stl.tech

Railway & Infrastructure Cables

Rolling Stock & Signalling Solutions

Product Brochure

About STL

We bring ultra-fast connectivity to all of us
STL is a global optical and digital solutions company driving connectivity across every layer of the network. We design and manufacture high-performance optical fibre and cable solutions — from raw glass to end applications — empowering next-generation networks for AI, 5G, FTTx, and hyperscale data centres. With deep expertise in advanced materials, precision manufacturing, and programmable network technologies, we deliver future-ready, sustainable solutions. Our Centres of Excellence lead innovation in ultra-broadband fibre optics, optical connectivity, and network design. STL's R&D-backed ecosystem enables seamless integration with legacy networks, faster deployments, and greater cost-efficiency for network builders.

Innovation is at the core of everything we do
With a presence in over 150 countries, STL is a trusted partner to global telcos, cloud companies, governments, and enterprises. Our integrated manufacturing and design capabilities span India, Italy, the US, and China. STL owns and operates one of the world's most advanced optical fibre facilities in South Carolina, USA, fully compliant with BABA and BEAD programs. We have pioneered solutions like multi-core fibre, ribbon cables, and AI-optimised interconnects. Our operations are built on Zero Waste to Landfill, water-positive, and low-carbon frameworks.

We are leading the future of networks
More than 3,000 STLers from over 30 nationalities power our purpose — to design networks that transform everyday lives. From rural broadband rollouts to hyperscale data centre connectivity, STL is enabling lightspeed networks that are efficient, intelligent, and sustainable. As a Great Place to Work certified company, we are committed to building a connected world that serves both people and the planet. Together with our partners and customers, STL is advancing digital ecosystems that are ready for the AI era and beyond.

About Optical Networking Business

Optical Fibre
STL leads in optical fibre innovation with fully backward integrated manufacturing facilities, ensuring superior quality preforms and fibre.

Optical Fibre Cables
STL is amongst the top global players offering customized ribbon, IBR, aerial, duct, and armored cables for telcos, enterprises, data centers, and citizen networks.

Optical Connectivity
STL provides advanced fibre management solutions, including closures, fibre management systems, patch cords, and splitters, addressing growing digital service demands and network consolidation.

Speciality Cables
STL offers a broad portfolio of copper and hybrid cables, including CAT6A and CAT7A U/UTP cables with superior cross-talk immunity, as well as custom designs supporting enterprises requiring high-speed and reliable connections.

Global Manufacturing Operations

One of the largest integrated manufacturing facilities for optical fibre, optical fibre cable and optical connectivity

Cables for Railway Industry

STL's railway signalling cable solutions are engineered to meet the **diverse regulatory and operational standards of each country**—including **SCMT, ERTMS**, and other regional protocols. Our portfolio includes **hybrid fiber + copper constructions** designed **for advanced signalling, telecom, and SCADA applications**. These cables are **CPR B2ca-rated, rodent-resistant, and built to minimize electromagnetic interference**—ensuring safe, reliable performance in demanding environments. We pride ourselves on co-developing bespoke cable designs with leading system integrators, ensuring seamless compatibility with signalling hardware and local infrastructure requirements. Whether for new projects or retrofits, STL delivers **tailored solutions** that combine innovation with deployment-ready practicality.

Cable For Railway Industry And Mass Transit

Cables for Rolling Stock

Cables for rolling stock include all cables that form part of the trains. These include cables used for controlling the train's run, power transmission, communications, and air-conditioning.

Rolling stock cables, therefore, have to confirm to highest level of security that minimize risks for people under every circumstance.

They must be resistant to fires, fluids, shocks and extreme temperatures providing reduced weights and dimensions.

Cables for Signalling System

Cables for signalling systems are cables used for managing the railway network, including for control and signal conveyance.

Signalling system cables must be capable of managing not only the train run, but also intervening in emergency situations.

They, therefore, must be cables with high technological content capable of ensuring continuous data flow between the train and stations without being influenced by the strong electromagnetic fields generated from the power lines.

STL, a market leader in the cabling industry, Offers a full range of rolling stock and signalling cables that comply with all rail requirements.

