

GROUNDING CONNECTION SPECIFICATION

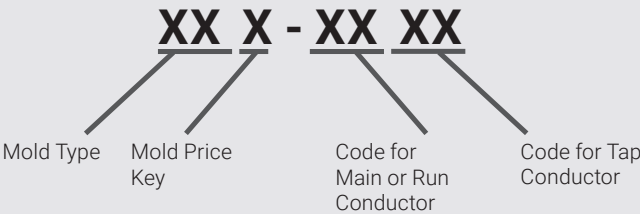
This specification covers the nVent ERICO Cadweld exothermic welding system for use in making electrical connections. The Cadweld system supplied under this specification shall include welding material, molds, tools and accessories as required.

Unless otherwise specified, Cadweld exothermic welding system shall be used for all electrical grounding connections of copper to copper and copper to steel conductors. 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 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 Cadweld Mold Numbering System

The Cadweld mold part number gives, in code, the complete information about the mold.  
Type of connection, mold price key, and conductor size(s)



Examples:

**TAD-4L3Q**

Type TA    Price Key D    750 kcmil Run    500 kcmil Tap

**GTC-182V**

Type GT    Price Key C    3/4" Copper Clad Ground Rod    250 kcmil Tap

**SSC-3D**

Type SS    Price Key C    350 kcmil Tap

**VSC-2C-V3**

Type VS    Price Key C    1/0 Cable    3" IPS

## 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.

## 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.

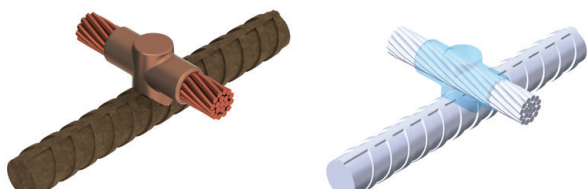
### NOTE:

For lightning protection applications where the main lightning protection conductor is connected to the rebar, nVent 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 nVent ERICO.**

Global Part Number	Mold Family	Price Key	Rebar Size, US	Conductor Size	Welding Material Required	Shim / Batching Required	Ease of Use	Handle Clamp Required	Conductor Sleeve
RRC512V	RR	C	#3	250 kcmil Concentric	150 or 150PLUSF20		Preferred	L160	
RRC522C	RR	C	#4	1/0 Concentric	90 or 90PLUSF20	B141A	Preferred	L160	
RRC522G	RR	C	#4	2/0 Concentric	90 or 90PLUSF20	B141A	Preferred	L160	
RRC522L	RR	C	#4	3/0 Concentric	115 or 115PLUSF20	B141A	Preferred	L160	
RRC522Q	RR	C	#4	4/0 Concentric	115 or 115PLUSF20	B141A	Preferred	L160	
RRC522V	RR	C	#4	250 kcmil Concentric	150 or 150PLUSF20	B141A	Preferred	L160	
RRC532C	RR	C	#5	1/0 Concentric	90 or 90PLUSF20	B141A	Preferred	L160	
RRC532G	RR	C	#5	2/0 Concentric	90 or 90PLUSF20	B141A	Preferred	L160	
RRC532L	RR	C	#5	3/0 Concentric	115 or 115PLUSF20	B141A	Preferred	L160	
RRC532Q	RR	C	#5	4/0 Concentric	115 or 115PLUSF20	B141A	Preferred	L160	
RRC532V	RR	C	#5	250 kcmil Concentric	150 or 150PLUSF20	B141A	Preferred	L160	
RRH542G	RR	H	#6	2/0 Concentric	90 or 90PLUSF20	B144C	Preferred		
RRH542L	RR	H	#6	3/0 Concentric	115 or 115PLUSF20	B144C	Preferred		
RRH542Q	RR	H	#6	4/0 Concentric	115 or 115PLUSF20	B144C	Preferred		
RRH542V	RR	H	#6	250 kcmil Concentric	150 or 150PLUSF20	B144C	Preferred		
RRH552C	RR	H	#7	1/0 Concentric	90 or 90PLUSF20	B144C	Preferred		
RRH552G	RR	H	#7	2/0 Concentric	90 or 90PLUSF20	B144C	Preferred		
RRH552L	RR	H	#7	3/0 Concentric	115 or 115PLUSF20	B144C	Preferred		
RRH552Q	RR	H	#7	4/0 Concentric	115 or 115PLUSF20	B144C	Preferred		
RRH552V	RR	H	#7	250 kcmil Concentric	150 or 150PLUSF20	B144C	Preferred		
RRH602L	RR	H	#14	3/0 Concentric	115 or 115PLUSF20	B144C	Preferred		
RRH602Q	RR	H	#14	4/0 Concentric	115 or 115PLUSF20	B144C	Preferred		
RRH612C	RR	H	#18	1/0 Concentric	90 or 90PLUSF20	B144C	Preferred		
RRH612L	RR	H	#18	3/0 Concentric	115 or 115PLUSF20	B144C	Preferred		
RRH612Q	RR	H	#18	4/0 Concentric	115 or 115PLUSF20	B144C	Preferred		

## RD MOLDS



Global Part Number	Mold Family	Price Key	Rebar Size, US	Conductor Size	Welding Material Required	Shim / Batching Required	Ease of Use	Handle Clamp Required	Conductor Sleeve
RDC511G	RD	C	#3	#6 Solid	65 or 65PLUSF20	B141A	Preferred	L160	B1331L
RDC511H	RD	C	#3	#6 Concentric	65 or 65PLUSF20	B141A	Preferred	L160	B112
RDC511K	RD	C	#3	#4 Solid	65 or 65PLUSF20	B141A	Preferred	L160	
RDC511L	RD	C	#3	#4 Concentric	65 or 65PLUSF20	B141A	Preferred	L160	
RDC511T	RD	C	#3	#2 Solid	65 or 65PLUSF20	B141A	Preferred	L160	
RDC521G	RD	C	#4	#6 Solid	65 or 65PLUSF20	B141A	Preferred	L160	B1331L
RDC521H	RD	C	#4	#6 Concentric	65 or 65PLUSF20	B141A	Preferred	L160	B112
RDC521K	RD	C	#4	#4 Solid	65 or 65PLUSF20	B141A	Preferred	L160	
RDC521L	RD	C	#4	#4 Concentric	65 or 65PLUSF20	B141A	Preferred	L160	
RDC521T	RD	C	#4	#2 Solid	65 or 65PLUSF20	B141A	Preferred	L160	
RDC521V	RD	C	#4	#2 Concentric	90 or 90PLUSF20	B141A	Preferred	L160	
RDC531G	RD	C	#5	#6 Solid	65 or 65PLUSF20	B141A	Preferred	L160	B1331L