



# TE Connectivity Wire & cable solutions

100E Wire & Cable



EVERY CONNECTION COUNTS



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# Launch of 100E Signal Wire Family

TE Connectivity is pleased to announce the launch of 100E 300v signal wire and cable.

Released in accordance to EN50306

## **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)



# 100E Signal Wire Family

## 100E Single primary wire

- Dual wall Zero Halogen primary wire.
- **Thin wall light weight cross linked jacket**
- Meets key rail Spec EN50306-2,

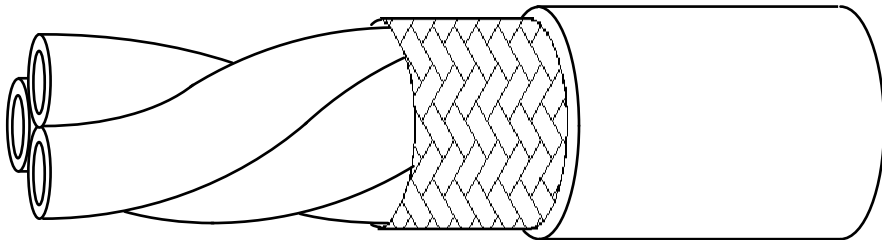


Description	Tyco Electronics Corporate Part Number
100E0111-0.50-9	C684793001
100E0111-0.50-9CK0001	CQ50933001
100E0111-0.75-9	CD45243001
100E0111-0.75-9CK0001	CQ50953001
100E0111-1.00-9	CD47583001
100E0111-1.00-9CK0001	CQ50963001
100E0111-1.50-9	CD47573001
100E0111-1.50-9CK0001	CQ50973001
100E0111-2.50-9	CT37013001
100E0111-2.50-9CK0001	CQ50983001

# 100E Signal Wire Family

## 100E Single & multi core cable with shield

- Dual wall Zero Halogen primary wire.
- One, two, three or four cores
- **With cross linked outer jacket**
- Meets key rail Spec EN50306-3,



Description	Tyco Electronics Corporate Part Number
100E1111-0.50-9-0	CQ36753001
100E1111-0.75-9-0	CD42923001
100E1111-1.00-9-0	set-up
100E1111-1.50-9-0	set-up
100E1111-2.50-9-0	set-up
100E1121-0.50-9/9-0	set-up
100E1121-0.75-9/9-0	set-up
100E1121-1.00-9/9-0	set-up
100E1121-1.50-9/9-0	cq36763001
100E1121-2.50-9/9-0	set-up
100E1131-0.50-9/9/9-0	set-up
100E1131-0.75-9/9/9-0	set-up
100E1131-1.00-9/9/9-0	set-up
100E1131-1.50-9/9/9-0	set-up
100E1131-2.50-9/9/9-0	set-up
100E1141-0.50-9/9/9/9-0	set-up
100E1141-0.75-9/9/9/9-0	set-up
100E1141-1.00-9/9/9/9-0	set-up
100E1141-1.50-9/9/9/9-0	set-up
100E1141-2.50-9/9/9/9-0	cq36773001

# 100E Signal Wire Family

## 100E Large core cables (specials)

- Custom designed Multi core cables.
- Due to potential number of parts will create as EPD cables
- Rail Zero Halogen outer jacket, can be braided or screened
- Rail specifications EN50306-4, Multi-Core and Multi-Pair Cables standard wall sheathed
  - Unscreened, Sheathed for either exposed or protected wiring, (0.50 mm<sup>2</sup> to 2.50 mm<sup>2</sup>, number of cores from 2 to 48)
    - Conform with table 1 of EN 50306-4 (Class 1P or 1E)
  - Screened, Sheathed for either exposed or protected wiring (0.50 mm<sup>2</sup> to 2.50 mm<sup>2</sup>, number of cores from 2 to 8)
    - Conform with table 3 of EN 50306-4 (Class 3P or 3E)
  - Screened, Sheathed for either exposed or protected wiring (0.50 mm<sup>2</sup> to 1.50 mm<sup>2</sup>, number of pairs of cores from 2 to 7)
    - Conform with table 3 of EN 50306-4 (Class 5P or 5E)



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# 100E vs 100G Signal Wire Family

100E & 100G are made from same jacket and conductor.