They bring to play:

- High Performance
- Reduced weights and dimensions
- Resistance to extreme temperatures (-40°C)
- Resistance to oils, fuels and fluids (IRM902, RM903)
- Hazard level 3 (HL3) EN 45545
- Resistance to Abrasion
- Resistance to electromagnetic interference
- Resistance to Vibration
- Resistance to Tear

And are:

- Halogen-free
- Low on toxicity (EN 50305)
- Low on smoke (EN 50268-2)
- Resistant to fire (EN 50200, EN50362)
- Flexible
- Flame retardant (EN 50266, IEC60332-3)

Rolling Stock
onboard applications

Cable application used inside the train

- Passenger lighting & power
- HVAC systems
- Audio/PA systems
- Door control systems
- Data & control cables
- Passenger information display
- Onboard Ethernet/communication

Signalling Cable
trackside infrastructure

Cable application used along the rail tracks

- Point machine (switch motor)
- Axle counter
- Signal lights
- Audio frequency circuit
- Level crossing
- S-Bond & safety systems
- ERTMS/SCMT communication
- Fiber optic SCADA/telecom

Application	Cable Type	Key Features
Signalling & Control	Multi-pair copper/hybrid	Shielded, EMC-optimized, flame retardant
SCADA / Telecom	Tight-buffer /armored fiber	Rodent-resistant, dielectric/steel-armored, low-loss
Power Circuits	LSZH copper (multi-core)	EN 45545 HL3, UV/oil/IRM-resistant, halogen-free

Trusted by Leading Rail & Infrastructure Operators Worldwide

Our Railway Cable Portfolio

Trackside Applications We Serve

STL cables are used in mission-critical rail signalling functions:

Point machines, axle counters, level crossings

Signals, lights, safety loops, and interlocks

S-Bond systems, audio frequency circuits

ERTMS – connecting control centers to field equipment

Balise & Track Signalling Cables

Cable Description	Configuration	CPR Classification
Outdoor Eurobalise Cable	1x2x0.9 / 1.5 / 2 mm²	–
Eurobalise Cable High Safety	1x2x0.9 / 1.5 / 2 mm²	B2ca, s1a, d1, a1

Safety System & Interlocking

Cable Description	Configuration	CPR Classification
Safety System Cable	1x2x1.5 mm²	Optional CPR variant
Safety System QUAD Cable	2x2x1.5 mm²	Optional CPR variant
Safety System QUAD Flexible (TE2/H5MNM)	2x2x1.5 mm²	–

Axle Counter Cables

Cable Description	Configuration	CPR Classification
Axle Counter TE	1x4x0.9 mm²	CPR
Axle Counter	3x2x16 AWG	–

S-Bond & Grounding

Cable Description	Configuration	CPR Classification
Mixed Steel/Copper Rope for S-BOND	35 mm^2	–
Steel Rope	110 mm^2	–

Power, Optical & Fire-Resistant

Cable Description	Series	Features
FG16M/FG18M/Variants	FG / FGOM Series	Power & Hybrid Optical
FG16OMNM/ FG18OMNM	Optical + NM16	Hybrid Optical Signalling
FG Screened Series	Screened Versions	EMI-Shielded
FTG Fire-Resistant Series	FTG16OM/FTG18OM	Flame-Proof for tunnels
RFI IS 409 Series (Italy)	Armoured/ Non-armoured	Compliant with RFI

Our Edge in Customization
Rapid prototyping for country-specific standards (SCMT, ERTMS, etc.)

