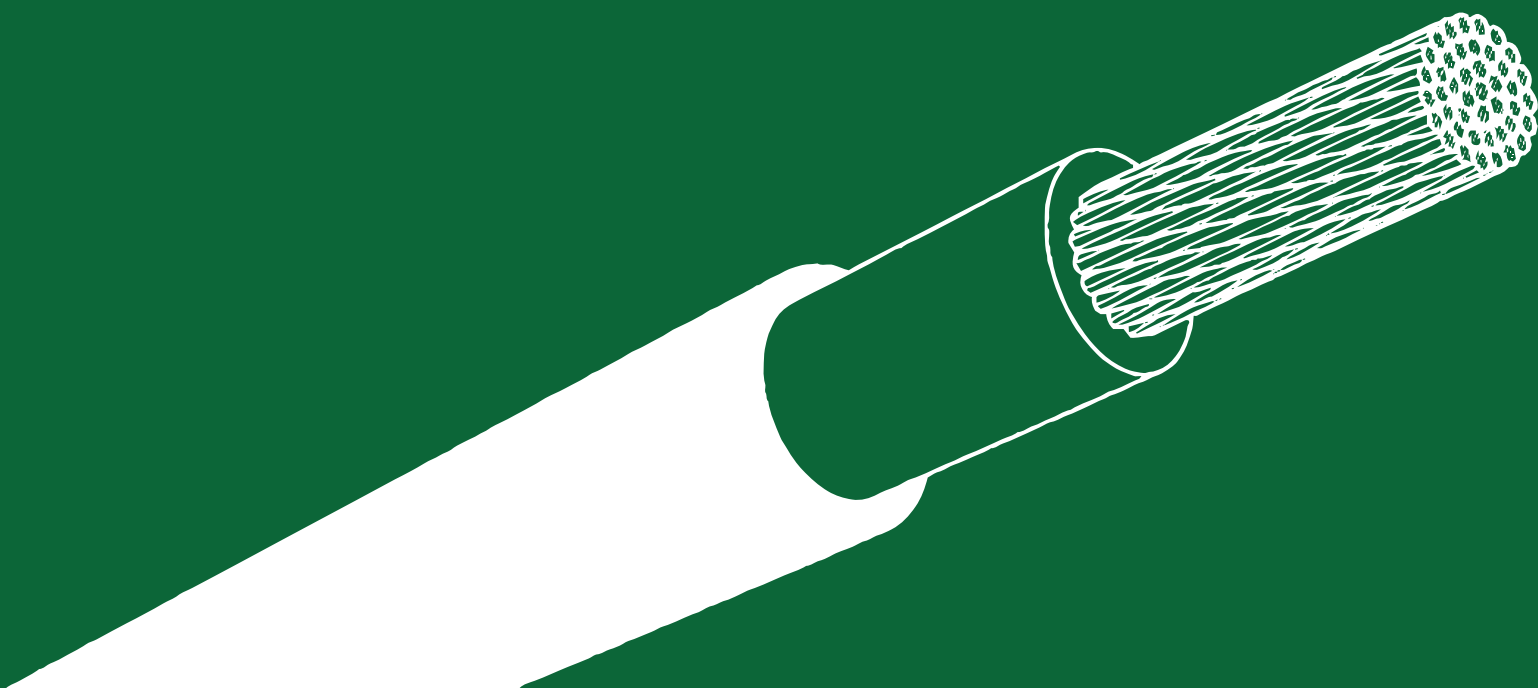


TIKA

C A B L E

Railway Systems



Description

Railway systems require specialized cables that can withstand vibration, mechanical stress, confined tunnel environments, and stringent fire safety regulations. This category covers the complete cabling needs for modern rail networks — from traction power delivery to signaling, communication, and station auxiliary systems.

Products include DC track feeder cables (750V/1500V DC) that deliver traction power to trains, medium and low voltage power cables for substations and station equipment, signaling and control cables for safe train operation, and communication cables (LAN, audio) for onboard and station networks. All railway cables featured here meet EN 45545 fire safety standards and feature LSZH (Low Smoke Zero Halogen) sheaths for tunnel safety.

Typical applications:

Mass Rapid Transit (MRT) and Light Rail Transit (LRT)

Inter-city and high-speed rail

Tram and streetcar systems

Railway depots and maintenance facilities

Station platforms and tunnels

Specification

DC Track Feeder Cable

DC track feeder cables are specifically designed for railway traction power distribution. These single-core cables operate at 750V or 1500V DC and feature a flexible, tinned copper conductor for frequent bending and vibration resistance. The XLPE insulation provides excellent electrical properties and thermal stability, while the LSZH (Low Smoke Zero Halogen) outer sheath ensures low smoke emission and no toxic halogen gases in the event of a fire — a critical safety requirement for tunnels and enclosed stations. These cables connect traction substations to the third rail or overhead catenary system, delivering power to moving trains.



