



Thermo Cables



Complete Cable Solutions



Global Expert In Speciality Cables Manufacturing

Thermo Cables is a recognized and preferred brand across various industries including Oil & Gas, Railways, Navy, Defence, Renewable Energy, Nuclear Power, Process Industries, Power etc, exporting 60% of products.

Established in 1990, it is a leading manufacturer of various types of speciality cables. Thermo Cables is a part of Thermo Group - a multi-product & multi-service organization with other group companies: Thermopads: A specialist in Commercial, Domestic and Industrial Heating Thermosystems: An EPC company in the field of Fuel Oil Handling Systems, Fire Detection Protection Systems etc.



Major Approvals

ADNOC - OFFSHORE
ADNOC - ONSHORE
ALBA
AP GENCO
AP TRANSCO
ARO DRILLING
AVANT GARDE
BALTIC CHEMICAL PLANT
BAPCO ENERGIES
BDL, BEL, BEML, BHEL, BLW
BOROUGE, BPCL
CLW, CMRL, CSL
DESEIN LTD, DGMS, DVC
DLW, DMDE & DMW
DLRL, DMRL & DMRC
DOLPHIN ENERGY
DRDO - ASL & DRDL
DUBAI WORLD
EGA
ENGINEERS INDIA LTD
ENOC
EXPRO
FICHTNER CONSULTING
GRSE, GSPC
GOA SHIPYARD
HALLIBURTON
HINDUSTAN SHIPYARD
HPCL, HAL, HMRL
INTERNATIONAL MARITIME INDUSTRIES
IOCL, ICF, ISRO
JACOB'S H & G
KNPC - KUWAIT
KOC - KUWAIT
LAMPRELL
L & T
MATERIAL ORGANISATION - KARWAR
MATERIAL ORGANISATION - MUMBAI
MATERIAL ORGANISATION - VIZAG
MECON, MCF
MN DASTUR & CO.
MAZGOAN DOCK LIMITED
MUMBAI PORT TRUST
NMDC ENERGY
NORTH OIL
NPCIL, NSTL, NTPC
ONGC
ORLEN
OXY
PDIL
PGCIL
PDO OMAN, PETRONAS
PETROPERU
QATAR ENERGY, QATAR PETROLEUM
RCF
SABIC
SAIL
SAIPEM
SAPURA ENERGY
SHELL, SONATRACH
TATA CONSULTING ENGINEERS
TECNIMONT ICB LTD
TOYO ENGINEERING INDIA LTD
THYSSENKRUPP

Stringent quality requirements, global standards of precision and increasingly demanding customers are the order of the day. Thermo Cables, sensitive to this reality, designs, manufactures and supplies a wide range of cables to satisfy customers' specifications and requirements.

Product Range

- ▼ Instrumentation Cables
- ▼ Power, Control & Earthing Cables
- ▼ Thermocouple Cables
- ▼ Fire Resistant Cables
- ▼ High Temperature Cables
- ▼ Foundation Fieldbus Cables
- ▼ Special Application (LFH) Cables
- ▼ Renewable Energy Cables
- ▼ Naval Application Cables
- ▼ Marine/Shipboard Cables
- ▼ Pressure Tight (PT) Cables
- ▼ Railway Cables
- ▼ Material Handling Cables
- ▼ Type-P Cables
- ▼ VFD Cables
- ▼ Co-Axial Cables (RG Series)
- ▼ ESP Cables
- ▼ Downhole (TEC) Cables
- ▼ Custom Wiring & Cable Harnesses
 - Railway
 - Defence
 - Wind
- ▼ IV Coupler & Jumper Cable Assembly
- ▼ Cable Systems

Why Us

- ◆ Leading & reputed manufacturer of Specialty Cables
- ◆ One stop solution for all Low Voltage Cables
- ◆ Serving satisfied customers since 30 years across 60+ countries
- ◆ In-house wire drawing, compounding, Electron beaming and testing facilities
- ◆ Quick response time and offer submission in less than 24 hours

Standards

- ◆ Cables designed and manufactured conforming to various National and International Standards

General Cables: ANSI MC 96.1, BS-6346, BS-5467, BS-7629, BS-6387, BS-7846, BS-5308-I & II, BS- 50288-7, IEC-60502-I, IEC-60189-I & II, IEC-60228, IEC-60584-I & III, IEC-60331, IS-8784, IS-613, IS-694, IS-1554-I, IS-7098-I, BS 16246, BS 7211.

Railway Cables: ELRS-0019 REV-4, CLW-0458 ALT-E, CLW-0459 ALT-C, EDTS - 132 REV - C, EDPS - 179, EDPS - 304, EN - 50264 - 3 - 1 & 2, EN - 50306 - 1, 2, 3 & 4, EN - 50382 - 1 & 2, EN - 45545 - 2, IEC 61156 - 6.

Navy & Marine Cables: EED 50-12 REV-3, EED 50-13 REV-2, DEF STAN 61-12 PART 18, DEF STAN 61-12 PART 31, DEF STAN 02-526, DEF STAN 02-527, MIL - DTL-24640C, MIL - DTL 24643C, IEC 60092 - 350, 353, 376 & 360, BS 6883, BS 7917, IS 9968 Part -I, IS 6380, EN 50525 - 2 - 11 - 12 - 21 - 22 - 41 - 42, EN 50618.

Mining Cables: IS 14494, **Co-Axial Cables:** MIL - DTL - 17H,

High Temperature / Aerospace Cables: JSS 51034, 51038, SAE-AS 22759 / 32A, 34B, 41B, 43B, 44A, 45A, 80D, 83E, 84E, 85E, 86E, 87E, 88E, 89E, 90D, 91D, 92D, ANSI / NEMA - WC - 27500

Quality & Reliability

- ◆ An ISO 9001: 2015 certified company with proven track record of delivering quality products
- ◆ NABL accredited full-fledged in-house testing laboratory
- ◆ Environment, Occupational Health and Safety Systems adhering to ISO 14001:2015, 45001:2018
- ◆ 15% of power consumption sourced through in-house generated renewable energy

Valuable Assets

- ◆ Over 3,00,000 sq ft of infrastructure facilities with latest technology
- ◆ 1000+ dedicated & high performing workforce
- ◆ Experienced & professional leadership team
- ◆ Offers technical support in cable selection through SAP

Instrumentation Cables

Instrumentation Cables are specially designed to transmit signals without any external interference. They are used in Data Acquisition Systems, Connections to Instruments, Computer Networking, PA Systems, Digital / Analog Control / Measuring & Communication Systems, Data Communication, Sensors, Transducers etc.

Construction	: Cores, pairs, triads or quads
Voltage Grade	: 90 V to 1100 Volts
Conductor	: Electrolytic Grade Copper Bare / Tinned / Nickel Plated / Silver Plated Solid / Stranded / Flexible Conductors
Range	: 0.5 / 0.75 / 1.0 / 1.5 / 2.5 Sq. mm up to 100 pair
Primary Insulation	: General Purpose PVC / Heat Resistant PVC / PE / XLPE / PTFE / FEP / PFA / EPR / Silicone Rubber / Fibre Glass
Screening	: Individual and / or overall with following options - - Aluminum Mylar with Drain Wire / Copper Tape with Tinned Copper Drain Wire - Braided with Bare or Tinned or Nickel Plated or Silver Plated Copper
Inner Sheath	: PVC / HRPVC / FRPVC / FRLS PVC / ZHFR / LSF
Armouring	: GI Round Wire / Flat Strip or GI / SS Wire Braiding / GI Braiding
Outer Sheath	: PVC / HRPVC / FRPVC / FRLS PVC / ZHFR / LSF
Rip Cord (Optional)	: For easy removal of sheath
Standards	: BS-EN 50288-7, BS-5308 Part-1 & 2, BS-7655, IEC-189 (1 & 2), VDE-0815 & 0816, IEC-60332-1, IEC-60332-3-22, 23, 24
Additional Features	: Communication pairs, Bi-colour extrusion, Band marking
Optional Bedding	: Aluminum Tape + HDPE + Polyamide Sheath for Alternate Lead Sheath Cables

Note: We also offer Data Communication and Low Capacitance Cables

Technical Data

Conductor Resistance at 20° C Ohms/Km	Conductor Size mm ²	0.5	0.75	1.0	1.5	2.5	
	Maximum Resistance (Plain Copper Conductor)	39.0	26.0	19.5	13.3	7.98	Class-5
		36.0	24.5	18.1	12.1	7.41	Class-2
Capacitance nf/Km	Between Conductors	< 250 for PVC < 150 for Polyolefin					
Inductance mH/Km		<1.0					
L/R Ratio μH/Ohm	Conductor Size mm ²	0.5	0.75	1.0	1.5	2.5	
	L/R	< 25	< 25	< 25	< 40	< 60	
Insulation Resistance at 20° C MΩhm-Km	PVC	More than 100					
	PE/XLPE	More than 5000					
Electrostatic noise rejection ratio		More than 76.0 db					