CPR-compliant cables: B2ca–s1a, d1, a1 ratings available

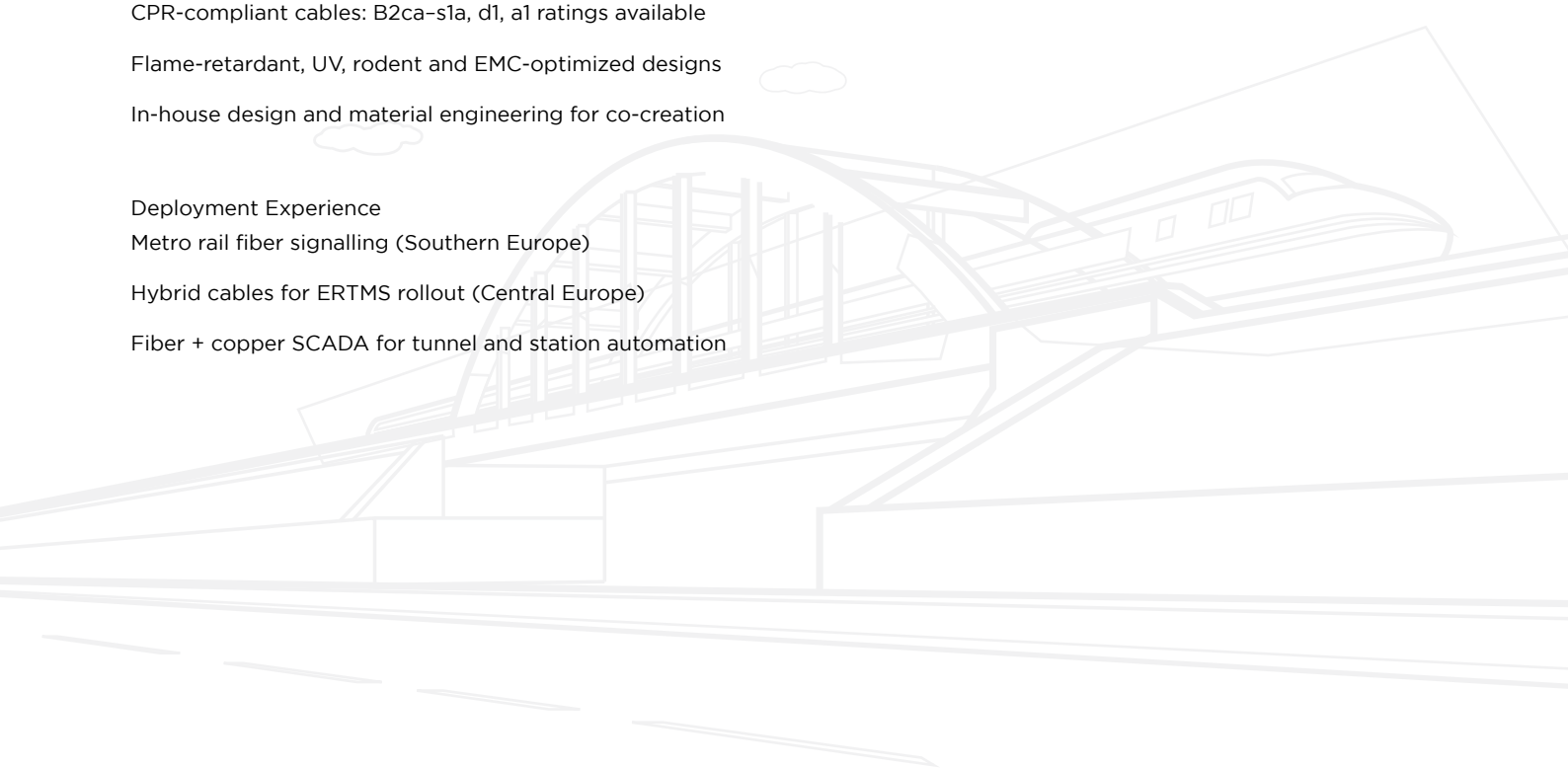
Flame-retardant, UV, rodent and EMC-optimized designs

In-house design and material engineering for co-creation

Deployment Experience
Metro rail fiber signalling (Southern Europe)

Hybrid cables for ERTMS rollout (Central Europe)

Fiber + copper SCADA for tunnel and station automation



Standard Wall Cables EN 50264-2

STANDARD WALL SINGLE CORE UNSHEATHED CABLES

Features

M
Code designation

Extra oil and fuel resistant

Flame retardant EN 50265-2-1

Low emission of smoke & toxic gases EN 50305, EN 61034-2

Hazard Level 3 (HL3) EN 45545

Fire retardant EN 50266-2-4

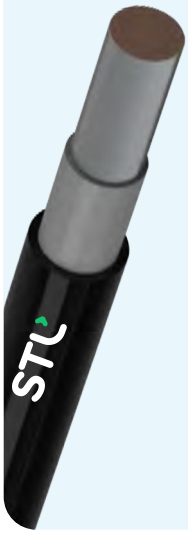
Operating Temp: -40°C to +90°C

Range: 1 to 400 sqmm & 1.5 to 400 sqmm

Application

Flexible cable 0.6/1kV designed for lighting circuits, equipment control, monitoring circuits, auxiliary and electric heating circuits. Flexible cable 1.8/3kV designed for auxiliary circuits at line voltage, traction circuits and electric heating fed at line voltage.