DC Track Feeder Cable

Medium Voltage Power Cable (33kV) for Rail

This 33kV power cable supplies auxiliary power to railway substations, station equipment, and along-track facilities. The cable features a compact copper or aluminium conductor, XLPE insulation, steel wire armour (SWA) for mechanical protection against vandalism and accidental digging, and a LSZH or PVC outer sheath. It is installed in cable troughs, ducts, or direct burial along the railway corridor. This cable ensures reliable power delivery to signaling systems, platform lighting, escalators, and ventilation fans — all essential for safe railway operations.



Medium Voltage Power Cable (33kV)

Low Voltage Power Cable (Multicore FR Armoured)

These multicore low voltage cables (typically 2 to 5 cores) are used for auxiliary power distribution within railway stations, depots, and along platforms. The cable features stranded copper conductors, PVC or XLPE insulation, steel wire armour (SWA) for mechanical protection, and a flame retardant (FR) PVC outer sheath. The FR rating ensures the cable will not propagate fire, an important safety feature in passenger-dense areas. Common applications include platform lighting, ticket vending machines, escalators, and station air conditioning systems.



Low Voltage Power Cable (Multicore FR Armoured)

LAN Cable (Cat 5E / 6) for Railway

These high-performance data cables are used for onboard and station communication networks. Featuring 24 AWG solid bare copper conductors, cross separator (Cat 6), and UTP or FTP construction, these cables support data rates up to 1 Gbps (Cat 5E) or 10 Gbps (Cat 6). The LSZH (Low Smoke Zero Halogen) jacket is mandatory for railway applications, ensuring passenger safety in tunnels and enclosed spaces. Typical uses include onboard passenger Wi-Fi, station CCTV networks, public address systems, and passenger information displays.



LAN Cable (Cat 5E-UPT)

Signaling & Control Cable

Signaling and control cables are critical for safe train operation. These multicore cables (4 to 100 cores) feature individual and overall shielding to protect against electromagnetic interference from traction currents. Copper conductors, XLPE or solid polyethylene insulation, and a LSZH or PVC sheath provide reliable signal transmission over long distances. These cables connect trackside signaling equipment, interlocking systems, axle counters, and train detection devices to the central control room. Performance and reliability are paramount, as any signal failure can disrupt train schedules or compromise safety.

Audio Cable (Halogen Free)

This screened audio cable is designed for public address (PA) and passenger announcement systems in railway environments. The cable features 2 to 8 cores of fine-stranded tinned copper conductors, individual and overall foil screening for noise rejection, and a flexible LSZH (halogen-free) sheath. The halogen-free construction is essential for tunnels and underground stations, where smoke inhalation is a primary cause of casualties during fire incidents. These cables deliver clear, reliable audio signals for train arrival announcements, emergency broadcasts, and platform communications.



AudioCable (Halogen Free)

Overhead Conductors

Parameter	DC Track Feeder Cable	MV Power Cable (33kV)	Signaling & Control Cable	LAN Cable (Railway)
Voltage Rating	0.6/1kV (750V/1500V DC operation)	19/33kV (36kV max)	300/500V or 450/750V	300V (nominal)
Conductor	Flexible tinned copper (Class 5 or 6), circular	Stranded copper (Class 2), circular	Stranded copper (Class 2), 0.5mm ² – 2.5mm ²	Solid bare copper (24 AWG / 0.51mm)
Conductor Construction	Many fine strands for flexibility	Compact stranded	7-strand or 19-strand	Solid single core
Insulation	XLPE (high thermal rating)	XLPE	XLPE or solid PE (for high insulation resistance)	HDPE (High Density Polyethylene)
Insulation Color	Black (no color coding required)	Black with semi-con screens	Color-coded per core	Solid colors + white/blue pairs
Screening	None (power cable)	Copper wire screen + copper tape	Individual pair/triad screen + overall foil screen + drain wire	None (UTP) or overall foil (FTP)
Armour	None or galvanized steel wire (for direct burial)	Steel wire armour (SWA)	Galvanized steel wire armour (SWA)	None
Sheath	LSZH (to EN 50267-2-1)	LSZH or PVC	LSZH (mandatory for tunnels)	LSZH (low smoke, zero halogen)
Flame Retardancy	IEC 60332-1, IEC 60332-3 (Category C or A)	IEC 60332-3	IEC 60332-3	IEC 60332-1
Smoke Emission	< 5% (transmission) per IEC 61034	< 5%	< 5%	< 5%
Halogen Content	Zero (pH >4.3, conductivity <10μS/mm)	Zero	Zero	Zero
Oil Resistance	Moderate	Moderate	Moderate	Not required
Standards	EN 50264, EN 50382, BS 7835	IEC 60502-2, EN 50382	EN 50288, IEC 60502-1, Railway specific	TIA/EIA 568-C.2, ISO 11801, EN 45545
Railway Fire Standard	EN 45545-2 (HL1/HL2/HL3)	EN 45545-2	EN 45545-2	EN 45545-2