Power, Control & Earthing Cables

Construction	: Single Core / Multi Core
Voltage Grade	: Upto 1800 / 3300 V AC
Conductor	: Aluminum / Copper, Solid / Standard / Flexible Conductor
Range	: Single Core up to 1000 Sq. mm Multi Core up to 400 Sq. mm Max 61 Cores of 1.5, 2.5, 4.0, & 6.0 Sq. mm
Primary Insulation	: General Purpose PVC / Heat Resistant PVC / XLPE / EPR / HEPR
Inner Sheath	: General Purpose / PVC / HRPVC / FRPVC / FRLS PVC / ZHFR / LSF
Armouring	: GI Round Wire / Flat Strip or GI / SS Wire Braiding Non-Magnetic Armour / Braiding for Single Core
Outer Sheath	: General Purpose / PVC / HRPVC / FRLS PVC / ZHFR / LSF
Standards	: IS-694, IS-1554 (Part-I), IS-7098 (Part-I), IEC-60502-1 & BS-6346, BS-5467, IEC-60227, BS-6004, IEC-60332-1, IEC-60332-3-22, 23, 24
Optional Bedding	: Aluminium Tape + HDPE + Polyamide Sheath for an alternate Lead Sheath Cables

Core Identification

Cores shall be identified by different colours of PVC insulation. Following colour scheme shall be adopted

1 Core	: Black or any Single colour
2 Core	: Red & Black
3 Core	: Red, Yellow & Blue
4 Core	: Red, Yellow, Blue & Black
5 Core	: Red, Yellow, Blue, Black & Grey
6 Cores and above	: Two adjacent Cores (counting and direction Core) in each layer, Blue & Yellow, remaining Cores Grey

In addition to these, combinations from the following colours can also be offered -

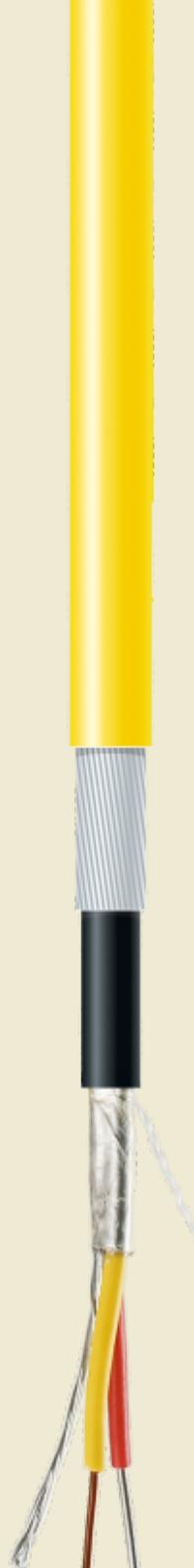
Red, Black, Blue, Brown, Green, Grey, Orange, Violet, White, Yellow.

Alternately, any single colour insulation on all Cores with number printing can also be provided.

Designation Code

Y	-- PVC insulation
W	-- Steel round wire armour
F	-- Steel strip armour
WW	-- Steel double round wire armour
FF	-- Steel double strip armour
Y	-- PVC outer sheath
Wa	-- Non-magnetic round wire armour
A	-- Aluminium conductor

No Abbreviations used when the conductor material is Copper



Thermocouple Extension/Compensating Cables

Construction	: Single or Multiple Pairs
Voltage Grade	: Up to 1100 V
Cable Code	: Kx, Kx (A), Tx, Jx, Ex, Sx / Rx, Bx, Nx, Ux, Wx
Range	: 16 AWG / 18 AWG / 20 AWG up to 48 Pair
Primary Insulation	: General purpose PVC / Heat Resistant PVC / PE / XLPE / PTFE / FEP / PFA / Silicone Rubber / Fibre Glass
Screening	: Individual and overall with following options - - Aluminum Mylar / Copper Tape with Tinned Copper Drain Wire - Braided with Bare or Tinned or Nickel Plated or Silver Plated Copper
Inner Sheath	: PVC / HRPVC / FRPVC / FRLS PVC / ZHFR / LSF / PTFE / PFA / FEP / Fibre Glass
Armouring	: GI Round Wire / Flat Strip or Wire Braiding and SS Wire Braiding
Outer Sheath	: PVC / HRPVC / FRPVC / FRLSPVC / ZHFR / LSF / PTFE / Fibre Glass / PFA / FEP
Standards	: ANSI: MC-96.1, IEC-584-3, DIN, BS IEC-60332-1, IEC-60332-3-22, 23, 24, IS-8784

Note: Other conductor sizes and insulation materials on request

Technical Data



Fire Resistant Cables

Finds application where electrical integrity of the cable has to remain intact for at least three hours, so as to activate and maintain crucial functions such as fire fighting, public announcements, smoke extraction systems, sprinklers, emergency lighting, evacuation path lighting systems etc.

The areas for Fire Resistant cable applications include places where large number of people congregate for short or limited period of time such as shopping malls, cinema theaters, educational institutions, airport terminals, mass transit systems (metro rail networks), high rise office buildings etc. FR cables also find use in power generation facilities, petrochemical complexes, nuclear power facilities, mines etc. for phased shut down of the plant and to keep critical functions like communication, rescue and evacuation systems functional during a fire.

Construction	: Single & Multi Cores / Pairs / Traids
Voltage Grade	: 300 / 500 / 600 / 1000 / 1100 V AC
Conductor	: - Solid or Stranded Annealed Bare or Tinned Copper Conductor / - Stranded Aluminium Conductor
Fire Barrier	: Glass Mica Tape
Insulation	: XLPE or EPR or Silicone Rubber
Screening	: Individual and/or overall with following options - - Aluminum Mylar / with Copper Drain Wire / Copper Tape with Tinned Copper Drain Wire - Braided with Bare or Tinned or Nickel Plated or Silver Plated Copper
Inner Sheath	: FRLS PVC / LSOH / ZHFR / SHF1 / SHF2 or equivalent
Armouring	: Galvanized Steel Wire Helical Armour / Steel Wire Braid / GI Wire Braid
Outer Sheath	: FRLS PVC / LSOH / ZHFR / SHF1 / SHF2 or equivalent
Standards	: BS-7846, BS-7629, BS-8434 or equivalent with fire test confirming resistance to BS-6387 category CWZ 'or' IEC-60331-21, BSEN 50200

- Fire Resistance cable type tested
at BRE Global (UK) for BS-6387
CWZ category





High Temperature Cables

High temperature cables are used in areas where both working temperatures and ambient temperatures are too high. They are made with a wide range of conductors, insulating materials and screening materials depending on the temperatures and conditions under which the cable has to perform.

Single Core high temperature hook-up wires & Multi Core / Multi Pair, Screened & Unscreened and Armoured & Unarmoured Cables

Construction	: Single Core or Multi Core / Pairs
Voltage Grade	: 250 V AC, 600 V AC & 1000 V AC (Rating as per MIL-16878, VDE, DIN, JSS)
Conductors	: Annealed Bare copper (up to 200° C) / Annealed tinned copper conductor (up to 180° C) Annealed silver plated copper conductor (up to 200° C) Nickel plated conductor (up to 260° C)
Insulation	

Insulation Material	Temperature Range	Characteristics
PTFE	- 200° C to 260° C	Excellent chemical resistance. High temperature stability
FEP	- 200° C to 200° C	Good chemical resistance Thin wall insulation due to good electrical properties
PFA	- 200° C to 250° C	Good chemical resistance, Thin wall insulation due to good electrical properties. Good flexibility
PTFE	- 150° C to 150° C	Mechanically tough
XL ETFE	- 150° C to 200° C	Good electric insulation, radiation resistance, ARC tracking and cold flow
PEEK	- 160° C to 250° C	Mechanically very tough High temperature and radiation resistance
Kapton Tape	- 250° C to 300° C	Very thin wall insulation. High temperature resistance
Silicon Rubber	- 40° C to 180° C	Flexible and abrasion resistance
Ceramic Yarn / Quartz Yarn Braiding	600° C	Chemically stable and higher thermal resistance
Special High Temperature Yarn	1000° C	Superior resistance to temperatures. excellent resistant against radiant heat.

Screening	: Individual and / or overall with following options - Aluminum Mylar / Copper Tape with Tinned Copper Drain Wire - Braided with Bare or Tinned or Nickel Plated or Silver Plated Copper
Armouring	: Steel galvanized wire, stainless steel wire, high strength steel wire braiding
Standards	: JSS-51034, JSS-51038, UL-1581
Industry & Applications	
Steel / Cement	: Cables for blast furnace, electric arc furnace, hot & cold rolling mills, steel refining facilities etc.
Communication	: High frequency co-axial cables for VHF, UHF and SHF transmission
Marine	: Engine proximity wiring for good resistance to high temperatures, fuel oils, chemicals, saline air / water etc.
Petrochemical	: Instrumentation & control, temperature sensing, fire warning etc.
Power	: In proximity to the turbines, boilers, ash handling etc.

Complete In-house expertise & facilities to provide the entire range of High Temperature Insulations



Foundation Fieldbus Cables

These Cables are meant for bi-directional communications protocol used for communications among field devices and to the control system. Installed in many process applications in industries like oil and gas refineries petrochemicals, power generation and even in food & beverage, pharmaceuticals and nuclear applications.

