LORDCO
AN ANODE ENGINEERING COMPANY

Specialist Engineering Suppliers

thermOweld®

PRODUCT CATALOGUE

GROUNDING | LIGHTNING PROTECTION | CATHODIC PROTECTION | ENERGY

www.lordco.co.nz

04 939 3944

TECHNICAL INFORMATION

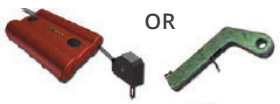
THE THERMOWELD® PROCESS

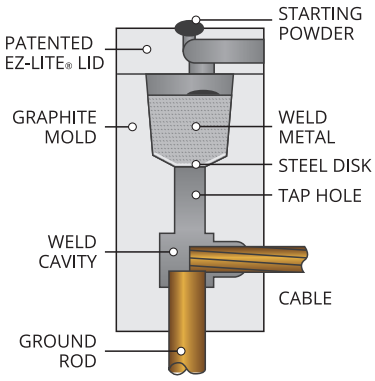
The thermOweld® permanent-connection process has been engineered to be an easy and effcient field welding system. No outside power, bulky gas tanks or other equipment associated with welding are required with the thermOweld® system. Any field installer or contractor can use our high-grade graphite molds designed and produced in thermOweld's world-class volume CNC manufacturing operations.

Incorporating our EZ Lite® mold lid (see page 10), ignition is done safely from the top of the mold with limited exhaust emanating from the side vent. This innovation from thermOweld®, combined with other unique features, make even tight field installations possible. For indoor connections where desired, thermOweld® offers low-emissions molds as well. Contractors worldwide demand thermOweld® for ease of use and the safest operation.

Using thermOweld's superior weld metal (see page 132), a high-temperature reaction between special formulations of copper oxide and aluminum occurs in the mold crucible. Upon reaching critical temperature, the resulting molten copper drops into the weld cavity, instantly creating a high-temperature molecular bond with the conductor. This weld connection cools rapidly and the mold can be removed for the next connection with thermOweld's special off-set handle clamps (page 136). The thermOweld® process creates a superior connection without the excessive applied heat of brazing, arc welding or soldering. This is important especially for welding insulated cables or to thin-wall pipe.

thermOweld® - EZ Lite® Mold





It's easy to see why thermOweld® is The Contractor's Choice worldwide!

The thermOweld® process creates a permanent, homogenous and molecular bond that cannot loosen or corrode. Compared to compression connectors, split bolts, crimp connectors, brazing and other connections, the thermOweld® connection is clearly superior. In fact, a thermOweld® connection will also withstand more current than the conductor itself.

The thermOweld® process has been used to weld materials other than copper for electrical purposes, shown here.

Stainless Steel	Galvanized Steel*	Columbium
Copperweld®	Silicon Bronze	Plain Steel
Nichrome V	Copper-Clad Steel	Everdur®
Kama	Brass	Chromax
Steel Rail	Bronze	Cast Iron
Cor-Ten®	Niobium	Monel

*When welding to galvanized steel it is recommended to resurface exposed bare steel.

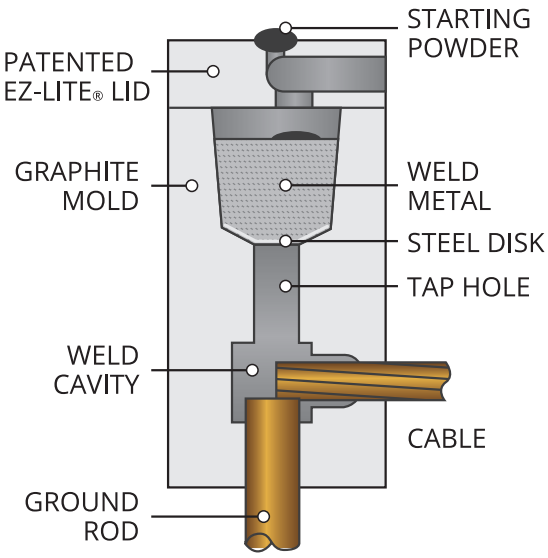
It's easy to see why thermOweld® is The Contractor's Choice worldwide!

STANDARDS	COUNTRY	DESCRIPTION
IEEE: 80-1986	USA, Australia, Asia, Europe, Latin America	Guide for Safety in AC Substation Grounding
IEEE: 837	USA, Australia, Asia, Latin America	Standard for Qualifying Permanent Connections used in Substation Grounding
IEEE: 81-1983	USA, Australia, Asia	Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potential of a Ground System
IEEE: 998-1996	USA, Australia, Asia	Guide for Direct Lightning Strike Shielding of Substations
UL-96	USA	Lightning Protection Components
UL 467	USA, Australia, Asia	Grounding and Bonding Equipment
NFPA 780	USA, Australia, Asia	Lightning Protection
NEC-250	USA, Canada	Grounding and Bonding National Electrical Code
TIA-607-B -2	Global	Telecom Grounding Bars and Products
IEC/TS 60479-1	Europe, Brazil	Effects of Current passing through human beings & livestock
EN62305-3: 2011	Europe	Protection against Lightning, Physical damage to structure and life hazard
ANCE NMX-J-549-2005	Latin America	Lightning Protection

TECHNICAL INFORMATION

THERMOWELD® EXOTHERMIC MOLDS

thermOweld® is a process of welding copper to copper, copper to steel and copper to ductile iron. The exothermic reaction takes place in a semi-permanent graphite mold with a special formula of copper oxide and aluminium.



thermOweld® connections are solid copper molecular bonds that do not loosen or corrode throughout the life of the host structure. These bonds are the superior connection method for the most reliable and highest longevity of grounding, lightning protection, cathodic protection and other critical infrastructure systems.

Standard Molds – thermOweld® standard molds are given in the tables on the pages in this catalogue and are used with new clean AWG and Metric wire and cable. A standard mold is not for use in "heavy-duty" applications; see Heavy Duty Molds.

Heavy Duty Molds – thermOweld® heavy-duty molds are given in the tables on the pages in this catalogue (with an H suffix) and are employed for use with reused or reclaimed and heavily oxidized AWG and Metric wire and cable. In these cases a "heavy-duty" mold is recommended as it accepts this larger wire diameter and utilizes a larger weld metal cartridge size. The resulting connection is larger than a standard mold connection. Note that the grounding engineer may determine that the calculated theoretical ground fault current level may be abnormally high and therefore would prefer the larger mass of a heavy-duty mold connection.

thermOweld® has designed and produced over 15,000 unique molds to meet application needs worldwide. We have solved many applications with unique and customized molds, utilizing our CAD engineering and specialized CNC machining capabilities. If you don't see what you need in this comprehensive catalogue, contact us. We are ready to support you quickly!

SINGLE SHOTS

thermOweld® single shot molds are an economical way to make cable connections onto the top of a ground rod or rebar. The single shot is a disposable single use ceramic mold that comes complete with everything required except the flint ignitor. This innovative process eliminates the need for a mold, handle clamps, and frames.

SUPERIOR WELD METAL

thermOweld® weld metal is packaged in moisture resistant plastic cartridges that have tight fitting caps. These cartridges and the necessary steel discs are then packaged in boxes that are shrink wrapped. Shrink wrapping ensures the weld metal will arrive in good condition, always dry, and ready for a positive ignition every time.

All weld metal is eligible for thermOweld's SDS (Same Day Service) shipment. Our SDS program is just like having it on your shelf.

TECHNICAL INFORMATION

THE MOLECULAR BOND

The thermOweld® connection is a molecular weld. The weld has the same melting point as copper. This factor, along with the increased cross sectional area of the connection and insure the following:

- thermOweld® connections are not effected by a high current surge. Tests have shown that the electrical conductor will melt before the thermOweld® connection, when subjected to high short circuit current. Consult IEEE Standard 837.
- thermOweld® connections will not loosen or corrode at the point of weld. There are no contact surfaces or mechanical pressures involved.
- thermOweld® connections have a current-carrying capacity equal to or greater than that of the conductors.

THE EZ LITE® MOLD

- Makes all thermOweld® molds EZ to ignite.
- Lights from the top at any angle.
- Reduces emissions by 50% or more.
- Reduces splatter.
- Keeps the handle clamps clean and prolongs life.
- Added Safety - The EZ Lite® Lid points the exhaust away from the user.

thermOweld® EZ Lite® Mold

INSTALLATION IS EASY!

MAKING A THERMOWELD® CONNECTION

1

Position cleaned conductors in mold.

2

Place metal disc in bottom of mold crucible.

3

Pour powder into crucible.

4

Place a small amount of starting powder in the ignition pocket.

5

Ignite the starting powder with the Flint Ignitor.

