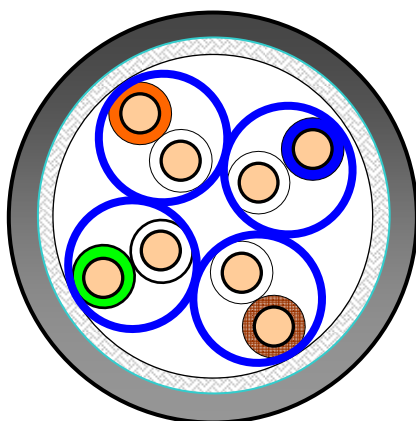


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STANDARDS

- ISO/IEC 11801 and ISO/IEC 24702
- EN 50173 – 1
- TIA/EIA-568-B.2 (May 2001).

CABLE CONSTRUCTION



CABLE CONSTRUCTION

Conductor

| | |
|----------|-------------------|
| Material | Solid bare copper |
| Diameter | AWG 23 |

Insulation

| | |
|-----------------------------------|-------------------|
| Material | Foam-Polyethylene |
| Diameter over insulated conductor | 1.45 ± 0.05 mm |

Pair

| | |
|--------------------|--|
| Pair | 2 twisted insulated conductors with overall foil |
| Number of pairs | 4, all twisted together |
| Colour code pair 1 | White & Blue |
| Colour code pair 2 | White & Orange |
| Colour code pair 3 | White & Green |
| Colour code pair 4 | White & Brown |

Shielding foil over element

| | |
|--------------------|---------------------------------|
| Material | Laminated Aluminium / Polyester |
| Position aluminium | Outside |

Braid

| | |
|----------|---------------------|
| Material | Solid tinned copper |
| Coverage | ≥ 65 % |

Sheath

| | |
|----------|-------------------------------|
| Material | FRNC/LSNH UV and oilresistant |
| Diameter | 8.0 ± 0.2 mm |

| | | |
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Electrical characteristics

Low frequency and D.C.

| | | |
|--|--------|---------|
| D.C. resistance conductor | < 75 | Ω/km |
| Resistance unbalance | < 2 | % |
| D.C. insulation resistance | > 5000 | MΩ.km |
| Dielectric strength cond. – cond. (2 sec.) | 2.5 | kV D.C. |
| Mutual capacitance | < 56 | nF/km |
| Capacitance unbalance | < 1600 | pF/km |

High frequency

| | | |
|---|--|---------|
| Velocity of propagation | | |
| @ 4 – 600 MHz | ≥ 0.6 | c |
| Skew | | |
| @ 1 – 600 MHz | ≤ 40 | ns/100m |
| Propagation delay | | |
| @ 1 – 600 MHz | ≤ 534 + 36/Vf | ns/100m |
| Longitudinal attenuation | | |
| @ 4 – 1000 MHz | ≤ 1.8*Vf+0.01*f+0.2/Vf | dB/100m |
| Near end cross talk (NEXT) | | |
| @ 1 – 31.25 MHz | ≥ 80 | dB |
| @ 31.25 – 1000 MHz | ≥ 102.4 – 15 log(f) | dB |
| Power sum near end cross talk (PSNEXT) | | |
| @ 1 – 31.25 MHz | ≥ 77 | dB |
| @ 31.25 – 1000 MHz | ≥ 99.4 – 15 log(f) | dB |
| Equal level far end cross talk (ELFEXT) | | |
| @ 1 – 5 MHz | ≥ 80 | dB |
| @ 5 – 1000 MHz | ≥ 94.0 – 20 log(f) | dB |
| Power sum equal level far end cross talk (PSELFEXT) | | |
| @ 1 – 5 MHz | ≥ 77 | dB |
| @ 5 – 1000 MHz | ≥ 91.0 – 20 log(f) | dB |
| Attenuation cross talk ratio (ACR) | | |
| @ 4 – 31.25 MHz | ≥ 80 - (1.85*Vf+0.01*f+0.2/Vf) | dB |
| @ 31.25 – 1000 MHz | ≥ (102.4 – 15 log(f)) - (1.8*Vf+0.01*f+0.2/Vf) | dB |
| Power sum attenuation cross talk ratio (PSACR) | | |
| @ 4 – 31.25 MHz | ≥ 77 - (1.8*Vf+0.01*f+0.2/Vf) | dB |
| @ 31.25 – 1000 MHz | ≥ (99.4 – 15 log(f)) – (1.8*Vf+0.01*f+0.2/Vf) | dB |

Input impedance open/short (Zo/s)

| | | |
|-----------------|----------|---|
| @ 4-100 MHz | 100 ± 15 | Ω |
| @ 100 – 250 MHz | 100 ± 22 | Ω |
| @ 250 – 600 MHz | 100 ± 25 | Ω |

Mean characteristic impedance (Zcm)

| | | |
|-----------|---------|---|
| @ 100 MHz | 100 ± 5 | Ω |
|-----------|---------|---|

| | | |
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Return Loss (RL)

| | | |
|----------------------|---------------------|----|
| @ 4 ≤ f ≤ 10 MHz | ≥ 20 + 5 log (f) | dB |
| @ 10 ≤ f ≤ 20 MHz | ≥ 25 | dB |
| @ 20 ≤ f ≤ 250 MHz | ≥ 25 – 7 log (f/20) | dB |
| @ 250 ≤ f ≤ 600 MHz | ≥ 17.3 | dB |
| @ 600 ≤ f ≤ 1000 MHz | ≥ 25 – 7 log (f/20) | dB |

Coupling attenuation Type II

| | | |
|------------------|----------------------|----|
| @ 30 – 100 MHz | > 80 | dB |
| @ 100 – 1000 MHz | > 80 – 20 log(f/100) | dB |

Transfer Impedance (Z_T)

| | | |
|-----------|-------|------|
| @ 1 MHz | < 5 | mΩ/m |
| @ 10 MHz | <5 | mΩ/m |
| @ 30 MHz | < 30 | mΩ/m |
| @ 100 MHz | < 100 | mΩ/m |

MECHANICAL CHARACTERISTICS

| | |
|--------------------------------|---------|
| Elongation at break conductor | ≥ 10 % |
| Elongation at break insulation | ≥ 100 % |
| Elongation at break sheath | ≥ 100 % |
| Tensile strength sheath | ≥ 9 Mpa |

ENVIRONMENTAL AND OVERALL CHARACTERISTICS

| | |
|--|------------------------------------|
| Maximum operating voltage | 30 V A.C. |
| Maximum continuous current per conductor (@25°C) | 1.4 A rms |
| Halogenfree according to | IEC 60754-1/2 / EN50267-1/2 |
| Smoke density | IEC 61034 |
| Oil resistant | IEC 60811-2-1 |
| Maximum pulling tension | 80 N |
| Minimum bending / setting radius | 80 / 40 mm |
| Temperature range installing | - 15 to +60 °C |
| Temperature range operating | - 40 to +80 °C |
| Temperature range storage | -40 to +80 °C |
| Flame propagation bundle | IEC 60332-3-24 / EN50266-2-4 cat C |
| Flame test single wire | IEC 60332-1-2 |



Belden declares this product to be in compliance with the environmental regulations EU RoHS (Directive 2002/95/EC, 27 January 2003); this is valid for all material produced after the RoHS compliant date for this product.