Voltage Grade	: 300 V / 600 V
Conductor	: Plain / Tinned Annealed Copper (up to 120° C) Silver Plated Annealed Copper (up to 200° C) Nickel Plated Annealed Copper (up to 260° C)
Range	: 22 AWG / 18 AWG / 16 AWG / 14 AWG
Operating Temperature	: -20° C to 90° C and for high Temperature cables up to 260° C
Insulation	: Solid Polyethylene (80° C) / XLPE (90° C) / Flouro Polymers FEP (200° C) / PFA (250° C)
Screening	: Individual and / or overall with following options - Aluminum Mylar with Drain Wire / Copper Tape with Tinned Copper Drain Wire - Braided with Bare or Tinned or Nickel Plated or Silver Plated Copper
Inner Sheath	: PVC / HR PVC / FR PVC / FRLS PVC / ZHFR / LSF / FEP / PFA
Armouring	: Round Galvanized Steel Wire / Flat Strip / Steel Wire Braid / GI Wire Braid
Outer Sheath	: PVC / HR PVC / FR PVC / FRLS PVC / ZHFR / LSF / FEP / PFA with Plain Orange Jacket or with strip for easy identification and Blue jacket available for Intrinsically Safe applications
Standards	: Cable specification Foundation Fieldbus FF-844 H1, Cable design based on EN 50288-7 / BS-5308 Part 1, IEC-60332 Electrical properties: FF-844 H1 and IEC-61158-2, Type A
Our FF Cable Features	: Excellent Electrical Characteristics with Low Capacitance (for long runs) RoHS compliant and CE marked

Special Application (LFH) Cables

Power, Control & Signal Cables, Limited Fire Hazard Insulation & Sheath materials with halogen free, fire retardant with low smoke generation and low toxic properties.

Specification	: Def Stan 61-12 (PT-18 & PT-31)
Construction	: Multi Core, Multi Pair, Composite Cables, Unscreened, Individually Screened & Collectively Screened
Voltage Grade	: 600 V
Conductor	: Circular electroplated & annealed tinned copper
Temperature Range	: - 50° C to +120° C
Insulation	: Special Halogen free and fire retardant with low smoke generation and low toxic polymers with E-beam curing process
Screening	: Annealed tinned copper braid
Outer Sheath	: Special halogen free and fire retardant with low smoke generation and low toxic polymers with E-beam curing process
Application	: Used in defence especially in Radar & Missile launching system for Power, Control, Lighting and Communication and Instrumentation circuits

Renewable Energy Cables

Solar Photovoltaic Cables

Solar photovoltaic cables are used for transmitting electrical power generated from the solar panel to the charging units, battery banks, change over systems, inverters etc. These cables have to function effectively while remaining exposed to a wide range of severe environmental conditions.

Construction:

Size (Sq mm)	Number of Strands/ Diameter	Nominal Outer Dia (mm)	Max Conductor Resistance Ohms/Km
2.5	50/0.25	5.50	8.21
4.0	56/0.30	6.00	5.09
6.0	85/0.30	6.80	3.39
10.0	140/0.30	7.70	1.95
16.0	128/0.40	8.80	1.24

Size (Sq mm)	Single Cable in Air (Amps)	Single Cable on Surface (Amps)	Multiple Cable on Surface (Amps)
2.5	41	39	33
4.0	55	52	44
6.0	70	67	57
10.0	98	93	79
16.0	132	125	107

Voltage Grade	: 1000 V AC / 1500 V DC
Temperature Range	: - 40° C to 120° C
Conductor	: Tin Coated Copper Class 5 conductor
Insulation and Sheath	: Electron Beam Irradiated Cross linked Polyolefin Compound
Standards	: TUV-2PIG 1169 / 07 2008 (Standard for Photovoltaic cables) or BSEN 50618-2014 (Covers upto 240 Sq. mm)
Features	: Resistant to ozone, water absorption & severe environmental conditions

Wind Power Cables

Torsion Cables

These cables are used for transmitting power from the generator mounted in the nacelle of the wind tower to base station. These are flexible cables made of special elastomeric compounds, so as to meet the torsional stresses exerted on the cable due to rotation of the nacelle towards wind direction.

Voltage Grade	: 600 V / 1100 V
Conductor	: Flexible Class-5 tinned or bare copper conductors, made to IEC-60228 / IS-8130
Range (Single Core)	: 10 Sq. mm to 400 Sq. mm
Insulation	: EPR - in conformance to IEC-60502 / IS-6380
Sheath	: Special elastomer compound with Oil, Fire, Hydrolysis & Torsion resistant properties (Zero halogen free sheath available on request)
Features	
Short circuit temperature (max) for up to 5 seconds	: + 250° C
Torsion angle	: ± 150° C per meter (Degrees)
Minimum bending radius	: 4D

Control & Instrumentation Cables

These cables are used in Wind Energy applications such as rotor blade pitch control, Yaw control, Top Box, Anemometer feedback, Remote data logging etc. Construction of Cables shall be as per Customers' requirement and conforming to various National/International Standards.





Naval Application Cables

On Board Indian Naval Ships and Crafts Cables

For use on onboard Surface Ships, Submarines and Crafts for Power, Lighting, Control, Communication and Instrumentation. Used in Fuel and Lubrication Oils, Hydraulic Fluids and Water Surfaces.

Standards	: EED-50-12-Thin Walled, Insulated, Electron Beam Cross Linked Irradiated Electric Cables EED-50-13-Fire Survival, High Temperature Zone, Fire Retardant Halogen Free Sheathed Electron Beam Cross Linked
Construction	: Single Core, Multi Core, Multi Pair & Triad Cables, Unscreened / Individually Screened or Collectively Screened
Voltage Grade	: 440 V AC, 600 V AC and 1800 V AC (for Single Core Cables)
Conductor	: Circular Electroplated, Annealed Tinned Flexible (Class V) Copper Conductor conformity to IEC-60228
Temperature Range	: - 65° C to 120° C (EED-50-12 Cables) - 30° C to 120° C (EED-50-13 Cables)
Insulation	: Electron Beam Cross Linked Polyolefin compound (EPR / EPDM LFH) / Silicone Rubber
Screening	: Annealed Tinned Copper / GI Wire Braids
Outer Sheath	: Electron Beam Cross Linked Polyolefin Compound (EVA / EMA / EEA LFH)
Protective Barrier	: Fibre Glass Braid / Lacquer Mica glass tape to meet the Fire Performance (applicable for EED-50-13 Cables)

Special Navy Cables

Power Navy Cables, Light Power Navy Cables, Telecommunication Navy Cables, Light Telecommunication Navy Cables.

Construction	: Multi Core Cables, Multi Pair Cables Unscreened or Individually Screened or Collectively Screened (Optional GI braided armoured) Limited Fire Hazard Sheathed
Conductor	: Circular Annealed Bare Copper conductor
Insulation	: EPR / HEPR as per relevant spec
Screening	: Annealed Tinned Copper Braid, Individually Screened or Collectively Screened as per relevant spec
Outer Sheath	: LFH Elastomeric Thermoset Compound
Temperature Range	: - 30° C to + 90° C
Application	: For use on board surface ships and crafts and power, control, lighting, submarines for communication and instrumentation circuits



Marine / Shipboard Cables

DEF STAN 02-526 (NES 526) and DEF STAN 02-527 (NES 527)

For use on onboard surface ships and crafts for power, control, lighting and communication and instrumentation circuits with or without fire survival characteristics.

Standards	: NES 526 - Dual layer Insulated, Electron Beam Cross linked irradiated Electric cables NES 527 - Fire Survival, High Temperature, Fire Retardant Halogen Free Sheathed Electron Beam Cross Linked Irradiated Electric cables
Construction	: Single Core, Multi Core, Multi Pair & Triad, Unscreened or Individually Screened or Collectively Screened.
Voltage Grade	: 440 V AC
Conductor	: Circular Electroplated, Annealed Tinned Copper
Temperature Range	: - 30° C to + 105° C
Insulation	: Dual Layer Electron Beam Cross linked irradiated materials / Silicone Rubber
Screening	: Annealed Tinned Copper Braid
Outer Sheath	: Electron Beam Cross linked irradiated LFH Compound
Protective Barrier	: Glass Braid/Lacquer, Mica Glass Tape to meet the fire performance applicable for DEF STAN 02-527 (NES 527) cables.

IEC 60092-350, 353, 360 & 376, BS-6883, BS-7917

For use in shipboard & offshore application at marine environment and use for Power, Control, Instrumentation and Communication with or without fire survival characteristics.