6

Remove weld and clean mold before making next connection.

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PIPE & PLATE INSTALLATIONS ARE EASY!

MAKING A THERMOWELD® CABLE TO STEEL OR CAST IRON CONNECTION

1

Clean pipe before making weld.

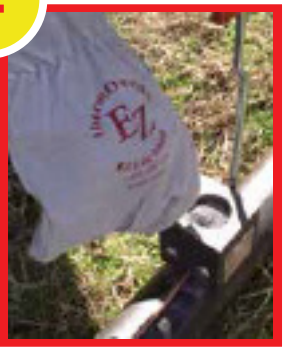
2

Position conductor and mold onto pipe.

3

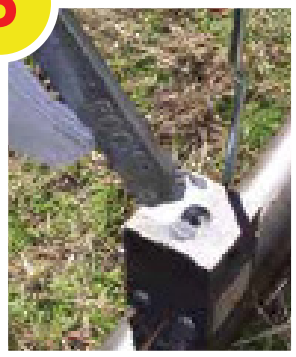
Place metal disc in bottom of mold.

4



Pour weld metal into mold.

5



Close lid and place starting powder on top. Ignite starting powder with Flint Ignitor.

6

Remove and clean mold before making next connection.

TECHNICAL INFORMATION

GROUND RODS

SIZE	MATERIAL	TYPE	BODY DIAMEMETER	THREAD SIZE
1/2"	Copperclad	Sectional	.505"	9/16"
	Copperclad	Plain	.475"	
	Steel*	Plain	.500"	
5/8"	Copperclad	Sectional	.563"	5/8"
	Copperclad	Plain	.563"	
	Steel*	Plain	.625"	
3/4"	Copperclad	Sectional	.682"	3/4"
	Copperclad	Plain	.682"	
	Steel*	Plain	.750"	
1"	Copperclad	Sectional	.914"	1"
	Copperclad	Plain	.914"	
	Steel*	Plain	1.00"	

* Plain Steel, Stainless Steel, Stainless Clad Rods or Galvanized Steel

STEEL PIPE SIZES

Standard Weight (Schedule 40)

ASTM A53-92-B ANSI/ASME B36.10M-1985

NORMAL SIZE	O.D.	WALL THICKNESS
1"	1.315"	.133"
1 1/4"	1.660"	.140"
1 1/2"	1.900"	.145"
2"	2.375"	.154"
2 1/2"	2.875"	.203"
3"	3.500"	.216"
3 1/2"	4.000"	.226"
4"	4.500"	.237"
5"	5.563"	.258"
6"	6.625"	.280"
8"	8.625"	.322"
10"	10.750"	.365"

RECTANGULAR COPPER BUSBAR

THICKNESS INCHES	WIDTH INCHES	CIRCULAR MIL SIZE	WEIGHT LBS. PER FOOT
1/8"	1"	159,200	.484
	1 1/2"	238,700	.726
	2"	318,300	.969
3/16"	1"	238,700	.727
	2"	477,500	1.45
1/4"	1"	318,300	.969
	1 1/2"	477,500	1.45
	2"	636,600	1.94
	3"	954,900	2.91
	4"	1,273,000	3.88
3/8"	1"	477,500	1.45
	1 1/2"	716,200	2.18
	2"	954,900	2.91
	3"	1,432,000	4.36
	4"	1,910,000	5.81
1/2"	2"	1,273,000	3.88
	3"	1,910,000	5.81
	4"	2,546,000	7.75

USEFUL CONVERSIONS
AREA
Sq.Inches x 1273 = kcmil Sq.Millimeteres x 1.974 = kcmil kcmil x .5067 = Square Millimeters
DENSITY
Copper: .323 lb/in3
Steel: .283 lb/in3

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TECHNICAL INFORMATION

CONCRETE REINFORCING BARS

US Imperial Sizes (Nominal Dimensions)

REBAR SIZES	DIAMETER	AREA - SQ.
3	.375”	.11”
4	.500”	.20”
5	.625”	.31”
6	.750”	.44”
7	.875”	.60”
8	1.000”	.79”
9	1.128”	1.00”
10	1.270”	1.27”
11	1.410”	1.56”
14	1.693”	2.25”
18	2.257”	4.00”

COPPER-CLAD STEEL CONDUCTORS

CABLE STRANDING	CONDUCTOR DIAMETER	SIZE IN CIRCULAR MILS
3/#10 CW	.220”	31,150
3/#9 CW	.247”	38,280
3/#8 CW	.277”	49,530
7/#10 CW	.306”	72,680
3/#7 CW	.311”	78,750
7/#9 CW	.343”	91,650
3/#6 CW	.349”	99,310
7/#8 CW	.385”	115,600
3/#5 CW	.392”	99,310
7/#7 CW	.433”	145,700
7/#6 CW	.486”	183,800
7/#5 CW	.546”	231,700
19/#9 CW	.572”	248,800
7/#4 CW	.613"	292,200
19/#8 CW	.642”	313,700
19/#7 CW	.721”	395,500
37/#9 CW	.801”	484,400
19/#6 CW	.810”	498,800
37/#8 CW	.899”	610,900
19/#5 CW	.910”	628,900
37/#7 CW	1.010”	770,300

TECHNICAL INFORMATION

METRIC TO IMPERIAL CABLE CONVERSION CHART

CROSS SECTIONAL AREA (MM2)	CONDUCTOR DIAMETER		SIZE A.W.G.	CONDUCTOR DIAMETER	
	INCHES	MM		INCHES	MM
2.0 Concentric	.071	1.8	#14 Concentric	.0726	1.84
3.5 Concentric	.095	2.4	#12 Concentric	.0915	2.3
4 Solid	.0984	2.5	#10 Solid	.102	2.6
6 Solid	.122	3.1	#8 Solid	.128	3.25
5.5 Concentric	.118	3.0	#10 Concentric	.116	2.95
8.0 Concentric	.142	3.6	#8 Concentric	.146	3.7
10 Solid	.150	3.8	#6 Solid	.162	4.1
10 Concentric	.162	4.2	#7 Concentric	.164	4.2
14 Concentric	.189	4.8	#6 Concentric	.184	4.7
16 Solid	.177	4.5	#4 Solid	.204	5.2
16 Concentric	.204	5.2	#5 Concentric	.205	5.2
22 Concentric	.236	6.0	#4 Concentric	.232	5.9
25 Solid	.220	5.6	#3 Solid	.229	5.8
25 Concentric	.260	6.4	#3 Concentric	.260	6.6
30 Concentric	.276	6.9	#2 Concentric	.292	7.4
35 Solid	.264	6.7	#2 Solid	.258	6.6
35 Concentric	.305	7.7	#2 Concentric	.292	7.4
38 Concentric	.315	7.8	#2 Concentric	.292	7.4
40 Concentric	.331	8.4	#1 Concentric	.332	8.4
50 Solid	.315	8.0	1/0 Solid	.325	8.3
50 Concentric	.354	9.0	1/0 Concentric	.373	9.5
55 Concentric	.378	9.6	1/0 Concentric	.373	9.5
60 Concentric	.394	10.0	2/0 Concentric	.419	10.6
70 Solid	.394	10.0	3/0 Solid	.410	10.4
70 Concentric	.430	10.9	2/0 Concentric	.419	10.6
80 Concentric	.453	11.5	3/0 Concentric	.470	12.0
95 Concentric	.505	12.6	4/0 Concentric	.528	13.4
100 Concentric	.512	13.0	4/0 Concentric	.528	13.4
120 Concentric	.567	14.2	250 MCM	.575	14.6
125 Concentric	.571	14.5	250 MCM	.575	14.6
150 Concentric	.634	16.1	300 MCM	.630	16.0
185 Concentric	.700	17.7	350 MCM	.681	17.3
200 Concentric	.717	18.2	400 MCM	.728	18.5
240 Concentric	.801	20.3	500 MCM	.813	20.7
250 Concentric	.815	20.7	500 MCM	.813	20.7
300 Concentric	.891	22.5	600 MCM	.893	22.7
325 Concentric	.922	23.4	700 MCM	.964	24.5
400 Concentric	1.03	26.2	800 MCM	1.031	26.2
500 Concentric	1.13	28.8	1000 MCM	1.152	29.3
600 Concentric	1.26	31.9	1200 MCM	1.263	32.1
625 Concentric	1.29	32.8	1250 MCM	1.289	32.7
725 Concentric	1.39	35.2	1400 MCM	1.364	34.6
800 Concentric	1.45	36.8	1600 MCM	1.459	37.1
850 Concentric	1.48	37.6	1700 MCM	1.506	38.2
1000 Concentric	1.64	41.6	2000 MCM	1.632	41.5

