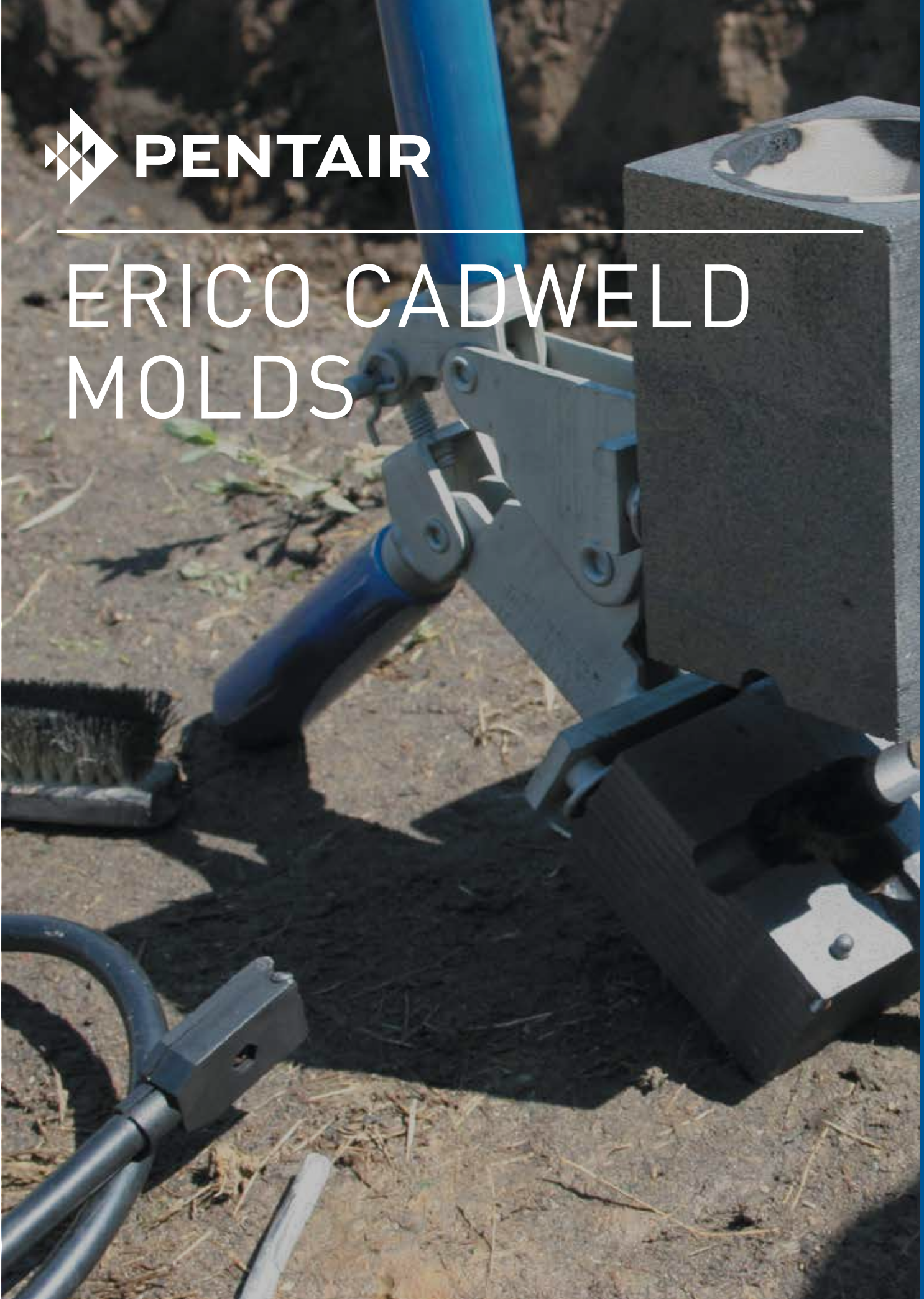


PENTAIR

ERICO CADWELD MOLDS

Grounding Connection Specification

This specification covers the ERICO CADWELD exothermic welding system for use in making electrical connections. The ERICO CADWELD system supplied under this specification shall include welding material, molds, tools and accessories as required.