Standards	: IEC 60092-350 - Construction & Test methods of Power, Control and Instrumentation cables. IEC 60092-353 - Power Cables for rated voltage of 0.6 / 1 KV, 1.8 / 3 KV. IEC 60092-376 - Control & Instrumentation Cables for rated voltage of 150 V / 250 V. IEC 60092-360 - Insulating and sheathing properties materials for shipboard and offshore cables. BS 6883 - Elastomeric insulated Cables for fixed wiring in ships & offshore units. BS 7917 - Elastomeric insulated fire resistant (Limited Circuit Integrity) Cables for fixed wiring in ships & offshore units.
Construction	: Single Core, Multi Core, Single Pair, Multi Pair, Multi Triad and Quad Screened & Unscreened, Armoured & Unarmoured
Voltage Grade	: 150 V / 250 V AC, 0.6 / 1.0 KV and 1.8 / 3.0 KV AC
Conductor	: Electroplated Annealed Bare / Tinned Copper of various classes
Temperature Range	: -15° C to 95° C
Insulation	: XLPE / EPR / HEPR, HF 90 / S 95
Screening	: Al-Mylar Tape along with Drain Wire / ABC or ATC Braiding
Inner Sheath	: SHF1 / SHF2 / SH / SF / SE
Braid Armour	: Copper (Bare or Tinned) / Copper alloy / GI Wire Braid with >90% coverage.
Outer Sheath	: SHF1 / SHF2 / SH / SF / SE

Pressure Tight (PT) Cables

Power, Control & Signal Cables, Data Communication, RF Cables, Halogen Free and Flame Retardant, Fire Survival with low smoke generation and low toxic properties of insulation & Sheath. These cables are suitable and designed to withstand radial and axial pressure up to 10 to 72 bar pressure.

Specification	: EED 57-03 & EED 57-04, DMDE SOTR
Construction	: Single Core, Multi Core, Multi Pair, Unscreened, Individually Screened & Collectively Screened
Voltage Grade	: 250 V AC, 600 V AC to 1000 V AC
Conductor	: Circular electrolytic Bare and Tinned or Silver Plated Copper
Temperature Range	: - 30° C to + 120° C
Insulation	: Special halogen free and fire retardant with low smoke generation and low toxic polymers with E-beam curing process
Screening	: Annealed Bare / Tinned / Silver Plated Copper
Outer Sheath	: Special halogen free and fire retardant with low smoke generation and low toxic polymers with E-beam curing process
Water Blocking Compound/Tape	: Provided to withstand pressure requirement
Application	: Used in Submarines for Power, Control, Lighting and Communication and Instrumentation circuits

UL/CSA Listed High Temperature Aerospace & Missile Wires & Cables

High Temperature Cables are used in areas where both working temperature and ambient temperatures are too high. They are made with a wide range of conductors, insulating materials and screening materials depending on the temperatures and conditions under which the cable has to perform.

Construction	: Single Core high temperature hook-up wires & Multi Core / Multi Pair, Screened / Unscreened and Armoured / Braided Cables
Voltage Grade	: 250 V AC, 600 V AC & 1000 V AC (Rating as per MIL-16878, VDE, DIN, ANSI)
Insulation Materials	: PTFE / FEP / PFA / PEEK / ETFE / XL-ETFE / Silicone Rubber / Varnished Fibre Glass Braid

Electron Beam Cross Linked ETFE (XL-ETFE), a type of Thermoset Insulation, provides excellent fluid / oil / moisture resistance also creates increased stability at higher temperatures. Wires and Cables conforming to MIL-W-22759/32-35 & 41-46 and MIL-STD-2223.





Railway Cables

Control & Power Cables for Diesel Electric Locomotives (EDPS 179 & EDPS 304)

This specification covers the performance requirements for control & power cables used within the electrical power distribution system of Diesel-Electric Locomotives and other heavy duty industrial equipment with larger duty cycle.

Application

- EDPS-179 (Control Wires): Used in the electrical control system of diesel-electric locomotives and other heavy-duty industrial equipment. They are typically of smaller sizes (up to and including AWG size 3).
- EDPS-304 (Power Cables): Used in the power distribution system of diesel-electric locomotives and other heavy-duty industrial equipment with variable duty cycles. These are larger cables (AWG size 1 and larger)
 - Drilling Rigs
 - Railroad and Transit Car Wiring
 - Electric Earth-Moving Equipment

Advantages

- Fire-safe due to flame-retardant, low-smoke and low-acid gas properties
- Performs reliably against oil, grease and extreme temperatures
- Features highly flexible, Class 5 annealed tinned copper conductors
- Engineered for a long service life, minimizing maintenance costs
- Resistance to mineral oil, diesel oil, fluids & ozone

Diesel Electric Locomotive Cables ATC, 125° C, As Per EMD/9094883

Construction

Conductor

- Annealed Tinned Copper Conductor

Insulation

- Thermosetting Crosslinked Polyolefin compound as Per EDPS 179 Dual Layer
- Thermosetting Crosslinked Polyolefin compound as Per EDPS 304

Technical Data

Temperature Range

- 65° C to +125° C

Thermal Life Rating

- 10,000 Hours at +125° C

Key features

High-Temperature Rating

- It can withstand a wide Temperature range from -65° C to 125° C

Durable Construction Rating

- Features a flexible, tinned copper conductor with robust dual-layer insulation

Environmental Resistance

- Highly resistant to oil, fuel, grease, moisture, ozone and high ambient conditions

Safety Features

- Excellent flame retardant and produces low smoke and acid gas generation

Performance and Usability

- Flexible, easy to strip and abrasion resistant & crush resistant



Fire retardant



Good Chemical Resistance



Good Resistance to UV, humidity and ozone



High Flexible



Halogen Free



Low Corrosivity of combustion gases



Low toxicity



Operating temp.

Railway Cables

Thin Walled Flexible Electron Beam Irradiated Elastomeric Cables (ELRS/SPEC/ELC/0019 REV-4)

Electron beam irradiated thin walled flexible elastomeric cables with copper conductor, limited fire hazard, minimum flame spread, low smoke emission & limited toxic fumes emission.

Application

They are designed for fixed, protected internal use in power, auxiliary as well as control circuit of conventional tap changer electric locomotives, AC/DC EMU & BG AC EMU & MEMU / Coaching Stock.

They offer robust resistance to oil, fuel, ozone and temperature extremes. Critically, their construction ensures superior fire performance meeting ELRS / ELC / SPEC / 0019 requirements along with EN 45545-2 HL3

Advantages

It's construction provides extreme durability against mechanical stress, chemicals and temperature fluctuations
Halogen-free, fire safety by reducing flame spread, smoke and toxic gas emissions
Resistance to mineral oil, diesel oil, fluids & ozone
Thin-wall design allows for space-efficient installation
Robust build guarantees a long service life

Construction:	Single Core Cables		Multi Core Cables	
Component	up to 750 V		Above 750 & Up To 1.8/3 KV	
Size (sq.mm)	1.5 sq. mm to 150 sq. mm	1.5 sq. mm to 300 sq. mm	19C X 2.5 sq. mm	19C X 4 sq. mm
Operating temperature	- 40° C to +120° C			
Electrolytic Flexible Annealed Tinned Copper (Class-5)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Insulation (Type EBXL EPDM)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Insulation (Type EBXL EVA)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sheath (Type EBXL EVA)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
HV Test	6 KV for 5min		8 KV for 15min	
HV Test-At room temp. at 90 ± 3° C	K ≥ 2000 MΩ-km K ≥ 30 MΩ-km		K ≥ 12000 MΩ-km K ≥ 200 MΩ-km	
Bending Radius:	3 X OD for cable diameter < 10mm 5 X OD for cable diameter > 10mm			

Colors: Various color options available as per customer requirement (Red, Yellow, Blue, Black, Grey, GNYE, Chocolate, White, etc.).

Compliance & Fire Safety

Low Flame Spread / Flame Retardancy : IEC 60332-1-2, IEC 60332-3 (various parts)

Low Smoke Emission : ASTMD 2843 / IEC 61034-2

Corrosivity of Combustion of gases (on Sheath only) : IEC 60754-2

Toxicity of Combustion of gases (on Sheath only) : NES 713

Key Features

RDSO Approved ELRS/SPEC/ELC/0019 REV-4 Compliant Electron Beam Irradiated (EBXL)

Halogen-Free, Low Smoke & Toxicity

High Temperature Rated - 40° C to +120° C Continuous Operation

Oil, Diesel & Chemical Resistant for Railway Environments

Flexible Tinned Copper Conductors (Class 5) for Easy Installation



Fire retardant



Good Chemical Resistance



Good Resistance to UV, humidity and ozone



High Flexible



Halogen Free



Low Corrosivity of combustion gases



Low toxicity



Operating Temp.

Railway Cables

Single Core Cables for Electric Locomotives & Rolling Stock Types WAG-9, WAG-9H, WAP-5 & WAP-7 (CLW/ES/03/0458 Alt.E)

These high-performance cables are built for demanding applications, ensuring efficient and reliable power transmission in power, auxillary, control, sensor and driver circuits for AC traction motors in Railway rolling stock.