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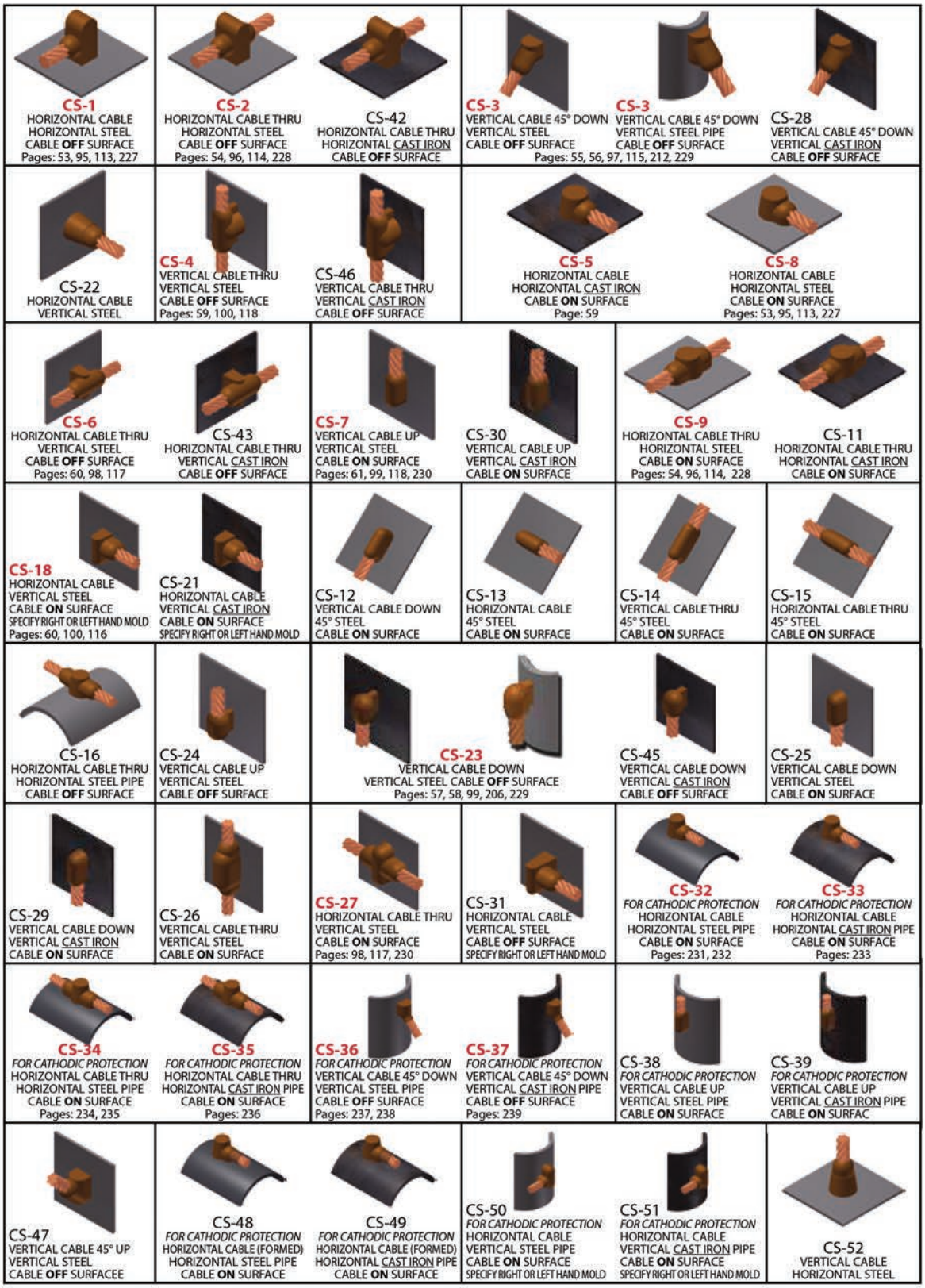
SELECTOR CHART

CABLE TO CABLE CONNECTIONS

SELECTOR CHART

CABLE TO STEEL OR CAST IRON CONNECTIONS



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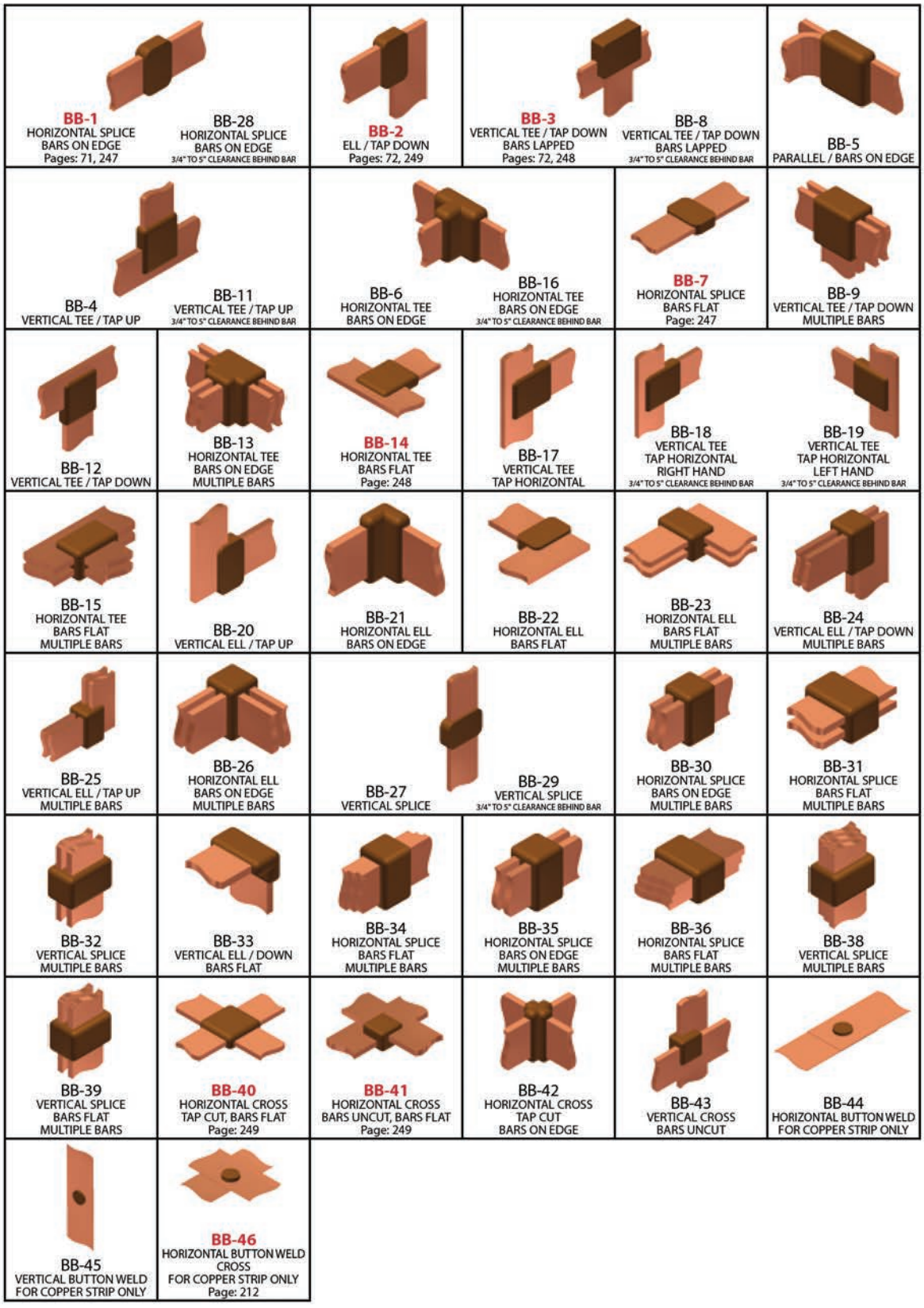
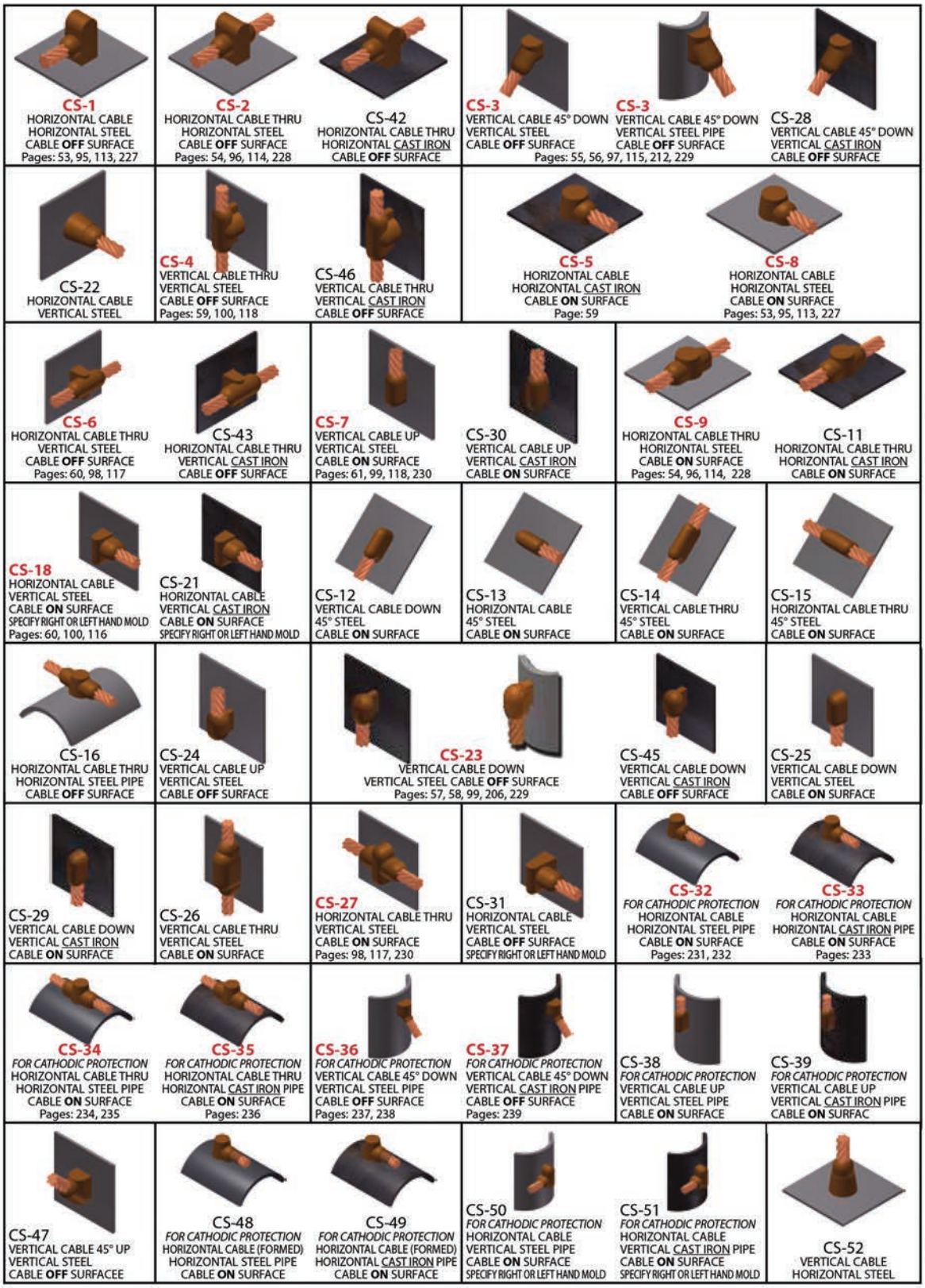
SELECTOR CHART

