

# Ground Rod Selection



## Copper-Bonded Ground Rod

The copper-bonded ground rod has an electrolytic coating of copper deposited over a layer of nickel. This process ensures a long lasting, molecular bond between the copper layer and the steel core. nVent ERICO recommends copper-bonded ground rods because the copper coating will not slip or tear when driven, nor will it crack if the rod is bent. The tough, carbon steel core has good characteristics for deep driving. Copper-bonded ground rods have a high resistance to corrosion and provide a low resistance path to ground.



## The Stainless Steel Ground Rod Option

It is important to note that certain soils and land fill areas may not be compatible with copper. In these situations, stainless steel is a better proposition. Stainless steel may also be an alternative, where structures or components, such as steel towers, poles or lead sheathed cables are in close proximity to an array of ground electrodes. In these circumstances, consideration must be given to the consequence of galvanic corrosion. The high cost of stainless steel rods prohibits their widespread use.

## NEGRP

The photo on the left shows two ground rods that were driven into the soil vertically at the Pecos testing site in Las Vegas, NV in December of 1992. The top ground rod is galvanized steel, 3/4" x 10'. Bottom ground rod is copper-bonded, 5/8" x 8'. Both ground rods were exhumed from the site in April of 2004. The loss of zinc resulted in excessive corrosion of the steel. The copper-bonded steel ground rods showed minimal corrosion.



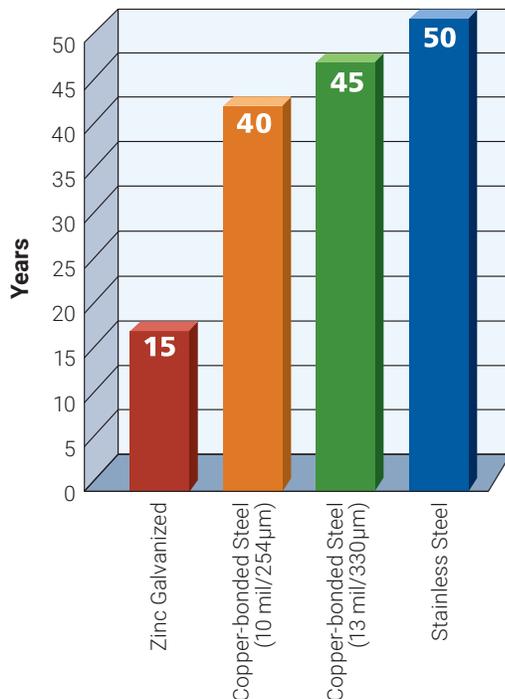
Excavated after 12 years.



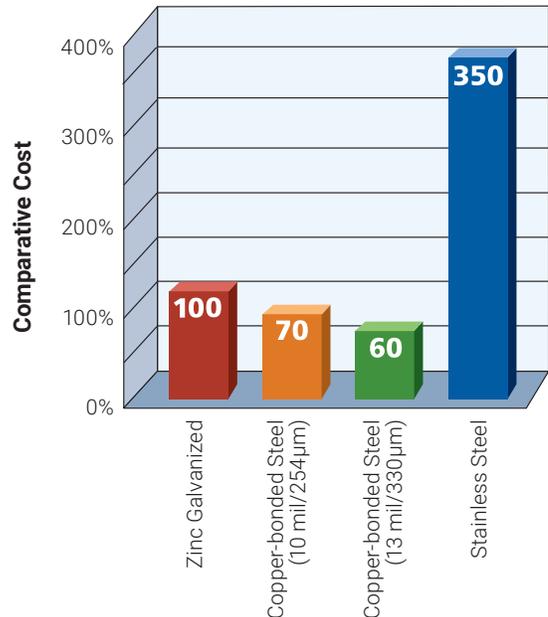
Excavated after 11 years.

The photo on the right shows a galvanized steel ground rod driven vertically into the ground at the Pawnee testing site in Las Vegas, NV. One area is reduced from a 3/4" diameter to approximately a 1/4" diameter due to extensive corrosion. The eventual failure would result in a potentially catastrophic loss of ground.