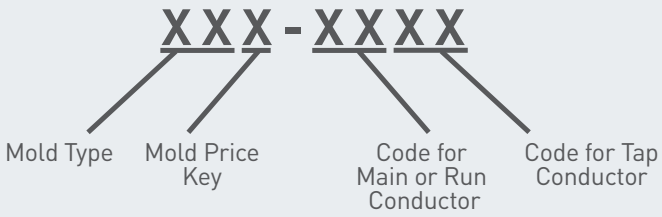
Unless otherwise specified, ERICO CADWELD exothermic welding system shall be used for all electrical grounding connections of copper to copper and copper to steel conductors. ERICO CADWELD connections shall be suitable for exposure to the elements of direct burial in earth or concrete without degradation over the lifetime of the grounding system.

The ERICO CADWELD exothermic welding system furnished under this specification shall meet the applicable requirements of IEEE Standard 80 "IEEE Guide for Safety in AC Substation Grounding" and IEEE Standard 837 IEEE "Standard for Qualifying Permanent Connections Used in Substation Grounding". Independent test data showing conformance to IEEE Std. 837 shall be readily available.

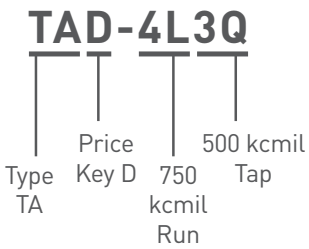
The ERICO CADWELD Mold Numbering System

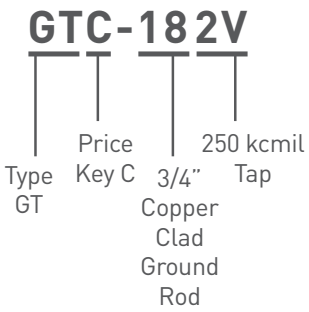
The ERICO CADWELD mold part number gives, in code, the complete information about the mold.

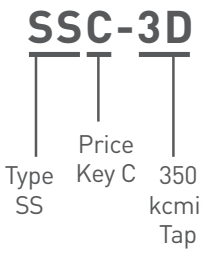
Type of connection, mold price key, and conductor size(s)

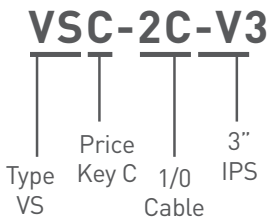


Examples:









CADWELD Connections Used for Grounding Reinforcing Bars

CADWELD provides efficient and permanent connections for both grounding and attaching lightning protection conductors to rebar. When making CADWELD connections to rebar, the normal materials required are: mold, handle and weld metal. In addition, packing material is also required. These materials act as a seal between the mold and rebar to prevent leaks. One unit of packing material must be ordered for each weld.

CADWELD Connections to Structural Reinforcing Bar and Anchor Bolts

Welding of ground conductors to reinforcing bars (rebar) by the CADWELD process should not be harmful if stresses in the rebar are below yield. As design stresses are normally only about 50% to 60% of the nominal yield strength of the rebar, welding by the CADWELD process should not be detrimental under design stresses.

As the ACI Building Code (ACI318-14 Commentary, 25.5.2.1) advises, "splice requirements encourage splicing bars at points of minimum stress ... encourage the location of splices away from regions of high tensile stress." The same advice should apply to locations of CADWELD connections of a ground conductor to rebar. Where possible, locate the weld area away from areas of maximum tensile stress, e.g., near the free end of the bar in a lap splice, on the hook extension for a hooked bar, etc. The same considerations apply to CADWELD connections to anchor bolts.

