



## Harnessing and Electro-Mechanical Solutions for Demanding, Harsh Environment Applications...

Railway Market: 100E Wire | ZHPCG Cable | SHF260 Flexible Cable



# Rail Wire Guide



## 100E Wire

### EN50306 Signal Wire and Cables Rail and Mass Transit

Range of high performance signal cables that meet the demanding requirements of various standards including EN50306. Extremely flexible, tough and resistant to a variety of fluids meeting the limited fire hazard requirements. Insulation materials are mechanically strong and durable whilst being smaller and lighter.

Rail approved zero Halogen, light weight wire and cable for signal, and low voltage applications. The construction is a dual wall combination of formulated polymer blends. Developed to meet Rail specification requirements, whilst maintaining the desirable features of small size, lightweight, flexibility, non-wrinkling.

#### Product Features

- Zero halogen, thin wall, high temperature
- Small size and lightweight
- Excellent handling and flexibility
- Outstanding resistance to oils, plus scrape abrasion and cut through.
- Voltage rating: 300 V.
- Conductor cores 0.5mm<sup>2</sup> to 2.5mm<sup>2</sup>.
- Temperature rating: -40°C up to +125°C.
- Dual wall construction
- Compliant with EN50306

#### Approvals

EN50306-2

Thin wall single core wires, 300 volts.

EN50306-3

Single core and multi-core cables (pairs, triples and quads) screened and thin wall sheathed.

EN50306-4

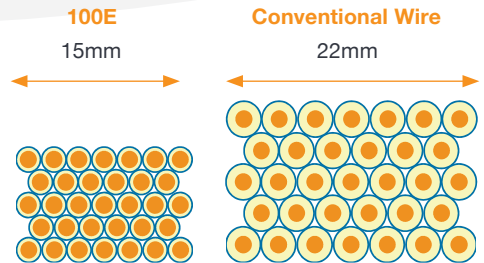
Multi-core and Multi-pair cables standard wall sheathed, screened or unscreened (thicker outer jacket).



**50% Volume Reduction**

**30% Weight Reduction**

over conventional wire

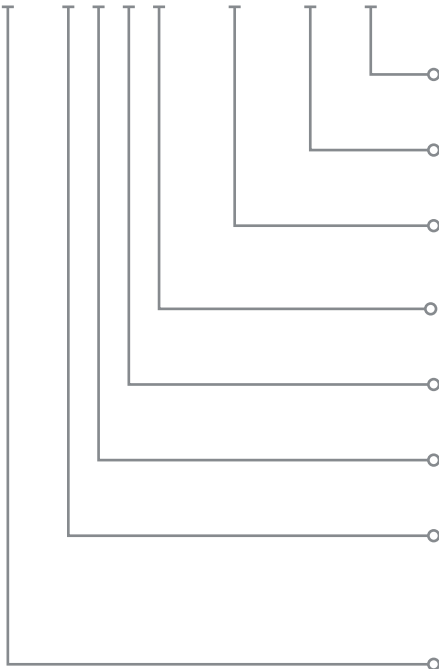


35 x 1mm<sup>2</sup> wires > 50% reduction in bulk of wiring and > 30% reduction in the weight of wiring

Conventional cables use filled soft polymer insulations, which by the nature of the insulation have to be thick wall. 100E wire uses engineered polymers to greatly reduce wall thickness by ~5 times.

Fire Hazard Performance		
Test	Method	Result
Flame Propagation - Single cable	IEC 60332-1-2	Charring confined 50-540mm
Flame Propagation - Bunched Cable ( d≥ 12mm)	IEC 60332-3-24	Max. burn length 2.5m
Flame Propagation - Bunched Cable (>6mm/<12mm)	EN 50305 Clause 9.1.1	Max burn length 2.5m
Flame Propagation - Bunched Cable (d ≤6mm)	EN 50305 Clause 9.1.2	Max burn length 1.5m
Smoke Testing	EN 61034-2	3m cube 90% min. transmittance
Toxicity	EN 50305 Clause 9.2	Index max.6
Fluorine Content	IEC 60684-2 Cl 45.2	<0.1% Fluorine
Evolution of HCL	EN 60754-1	<0.5% HCL
Acid Gas Emission	EN 60754-2	pH >4.3 conductivity <10µS/mm

