered trademarks of the National Fire Protection Association, Quincy, Massachusetts.



MODEX™ Modular Wiring Systems

Alcan Cable's new MODEX™ brand of modular wiring systems are designed for quick and easy on-site installation in commercial and institutional construction applications. These factory assembled branch circuit wiring solutions are UL Listed, factory tested, and customized to meet the contractor's electrical specifications. The clean, fast and simple installation of MODEX™ systems translates into total installed cost savings to the contractor. Installation savings are maximized when MODEX™ Systems are used in device intensive buildings with common footprints such as hotels, condominiums, dorms and hospitals.

Description

MODEX™ products consist primarily of three assemblies: MODEX™ Prewired, MODEX™ Pigtailed, and MODEX™ Hardwired Systems.

MODEX™ Prewired Systems

These customized, complete pre-assembled branch circuit wiring systems are designed to meet the contractor's electrical design requirements.

- 5-pin connectors ensure a correct installation every time
- Simply set the bracket, run branch circuit to the power supply and plug in
- MC whips can be cut and prepped for quick connection

MODEX™ Pigtailed Systems

These systems consist of a rough-in assembly (bracket, box and ring) with a device pigtailed.

- Comes with a metal protective cover
- Quick-snap connectors accept a #12 THHN stranded or solid wire
- Can be used with conduit, flex, MC or non-metallic raceways

MODEX™ Hardwired Systems

Best suited for dedicated circuits, hardwired systems can dramatically reduce your labor costs and allow you to meet or exceed your installation deadlines.

- Comprised of brackets, boxes, devices and cable
- Hardwired systems supplied as either MC or flex cable with one end terminated to device and the other end prepped for wire makeup
- Simply install bracket assembly and connect to the power source

Marking

All MODEX™ systems are UL listed. A UL label is prominently displayed on every assembly. MODEX™ systems are delivered prepackaged directly to the job site to minimize material handling and shrinkage costs.



Alcan Cable Resources

If you would like more information on the company or any of our products, we have a comprehensive repository of information located on our website at www.cable.alcan.com. Here is a brief description of a few of the items:

Alcan Online University

The University is an interactive training program that allows you to choose your areas of interest and determine how far you would like to go within each subject. Whether your schedule allows 15 minutes or 2 hours, Alcan Cable has a course for you.

Alcan Design Software

The Alcan Cable Design Software is a proprietary tool that was specifically designed for Electrical Engineers and Electrical Contractors. This tool will quickly convert 600 volt circuits to STABILOY® AA-8030 aluminum alloy conductor circuits. The software includes various conductor insulation types, conduit types and MC Cable. This valuable tool will do all of the work for you by calculating voltage drop, conduit fill, material and installation costs.

Resource Library

The resource library has variety of information including installation and product videos, technical papers, product brochures, articles and price sheets. Most of these items can be downloaded and printed.

Alcan Online Store

The Alcan Online store has a variety of logo items such as shirts and gifts as well as tools. These items may be purchased with a credit card or with Alcan points. To find out how to get Alcan points, contact your local manufacturer's representative or an Alcan Field Applications Engineer.

Notes

grounded in service
wired to innovate™

www.cable.alcan.com

Alcan Cable operates throughout North America – in the U.S. as a division of Alcan Products Corporation, and in Canada as a division of Alcan, Inc. Alcan Cable has its own research and development facilities and is backed by the technology and laboratories of the Alcan Group. We're proud of our long history of providing new and innovative solutions to the many customers we serve.

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