This means both types have exactly the same material, electrical and low hazard properties.

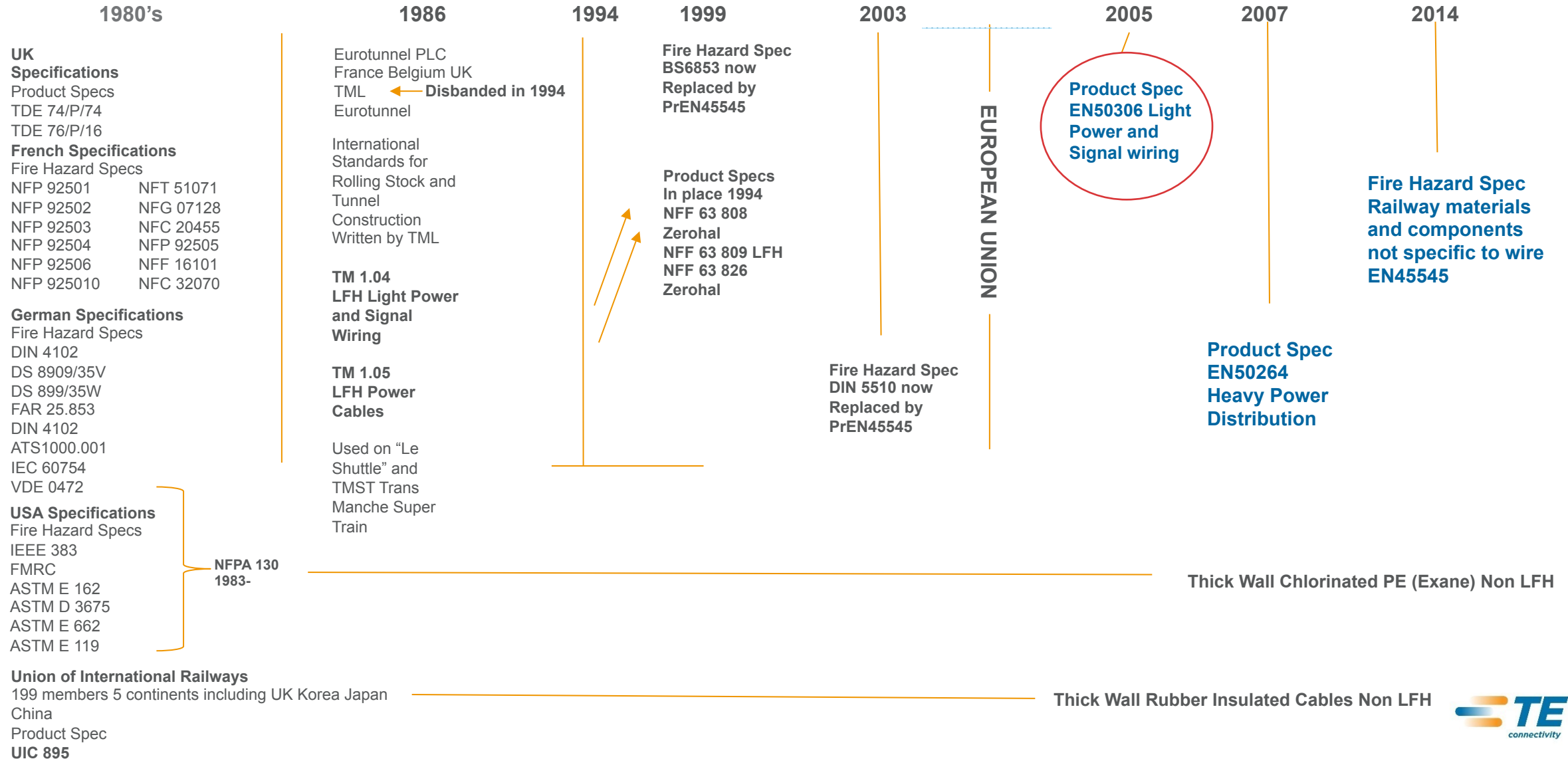
In the past TE has always claimed 100G meets all of the rail requirements in EMEA, with EN50306