**100E 1 1 1 1 - 0.50 - 9 - 0**



**Part Numbering example**

**Outer Jacket Colour**

0 = Black, standard colour

**Core Insulation Colour**

9 = White, standard colour

**Conductor Size**

0.50mm<sup>2</sup>; 0.75mm<sup>2</sup>; 1.00mm<sup>2</sup>; 1.5mm<sup>2</sup>; 2.5mm<sup>2</sup>

**Conductor Type**

1 = Tin Plated Copper

**Number of Conductors**

1 to 4

**Class of Wire**

1 = 300V

**Constructions**

0 = Just primary wire

1 = Round braid, screened and jacketed

4 = Jacketed , no screen

**Base Wire**

Spec 100E - Rail (White core insulation)

Spec 100G - VG 95218-28 Type E available

## 100E Wire

### EN50306 Signal Wire and Cables

#### Rail and Mass Transit

#### EN50306-2 Thin Wall Single Core Wires 300 volts

Part Description	Conductor			Finished Wire		
	Cross Sectional Area	Conductor Stranding No./Diam	Max. Diameter	Max. Resistance @ 200C (Ω/km)	Max. Diameter	Weight
100E0111-0.50-X	0.50 mm <sup>2</sup>	19/0.18 mm	0.90 mm	40.1 Ω/km	1.45 mm	6.60 kg/km
100E0111-0.75-X	0.75 mm <sup>2</sup>	19/0.23 mm	1.15 mm	26.7 Ω/km	1.65 mm	8.90 kg/km
100E0111-1.00-X	1.00 mm <sup>2</sup>	19/0.25 mm	1.26 mm	20.0 Ω/km	1.80 mm	10.7 kg/km
100E0111-1.50-X	1.50 mm <sup>2</sup>	37/0.23 mm	1.58 mm	13.7 Ω/km	2.13 mm	16.0 kg/km
100E0111-2.50-X	2.50 mm <sup>2</sup>	37/0.29 mm	2.01 mm	8.21 Ω/km	2.63 mm	25.7 kg/km

#### EN50306-3 Single Core Cables, Screened and Thin Wall Sheathed

Part Description	Cross Sectional Area	Shield Size	Jacket Thickness		Nom. Overall Diameter	Weight
			Min.	Nom.		
100E1111-0.50-X	0.50 mm <sup>2</sup>	0.10 mm	0.20 mm	0.38 mm	2.61 mm	17.4 kg/km
100E1111-0.75-X	0.75 mm <sup>2</sup>	0.10 mm	0.20 mm	0.38 mm	2.82 mm	20.7 kg/km
100E1111-1.00-X	1.00 mm <sup>2</sup>	0.10 mm	0.20 mm	0.38 mm	2.95 mm	23.9 kg/km
100E1111-1.50-X	1.50 mm <sup>2</sup>	0.10 mm	0.20 mm	0.38 mm	3.28 mm	31.6 kg/km
100E1111-2.50-X	2.50 mm <sup>2</sup>	0.10 mm	0.20 mm	0.38 mm	3.88 mm	49.3 kg/km

#### EN50306-3 Two Core Cables, Screened and Thin Wall Sheathed

Part Description	Cross Sectional Area	Shield Size	Jacket Thickness		Nom. Overall Diameter	Weight
			Min.	Nom.		
100E1121-0.50-X	0.50 mm <sup>2</sup>	0.13 mm	0.20 mm	0.38 mm	4.14 mm	32.5 kg/km
100E1121-0.75-X	0.75 mm <sup>2</sup>	0.13 mm	0.20 mm	0.38 mm	4.56 mm	39.0 kg/km
100E1121-1.00-X	1.00 mm <sup>2</sup>	0.13 mm	0.20 mm	0.38 mm	4.81 mm	47.0 kg/km
100E1121-1.50-X	1.50 mm <sup>2</sup>	0.13 mm	0.20 mm	0.38 mm	5.48 mm	64.4 kg/km
100E1121-2.50-X	2.50 mm <sup>2</sup>	0.13 mm	0.20 mm	0.38 mm	6.48 mm	95.2 kg/km

