

ZCO3 & ZCO3-SH Main Signalling Cables (AC Electrified High Speed Lines)

Applications

The cables are designed for connection between traffic control centers and equipment shelters along the trackside. The cables are specially designed to give good induction protection ($R.F=0.21$ at inductive voltage $100V/km$) and are suitable for installation in high speed railway lines electrified at $25KV$ ac.

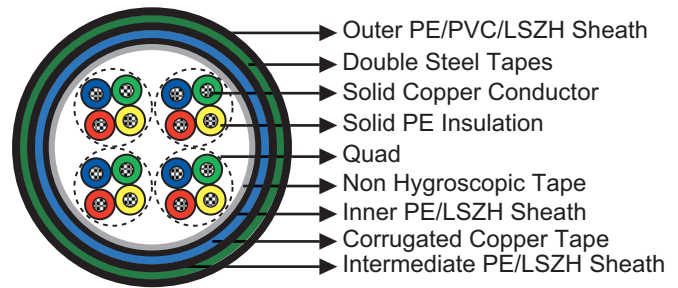


Standards

- SNCF CT 445
- NF F 55-698

Construction

- Conductors: Solid annealed copper, 1.0 mm^2 nominal cross section area.
- Insulation: Solid polyethylene.
- Cabling Element: Four conductors are twisted to form a quad.
- Stranding: Quads are helically stranded to get the cable core.
- Core Wrapping: Plastic tape(s) with overlapping.
- Inner Sheath: Low density polyethylene. LSZH FR option can be offered upon request to NF C 32 070.2.2 (C1).
- Electrostatic Shield: Corrugated copper tape.
- Intermediate Sheath: Low density polyethylene. LSZH FR option can be offered upon request to NF C 32 070.2.2 (C1).
- Electromagnetic Shield: Two helically applied steel tapes (0.5mm).
- Outer Sheath: PE/PVC compound. LSZH FR option can be offered upon request to NF C 32 070.2.2 (C1).
- Remarks: ZCO3: PE/PVC Sheath; ZCO3-SH: LSZH Sheath.



Electrical Characteristics at 20°C

| | | |
|--|---------------------|---------|
| Nominal Conductor Diameter | mm | 1.13 |
| Nominal Cross Section Area | mm^2 | 1.0 |
| Maximum Conductor Resistance (DC) | Ω/km | 18.1 |
| Minimum Insulation Resistance @500 V DC (3mins) | $M\Omega.\text{km}$ | 5000 |
| Maximum Mutual Capacitance (AC) @1000Hz | nF/km | 40 |
| Maximum Capacitance Unbalance @800Hz | pF/500m | 400 |
| Dielectric Strength, conductor to conductor (DC voltage 3mins) | V | 4500 |
| Operating Voltage AC/DC | V | 450/750 |



Reduction Factor

| Inductive voltage(V/km) | 50 | 70 | 100 | 370 | 400 | 470 |
|-------------------------|------|------|------|------|------|------|
| Reduction factor @50Hz | 0.42 | 0.30 | 0.21 | 0.16 | 0.18 | 0.31 |

Mechanical and Thermal Properties

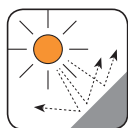
- Minimum Bending Radius: 8×OD (static); 16×OD (dynamic)
- Temperature Range: -40°C to +70°C (during operation); -20°C to +50°C (during installation)

Dimensions and Weight

| Cable Code | No. of Quads | Nominal Sheath Thickness mm | | | Nominal Overall Diameter mm | Nominal Weight kg/km |
|---------------------------------------|--------------|--------------------------------|---------|-------|-----------------------------------|-------------------------|
| | | Inner | Interm. | Outer | | |
| 1.13mm Conductor, 2.33 Insulated Wire | | | | | | |
| RS/ZCO3-2Y2Y(K)2YB2Y-2Q1S | 2 | 0.8 | 1.0 | 1.6 | 27.0 | 1295 |
| RS/ZCO3-2Y2Y(K)2YB2Y-4Q1S | 4 | 0.8 | 1.0 | 1.6 | 29.5 | 1490 |



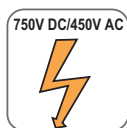
Anti Induction



UV Resistant



Mineral Oil Resistant



Rated voltage

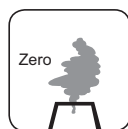


Buried in Ground



Laid In Ducts

PE Sheath



Zero Halogen
IEC 60754-1/NF C20-454
EN 50267-2-1

PVC Sheath



Flame Retardant
NF C32-070-2.1(C2)
IEC 60332-1/EN 50265-2-1

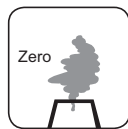
LSZH Sheath



Flame Retardant
NF C32-070-2.1(C2)
IEC 60332-1/EN 50265-2-1



Fire Retardant
NF C32-070-2.2(C1)
IEC 60332-3/EN50266



Zero Halogen
IEC 60754-1/NF C20-454
EN 50267-2-1



Low Smoke Emission
IEC 61034/NFC20-902
EN 50268/NF C32-073



Low Corrosivity
EN 50267-2-2/NF C32-074
IEC 60754-2/NF C20-453



Low Toxicity