However this is not strictly true, it does not follow the marking on the jacket and colour of the cores clauses

- 100G meets all of the property & dimensional requirements of the EN spec,
- 100E adheres to all of the EN50306 requirements including colour of jacket & markings

# Global W&C Specifications Development

## Channel Tunnel



# Global W&C Specifications Development

## EN 50306-2

- Single Core Cables
- Cores - White
- 0.50mm<sup>2</sup>, 0.75mm<sup>2</sup>, 1.00mm<sup>2</sup>, 1.50mm<sup>2</sup>, 2.50mm<sup>2</sup>
- Marking of Cable;

Manufacturer's Name, EN Reference, Voltage Rating, Number of Cores and Conductor Size, Hazard Level

E.G TE Connectivity EN 50306-2 300V 1x1.50 M

## EN 50306-3

- Single Core and Multi-Core Cables (pairs, triples and quads) screened and thin wall sheathed
- Cores Individually Numbered
- Cores - White, Outer Jacket – Black
- 0.50mm<sup>2</sup>, 0.75mm<sup>2</sup>, 1.00mm<sup>2</sup>, 1.50mm<sup>2</sup>, 2.50mm<sup>2</sup>
- Single Core, Pairs, Triples, Quads
- Marking of Cable;

Manufacturer's Name, EN Reference, Voltage Rating, Number of Cores and Conductor Size, Hazard Level, Screening, Temperature Rating -

E.G TE Connectivity EN 50306-3 300V 1x1.50 MF S 105



# Global W&C Specifications Development

## EN 50306-4

- Multi-Core and Multi-Pair Cables standard wall sheathed
  - Unscreened, Sheathed for either exposed or protected wiring, (0.50 mm<sup>2</sup> to 2.50 mm<sup>2</sup>, number of cores from 2 to 48)
    - Conform with table 1 of EN 50306-4 (Class 1P or 1E)
  - Screened, Sheathed for either exposed or protected wiring (0.50 mm<sup>2</sup> to 2.50 mm<sup>2</sup>, number of cores from 2 to 8)
    - Conform with table 3 of EN 50306-4 (Class 3P or 3E)
  - Screened, Sheathed for either exposed or protected wiring (0.50 mm<sup>2</sup> to 1.50 mm<sup>2</sup>, number of pairs of cores from 2 to 7)
    - Conform with table 3 of EN 50306-4 (Class 5P or 5E)
- Cores - White, Outer Jacket – Black

# TE 100E Low Power / Sensor Cable

Dual wall Zero Halogen primary wire, supplied as both single core signal wire, and Multi core cable, can be braided or screened

- Small size, lightweight.
- Excellent handling and flexibility.
- Outstanding resistance to oils.
- Excellent scrape abrasion & 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 .
- Flexible, ( does not wrinkle on bending ).
- Dual wall construction ( notch and abrasion resistant ).
- Compliant with EN50306



# Drivers For Change In The Rail Industry

## Key Issues

Hazards associated with fires, flame propagation and by-products of combustion (smoke and noxious gases)