**EN50306-3 Three Core Cables, Screened and Thin Wall Sheathed**

Part Description	Cross Sectional Area	Shield Size	Jacket Thickness		Nom. Overall Diameter	Weight
			Min.	Nom.		
100E1131-0.50-X	0.50 mm <sup>2</sup>	0.13 mm	0.20 mm	0.38 mm	4.36 mm	42.0 kg/km
100E1131-0.75-X	0.75 mm <sup>2</sup>	0.13 mm	0.20 mm	0.38 mm	4.82 mm	52.2 kg/km
100E1131-1.00-X	1.00 mm <sup>2</sup>	0.13 mm	0.20 mm	0.38 mm	5.09 mm	62.3 kg/km
100E1131-1.50-X	1.50 mm <sup>2</sup>	0.13 mm	0.20 mm	0.38 mm	5.81 mm	85.9 kg/km
100E1131-2.50-X	2.50 mm <sup>2</sup>	0.13 mm	0.20 mm	0.38 mm	6.86 mm	129 kg/km

**EN50306-3 Four Core Cables, Screened and Thin Wall Sheathed**

Part Description	Cross Sectional Area	Shield Size	Jacket Thickness		Nom. Overall Diameter	Weight
			Min.	Nom.		
100E1141-0.50-X	0.50 mm <sup>2</sup>	0.13 mm	0.25 mm	0.38 mm	4.72 mm	85.8 kg/km
100E1141-0.75-X	0.75 mm <sup>2</sup>	0.13 mm	0.25 mm	0.38 mm	5.22 mm	101 kg/km
100E1141-1.00-X	1.00 mm <sup>2</sup>	0.13 mm	0.30 mm	0.43 mm	5.62 mm	123 kg/km
100E1141-1.50-X	1.50 mm <sup>2</sup>	0.13 mm	0.38 mm	0.48 mm	6.53 mm	168 kg/km
100E1141-2.50-X*	2.50 mm <sup>2</sup>	0.13 mm	0.46 mm	0.61 mm	7.96 mm	250 kg/km

**EN50306-4 Multi-Core and Multi-Pair Cables, Screened and Standard Wall Sheathed**

Custom designed cables (specials). Due to the potential number of parts possible, these will be created as EPD cables. Rail specifications EN50306-4 multi-core and multi-pair cables are standard wall sheathed.

- Unscreened, sheathed or either exposed or protected wiring (0.5mm<sup>2</sup> to 2.50 mm<sup>2</sup>, number of cores from 2 to 48). Conforms with table 1 of EN50306-4 (Class 1P or 1E)
- Screened, sheathed for either exposed or protected wiring (0.5mm<sup>2</sup> to 2.50 mm<sup>2</sup>, number of cores from 2 to 8). Conforms with table 3 of EN50306-4 (Class 3P or 3E)
- Screened, sheathed for either exposed or protected wiring (0.5mm<sup>2</sup> to 1.50 mm<sup>2</sup>, number of cores from 2 to 7). Conforms with table 3 of EN50306-4 (Class 5P or 5E)



# Wire and Cable

## ZHPCG CK0226 Cable

EN45545-2 Power Cable

Rail and Mass Transit

Rail approved zero Halogen Power Cables, available as 750V or 1800V rated.

Halogen free cable with good oil resistance and resistance to water, making them ideal for the Rail Market, where its low fire hazard performance and flexibility are key to a successful installation.