BUS BAR TO BUS BAR CONNECTIONS



SELECTOR CHART

CABLE TO GROUND ROD OR ROD CONNECTIONS

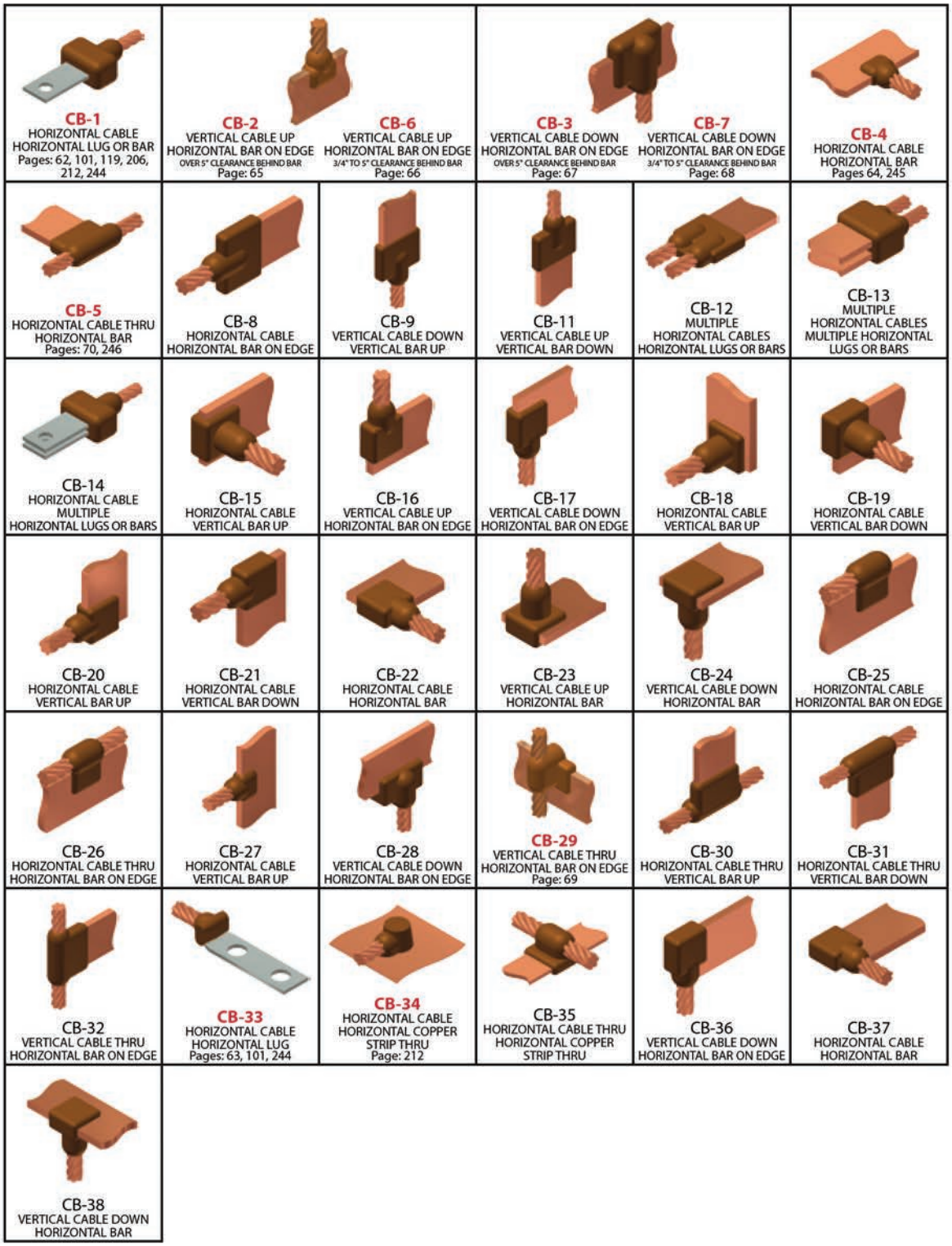


SELECTOR CHART

BUS BAR TO BUS BAR CONNECTIONS

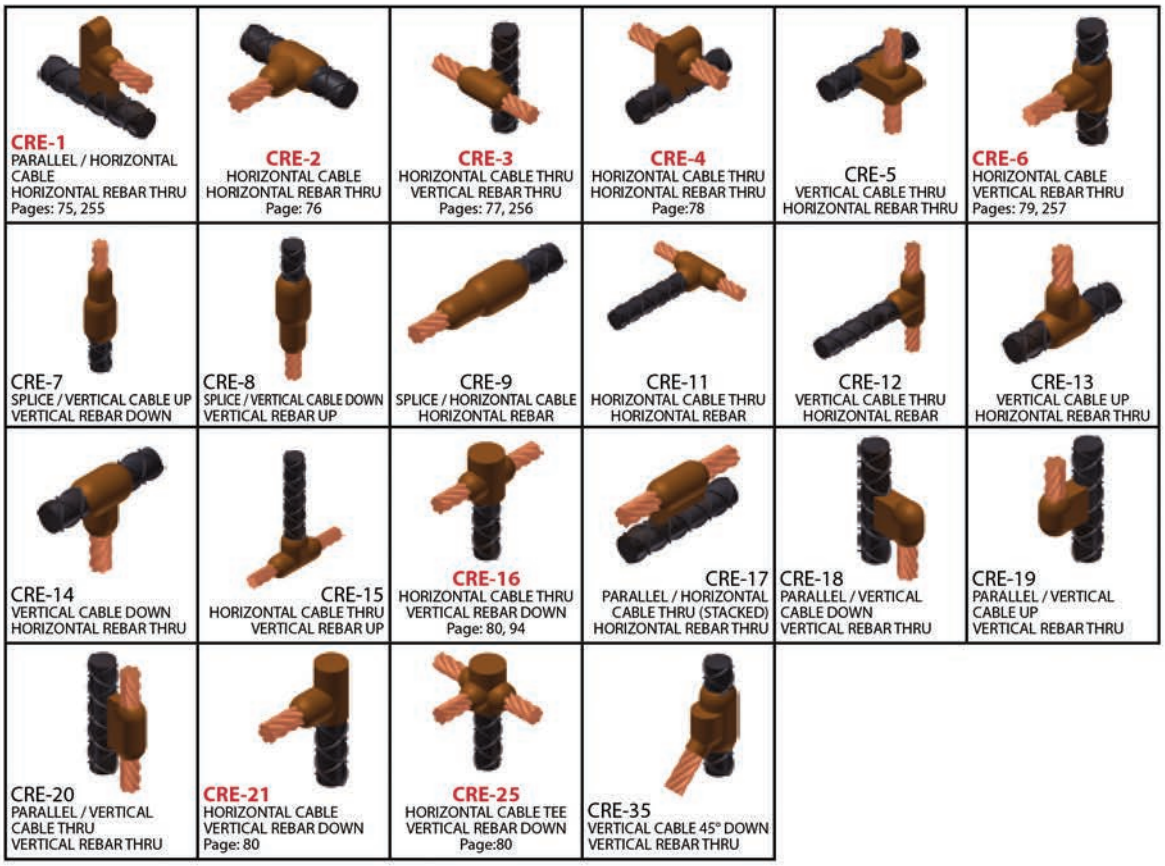
SELECTOR CHART

CABLE TO LUG OR BUS BAR CONNECTIONS



SELECTOR CHART