Increased awareness of the need for limited fire hazard products





# Drivers For Change In The Rail Industry

## Benefits of EN50306 WIRE & CABLE

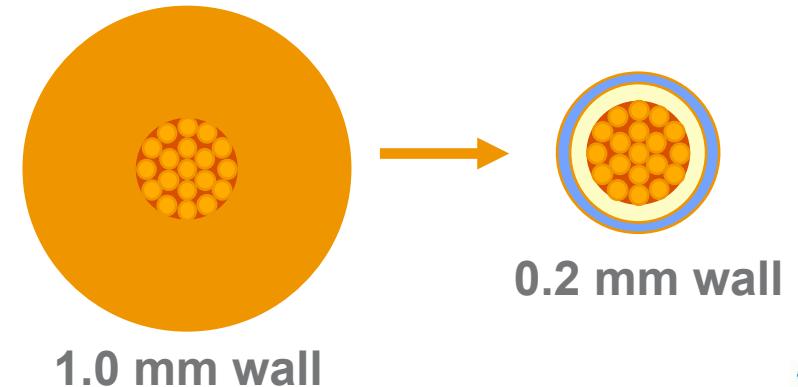
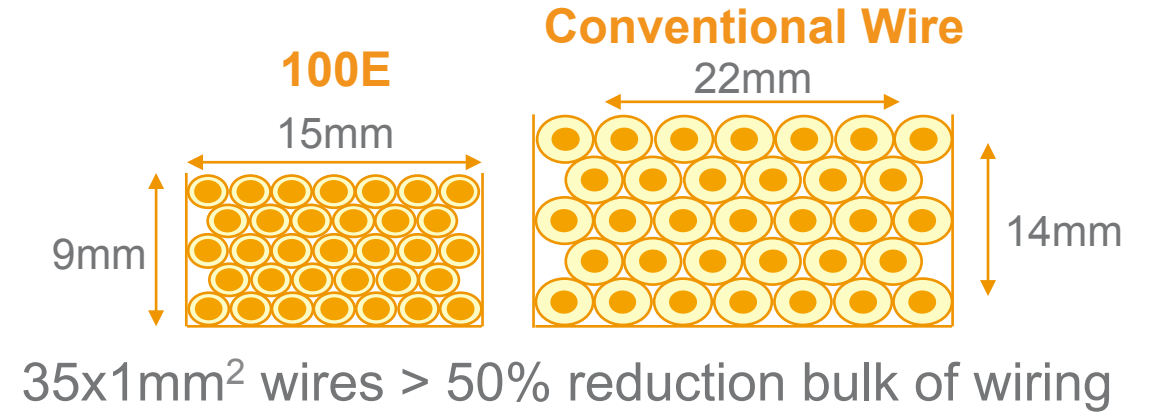
- Conventional cables use filled soft polymer insulations which by the nature of the insulation have to be thick wall
- TE uses tough engineering polymers which allows the insulation wall thickness to be greatly reduced
- Reduction in wall thickness offers significant savings in the bulk of the wiring looms
- Reduction in insulation wall thickness provides huge savings in weight of the wiring looms



# Benefits of TE Small Light Wires & Cables 100E

## The Balance of properties TE offers the Rail market

- Reduction in size – Improved passenger experience, easier to design and install
- Greater options for cable routing – Less wire required – Improved vehicle layout
- Ease of installation – Reduction in installation costs