Conductor sizes 1mm<sup>2</sup> to 400mm<sup>2</sup>

### Product Features

- Zero halogen
- Small size and lightweight
- Excellent handling and flexibility
- Outstanding resistance to oils, plus scrape abrasion and cut through.
- Voltage rating: 750V or 1800V
- Conductor cores 1.0mm<sup>2</sup> to 400mm<sup>2</sup>.
- Temperature rating: -25°C up to +105°C.
- Dual wall construction

### Approvals

EN45545-2

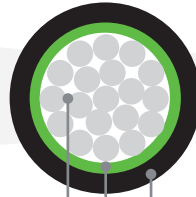
DIN 5510-2

### Voltage Rating

- ZHPCG-15 750/1300V  
IEC Class 5 - Flexible cable
- ZHPCG-35 1800/3300V  
IEC Class 5 - Flexible cable
- ZHPCG-36 1800/3300V  
IEC Class 6 - Very flexible cable

### Colours

- Standard jacket colour black
- Colours on request



**Outer Jacket**  
Black Zerohal®

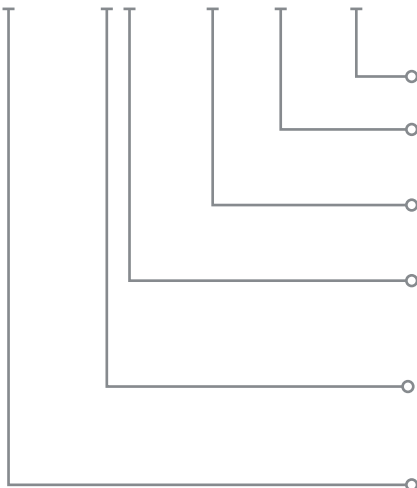
**Insulation**  
Flexible Polyolefin  
containing no added  
halogens

**Conductor**  
Flexible tin plated  
copper special class 5  
to IEC 60228

<b>Fire Hazard Performance</b>		
<b>EN45545</b>		
Test	Method	Result
Flammability - small scale	IEC 60332-1-2	Charring confined to between 50mm and 540mm
Flammability - large scale	Clause 9.1.2 EN50305	Max. burn length 1.5m
Smoke - large scale	EN 61034-2	3m cube box 90% min. transmittance
Toxicity	Clause 9.2 EN50305	Index max. 6
<b>DIN 5510-2</b>		
Flammability - small scale	IEC 60332-1-2	Pass
Flammability - large scale	EN50305	Pass
Smoke - large scale	EN 61034-2	Pass
PH & Conductivity	EN50267-2-2	Pass
Evolution of HCl	EN50267-2-1	Pass
Fluorine Content	EN60684-2	Pass
Toxicity	Clause 9.2 EN50305	Pass

example...