CABLE TO REBAR CONNECTIONS



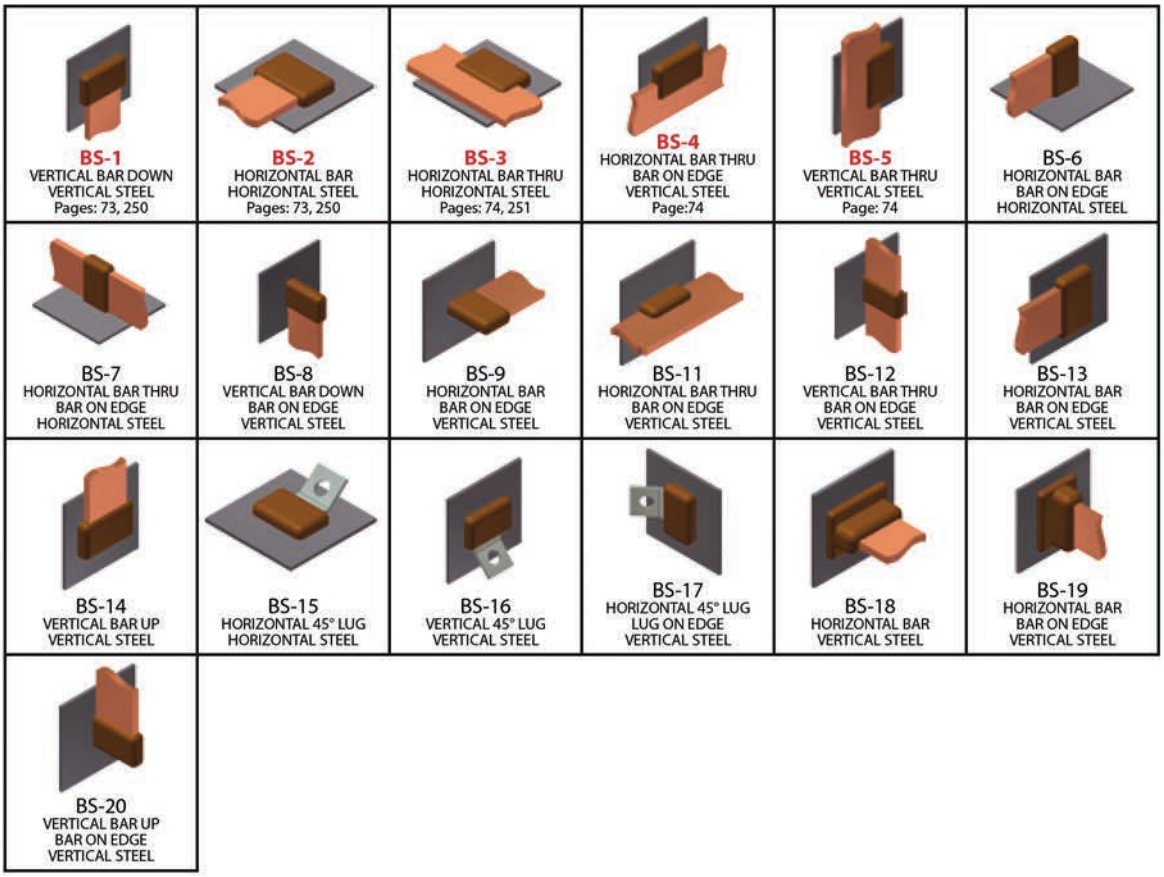
BUS BAR TO REBAR CONNECTIONS

ROD TO REBAR CONNECTIONS / REBAR TO REBAR CONNECTIONS

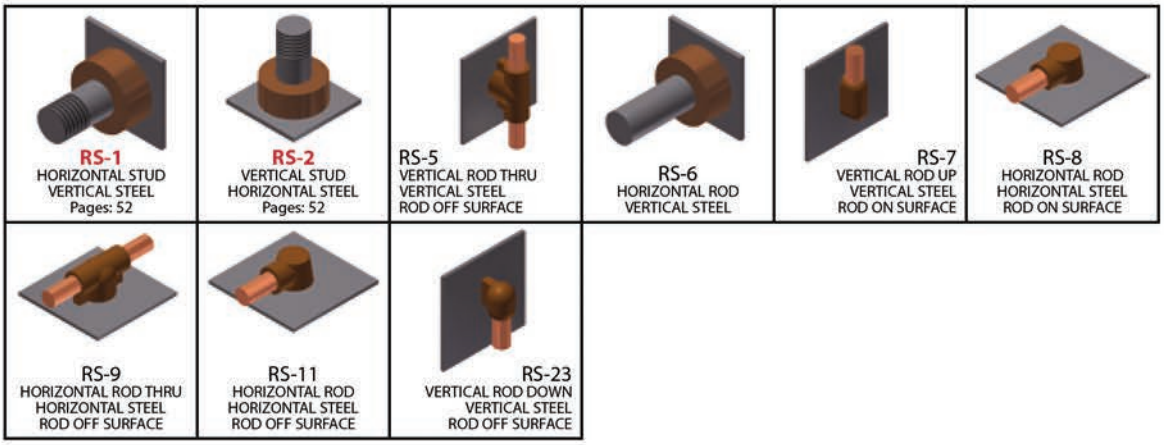
(NOTE: RE WELD TYPES ARE FOR ELECTRICAL CONTINUTITY ONLY AND ARE NOT TO BE USED FOR STRUCTURAL PURPOSES.)