Application

Designed for critical power transmission within diverse railway rolling stock. These cables are primarily used as connecting leads for AC traction motors, specifically in MEMU (Mainline Electric Multiple Unit) trains and are also employed in other electric locomotives for high-voltage power circuits. Suitable for protected permanent installation in railway rolling stock (interior & exterior) for connections between fixed and moving parts

Advantages

Electron beam irradiated flexible elastomeric construction ensures exceptional durability against mechanical stress, chemical exposure and temperature variations. Dual-wall insulated electrical cable with limited fire hazard properties. This construction ensures extreme durability low flame spread, low smoke halogen free, flame retardant, and excellent resistance to high and low temperature, oil, ozone, weathering and abrasion. flexible & easy strippable

Construction:

Component	4GKW- 1.8 KV (1.8/3 KV) (Single Core Cable)	9GKW- 4 KV (3.6/6 KV) (Single Core Cable)	3GKW (300/500 V) (Single Core Wire)
Size (sq.mm)	1.5 sq.mm to 150 sq.mm	10 sq.mm to 150 sq.mm	0.5 sq. mm
Operating temperature	- 40° C to + 120° C		
Circular Annealed Tinned Copper (Class-5) Complying to IEC 60228	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Insulation - EBXL EPDM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Insulation - (Electron Beam Cross Linked Copolymer - Type EBXL EVA)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sheath-Type EBXL EVA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
HV TEST	6 KV at 50HZ for 15min	12 KV at 50HZ for 15 min	3 KV at 50HZ for 15min
Min. Bending Radius	3 X OD for Cable dia ≤ 10mm 5 X OD for Cable dia > 10mm	3 X OD for fixed installation 4 X OD for flexing installation	

*The 300/500 V grade: Insulation Color: Red / Yellow with Green Stripe / customer requirements

*For 1.8 KV (4 GKW) Insulation color: Grey & outer sheath color: Black

*For 4.0 KV (9 GKW) Insulation color: Red & outer sheath color: Black



Compliance & Fire Safety

Low Flame Spread / Flame Retardant - IEC 60332-1-2, IEC 60332-3 CAT-C

Smoke Intensity - IEC 61034-2

Corrosivity of combustion of gases IEC 60754-2

Toxicity of combustion of gases, sheath only adheres to UITP part 2 E7

Key Features

Insulation type : features Electron Beam cross-linked insulation

Environmental resistance : resists oil, diesel and various chemicals

Physical properties : flexible and highly durable

Conductor material : flexible ATC conductors



Fire retardant



Good Chemical Resistance



Good Resistance to UV, humidity and ozone



High Flexible



Halogen Free



Low Corrosivity of combustion gases



Low toxicity



Operating temp.

Railway Cables

Multi Core / Pair Cables for Electric Locomotives & Rolling Stock Types WAG-9, WAG-9H, WAP-5 & WAP-7 (CLW/ES/03/0459 Alt.C)

These cables are used in control, sensor & roof circuit of Electric Locomotive with excellent flame retardant and low smoke halogen-free properties. Designed for durability, they resist extreme temperatures, oil, ozone, weathering and abrasion while remaining flexible and easy to strip.

Application

- Designed for flexible Control Cables 415/110 V Circuits
- Primarily used for control, sensor & roof circuit of Electric Locomotive, including WAG-9, WAP-5, and WAP-7. Their multi-core configuration and robust construction make them ideal for permanent installation inside & outside of railway rolling stock to connect fixed & moving parts
- For various low voltage signal transmission in railway rolling stock (Locomotives, Metros, EMU, MEMU, control circuit)

Advantages

- Provides extreme durability against mechanical stress, chemicals and temperature fluctuations. Halogen-free, fire safety by reducing flame spread, smoke and toxic gas emissions
- Ensures very good EMC compatibility for screened cables where signal integrity is essential for safe operation

Construction:

Component	300/300 V (0.5 sq.mm) Screened	300/300 V (0.5 sq.mm) Twisted	600/1000 V (1.0 sq.mm) Screened	600/1000 V (1.0 sq.mm) Twisted
Circular Annealed Tinned Copper (Class-5) Complying to IEC 228	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Operating temperature	- 40° C to +120° C			
Insulation (Type EBXL EPDM)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Fillers	(Optional)	(Optional)	(Optional)	(Optional)
Separators	(Optional)	(Optional)	(Optional)	(Optional)
EMC Screening (Tin Copper Braiding)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sheath (Type EBXL EVA) (BLACK)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
HV Test	1.5 KV at 50HZ for 15 min		4 KV at 50HZ for 15min	
Min. Bending Radius (Fixed installations)	5 x Overall diameter			

= Included | = Not Included | (Optional) = May be included as per specification or customer request

Compliance & Fire Safety

Low Flame Spread / Flame Retardant : IEC 60332-1-2, IEC 60332-3 (CAT-C)

Smoke Intensity : IEC 61034-1

Corrosivity of Combustion of gases : IEC 60754-2

Toxicity of Combustion : NES 713

Halogen Content : IEC-60754-1



Key Features

Electron Beam Cross-linked Insulation : Ensures excellent thermal, electrical and mechanical stability

Halogen-Free : Minimizes emission of toxic and corrosive gases in case of fire

Environmental Resistance : Resistant to oil, diesel, chemicals, weathering and abrasion

Temperature Performance : Excellent resistance to both high and low temperatures

Flexibility & Durability : Highly flexible design with robust mechanical strength for long service life



Fire retardant



Good Chemical Resistance



Good Resistance to UV, humidity and ozone



High Flexible



Halogen Free



Low Corrosivity of combustion gases



Low toxicity



Operating temp.

Railway Cables

Thin-Walled Electron Beam Irradiated Flexible Elastomeric Cables with copper conductor. (EDTS 132, REV-C)

Flexible copper cables with E-beam cross-linking, designed for passenger coaches, featuring thin walled insulation, low chemical residue and Limited Fire Hazard properties with minimum flame spread, smoke and toxic emissions.

Application

: For Coaching Stock Applications. Suitable for use in power and control circuits for passenger coaches, AC/DC EMU, BG AC EMU and MEMU coaching stock. UIC cables are used in modern railway applications to ensure safe and reliable communication and control applications

Advantages

- Enhanced Fire Safety
- EMC Compatibility
- Extreme Durability
- Space-Efficient Design
- Reliable Performance
- : Limited fire hazard type with low smoke and toxicity
- : Ensures very good EMC compatibility for screened cables
- : Resistant to high temperatures, mechanical stress and harsh chemicals
- : Thin-walled construction for easy & compact installation
- : Tinned copper conductors ensure efficient power and signal transmission
- : Resistance to mineral oil, diesel, fluids and chemicals

Construction:

Component	Data Sheet-1	Data Sheet-2	Data Sheet-3	Data Sheet-4	Data Sheet-5	Data Sheet-7
Voltage Rating	1.8/3.0 KV	600/1000 V	600/1000 V	600/1000 V	300/300 V	600/1000 V
Operating temperature	- 40° C to +120° C					
Core & Cable type	Single Core Unscreened	Single Core Unscreened	Multi Core Unscreened	Multi Core Screened	UIC Screened	Multi Core Unscreened
Circular Annealed Tinned Copper Conductor (120° C) (Class 5)	<input checked="" type="checkbox"/>					
Insulation (EBXL EPDM)	<input checked="" type="checkbox"/>					
EMC Screening (ATC Braiding)	<input checked="" type="checkbox"/>					
Sheath (EBXL EVA)	<input checked="" type="checkbox"/>					
Test Voltage	6 KV for 15 min	3 KV for 5 min	1.5 KV for 5 min	1.5 KV for 5 min	2.0 KV for 1 min	1.5 KV for 5 min
Bending Radius	3XD < 10 mm 5XD > 10 mm	3XD < 10 mm 5XD > 10 mm	4XD (fixed) 5XD (flexible)	3XD (fixed) 5XD (flexible)	4XD (fixed) 5XD (flexible)	4XD (fixed) 5XD (flexible)

= Included | = Not Included

* Insulation color shall conform to standard or be customized as per customer requirements. Outer sheath will be provided in black for all Data sheets except Datasheet-2: Outer sheath color : Grey

Compliance & Fire Safety

Low Flame Spread / Flame Retardancy : IEC 60332-1-2, IEC 60332-3 CAT C

Low Smoke Emission : ASTMD 2843 / IEC 61034-2

Corrosivity of Combustion of gases (on Sheath only) : IEC 60754-2

Toxicity of Combustion of gases (on Sheath only) : NES 713

Key Features

Fire Safety : Limited Fire Hazard type with low smoke and toxicity

Insulation : Electron beam irradiated, flexible elastomeric construction provides extreme durability against mechanical stress, chemicals and temperature fluctuations

Environmental Resistance : Resistant to oil, diesel and various chemicals

Flexibility : Class 5 tinned, flexible copper conductors for easy installation



Fire retardant



Good Chemical Resistance



Good Resistance to UV, humidity and ozone



High Flexible



Halogen Free



Low Corrosivity of combustion gases



Low toxicity



Operating temp



Screened Versions

Railway Cables

Single Core and Multi Core Power and Control Cables designed for railway rolling stock, traction & metro applications (EN 50264-3-1 & EN 50264-3-2)

Offering exceptional flame resistance, durability and EMC compatibility, these cables are ideal for fixed installations in locomotives, metros & EMUs.