STANDARD WALL SINGLE CORE SHEATHED CABLES



Features

OM
Code designation

Extra oil and fuel resistant

Flame retardant EN 50265-2-1

Low emission of smoke & toxic gases EN 50305, EN 61034-2

Hazard Level 3 (HL3) EN 45545

Fire retardant EN 50266-2-4

Operating Temp: -40°C to +90°C

Range: 1.5 to 400 sqmm & 2.5 to 400 sqmm

Application

Flexible cable 1.8/3kV designed for auxiliary circuits at line voltage, traction circuits and electric heating fed at line voltage. Flexible cable 3.6/6kV designed for auxiliary circuits at line voltage, traction circuits and electric heating fed at line voltage.

STANDARD WALL SINGLE CORE SHEATHED CABLES

Features

OM
Code designation

Extra oil and fuel resistant

Flame retardant EN 50265-2-1

Low emission of smoke & toxic gases EN 50305, EN 61034-2

Hazard Level 3 (HL3) EN 45545

Fire retardant EN 50266-2-4

Operating Temp: -40°C to +90°C

Range: 1.5 to 50 sqmm, 2 to 4 cores

Application

Flexible cable 0.6/1kV designed for lighting circuits, equipment control, monitoring circuits, auxiliary and electric heating circuits.

STANDARD WALL MULTICORE CABLES SCREENED 0,6/1kV

Features

OM S
Code designation

Extra oil and fuel resistant

Flame retardant EN 50265-2-1

Low emission of smoke & toxic gases EN 50305, EN 61034-2

Hazard Level 3 (HL3) EN 45545

Fire retardant EN 50266-2-4

Operating Temp: -40°C to +90°C

Range: 1.5 to 50 sqmm, 2 to 4 Cores

Application

Flexible cable 0,6/1kV designed for lighting circuits, equipment control, monitoring circuits, auxiliary and electric heating circuits.

Reduced Wall Cables EN 50264-3

REDUCED WALL MULTICORE CABLES 300/500 V

Features

OM-OM S
Code designation

Extra oil and fuel resistant

Flame retardant EN 50265-2-1

Low emission of smoke & toxic gases EN 50305, EN 61034-2

Hazard Level 3 (HL3) EN 45545

Fire retardant EN 50266-2-4

Operating Temp: -40°C to +90°C

Range: 1.5 to 50 sqmm, 2 to 4 Cores

Application

Flexible cable 300/500 V designed for the internal safe circuits, control and monitoring circuits.

Thin Wall Cables EN 50306

THIN WALL

Features

M
Code designation

Extra oil and fuel resistant

Flame retardant EN 50265-2-1

Low emission of smoke & toxic gases EN 50305, EN 61034-2

Hazard Level 3 (HL3) EN 45545

Fire retardant EN 50266-2-4

Operating Temp: -40°C to +105°C

Range: 0.5 to 2.5 sqmm

Application

Flexible cable 300V designed for equipment control, monitoring circuits and for the internal wiring of the equipment.

Thin Wall Cables EN 50306

THIN WALL SCREENED CABLES WITH THIN WALL SHEATH

Features

MM S
Code designation

Extra oil and fuel resistant

Flame retardant EN 50265-2-1

Low emission of smoke & toxic gases EN 50305, EN 61034-2

Hazard Level 3 (HL3) EN 45545

Fire retardant EN 50266-2-4

Operating Temp: -40°C to +90°C

Range: 0.5 to 2.5 sqmm, 1 to 48 cores

Application

Flexible cable 300V designed for equipment control, monitoring circuits and for the internal wiring of equipment run on trays exposed.