SELECTOR CHART

LUG OR BUS BAR TO STEEL CONNECTIONS

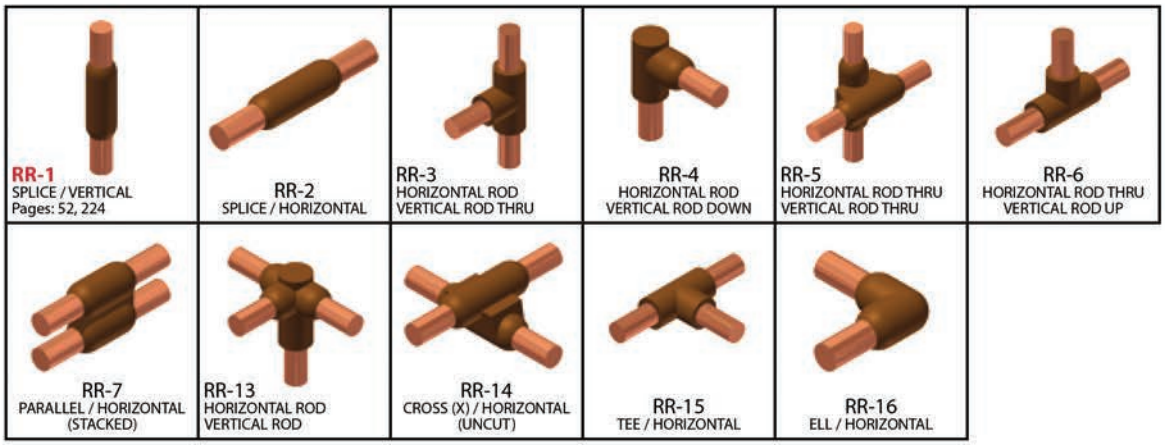


THREADED STUD OR ROD TO STEEL CONNECTIONS

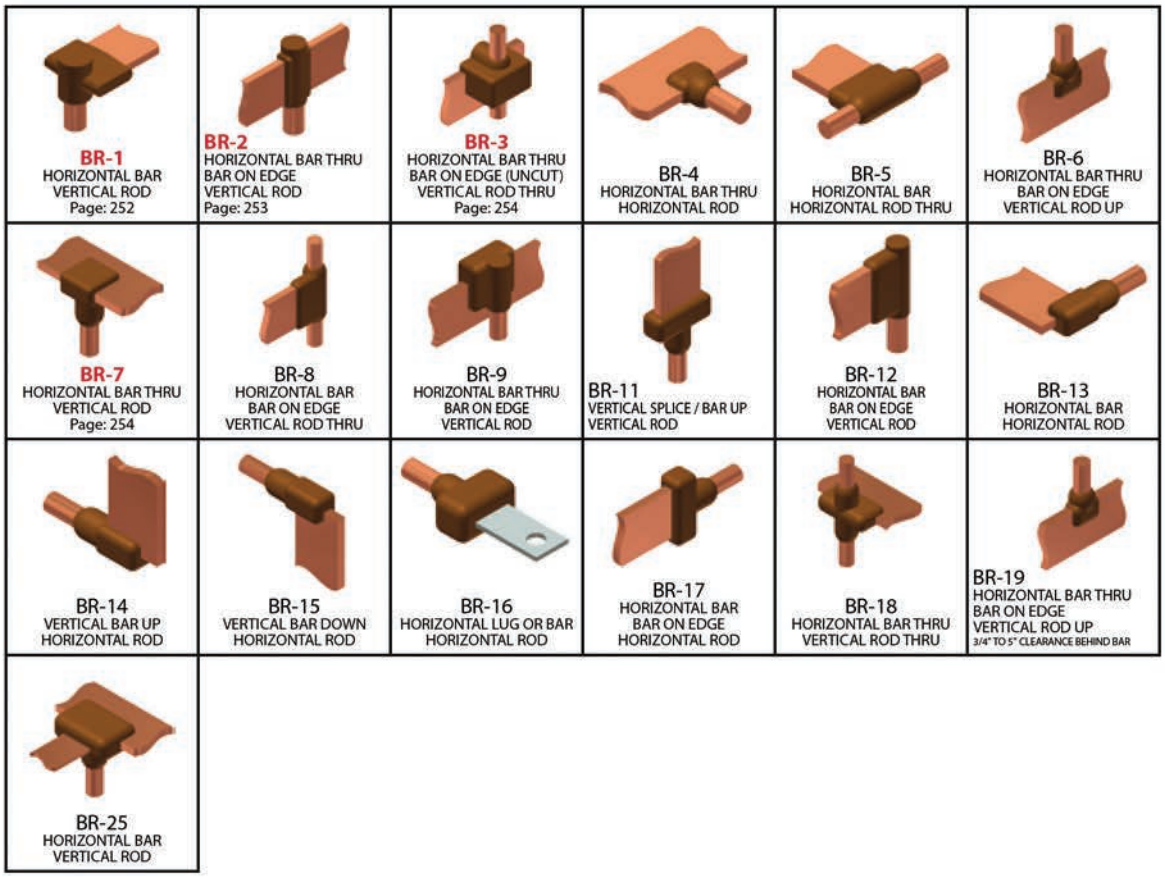


SELECTOR CHART

GROUND ROD TO GROUND ROD CONNECTIONS



BUS BAR TO GROUND ROD CONNECTIONS



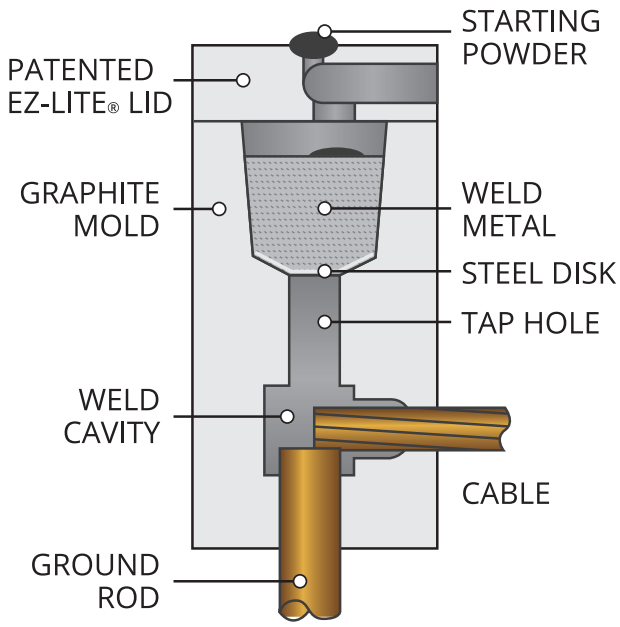
TECHNICAL INFORMATION

THERMOWELD® PROVIDES HIGH QUALITY PRODUCTS TO THE ELECTRIC, UTILITY, TELECOM, AND CATHODIC MARKETS.

The thermOweld® process is a simple way of welding copper to copper and copper to steel. The reaction takes place in a semi-permanent graphite mold and uses high temperature reactions of copper oxide and aluminum.

The thermOweld® connections are solid molecular bonds; they will not loosen or corrode throughout the life of the weld.

IF YOU NEED IT, WE CAN MAKE IT



FEATURES

- All thermOweld® molds come with our EZ Lite® lid.
- Added Safety - EZ Lite® Lid redirects exhaust away from the user.
- The average life of a mold is 50 plus welds - depending on the care and treatment it receives.
- EZ to ignite with the top ignition hole.
- EZ Lite® Lid extends the life of handles and framework of mold.
- Reduces emission by more than 50% compared to the standard lid.

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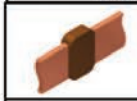
thermOweld®

MOLDS FOR USE WITH METRIC CONDUCTORS

SELECTOR CHART

MOLDS - METRIC

Weld Type		Page #
	BB-1	247
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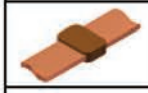
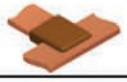
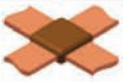
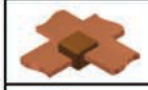
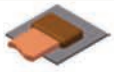
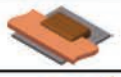
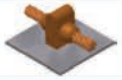
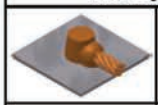
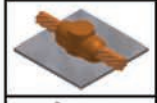
	BB-3	248
	BB-7	247
	BB-14	248
	BB-40	249
	BB-41	249
	BR-1	252
	BR-2	253
	BR-3	254
	BR-7	254
	BRE-8	257
	BS-1	250
	BS-2	250
	BS-3	251
	CB-1	244
	CB-4	245

Weld Type		Page #
	CB-5	246
	CB-33	244
	CC-1	217
	CC-2	218
	CC-4	219
	CC-6	220
	CC-7	221
	CC-11	220
	CC-14	217
	CR-1	222
	CR-2	223
	CR-3	224
	CRE-1	255
	CRE-3	256
	CRE-6	257
	CS-1	227
	CS-2	228
	CS-3	229
	CS-7	230

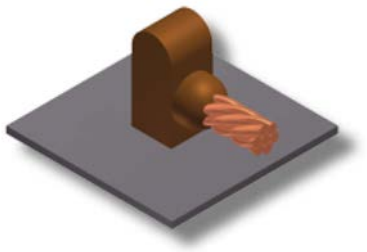
Weld Type		Page #
	CS-8	227
	CS-9	228
	CS-23	229
	CS-27	230
	CS-32	231-232
	CS-33	233
	CS-34	234-235
	CS-35	236
	CS-36	237-238
	CS-37	239
	RR-1	224
	Single Shots	225-226
	CP Kit	240
	thermO-cap	241
	Magnetic Mold Support	243
	CP Weld Metal	242

TECHNICAL INFORMATION

MOLDS - METRIC

CS-1 TYPE MOLDS

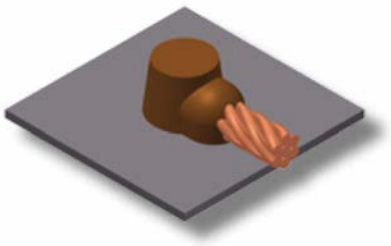
Horizontal Cable to Horizontal Steel Surface
For Metric Conductors
Note that the cable is OFF the surface