EN 50264-3-1 Single Core Cables

Application	<ul style="list-style-type: none">Used for power transmission, controlling in various application in Railway Rolling Stock (Locomotives, Metros, EMU, MEMU)They are suitable for use in confined spaces due to their reduced bending radius.They can withstand harsh operating conditions, including exposure to oil, ozone and wide temperature fluctuations.The conductors are rated for continuous operation at temperatures 90° C (Optional: 120° C)
Advantages	<ul style="list-style-type: none">Halogen-free, fire safety by reducing flame spread, smoke and toxic gas emissions.They are resistant to oils, fuels and ozone, ensuring durability and reliable performance even when exposed to harsh chemicals.They can withstand mechanical stresses like vibration and impact, which are common in railway environments.

Construction:

Single Core Cables

Component	0.6/1 KV (Unsheathed) M	1.8/3 KV (Unsheathed) M	1.8/3 KV (Sheathed) MM	3.6/6 KV (Sheathed) MM
Size (sq.mm)	1.0 sq.mm to 400 sq.mm	1.5 sq.mm to 400 sq.mm	1.5 sq.mm to 400 sq.mm	2.5 sq.mm to 400 sq.mm
Operating temperature	- 40° C to + 90° C / + 120° C			
Flexible Tinned Coated Annealed Copper Conductor (Class 5)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Conductor screening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Separator Tape	(Optional)	(Optional)	(Optional)	<input type="checkbox"/>
Insulation (Type EI 106/107/108/109/110)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Separator Tape	<input type="checkbox"/>	<input type="checkbox"/>	(Optional)	(Optional)
Sheath (Type EM 101/102/103/104)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Test Voltage	3.5 KV for 5 min	6.5 KV for 5 min	6.5 KV for 5 min	11 KV for 5 min

= Included | = Not Included | (Optional) = May be included as per specification or customer request



Key features & Fire Safety : IEC 60332-1-2 – Flame Retardant

IEC 60754-1/2 – Corrosivity of Combustion of gases

IEC 61034-2 – Low Smoke Emission

EN 45545-2 HL-2/HL-3 - Fire behavior of the Cable



Fire retardant



Good Chemical Resistance



Good Resistance to UV, humidity and ozone



High Flexible



Halogen Free



Low Corrosivity of combustion gases



Low toxicity



Operating temp



Screened Versions

Railway Cables

Medium Voltage Single Core and Multi Core Power and Control Cables designed for railway rolling stock, traction & metro applications (EN 50264-3-1 & EN 50264-3-2)

Offering exceptional flame resistance, durability and EMC compatibility, these cables are ideal for fixed installations in locomotives, metros & EMUs.

EN 50264-3-2 Multi Core Cables

Application

: Used for power transmission, controlling in various application in Railway Rolling stock (Locomotives, Metros, EMU, MEMU)

The cables can withstand harsh operating conditions, including exposure to oil, ozone and wide temperature fluctuations.

The conductors are rated for continuous operation at temperatures 90° C. (Optional :120° C)

Their flexible, multi-core design enables easy routing in limited spaces, especially where movement or vibration is present.

Advantages

: Halogen-free, fire safety by reducing flame spread, smoke and toxic gas emissions.

They are resistant to oils, fuels and ozone, ensuring durability and reliable performance even when exposed to harsh chemicals.

The cables can withstand mechanical stresses like vibration and impact, which are common in railway environments.

Construction:

Multicore Cables

Component	300 / 500 V (Unscreened) MM	300 / 500 V (Screened) MMS	0.6 / 1 KV (Unscreened) MM	0.6 / 1 KV (Screened) MMS
Size (sq.mm)	1.0 sq.mm to 2.5 sq.mm	1.0 sq.mm to 2.5 sq.mm	1.5 sq.mm to 50 sq.mm	1.5 sq.mm to 50 sq.mm
Operating temperature	- 40° C to + 90° C / + 120° C			
Flexible Tinned Coated Annealed Copper Conductor (Class 5)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Separator Tape	(Optional)	(Optional)	(Optional)	(Optional)
Insulation (Type EI 106/107/108/109/110)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Metallic Screening	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Separator Tape	(Optional)	(Optional)	(Optional)	(Optional)
Sheath(Type EM 101/102/103/104)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Test Voltage	2 KV for 5 min		3.5 KV for 5 min	

= Included | = Not Included | (Optional) = May be included as per specification or customer request



Key features & Fire Safety : IEC 60332-1-2 – Flame Retardant

IEC 60754-1/2 – Corrosivity of Combustion of gases

IEC 61034-2 – Low Smoke Emission

EN 45545-2 HL-2/HL-3 – Fire behavior of the Cable



Fire retardant



Good Chemical Resistance



Good Resistance to UV, humidity and ozone



High Flexible



Halogen Free



Low Corrosivity of combustion gases



Low toxicity



Operating temp



Screened Versions

Railway Cables

Thin-Walled Single, Multi-Core and Multi-Pair, Railway Signal & Control Cables with Special Fire Performance for Railway Rolling Stock (EN -50306-1,2,3,4)

Ideal for modern railway applications where space, weight, safety and EMC performance are critical.

Application

They are designed for fixed & protected internal & external wiring in all railway vehicles, from locomotives to trams. Rated for occasional thermal stress, with a continuous operational life equivalent to temperatures of 105° C (Optional: 120° C). Their compact size and flexibility are perfect for confined spaces

These cables are crucial for power transmission, controlling & various low voltage signal transmission in various Rolling stock applications (Locomotives, Metros, EMU, MEMU, Control circuits)

Their halogen-free, cross linked construction ensures superior fire safety, providing essential protection for passengers and crew

Advantages

Resists mechanical stress, chemicals and extreme temperatures
Halogen-free, cross-linked construction with good flexibility and durability
compact and light weight design, very good EMC compatibility for screened cable
Thin-wall design and low bending radius allow for space-saving installations.
Robust build guarantees a long service life

EN 50306 Thin-Wall Railway Rolling Stock Cables

EN 50306 Cables offer diverse constructions (single / multi core, screened / unscreened, multipair), operate reliably from -40° C to +105° C (Optional 120° C) They are rated for 300 V to earth.

Available in 0.50 mm² to 2.5 mm² cross- sections, they feature electron-beam cross linked, halogen - free materials ensuring superior fire performance (low smoke, non-toxic, non-corrosive gases) and robust resistance to oils, fuels, ozone and UV, all in a compact, durable, thin- wall design.

Key features

- IEC 60332-1-2 – Flame Retardant
- IEC 60754-1/2 – Corrosivity of Combustion of gases
- IEC 61034-2 – Low Smoke Emission
- EN 45545-2 HL-2/HL-3 – Fire behavior of the Cable

Construction Details:

Component	50306-2	50306-3	50306-4
Size (sq.mm)	0.5 sq.mm to 2.5 sq.mm	0.5 sq.mm to 2.5 sq.mm	0.5 sq.mm to 2.5 sq.mm
Operating temperature	- 40° C to + 105° C / +120° C		
Cable Types	Single Core	Single Core & Multi Core Cables	Multi Core & Multi Pair Cables
Screening	Unscreened	Screened	Unscreened / Screened
Flexible Tinned Coated Annealed Copper Conductor (120° C) (Class 5)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Separator Tape	<input checked="" type="checkbox"/>	(Optional)	(Optional)
Insulation (as per 3.1 of EN 50306-1)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Laying up & Fillers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Metallic Screening	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Separator Tape	<input checked="" type="checkbox"/>	(Optional)	(Optional)
Sheath (Type S1 or S2 as per 3.2 of EN 50306-1)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Test Voltage		2 KV for 5 min	

= Included | = Not Included



Fire retardant



Good Chemical Resistance



Good Resistance to UV, humidity and ozone



High Flexible



Halogen Free



Low Corrosivity of combustion gases



Low toxicity



Operating temp



EMI





Railway Cables

High-Temperature Silicon Rubber insulated Power Cables having special Fire Performance for Railway Rolling Stock/Traction/Metro (EN 50382-1 and EN 50382-2)

These railway cables deliver superior performance in high-temperature environments, offering excellent flexibility and mechanical strength. Engineered for safe and efficient power transmission in traction systems, metro trains and rolling stock operating under extreme thermal and environmental conditions.

Application : Designed for railway rolling stock applications requiring superior fire performance and thermal endurance. Halogen-free with low smoke, toxicity and corrosivity. Ideal for power distribution in locomotives, metros, EMUs and MEMUs, they are well-suited for high-stress areas like traction converters, rooftop and under frame wiring and control systems.

Advantages : Engineered with advanced cross-linked silicone rubber compounds, superior mechanical durability-demonstrating high resistance to abrasion, tensile stress and cut-through damage. Outstanding chemical resistance ensures reliable performance in environments exposed to oils, fuels, acids and alkalis.