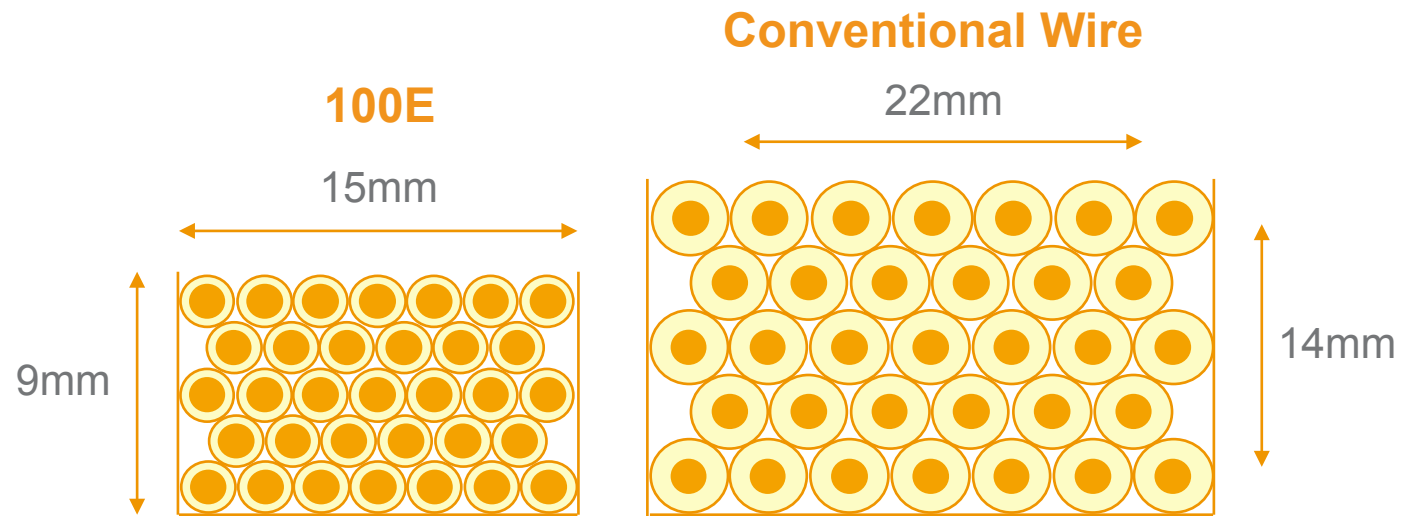




# Benefits of Te Small Light Wires & Cables 100E

## The Balance of properties TE offers the Rail market

- Reduction in weight – Improved vehicle performance
- Reduction in energy consumption – Lower cost
- Reduced emissions - compliance with the drive towards more efficient systems



35x1mm<sup>2</sup> wires > 30% reduction in weight of wiring

# Benefits of Te Small Light Wires & Cables 100E

## The Balance of properties TE offers the Rail market

- Ease of installation – Reduction in installation costs
- Better physical properties – Reduction in wire damage during installation / maintenance



**100G wire occupies less than half of the volume of the wire used in this installation**

- Durable 100E insulation resists damage from sharp edges
- Drastically reduced wire bulk makes wire installation and maintenance far easier and cheaper

# TE Connectivity

## Wire & Cable Solutions

Rail Manufacturing locations



# Dorcan, Swindon - UK



## History - Established 1974

Employees	:+950
Total Dorcan Site	:455k Sq/ft
Site H W&C	:404k Sq/ft
Site A W&C	:90k Sq/ft

## Key Industries it supplies to

Aerospace, Defence, Rail, Automotive, Construction, Marine, Industrial, Energy

## Major Products

### Wire & Cable

Multicore Cables, 44 Wire & Cables, 55 Wire & Cables, Power Cables, Auto Wire & Cables, Low Fire Hazard Wire & Cable C-Lite, Marine Umbilical's and Tethers.

### Materials

Compounds for Heat Shrink Tubing, wire Insulation, Telecommunication joints and HV termination joints Hot Melt Adhesives, Solution Adhesives, Mastics and Inks

### Harnessing / Raceway

Component Kitting and Small / Prototype Harness build.

## Processes

### Wire & Cable

- Primary wire extrusion - Jacket extrusion
- Braiding – Cabling – Beaming

### Materials

- Batch & Continuous Mixing
- Powder Blending & Adhesive Mixing

### Harnessing / Raceway

- Kitting and Harness Build

# Kunshan - China



## **Established : Jan,2013**

Total Capital Investment: \$9 Million

Land Space : 5,800 m<sup>2</sup>

Floor Space : 5,000 m<sup>2</sup>

Employees : +62

## **Key Industries it supplies to (ASIA)**

Aerospace, Defence, **Rail**, Automotive, Construction, Marine, Industrial, Energy

## **Major Products**

### **Wire & Cable**

44 Wire & Cables, 55 Wire & Cables, Auto Wire & Cables, Low Fire Hazard Wire & Cable, C-Lite.

## **Major Process**

- Extrusion
- Marking& Stripe
- Spooling
- Cabling
- Braiding
- Electron Beaming

## **Certificate**

ISO9001 (Jul 2013), TS16949/AS9100 (Jun 2014)  
BV, DNV, KR, NK, GL, RMS, ABS, LR