

nVent ERICO Cu-Bond Round Conductor

Power Utilities

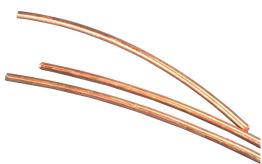
For decades, nVent ERICO has provided the market with high quality copper-bonded ground rods. nVent ERICO has taken that same concept in ground rods and made this into a revolutionary new grounding conductor. The core of the nVent ERICO Cu-Bond Round Conductor is a low carbon steel grade for improved flexibility in the field. The steel core is plated with nickel then electro-plated with a coating of copper. This electro-plating process helps ensure a long-lasting molecular bond between the copper layer and the steel.

The steel core of the conductor provides theft-deterrent benefits, making the conductor difficult to cut with hand tools. With this steel core, nVent ERICO Cu-Bond Round Conductor is a cost-effective alternative to 100% copper conductor. The copper surface of the conductor provides high conductivity and corrosion resistance properties.

Above grade, the unique properties of nVent ERICO Cu-Bond Round Conductor make it ideal for both horizontal and vertical placement. The conductor is well-suited as a lightning protection conductor when applied in accordance with the IEC 62305-3 Edition 2.0 standard.

In the utility industry, the product can be used as a distribution down-lead conductor or as part of a bonding kit for substation fences or equipment ground risers back to the grid. In telecom applications, the product can be used to connect an equipment ground to the ground grid, as a riser (down-lead) for towers, or as a grounding conductor for datacenter mesh bonding. They are also well suited for rail applications such as trackside bonding conductors and stray current conductors, grounding kits for trackside equipment, electrical traction power, as well as in substation, wayside shelters, and communication antenna equipment.

Below grade, nVent ERICO Cu-Bond Round Conductors are ideal as earthing and bonding conductors where copper theft may occur. They may be used as a buried ground grid conductor or electrode for wireless telecom towers, power distribution and transmission grounding in utility substations, large scale ground mount solar farms, petrochemical and mining infrastructure in industrial facilities,



and railway applications. The conductor also can be used as an interconnecting grounding conductor between wind towers or as a grounding grid at the base of a wind tower.

CERTIFICATIONS



CARACTERÍSTICAS

Theft-deterrent; steel core is hard to cut with hand tools

Cost-effective; copper bonded to a steel core minimizes the amount of copper in the cable

Superior corrosion resistance; application life of typically 30-40 years in most soil conditions

Copper-bonded coating will not crack or tear when the conductor is bent

High resistance to corrosion and provides a low-resistance path to ground

nVent ERICO Cu-Bond Round Conductor is marked every meter (3.28') for easy measurement in the field

Meets the requirements of IEC® 62305-3 Edition 2 and IEC/EN 62561-2 for lightning protection applications

nVent ERICO Cu-Bond Round Conductors are UL certified to IEC® 62561-2

ESPECIFICAÇÕES

Table 1/1

Número de catálogo	Espessura do revestimento	Equivalência de capacidade de fusão	Código de condutores nVent ERICO Cadweld	Peso unitário	Certification Details
CBSC8	254 µm	25 mm ²	T1	39 kg	IEC® 62561-2

DETALHES ADICIONAIS DO PRODUTO

Resistance per unit length measurements made in mΩ/m, CBSC compared with respect to AWG/Metric.

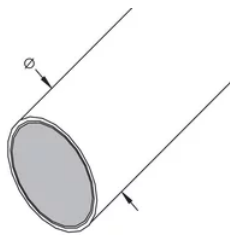
The IEEE® 837 standard (Annex C) provides a method of calculating the fusing current for conductors. This chart is a reference of the calculations for copper-bonded steel conductor according to the IEEE 837 standard. This information is for reference only.

Comparação de Seção do Condutor		
Seção do Condutor	Diâmetro aproximado	Corte transversal
25 mm ²	6,76 mm	-
35 mm ²	7,65 mm	-
CBSC8	8,00 mm	50,27 mm ²
50 mm ²	8,89 mm	-
CBSC10	10,00 mm	78,52 mm ²
70 mm ²	10,69 mm	-
95 mm ²	12,47 mm	-
CBSC13	13,20 mm	138,07 mm ²
CBSC14	14,20 mm	158,90 mm ²
120 mm ²	14,22 mm	-
CBSC16	15,70 mm	199,84 mm ²
150 mm ²	15,75 mm	-
185 mm ²	17,65 mm	-
CBSC18	17,70 mm	243,27 mm ²

Comparação de condutividade				
Número da peça	AWG (Ω/km)	Resistência do CBSC por Comparação de comprimento	mm ² (Ω/km)	Resistência do CBSC por Comparação de comprimento
CBSC18	1/0 AWG	118,52%	50 mm ²	110,82%
	2 AWG	74,54%	35 mm ²	77,57%
CBSC16	2 AWG	102,20%	35 mm ²	106,36%
	4 AWG	64,27%	25 mm ²	75,97%
CBSC14	2 AWG	137,78%	25 mm ²	102,42%
	4 AWG	86,65%	16 mm ²	65,55%
CBSC13	2 AWG	134,46%	25 mm ²	99,95%
	4 AWG	84,56%	16 mm ²	63,97%
CBSC10	4 AWG	132,25%	16 mm ²	100,05%
	6 AWG	83,17%	10 mm ²	62,53%
CBSC8	6 AWG	107,85%	16 mm ²	129,73%
	8 AWG	67,83%	10 mm ²	81,08%

Corrente de fusão I rms (kA) - IEEE® 837 Anexo C							
Tipo de condutor Aço cobreado, Alma de aço, HasteUma		CBSC8	CBSC10	CBSC13	CBSC14	CBSC16	CBSC18
Seção Transversal do Condutor em mm ²	A	50.265	78.52	138.07	158.903	199.84	243.27
Temperatura inicial do condutor em °C	Ta	40	40	40	40	40	40
Tempo de fluxo de corrente em segundos	tc	2	2	2	2	2	2
Temperatura máxima permitida em °C	Tm	1084	1084	1084	1084	1084	1084
Coeficiente de resistividade térmica à Temperatura de Referência Tr	ar	0.00378	0.00378	0.00378	0.00378	0.00378	0.00378
Resistividade do Condutor Terra à Temperatura de Referência Tr em mΩ-cm	rr	8.621	8.621	8.621	8.621	8.621	8.621
1/a0 ou (1/ar) – Tr em °C	K0	245	245	245	245	245	245
Fator de Capacidade Térmica em Joules/cm ³ /°C	TCAP	3.846	3.846	3.846	3.846	3.846	3.846
Condutividade do Material	%	24.5	20.4	18.8	15.9	16.3	17.7
Cálculo de Corrente de Fusão	β	84.73	84.73	84.73	84.73	84.73	84.73
	I	4.79	7.48	13.16	15.15	19.05	23.19
	I90%	4.31	6.74	11.84	13.63	17.14	20.87
	I80%	3.83	5.99	10.53	12.12	15.24	18.55

DIAGRAMAS



AVISO

Os produtos nVent devem ser instalados e utilizados apenas conforme indicado nas fichas de instrução do produto e materiais de treinamento da nVent. As fichas de instrução estão disponíveis em www.nVent.com e com nossos representantes de atendimento ao cliente nVent. A instalação inadequada, uso incorreto, aplicação incorreta ou outra falha qualquer em seguir completamente as instruções e avisos da nVent podem levar ao mau funcionamento do produto, danos à propriedade, lesões corporais graves e morte, e/ou anular sua garantia.

⚠ WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.



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