

COPPERSTEEL® WIRES AND CABLES - 53% IACS

CS53-22-1F

Description

**COPPERSTEEL** is a bimetallic conductor that combines the mechanical properties of steel with the high conductivity and corrosion resistance of copper. Created from a continuous cladding process where the metals are joined together on an atomic scale to produce a bimetallic material with the best of both metals, it is the smartest option for grounding grid, counterpoise, grounding conductor and various other applications.

**SUBSTATION GROUNDING SYSTEMS:** For grounding applications, the COPPERSTEEL conductors with 40% and 53%, IACS have equivalent fusing resistance performance to bare copper cable with same cross section, against short-circuit up to 1s rate duration. In practice, this is possible because the steel core allows the COPPERSTEEL conductor to work over a wider temperature range than copper, without compromising its physical characteristics.

**POWER GENERATION GROUNDING SYSTEMS (RENEWABLE):** The best grounding solution for wind farms, photovoltaic systems and hydroelectric plants. Performance equivalent to copper and superior to hot dip galvanized steel, ensuring maximum performance in the grounding of equipments (wind turbines, transformers, photovoltaic plates, etc) and civil works (anchor bolts, powerhouses, substations, among others), in addition to reducing the potential for theft.

**PUBLIC LIGHTING / SIGNALING:** In applications such as conductors for public lighting and signaling, COPPERSTEEL conductors, with 53% IACS, offer adequate conductivity and less theft potential compared to pure copper cables.

**TELECOMMUNICATIONS:** The outer copper layer of the COPPERSTEEL conductors and cables ensure equivalent performance to bare copper in TELECOM applications, due to the skin-effect at high frequencies.



Datasheet

|                               |            |
|-------------------------------|------------|
| Código INTELLI                | CS53-22-1F |
| Nominal Cross Section (mm²)   | -          |
| Effective Cross Section (mm²) | 0,32       |
| Conductor Characteristics     |            |
| Qtd. De Fios                  | 1          |
| Diâmetro dos Fios (mm)        | 0,64       |
| Diâmetro do Cabo (mm)         | -          |
| Seção (AWG/MCM)               | 22         |
| Physical Parameters           |            |
| Área do Cobre (%)             | 49         |

|  |           |
|--|-----------|
| Área do Aço (%)  | 51        |
| Massa Específica (g/cm³)                               | 8,35      |
| <b>Mechanical Characteristics</b>                      |           |
| Peso Nominal (kg/km)                                   | 2,70      |
| Módulo de Elasticidade (GPa)                           | 166       |
| Coef. de Dilatação Linear (1/°C)                       | 1,98 E-05 |
| Carga de Ruptura - LCA (daN)                           | 8,4       |
| <b>Electrical Characteristics</b>                      |           |
| Coef. de Variação de Resistência (1/°C)                | 0,00378   |
| Reatância Indutiva - 60Hz (ohms/km)                    | -         |
| Reatância Capacitiva - 60Hz (ohms/km)                  | -         |
| Capacidade de Corrente em Regime Permanente - 75°C (A) | 11,0      |
| Capacidade de Corrente em CC - 50ms (A)                | -         |
| Capacidade de Corrente em CC - 100ms (A)               | -         |
| Capacidade de Corrente em CC - 0,5s (A)                | -         |
| Resistência Máxima à 20°C em CC (ohms/km)              | 101,120   |
| <b>Package</b>   |           |
| Tipo de Bobina   | -         |
| Lance Nominal (m)                                      | -         |
| Massa Líq. por Bobina (kg)                             | -         |
| Massa Bruta da Bobina com Fechamento (kg)              | -         |