**ZHPCG - 36 - 16.0 - 0 CK0226**



**Part Numbering example**

**Denotes Rail CK**

**Jacket Colour**

9 = White, standard colour

**Conductor Size**

1.0mm<sup>2</sup> to 400mm<sup>2</sup>

**Conductor Type**

5 = IEC Class 5 flexible

6 = IEC Class 6 very flexible

**Voltage rating**

1 = 750/1300 V

3 = 1800/3300 V

**Product Family**

ZHPCG 15, 35 or 36

## ZHPCG-15 CK0226 Cable

EN45545-2 Power Cable

Rail and Mass Transit

### 15. 750/1300V - ZHPCG CK0226

Part Description	Conductor		Finished Wire		
	Max. Strand Dia.	Max. Diameter	Max. Resistance @ 200C	Max. Diameter	Weight
ZHPCG-15-1.0-0-CK0226	0.21 mm	1.25 mm	20.00 Ω/km	4.00 mm	28 kg/km
ZHPCG-15-1.5-0-CK0226	0.26 mm	1.49 mm	13.70 Ω/km	4.00 mm	36 kg/km
ZHPCG-15-2.5-0-CK0226	0.26 mm	1.97 mm	8.21 Ω/km	4.50 mm	45 kg/km
ZHPCG-15-4.0-0-CK0226	0.31 mm	2.56 mm	5.09 Ω/km	4.89 mm	60 kg/km
ZHPCG-15-6.0-0-CK0226	0.31 mm	3.05 mm	3.39 Ω/km	5.56 mm	85 kg/km
ZHPCG-15-10.0-0-CK0226	0.41 mm	4.05 mm	1.95 Ω/km	6.88 mm	135 kg/km
ZHPCG-15-16.0-0-CK0226	0.41 mm	5.20 mm	1.24 Ω/km	8.48 mm	195 kg/km
ZHPCG-15-25.0-0-CK0226	0.41 mm	7.00 mm	0.795 Ω/km	10.30 mm	300 kg/km
ZHPCG-15-35.0-0-CK0226	0.41 mm	7.75 mm	0.565 Ω/km	11.90 mm	443 kg/km
ZHPCG-15-50.0-0-CK0226	0.41 mm	9.20 mm	0.393 Ω/km	14.10 mm	623 kg/km
ZHPCG-15-70.0-0-CK0226	0.51 mm	11.50 mm	0.277 Ω/km	16.30 mm	847 kg/km
ZHPCG-15-95.0-0-CK0226	0.51 mm	13.00 mm	0.210 Ω/km	18.80 mm	1119 kg/km
ZHPCG-15-120.0-0-CK0226	0.51 mm	14.80 mm	0.164 Ω/km	20.80 mm	1445 kg/km
ZHPCG-15-150.0-0-CK0226	0.51 mm	16.70 mm	0.132 Ω/km	22.90 mm	1775 kg/km
ZHPCG-15-185.0-0-CK0226	0.51 mm	18.70 mm	0.108 Ω/km	25.30 mm	2115 kg/km
ZHPCG-15-240.0-0-CK0226	0.51 mm	21.90 mm	0.0817 Ω/km	28.70 mm	2762 kg/km
ZHPCG-15-300.0-0-CK0226	0.51 mm	26.90 mm	0.0654 Ω/km	32.30 mm	3452 kg/km
ZHPCG-15-400.0-0-CK0226	0.51 mm	31.00 mm	0.0495 Ω/km	36.30 mm	4474 kg/km



**ZHPCG-35/36 CK0226 Cable**

EN45545-2 Power Cable

Rail and Mass Transit

**35. 1800/3300V - ZHPCG CK0226**

Part Description	Conductor		Finished Wire		
	Max. Strand Dia.	Max. Diameter	Max. Resistance @ 200C	Max. Diameter	Weight
ZHPCG-35-1.5-0-CK0226	0.26 mm	1.55 mm	13.70 Ω/km	4.00 mm	38 kg/km
ZHPCG-35-2.5-0-CK0226	0.26 mm	1.97 mm	8.21 Ω/km	4.50 mm	53 kg/km
ZHPCG-35-4.0-0-CK0226	0.31 mm	2.56 mm	5.09 Ω/km	4.89 mm	73 kg/km
ZHPCG-35-6.0-0-CK0226	0.31 mm	3.05 mm	3.39 Ω/km	5.56 mm	97 kg/km
ZHPCG-35-10.0-0-CK0226	0.41 mm	4.05 mm	1.95 Ω/km	6.88 mm	141 kg/km
ZHPCG-35-16.0-0-CK0226	0.41 mm	5.20 mm	1.24 Ω/km	8.48 mm	214 kg/km
ZHPCG-35-25.0-0-CK0226	0.41 mm	7.00 mm	0.795 Ω/km	10.30 mm	316 kg/km
ZHPCG-35-35.0-0-CK0226	0.41 mm	7.75 mm	0.565 Ω/km	11.90 mm	425 kg/km
ZHPCG-35-50.0-0-CK0226	0.41 mm	9.20 mm	0.393 Ω/km	14.10 mm	582 kg/km
ZHPCG-35-70.0-0-CK0226	0.51 mm	11.50 mm	0.277 Ω/km	16.30 mm	802 kg/km
ZHPCG-35-95.0-0-CK0226	0.51 mm	13.00 mm	0.210 Ω/km	18.80 mm	1051 kg/km
ZHPCG-35-120.0-0-CK0226	0.51 mm	14.80 mm	0.164 Ω/km	20.80 mm	1308 kg/km
ZHPCG-35-150.0-0-CK0226	0.51 mm	16.70 mm	0.132 Ω/km	22.90 mm	1601 kg/km
ZHPCG-35-185.0-0-CK0226	0.51 mm	18.70 mm	0.108 Ω/km	25.30 mm	1966 kg/km
ZHPCG-35-240.0-0-CK0226	0.51 mm	21.90 mm	0.082 Ω/km	28.70 mm	2542 kg/km
ZHPCG-35-300.0-0-CK0226	0.51 mm	26.90 mm	0.065 Ω/km	32.30 mm	3568 kg/km
ZHPCG-35-400.0-0-CK0226	0.51 mm	31.00 mm	0.050 Ω/km	36.30 mm	4652 kg/km