## Ground Rod Life Expectancy



## Ground Rod Annual Cost



# Copper-Bonded Ground Rods

## POINTED RODS

- 99.9% pure electrolytic copper coating
- Molecular bond to nickel-sealed high strength steel core
- Rods have a high carbon steel core and tip that provide superior strength when driving
- Copper coating will not crack when bent or tear when driven
- Minimum copper coating of 10 mils on rods listed to UL® 467
- nVent ERICO name, length, diameter and part number is roll-stamped within 12" of chamfered end
- UL logo and control number where applicable stamped on each rod for easy inspection after installation



Material: Copper-Bonded Steel  
Tensile Strength: 80,000 psi Min

Part Number	Ground Rod Diameter, Nominal	Ground Rod Diameter, Actual (Ø)	Length	Plating Thickness	Unit Weight
613840**	3/8"	0.358"	4.0'	10 mil	1,300 lb
611350**	1/2"	0.505"	5.0'	10 mil	3,500 lb
611380	1/2"	0.505"	8.0'	10 mil	5,500 lb
611300	1/2"	0.505"	10.0'	10 mil	6,900 lb
615840**	5/8"	0.560"	4.0'	10 mil	3,400 lb
615850**	5/8"	0.560"	5.0'	10 mil	4,200 lb
615860**	5/8"	0.560"	6.0'	10 mil	5,100 lb
615880	5/8"	0.560"	8.0'	10 mil	6,800 lb

Part Number	Ground Rod Diameter, Nominal	Ground Rod Diameter, Actual (Ø)	Length	Plating Thickness	Unit Weight
615800	5/8"	0.560"	10.0'	10 mil	8,500 lb
615812	5/8"	0.560"	12.0'	10 mil	10,000 lb
615815	5/8"	0.560"	15.0'	10 mil	12,800 lb
615883	5/8"	0.561"	8.0'	13 mil	6,800 lb
615803	5/8"	0.561"	10.0'	13 mil	8,400 lb
613440**	3/4"	0.681"	4.0'	10 mil	5,600 lb
613480	3/4"	0.681"	8.0'	10 mil	10,100 lb
613400	3/4"	0.681"	10.0'	10 mil	12,600 lb
613403	3/4"	0.681"	10.0'	13 mil	12,400 lb
613412	3/4"	0.681"	12.0'	10 mil	14,900 lb
613415	3/4"	0.681"	15.0'	10 mil	18,500 lb
614400	1"	0.911"	10.0'	10 mil	22,000 lb

\*\* Non-UL listed rods  
† Additional lengths available

## STEEL DRIVING SLEEVES FOR POINTED RODS\*



- Slides on top of ground rod to prevent mushrooming while driving into ground

Part Number	Ground Rod Size (Unthreaded)
B13714	1/2" Copper-Bonded or Steel rod
B13716	5/8" Copper-Bonded rod (.563" diameter)
B13731	5/8" Steel rod (.625" diameter)
B13718	3/4" Copper-Bonded rod (.682" diameter)
B13733	3/4" Steel rod (.750" diameter)
B13722	1" Copper-Bonded rod (.914" diameter)

\*For unthreaded ground rods only.

## ECONOMICAL SLEEVES FOR 5/8" COPPER-BONDED, POINTED RODS

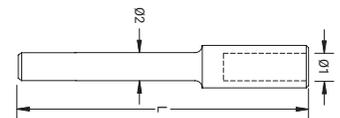


Part Number	Ground Rod Size
EDS58	5/8" Copper-Bonded Rods (.563" diameter)

## DRIVING HEADS FOR COPPER-BONDED POINTED RODS



- For use in power assisted ground rod drivers



Part Number	Ground Rod Size	Ø1	Ø2	L
DH58	5/8" Copper-Bonded Rods (.563" diameter)	0.58"	0.85"	7"
DH34	3/4" Copper-Bonded Rods (.682" diameter)	0.78"	0.85"	7"

## THREADLESS COMPRESSION COUPLERS FOR COPPER-BONDED POINTED RODS



- Made of high-strength silicon bronze
- Tapered so when rod is driven into coupling, parts compress to form a conductive connection



Part Number	Nominal Rod Diameter (in)	Unit Weight (lbs)	Standard Package
CC12F	1/2 (full)	0.240	25
CC58	5/8	0.300	25
CC34	3/4	0.450	25