MOLDS FOR METRIC CONDUCTORS					
CABLE SIZE (MM^2)	MOLD #	PRICE KEY	WELD METAL	HANDLE CLAMPS	LEAD TIME
8mm Ø	M-4527	4	90	B-106	2
50	M-3419	4	90	B-106	2
10mm Ø	M-4529	4	90	B-106	4
70	M-3421	4	90	B-106	2
95	M-3423	4	115	B-106	2
120	M-3424	4	115	B-106	2
150	M-3425	4	150	B-106	2
185	M-3426	4	200	B-106	4
240	M-3427	4	200	B-106	2
300	M-3428	4	250	B-106	4

CS-8 TYPE MOLDS

Horizontal Cable to Horizontal Steel Surface
For Metric Conductors
Note that the cable is ON the surface



MOLDS FOR METRIC CONDUCTORS					
CABLE SIZE (MM^2)	MOLD #	PRICE KEY	WELD METAL	HANDLE CLAMPS	LEAD TIME
10	M-10792	3†	45	Included	4
16	M-10264	3†	45	Included	4
25	M-3479	3†	45	Included	2
30	M-4530	3†	45	Included	4
35	M-3480	3†	45	Included	2
8mm Ø	M-4534	3†	45	Included	4
50	M-3480	3†	45	Included	2
10mm Ø	M-4536	3†	65	Included	4
70	M-3483	3†	65	Included	2
95	M-3485	4	90	Included	2
120	M-3486	4	115	B-106	2
150	M-3487	4	150	B-106	4
185	M-3488	4	200	B-106	2
240	M-3489	4	200	B-106	2
300	M-3490	4	250	B-106	4

For sizes not listed, contact thermOweld®.

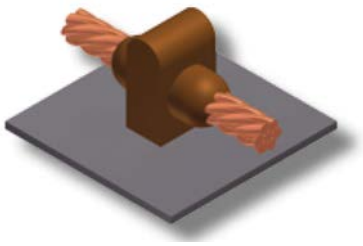
- For heavy duty connections, contact thermOweld®.
- For expedited service, contact thermOweld®.
- To order weld metal for use with EZ Lite Remote® insert TW before and EZ after weld metal number.
- Required Tools:
  Handle Clamps w/Flint Ignitor (see chart for correct handles)
  †~Sold complete with frame
  38-0309-00 ~ Flint Ignitor or 38-EZLT-RU EZ Lite Remote®
- Other recommended accessories:
  40-0319-01 ~ Mold Cleaner for cartridge sizes #15-65 (Price Key 3 Molds Only)
  38-3922-00 ~ Mold Cleaning Brush
  38-0135-00 ~ Cable Cleaning Brush
  38-0101-00 ~ Rasp
  38-4129-00 ~ Packing Material for $50mm^2$ & Larger Molds (CS-8 Molds Only)

TECHNICAL INFORMATION

MOLDS - METRIC

CS-2 TYPE MOLDS

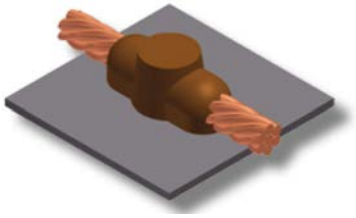
Horizontal Thru Cable to Horizontal Steel Surface For Metric Conductors
Note that the cable is OFF the surface



MOLDS FOR METRIC CONDUCTORS					
CABLE SIZE (MM^2)	MOLD #	PRICE KEY	WELD METAL	HANDLE CLAMPS	LEAD TIME
8mm Ø	M-4537	4	90	B-106	2
50	M-4538	4	90	B-106	2
10mm Ø	M-4551	4	115	B-106	4
70	M-4552	4	115	B-106	2
95	M-4560	4	115	B-106	2
120	M-4585	4	150	B-106	2
150	M-4592	4	200	B-106	4
185	M-4602	4	250	B-106	4
240	M-4617	5	2-150	B-107	4
300	M-4622	5	2-200	B-107	4

CS-9 TYPE MOLDS

Horizontal Thru Cable to Horizontal Steel Surface For Metric Conductors
Note that the cable is ON the surface



MOLDS FOR METRIC CONDUCTORS					
CABLE SIZE (MM^2)	MOLD #	PRICE KEY	WELD METAL	HANDLE CLAMPS	LEAD TIME
10	M-10793	3†	45	Included	4
16	M10794	3†	45	Included	4
25	M-3496	3†	45	Included	2
30	M-4638	3†	45	Included	4
35	M-3497	3†	45	Included	4
8mm Ø	M-4641	4	90	B-106	4
50	M-3498	4	90	B-106	2
10mm Ø	M-4653	4	115	B-106	4
70	M-3500	4	115	B-106	2
95	M-3502	4	115	B-106	2
120	M-3503	4	150	B-106	4
150	M-3504	4	200	B-106	4
185	M-3505	4	250	B-106	4
240	M-3506	5	2-150	B-107	4
300	USE TYPE CS-2				

For sizes not listed, contact thermOweld®.

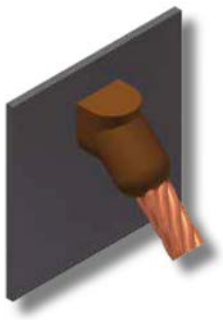
- For heavy duty connections, contact thermOweld®.
- For expedited service, contact thermOweld®.
- To order weld metal for use with EZ Lite Remote® insert TW before and EZ after weld metal number.
- Required Tools:
  Handle Clamps w/Flint Ignitor (see chart for correct handles)
  †~Sold complete with frame
  38-0309-00 ~ Flint Ignitor or 38-EZLT-RU EZ Lite Remote®
- Other recommended accessories:
  40-0319-01 ~ Mold Cleaner for cartridge sizes #15-65 (Price Key 3 Molds Only)
  38-3922-00 ~ Mold Cleaning Brush
  38-0135-00 ~ Cable Cleaning Brush
  38-0101-00 ~ Rasp
  38-4129-00 ~ Packing Material for 50mm^2 & Larger Molds (CS-8 Molds Only)

TECHNICAL INFORMATION

MOLDS - METRIC

CS-3 TYPE MOLDS

Angular Cable Drop to Vertical Steel Surface
For Metric Conductors

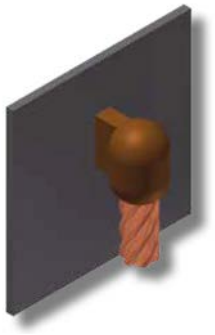


For connections to pipe, contact thermOweld

MOLDS FOR METRIC CONDUCTORS					
CABLE SIZE (MM^2)	MOLD #	PRICE KEY	WELD METAL	HANDLE CLAMPS	LEAD TIME
10	M-10795	4	45	B-106	4
16	M-10796	4	45	B-106	4
25	M-3445	4	45	B-106	2
30	M-4670	4	45	B-106	4
35	M-3446	4	45	B-106	2
8mm Ø	M-4672	4	90	B-106	2
50	M-3447	4	90	B-106	2
10mm Ø	M-4691	4	115	B-106	2
70	M-3449	4	90	B-106	2
95	M-3451	4	115	B-106	2
120	M-3452	4	115	B-106	2
150	M-3453	4	115	B-106	4
185	M-3454	4	200	B-106	2
240	M-3455	4	200	B-106	2
300	M-3456	4	250	B-106	4

CS-23 TYPE MOLDS

Vertical Cable Drop to Vertical Steel Surface
For Copper-Clad Steel Conductors
Note that the cable is OFF the surface



MOLDS FOR METRIC CONDUCTORS					
CABLE SIZE (MM^2)	MOLD #	PRICE KEY	WELD METAL	HANDLE CLAMPS	LEAD TIME
10	M-3070	4	45	B-106	4
16	M-10797	4	65	B-106	4
25	M-4679	4	65	B-106	2
30	M-10798	4	65	B-106	2
35	M-4114	4	65	B-106	2
8mm Ø	M-10799	4	65	B-106	4
50	M-3140	4	115	B-106	2
70	M-4678	4	115	B-106	2
95	M-4601	4	150	B-106	2
120	M-3747	4	200	B-106	2
150	M-3080	4	200	B-106	4
185	M-9823	4	250	B-106	2
240	M-10800	17	2-150	B-106	4
300	M-10801	17	2-150	B-106	4

For sizes not listed, contact thermOweld®.