Designed for flexibility and ease of handling, these cables simplify installation and stripping processes, meeting the rigorous operational demands of modern railway systems

Construction: EN 50382-2

Component	1.8/3 KV (Unsheathed) F/FZ	1.8/3 KV (Sheathed) FF	3.6/6 KV (Unsheathed) F/FZ	3.6/6 KV (Unsheathed) FX/FXZ	3.6/6 KV (Sheathed) FF			
Size (sq.mm)	1.5 sq.mm to 400 sq.mm	1.5 sq.mm to 400 sq.mm	2.5 sq.mm to 400 sq.mm	2.5 sq.mm to 400 sq.mm	2.5 sq.mm to 400 sq.mm			
Flexible Bare copper (150° C) or Tinned copper conductor (120° C) (Class 5)	✓	✓	✓	✓	✓			
Flexible Bare copper (150° C) or Tinned copper conductor (120° C) (Class 6)	✗	✗	✗	✓	✗			
Conductor screening	✗	✗	(Optional)	✗	(Optional)			
Separator Tape	(Optional)	(Optional)	✗	(Optional)	(Optional)			
Insulation (Type EI 111)	✓	✓	✓	✓	✓			
Insulation (Type EI 112)	✗	✓	✗	✗	✓			
Textile braid on request for FZ, FXZ	✓	✗	✓	✓	✗			
Sheath (EM 105/106/107)	✗	✓	✗	✗	✓			
Test Voltage (R.M.S)	6.5 KV for 5 mins	6.5 KV for 5 mins	11 KV for 5 mins	11 KV for 5 mins	11 KV for 5 mins			
Bending Radius:	4 x Outer diameter		if OD ≤ 12 mm		6 x Outer diameter		if OD > 12 mm	

✓ = Included | ✗ = Not Included | (Optional) = May be included as per specification or customer request
*Type FFXS jumper cable with EMC-protected metallic braided screen is available on request



Compliance & Fire Safety

EN 50382-1 - General construction and performance requirements

EN 50382-2 - Specifications for single-core silicone rubber insulated cables

IEC 60332-1-2 – Flame Retardant

IEC 60754-1/2 – Corrosivity of Combustion of gases

IEC 61034-2 – Low Smoke Emission

EN 45545-2 HL-2/HL-3 – Fire behaviour of the Cable stems

Key Features

Safety-focused design for enclosed and public environments

Approved for flexible and fixed wiring in rolling stock, tunnels and depots

Low-toxicity materials preserve electronics and ensure occupant safety

Resistance to mineral oils, fuels, ozone and UV radiation



Fire retardant



Good Chemical Resistance



Good Resistance to UV, humidity and ozone



High Flexible



Halogen Free



Low Corrosivity of combustion gases



Low toxicity



Operating temp.



Material Handling Cables

CRD & Trailing Cables

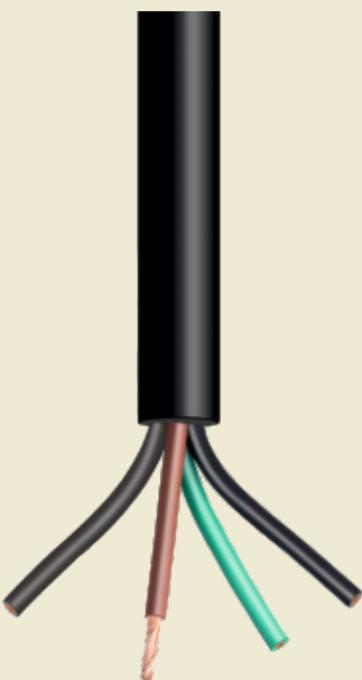
These cables are used in conveyor machinery such as transfer cars, boom-stackers, side arm chargers, bulk material conveyors etc. They find application in almost every industry segment like Steel Mills, Cement Plants, Docks, Power Plants, Automobile Industries & Refineries and Petrochemicals.

Construction	: Single cable comprising multiple elements like composite type, power cores, control cores, signaling pairs, etc for multipurpose functions
Voltage Grade	: 600 / 1100 V AC
Conductor	: Class 5 flexible tinned or bare copper
Insulation	: EPR
Screening	: Tinned or bare copper wire braid (If Applicable)
Inner Sheath	: HOFR Elastomer
Anti Kink Braid	: Fabric braid embedded between inner and outer sheath
Outer Sheath	: HOFR Elastomer
Features	: Designed to withstand continuous reeling and unreeling sheath materials that have a high degree of flex fatigue resistance, excellent heat, oil and fire resistant properties
Operating Temperature	: - 20° C to + 90° C
Test Voltage	: 3000 V AC / 3500 V AC
Bending Radius	: 8 D
Core Marking	: 1-5 Cores colour coded as Green / Yellow, Blue, Brown, Black, Grey or Coloured Rubberised cotton tapes. 6 Cores and above with numbered Cores, with one earth Core of Green / Yellow
Standards	: IS 8130, IS 6380, IS 9968 I, IEC-60228, IEC-60502, IEC-60332

HO7RN-F-Heavy Duty Rubber Cables

These heavy duty elastomer cables are used in generators, heavy machinery, portable power tools and equipment, moving machinery in wet, hot or oily environments. Their flexibility permits use in constricted spaces with sharp and complex bends. They can be made with special abrasion resistant sheaths to withstand rough use in portable equipment.

Voltage Grade	: 450 / 750 V AC
Conductor	: Bare or tinned flexible Class 5 conductor as per (EN 60228)
Range	: Single Core: up to 300 Sq. mm Multi Core: 1 Sq. mm - 2.5 Sq. mm up to 61 Cores 4 Sq. mm - 6 Sq. mm up to 19 Cores 10 Sq. mm - 300 Sq. mm up to 5 Cores
Insulation	: EPR
Sheath	: Black heavy duty elastomer
Temperature Range	: - 25° C to + 85° C
Colour Coding	: 1-5 Cores colour coded as Green / Yellow, Blue, Brown, Black, Grey or Coloured Rubberised cotton tapes. 6 Cores or more with numbered Cores and earth Core of Green / Yellow
Standards	: EN 50525-2-21





Type - P Cables

Type P Cables are specifically designed for installation and use in harsh environments found within offshore and onshore drilling rigs. These extreme environments may include severe cold, high heat, constant vibration, drilling mud, mechanical stress and salt corrosion.

Specification	: IEEE 1580, IEC 60092-353, IEC 60092-376, UL 1309
Temperature Range	: 90° C, 100° C, 110° C & 125° C
Conductor	: Flexible stranded tinned copper
Application	: Powering Machinery, Communication Devices, Navigation Systems, Offshore Drilling Rigs, Shipboard Wiring and Marine Vessels
Cable Type	: Multi Core, Single Core, Power, Control, VFD and Instrumentation Cables
Voltage Grade	: 300 V, 0.6 / 1.0 KV & 2 KV
Insulation	: XLPO
Sheath	: Extruded Flame Retardant, Oil & Abrasion Resistant Synthetic Elastomer
Armour (Optional)	: Tinned copper or bronze wire braid
Shield (applicable for Instrumentation Cables)	: An aluminum/polyester tape with drain wire, 100% coverage, is applied over each twisted pair and the cabled core, the single pair construction has only the overall shield.

VFD Cables

VFD cables are used to connect the VFD drive to the variable frequency motors, drives precisely controls the speed and torque of the motors. During this operation of controlling the motor by changing the frequency there is every chance for noise generation, sudden induced voltage and spikes and intense electric field around the conductor which can be suppressed with special design.

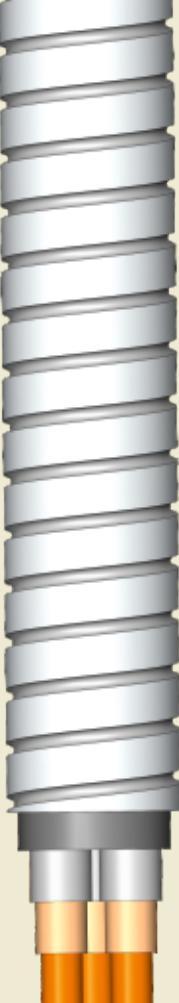
Construction	: Metallic layer over the core / cable will reduce the noise / strong electric field around the core / earthing of all spikes generated during the operation.
Voltage Grade	: Up to 1800 / 3300 V AC
Conductor	: Circular electrolytic bare copper / tinned copper (stranded / flexible)
Insulation	: XLPE or EPR or HEPR
Screening	: Combination of copper tape and copper wire braid or double layer of copper tape and concentric braiding
Outer Sheath	: PVC / ZHFR / SHF1 / SHF2
Application	: This construction of metallic layer over the core / cable will reduce the noise / strong electric field around the core / earthing of all spikes generated during the operation.

Co-Axial Cables (RG Series)

Radio Frequency or Signal Transmission Cables, Polyethylene / XLPE / Flouropolymer / Dielectric Insulation & Halogen Free Flame retardant with low smoke and low toxic polymers, Sheath materials.

Specification	: Def Stan 02-512 (PT-5) & MIL-DTL-17H & customer specification
Construction	: Single Core Screened Cables
Primary Conductor	: ABC / ATC / SPC & special conductors like CCS (Copper Clad Steel) etc
Temperature Range	: - 30° C to + 120° C
Insulation	: Polyethylene / XLPE / Flouropolymer
Outer Conductor	: Aluminium Mylar Tape / Annealed Tinned / Bare Copper Braid
Outer Sheath	: Special halogen free and fire retardant with low smoke generation and low toxic properties with E-beam curing process
Type of Cables	: RG 11, RG 213, RG188, RG 58, RG 59, RG 214
Application	: For use of VHF (Very High Frequency) signal transmission





Electrical Submersible Pump (ESP) Cables

High, medium & low temperature flat & round cables are 3 KV, 4 KV & 5 KV rated for operating temperatures up to 450° F, 284° F, 205° F & 160° F.