NOTE:

For lightning protection applications where the main lightning protection conductor is connected to the rebar, ERICO recommends a 2/0 AWG copper conductor for structures over 75 feet in height and a #2 AWG copper conductor for structures under 75 feet. For a bonding conductor, a #6 AWG copper may be used. These sizes meet NFPA78 Code requirement. Anchor bolts are connected in the same way.

All welds to rebar requiring larger than a #150 weld metal will be sold only after review by ERICO.

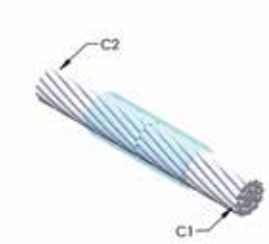
Cable to Cable



- Forms a permanent, low resistance connection
- Provides a molecular bond
- ERICO CADWELD Exothermic Connections are rated with the same current capacity as the conductor
- Portable installation equipment with no external source of power required
- Installers can be easily trained to make ERICO CADWELD Exothermic Connections
- Connections are visually inspected

SS Molds





Global Part Number	Mold Family	Price Key	Conductor 1	Conductor 2	Welding Material	Ease of Use	Handle Clamp (Sold separately unless noted)
SSC1D	SS	C	#8 Solid	#8 Solid	25 or 25PLUSF20	Preferred	L160
SSC1G	SS	C	#6 Solid	#6 Solid	25 or 25PLUSF20	Preferred	L160
SSC1H	SS	C	#6 Concentric	#6 Concentric	25 or 25PLUSF20	Preferred	L160
SSC1K	SS	C	#4 Solid	#4 Solid	45 or 45PLUSF20	Preferred	L160
SSC1L	SS	C	#4 Concentric	#4 Concentric	25 or 25PLUSF20	Preferred	L160
SSC1T	SS	C	#2 Solid	#2 Solid	32 or 32PLUSF20	Preferred	L160
SSC1V	SS	C	#2 Concentric	#2 Concentric	32 or 32PLUSF20	Preferred	L160
SSC1Y	SS	C	#1 Concentric	#1 Concentric	32 or 32PLUSF20	Preferred	L160
SSC2C	SS	C	1/0 Concentric	1/0 Concentric	45 or 45PLUSF20	Preferred	L160
SSC2G	SS	C	2/0 Concentric	2/0 Concentric	65 or 65PLUSF20	Preferred	L160
SSC2Q	SS	C	4/0 Concentric	4/0 Concentric	90 or 90PLUSF20	Preferred	L160
SSC2V	SS	C	250 kcmil Concentric	250 kcmil Concentric	115 or 115PLUSF20	Preferred	L160
SSC3A	SS	C	300 kcmil Concentric	300 kcmil Concentric	115 or 115PLUSF20	Preferred	L160
SSC3D	SS	C	350 kcmil Concentric	350 kcmil Concentric	150 or 150PLUSF20	Preferred	L160
SSC3H	SS	C	400 kcmil Concentric	400 kcmil Concentric	150 or 150PLUSF20	Preferred	L160
SSC3Q	SS	C	500 kcmil Concentric	500 kcmil Concentric	200 or 200PLUSF20	Preferred	L160
SSC4L	SS	C	750 kcmil Concentric	750 kcmil Concentric	150 x 2 or 300PLUSF20	Preferred	L160
SSD4Y	SS	D	1000 kcmil Concentric	1000 kcmil Concentric	200 x 2 or 400PLUSF20	Preferred	L159
SST1G	SS	T	#6 Solid	#6 Solid	25 or 25PLUSF20	Preferred	Clamp Included
SST1K	SS	T	#4 Solid	#4 Solid	25 or 25PLUSF20	Preferred	Clamp Included
SST1L	SS	T	#4 Concentric	#4 Concentric	25 or 25PLUSF20	Preferred	Clamp Included
SST1T	SS	T	#2 Solid	#2 Solid	32 or 32PLUSF20	Preferred	Clamp Included
SST1V	SS	T	#2 Concentric	#2 Concentric	32 or 32PLUSF20	Preferred	Clamp Included