THIN WALL MULTICORE UNSCREENED

Features

MM
Code designation

Extra oil and fuel resistant

Flame retardant EN 50265-2-1

Low emission of smoke & toxic gases EN 50305, EN 61034-2

Hazard Level 3 (HL3) EN 45545

Fire retardant EN 50266-2-4

Operating Temp: -40°C to +90°C

Range: 0.5 to 2.5 sqmm, 2 to 40 cores

Application

Exposed and protected wiring. Flexible cable 300V designed for equipment control, monitoring circuits and for the internal wiring of equipment run on trays exposed.

THIN WALL MULTIPAIRS CABLES INDIVIDUALLY SCREENED

Features

MM S
Code designation

Extra oil and fuel resistant

Flame retardant EN 50265-2-1

Low emission of smoke & toxic gases EN 50305, EN 61034-2

Hazard Level 3 (HL3) EN 45545

Fire retardant EN 50266-2-4

Operating Temp: -40°C to +90°C

Range: 0.5 to 1.5 sqmm, No of Pairs or Cores from 2 to 7

Application

Exposed and protected wiring. Flexible cable 300V designed for equipment control, monitoring circuits and for the internal wiring of equipment run on trays exposed.

High Temperature Cables EN 50382

SINGLE CORE UNSHEATHED CABLES FOR HIGH TEMPERATURE

Features

F
Code designation

Extra oil resistant

Flame + halo-gen free EN 50264-2-1

Low emission of smoke & toxic gases EN 50305, EN 61034-2

Hazard Level 3 (HL3) EN 45545

Fire retardant EN 50266-2-4

Tear Resistant

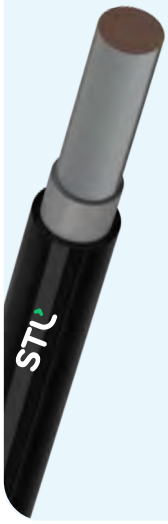
Operating Temp: -40°C to +120/150°C

Range: 1.5 to 400 sqmm & 2.5 to 400 sqmm

Application

Flexible cable suitable for power converter, traction circuits, auxiliary circuits at line voltage and electric heating circuits. High heat resistance.

SINGLE CORE SHEATHED CABLES FOR HIGH TEMPERATURE



Features

OF
Code designation

Extra oil resistant

Flame retardant EN 50265-2-1

Low emission of smoke & toxic gases EN 50305, EN 61034-2

Hazard Level 3 (HL3) EN 45545

Fire retardant EN 50266-2-4

Tear Resistant

Operating Temp: -40°C to +120/150°C & 2.5 to 400 sqmm

Application

Flexible cable 0,6/1kV designed for lighting circuits, equipment control, monitoring circuits, auxiliary and electric heating circuits.

Data Transmission Cables

STL-UIC CABLES

4x4x1 mm²

16 cores transit cable for remote control and information line, according to UIC 558

Features

- Flame retardant: DIN EN 60332-1-2
- Smoke density: DIN EN 61034-1
- Toxicity index: ≤3 DIN EN 50305 par. 9.2
- Transmittance: ≥ 60 %

Benefits / Application

UIC connection cables for fixed and protected installations inside of rail vehicles. These cables are applied for signal transmission between the locomotive and coaches. They are suitable for door controls, lighting, loud-speaker systems.

- Excellent fire performance
- Low fire load
- Low toxicity
- High flexibility
- Halogen-free
- Electron-beam cross-linked

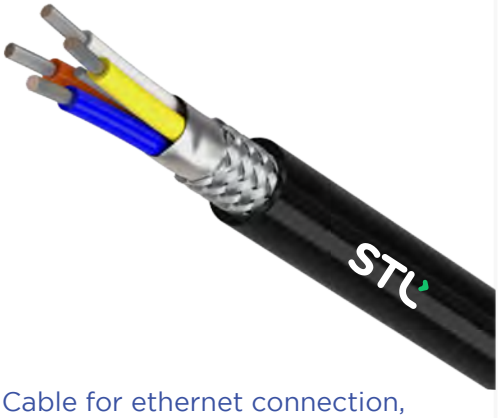
ETHERNET CABLES CAT 5e

Features

- Maximum conductor temperature operating: +70°C
- Minimum ambient temperature: -40°C
- Flame retardant: EN 60332-1-2
- Amount of halogen acid gas during the combustion: EN 50267-2-1
- Toxicity index: <= 3 | EN 50305 par. 9.2
- Non fire propagation: EN 50305 par. 9.1
- Smoke density: DIN EN 61034-1 | Transmittance: ≥70%
- Fluorine content: <= 0.10 % EN 60684-2
- Degree of acidity of gasses (corrosivity) EN 50267-2-2