**36. 1800/3300V - ZHPCG CK0226**

ZHPCG-36-1.5-0-CK0226	0.16 mm	1.68 mm	12.80 Ω/km	4.91 mm	42 kg/km
ZHPCG-36-2.5-0-CK0226	0.16 mm	2.60 mm	7.76 Ω/km	5.99 mm	63 kg/km
ZHPCG-36-4.0-0-CK0226	0.16 mm	3.00 mm	4.76 Ω/km	6.41 mm	84 kg/km
ZHPCG-36-6.0-0-CK0226	0.21 mm	3.80 mm	3.23 Ω/km	7.25 mm	111 kg/km
ZHPCG-36-10.0-0-CK0226	0.21 mm	4.87 mm	1.88 Ω/km	8.47 mm	169 kg/km
ZHPCG-36-16.0-0-CK0226	0.21 mm	5.80 mm	1.19 Ω/km	9.66 mm	248 kg/km
ZHPCG-36-25.0-0-CK0226	0.21 mm	7.70 mm	0.780 Ω/km	11.76 mm	363kg/km
ZHPCG-36-35.0-0-CK0226	0.21 mm	9.00 mm	0.550 Ω/km	13.23 mm	495 kg/km
ZHPCG-36-50.0-0-CK0226	0.31 mm	10.70 mm	0.393 Ω/km	15.12 mm	667 kg/km
ZHPCG-36-70.0-0-CK0226	0.31 mm	12.60 mm	0.270 Ω/km	17.30 mm	916kg/km
ZHPCG-36-95.0-0-CK0226	0.31 mm	14.80 mm	0.200 Ω/km	20.16 mm	1227 kg/km
ZHPCG-36-120.0-0-CK0226	0.31 mm	17.10 mm	0.160 Ω/km	22.58 mm	1539 kg/km
ZHPCG-36-150.0-0-CK0226	0.31 mm	18.30 mm	0.132 Ω/km	23.48 mm	1839 kg/km
ZHPCG-36-185.0-0-CK0226	0.31 mm	20.90 mm	0.108 Ω/km	25.93 mm	2229 kg/km
ZHPCG-36-240.0-0-CK0226	0.41 mm	23.50 mm	0.081 Ω/km	30.14 mm	2905 kg/km
ZHPCG-36-300.0-0-CK0226	0.41 mm	26.00 mm	0.060 Ω/km	33.18 mm	3595 kg/km

## Power Cables

### Flexible Wire Power

Range of flexible power cables insulated and jacketed using materials that provide improved performance over other materials available, such as CSP/EPR, silicone, or PCP/Butyl.

#### Features & Benefits

- Size and weight savings
- Excellent flexibility
- Resistance to solvents and chemicals
- Corona resistance
- Arc-resistance of materials

#### Type TR16

General purpose, single-wall, 125°C construction normally specified for use inside cabinets in protected areas. Conductor sizes 2.5mm<sup>2</sup> to 95mm<sup>2</sup>

#### Type ZHI15

Halogen-free cable with good oil resistance, particularly suitable for use in offshore, ship and mass transit applications where low-fire-hazard performance is required. Conforms to Defence Standard 61-12 part 31 specification. Conductor sizes 1.5mm<sup>2</sup> to 400mm<sup>2</sup>

#### Type AFR35

A single-extrusion, abrasion resistant, flame and fuel-resistant, radiation crosslinked polyolefin cable. Conductor sizes 1.5mm<sup>2</sup> to 400mm<sup>2</sup>

#### Type FTR16

Dual-wall diesel-oil resistant cable originally developed for tank engine compartment applications. Meets the German BWB VG 95218 specification. Conductor sizes 4mm<sup>2</sup> to 120mm<sup>2</sup>