- For heavy duty connections, contact thermOweld®.
- For molds with wear plates, see page 135.
- For expedited service, contact thermOweld®.
- To order weld metal for use with EZ Lite Remote® insert TW before and EZ after weld metal number.
- Required Tools;
  Handle Clamps w/ Flint Ignitor (see chart for correct handles)
- 38- 0309-00 ~ Flint Ignitor or 38-EZLT-RU EZ Lite Remote®
- Other recommended accessories;
  40- 4431-00 ~ Magnetic Handle Clamp w/ B-106
  Handles 38-3922-00 ~ Mold Cleaning Brush
  38-0135-00 ~ Cable Cleaning Brush
  38-0101-00 ~ Rasp

TECHNICAL INFORMATION

MOLDS - METRIC

CS-2 TYPE MOLDS

Cathodic Protection
Horizontal Cable to Horizontal
Steel Pipe For Metric Conductors

MOLDS FOR METRIC CONDUCTORS						
CABLE SIZE (MM^2)	PIPE DIA. IN MM	MOLD #	PRICE KEY	WELD METAL	HANDLE CLAMPS	LEAD TIME
2.5, 4 & 6	up to 125	M-4146‡	3†	15CP	Included Optional: Magnetic Molds Support, Catalogue Number 40-7202-00	2
2.5, 4 & 6	over 125	M-4147‡	3†	15CP		2
10	up to 125	M-4148	3†	15CP		2
	over 125	M-4149	3†	15CP		2
16	up to 125	M-4146	3†	15CP		2
	over 125	M-4147	3†	15CP		2
25	up to 70	M-4152	3†	25CP		2
	70 to 165	M-4153	3†	25CP		2
	over 165	M-4154	3†	25CP		2
30	up to 70	M-2833	3†	32CP		4
	70 to 165	M-2834	3†	32CP		4
	165 to 250	M-2835	3†	32CP		4
	over 250	M-2836	3†	32CP		4
35	up to 70	M-4155	3†	32CP		2
	70 to 165	M-4156	3†	32CP		2
	165 to 250	M-4157	3†	32CP		2
	over 250	M-4158	3†	32CP		2
50	up to 70	M-4159	3†	45CP		4
	70 to 165	M-4160	3†	45CP		2
	165 to 250	M-4161	3†	45CP		2
	over 250	M-4162	3†	45CP		2
70	up to 70	M-4163	3†	65CP		2
	70 to 165	M-4164	3†	65CP		2
	165 to 250	M-4165	3†	65CP		2
	over 250	M-4166	3†	65CP		2
‡ 38-4590 Sleeve/Weld Req'd						

APPLICATION NOTES.

When specifying and applying thermOweld® products for cathodic protection of buried piping systems, it is the specifier and buyer's responsibility to respect the following ASME guidelines in conjunction with ASTM, NACE and applicable country, state, municipality and local guidelines:

ASME B31.8-2000, "Gas Transmission and Distrabution Piping Systems"
862.115 Para (b)1 (steel pipe) 15 grams maximum weld metal cartridge
ASME B31.8-2000, "Gas Transmission and Distrabution Piping Systems"
862.223 Para (a) (ductile/cast iron pipe) 32 grams maximum weld metal cartridge

For sizes not listed, contact thermOweld®.

- For heavy duty connections, contact thermOweld®.
- For expedited service, contact thermOweld®.
- To order weld metal for use with EZ Lite Remote® insert TW before and EZ after weld metal number.
- Required Tools:
  Handle Clamps w/Flint Ignitor (see chart for correct handles)
  †~Sold complete with frame
  38-0309-00 ~ Flint Ignitor or 38-EZLT-RU EZ Lite Remote®
- Other recommended accessories:
  40-0319-01 ~ Mold Cleaner for cartridge sizes #15-65 (Price Key 3 Molds Only)
  38-3922-00 ~ Mold Cleaning Brush
  38-0135-00 ~ Cable Cleaning Brush
  38-0101-00 ~ Rasp
  38-4129-00 ~ Packing Material for $50mm^2$ & Larger Molds (CS-8 Molds Only)

TECHNICAL INFORMATION

MOLDS - METRIC

CS-34 TYPE MOLDS

Cathodic Protection Horizontal Thru Cable to Horizontal Steel Pipe For Metric Conductors

MOLDS FOR METRIC CONDUCTORS						
CABLE SIZE (MM^2)	PIPE DIA. IN MM	MOLD #	PRICE KEY	WELD METAL	HANDLE CLAMPS	LEAD TIME
2.5, 4 & 6	up to 105	M-4167‡	3†	25CP	Included Optional: Magnetic Molds Support, Catalogue Number 40-7202-00, See Page 136	2
2.5, 4 & 6	over 1105	M-4168‡	3†	25CP		2
10	up to 105	M-10806	3†	25CP		4
	over 105	M-10807	3†	25CP		4
16	up to 105	M-10808	3†	25CP		4
	over 105	M-10809	3†	25CP		2
25	up to 70	M-4173	3†	32CP		4
	70 to 165	M-4174	3†	32CP		4
	over 165	M-4175	3†	32CP		2
35	up to 70	M-4176	3†	45CP		2
	70 to 165	M-4177	3†	45CP		2
	165 to 250	M-4178	3†	45CP		2
	over 250	M-4179	3†	45CP		2
50	up to 70	M-4180	3†	65CP		4
	70 to 165	M-4181	3†	65CP		4
	165 to 250	M-4182	3†	65CP		4
	over 250	M-4183	3†	65CP		2
‡ (2) 38-4590 Sleeve/Weld Req'd						

For sizes not listed, contact thermOweld®.

- Molds listed are for concentric stranded cable. Add suffix "-S" to mold number for solid conductors.
- For expedited service, contact thermOweld®.
- To order weld metal for use with EZ Lite Remote® insert TW before and EZ after weld metal number.
- Required Tools:
  Handle Clamps w/Flint Ignitor (see chart for correct handles)
  †~Sold complete with frame. If frame not requiredm specify MOLD NUMBER followed by the suffix "-G"
  38-0309-00 ~ Flint Ignitor or 38-EZLT-RU EZ Lite Remote®
- Other recommended accessories:
  40-0319-01 ~ Mold Cleaner for cartridge sizes #15-6538-3922-00 ~ Mold Cleaning Brush
  38-0135-00 ~ Cable Cleaning Brush
  38-0101-00 ~ Rasp
  38-4129-00 ~ Packing Material for 1/0 & Larger Molds

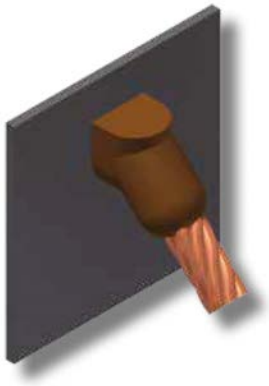
TECHNICAL INFORMATION

MOLDS - METRIC

CS-36 TYPE MOLDS

Cathodic Protection
Angular Cable Drop to Verticle Steel Surface For Metric Conductors

MOLDS FOR METRIC CONDUCTORS					
CABLE SIZE (MM^2)	MOLD #	PRICE KEY	WELD METAL	HANDLE CLAMPS	LEAD TIME
10	M-10721	18†	15CP	40-4565-00	2
16	M-10722	18†	25CP	40-4565-00	2
25	M-4274	18†	32CP	40-4565-00	2
30	M-10723	18†	32CP	40-4565-00	4
35	M-9878	18†	32CP	45-4565-00	2
50	M-10724	18†	65CP	40-4565-00	4
70	M-10725	18†	65CP	40-4565-00	4



For connections to pipe, contact thermOweld

For sizes not listed, contact thermOweld®.

- For expedited service, contact thermOweld®.
- To order weld metal for use with EZ Lite Remote® insert TW before and EZ after weld metal number.
- Required Tools:
  Handle Clamps w/Flint Ignitor (see chart for correct handles)
  †~Sold complete with frame. If frame not required, specify MOLD NUMBER (followed by suffix "-G"
  38-0309-00 ~ Flint Ignitor or 38-EZLT-RU EZ Lite Remote®
- Other recommended accessories:
  40-0319-01 ~ Mold Cleaner for cartridge sizes #15-65 (Price Key 3 Molds Only)
  38-3922-00 ~ Mold Cleaning Brush
  38-0135-00 ~ Cable Cleaning Brush
  38-0101-00 ~ Rasp
  38-4129-00 ~ Packing Material for $50mm^2$ & Larger Molds

WELDING TO HORIZONTAL PIPE.
To weld to 4" to 24" horizontal pipe, add pipe size to mold number. Example: To weld #1 str cable to 6" horiztonal pipe, the mold number would be M-163-6. To weld to pipe 30" and larger, use flat surface mold.

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PRODUCT CATALOGUE

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