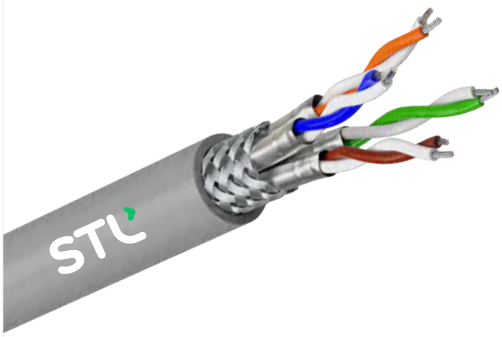
Benefits / Application

Data networks, computer networks, subway turnstile link, link automated ticketing systems



Cable for ethernet connection, CAT-5E according to EN 50288-2-2 and IEC 61156-6 2x2x22 AWG S-FTP

ETHERNET CABLES CAT 7



Cable for ethernet connection, CAT. 7 4x2x24 AWG S-FTP

Features

- Maximum conductor temperature operating: +70°C
- Minimum ambient temperature: -40°C
- Flame retardant: EN 60332-1-2
- Amount of halogen acid gas during the combustion: EN 50267-2-1
- Toxicity index: <= 3 | EN 50305 par. 9.2
- Non fire propagation: EN 50305 par. 9.1
- Smoke density: DIN EN 61034-1 | Transmittance: ≥70%
- Fluorine content: <= 0.10 % EN 60684-2
- Degree of acidity of gasses (corrosivity) EN 50267-2-2

Benefits / Application

Data networks, computer networks, subway turnstile link, link automated ticketing systems

STL - SERIAL CABLES

(2+1)x0.5 mm2,
CAN BUS CABLE

Features

- Maximum conductor temperature operating: +70°C
- Non fire propagation: EN 50305 par. 9.1
- Minimum ambient temperature: -40°C
- Smoke density: DIN EN 61034-1 | Transmittance: ≥70%
- Flame retardant: EN 60332-1-2
- Fluorine content: <= 0.10 % EN 60684-2
- Amount of halogen acid gas during the combustion: EN 50267-2-1
- Degree of acidity of gasses (corrosivity) EN 50267-2-2
- Toxicity index: <= 3 | EN 50305 par. 9.2

Benefits / Application

Most common application is in-vehicle electronic networking. Railway applications such as streetcars, trams, undergrounds, light railways, and long-distance trains incorporate CAN.

STL - VGA

Features

- Flame retardant: EN 60332-1-2
- Toxicity index: <= 3 | EN 50305 par. 9.2
- Smoke density: DIN EN 61034-1 | Transmittance: ≥70%

Benefits / Application

Cables for video surveillance network, cameras cable, high resolution.

3 COAX 75 OHM+3x26 AWG

Let’s connect the future of rail

Reach out to our sales reresentatives to co-create your next signalling solution with STL

Disclaimer: All designs are indicative. STL offers custom signalling cable development per client specifications.

About STL-Sterlite Technologies Limited

STL is a leading global optical and digital solutions company providing advanced offerings to build 5G, Rural, FTTx, Enterprise and Data Centre networks. The company, driven by its purpose of ‘Transforming Billions of Lives by Connecting the World’, designs and manufactures in 4 continents with customers in more than 100 countries. Telecom operators, cloud companies, citizen networks, and large enterprises recognize and rely on STL for advanced capabilities in Optical Connectivity, Global Services, and Digital and Technology solutions to build ubiquitous and future-ready digital networks. STL’s business goals are driven by customer-centricity, R&D and sustainability. Championing sustainable manufacturing, the company has committed to achieve Net Zero emissions by 2030. With top talent from 30+ nationalities, STL has earned numerous 'Great Place to Work' awards and been voted as the 'Best Organisation for Women'.