#### Type ZHPCG-15/-35

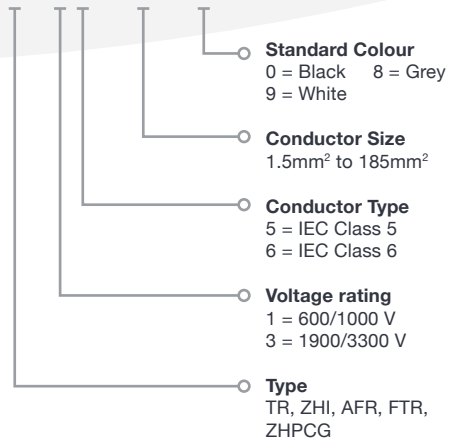
Halogen free cable with good oil resistance and resistance to water. It is particularly suitable to the Mass Transit, Marine and Off-Shore industries where its low fire hazard performance and flexibility are key to a successful installation. Conductor sizes 1mm<sup>2</sup> to 400mm<sup>2</sup>

For further details and information regarding non-standard colours please contact us.



part number example...

### TR 16 - 16 - 0



Type	Tensile Strength	Temp. Rating	Colour
TR	20 N/mm <sup>2</sup>	125°C	Black
ZHI	9 N/mm <sup>2</sup>	105°C	Black
AFR	18 N/mm <sup>2</sup>	105°C	Grey
FTR	18 N/mm <sup>2</sup>	125°C	Black
ZHPCG	9 N/mm <sup>2</sup>	115°C	Black

## SHF260

Highly Flexible Wire  
Power



part number example...

**SHF260-0113-24-9**



Colour of cable is white (9) as standard.

SHF-260 is a highly flexible premium performance power cable, for applications requiring up to 1000 volts (rms).

The need for a combination of high temperature and high performance in wire insulation has become a critical factor in today's platforms. This is especially true in large diameter power feeder applications where temperature and durability are key.

The highly flexible nature of SHF-260 allows the cable to be bent and routed in extremely tight areas with no wrinkling or cracking of the insulation. This results in being able to run shorter distances, reducing the stress on the contact and reducing the mating and demating forces normally associated with large shell diameter circular connectors, such as MIL-C-5015 and MIL-C-83723 connectors.

Its ability to route in tight spaces may allow the user to go "up" in AWG sizes and eliminate the need to split power, where routing and bending previously prevented the user from doing so.

### Applications

Typical uses include both primary and secondary power distribution applications where high amperage is needed.

### Features & Benefits

- Handles down to a 6x bend radius
- All extruded fluoropolymer based insulation system
- Outstanding chemical and fluid resistance when tested to SAE-AS-22759
- Corona resistant when tested to ASTM D1868
- Arc resistant to the SAE-AS-22759
- Available in sizes from 0000 to 12 AWG
- Meets FAR Part 25 flammability

### Operating Temperature

- -65°C to +260°C

### Voltage Rating

- 1000 volts (rms)

Thermal Properties	
Life Cycle	290°C for 500 hours
Cold Bend	-65°C for 4 hours
Thermal Shock Resistance	Accordance with SAE AS 22759 using an oven temperature of 260°C
Physical Properties	
Insulation elongation	150% minimum
Tensile Strength	2000 lb ft/inch <sup>2</sup>
Fire Hazard Properties	
Smoke	SAE AS 22759



## Harnessing and Electro-Mechanical Components for Demanding, Harsh Environment Applications

Working closely with suppliers and manufacturers worldwide we offer a comprehensive range of high performance components and associated products for the Aerospace, Defence, Energy, Industrial, Medical and Motorsport markets. Our experienced team includes technical specialists, to provide leading service.

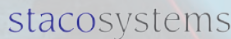
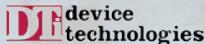
With immediate access to in excess of 8,000 product lines from an extensive 'off the shelf' stock profile for next day delivery as standard, along with flexible MOQ's and pack sizes.

We are fully committed to complying with the latest quality approvals for the customers markets we serve, including ISO9011:2008 and AS9120:2005.

Tel: +44(0) 1793 616700 | Fax: +44(0) 1793 644304 | sales@is-rayfast.com

[www.is-rayfast.com](http://www.is-rayfast.com)

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