Sizes : 1, 2, 4, 6 AWG & other sizes and KV ratings available upon request

Application : Downhole extraction systems are critical for crude oil extraction. The reliability of the electrical power supply to an Electrical Submersible Pump (ESP) system depends on the performance and reliability of the power feed through the wellhead, power cable, motor lead cable, pig tail connectors and related equipment such as the pump and motor. These cables offer an efficient, rugged and easy to handle solution that delivers reliable performance in a package that is straight forward to install and maintain.

Construction : - Solid or stranded plain or tinned copper conductor
- Proprietary PP / EPDM rubber insulation with a poly-adhesive layer to the conductor
- Lead Sheath (applicable only for SL.No 4,12 & 14 from the below table).
- HDPE / EPDM / Nitrile Rubber
- Longitudinally applied rubber backed fabric / PTFE
- Galvanized steel armour

SL. No	Rated	Cable Construction	Voltage	Conductor	Conductor	Insulation	Barrier Material	Tape	Jacket Material	Standard
	Temp. °F (°C)		Rating KV	Size (AWG)	Coating	Material				Armor
1	160(71)	Flat/Round	3,4,5	1,2,4,6	Bare/Tin	PP	NA	Rubber Backed Woven Fabric	HDPE	Galvanized
2	205(96)	Flat/Round	3,4,5	1,2,4,6	Bare/Tin	PP	NA	Rubber Backed Woven Fabric	Nitrile Rubber	Galvanized
3	205(96)	Flat/Round	3,4,5	1,2,4,6	Bare/Tin	PP	NA	Rubber Backed Woven Fabric	Nitrile Rubber	Galvanized
4	250(121)	Flat/Round	3,4,5	1,2,4,6	Bare/Tin	PP	Lead Sheath	Rubber Backed Woven Fabric	Nitrile Rubber	Galvanized
5	250(121)	Flat/Round	3,4,5	1,2,4,6	Bare/Tin	PP	NA	Rubber Backed Woven Fabric	Nitrile Rubber	Galvanized
6	284(140)	Flat/Round	3,4,5	1,2,4,6	Bare/Tin	EPDM	NA	Rubber Backed Woven Fabric	Nitrile Rubber	Galvanized
7	284(140)	Flat/Round	3,4,5	1,2,4,6	Bare/Tin	EPDM	NA	Rubber Backed Woven Fabric	Nitrile Rubber	Galvanized
8	300(148)	Flat/Round	3,4,5	1,2,4,6	Bare/Tin	EPDM	NA	Special Heat Resistant tape	EPDM	Galvanized
9	300(148)	Flat/Round	3,4,5	1,2,4,6	Bare/Tin	EPDM	NA	Special Heat Resistant tape	EPDM	Galvanized
10	400(204)	Flat/Round	3,4,5	1,2,4,6	Bare	Polyimide Tape / EPDM	NA	Special Heat Resistant tape	EPDM	Galvanized
11	400(204)	Flat/Round	3,4,5	1,2,4,6	Bare	Polyimide Tape / EPDM	NA	Special Heat Resistant tape	EPDM	Galvanized
12	450(232)	Flat/Round	3,4,5	1,2,4,6	Bare	Polyimide Tape / EPDM	Lead Sheath	Special Heat Resistant tape	EPDM	Galvanized
13	450(232)	Flat/Round	3,4,5	1,2,4,6	Bare	Polyimide Tape / EPDM	NA	Special Heat Resistant tape	EPDM	Galvanized
14	450(232)	Flat/Round	4,5	2,4,6	Bare	Polyimide Tape / EPDM	Lead Sheath	Special Heat Resistant tape	EPDM	Monel

NOTES : 1. Materials and specifications are subject to change without notice. 2. Jacket is not applicable for Flat cable construction

Downhole Tubing Encapsulated Conductor (TEC) Cables

These cables are used in the Oil and gas refineries, Oil well monitoring, Powering downhole equipment and instrumentation, Underground power distribution, Pressure sensing equipment & Data collection etc.

They are used to monitor, provide power and transmit signals in a downhole application. Cables used in the oil & gas industry must be able to withstand extreme environments, temperatures and pressure which is why Thermo Cables is the choice of industry professionals.

TEC (Tubing Encapsulated Conductor) cables have the traditional characteristics of stranded wires or cables – they have some form of copper conductor surrounded by an insulation material or jacket. The difference comes when the stranded wire or the tubing layer that surrounds the product with an armored metal component. Lastly, the final layer encapsulates the entire cable. TEC tubing encapsulated cables can withstand temperature ranges from 150° C to 300° C.

These are made with 5 layers and can be constructed with the following materials:

Conductor Layer	: can be comprised of 20 AWG to 12 AWG, solid or stranded, bare copper, tinned copper, nickel plated copper, or silver plated copper.
Insulation Layer	: can be comprised of either FEP, PFA, ETFE or ECTFE.
Extruded Filler Layer	: can be comprised of PFA, FEP or Polypropylene.
Armor Layer	: can be comprised of 316L Stainless Steel, Alloy 825 or Alloy 625
Final Layer	: an encapsulation layer can be comprised of FEP, PFA, ETFE, Polyolefin, Polyamide.

Cables Specification:

Voltage Rating V DC	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000		
Conductor Gauge (AWG)	18	16	18	16	18	16	18	16	18	16	18	16		
Conductor Type	Solid or Stranded													
Conductor Coatings	Bare, Tinned, Nickel Plated, Silver Plated													
Insulation	ETFE, ECTFE, FEP, PFA													
Filler	Polypropylene, FEP, PFA													
Armor Type	316L, Alloy 825, Alloy 625													
Max. Conductor Resistance Ohms/KFT 20° C	7	4.4	7	4.4	7	4.4	7	4.4	7	4.4	7	4.4		
Max. Conductor Resistance Ohms/KFT 150° C	10.5	6.5	10.5	6.5	10.5	6.5	10.5	6.5	10.5	6.5	10.5	6.5		
Capacitance pF/ft 20° C	26	27.2	32	29.3	36	34.9	26	27.2	32	29.3	36	34.9		
Capacitance pF/ft 150° C	27.5	30.9	33.5	33.3	40.8	39.7	27.5	30.9	33.5	33.3	37.5	39.7		
Min. Insulation Resistance Mohms/KFT	6500	15000	6500	15000	6500	15000	6500	15000	6500	15000	6500	15000		
Cable Type	Polyolefin	Polyamide	ETFE		FEP		PFA							
Cable Color	Yellow	Black	Blue		Natural									
Max. working temperature, degC (degF)	150 (302)			175 (347)			200 (392)		250 (482)		300 (572)			
Min. storage and transportation temperature, degC (degF)	-48 (-54)			-100 (-148)			-110 (-166)							

Infrastructure

Machinery

Testing Equipment

Name of the Machine	Name of the Machine	Name of the Machine - Range/LC
Rod Break Down Machine (9 Die)	HOIST 'E' - 19 B Laying - 2 Nos	Fourier Transmission infrared Spectrometer (FTIR)
Rod Break Down Machine (11 Die)	HOIST 'G' - 30 Armouring - 2 Nos	Profile Projector
Rod Break Down Machine (13 Die)	HOIST 'G' - 30 B Armouring	Digital Thermometer With Sensor - 2 Nos
Skip Stranding Machine - 2 Nos	HOIST 'F' - 37 Laying	Hot Air Ageing Oven 6 Nos - Up to 250° C & 300° C
Electroplating Tinning Machine - 2 Nos	HOIST 'F' - 37 B Laying - 2 Nos	Hot Set Oven
Multi Wire Drawing Machine 30 mm	HOIST 'K' - 40 Armouring	Ozone Resistance Test Equipment
Multi Wire Drawing Machine 8 Wire - 2 Nos	HOIST 'H' - 48 Armouring - 2 Nos	Smoke Density Apparatus - 3 Nos
Fine Wire Drawing Machine - 4 Nos	HOIST 'H' - 48 B Armouring - 2 Nos	Oxygen & Temperature index Apparatus - 2 Nos
Mixing Machine 75 mm - 3 Nos	HOIST 'J' - 72 B Armouring	Flammability Tester - 3 Nos
Kneader Line - 2 Nos	HOIST 'F' - 96 Armouring	Cold Chamber Bend Cold Impact Test Set - 2 Nos 20° C to +25° C
75 L Kneader	HOIST 'K' - HV Area	Hot Set Test Apparatus - 3 Nos
Ring Marker	HOIST 'L' - Drum Twister Area	Toxicity Index Test Equipment
High Speed Core Rewinding - 4 Nos	HOIST 'O' - RBD Area	Halogen Acid Gas Emission Test Apparatus
Taping Machine - 7 Nos	HOIST 'I' - Despatch - 2 Nos	pH & Conductivity Test Equipment - 2 Nos - 0 to 14 pH
Vertical Taping Machine - 6 Nos	Chain Hoist 'A' - G I Rewinding - 2 Nos	Abrasion Resistancne Tester - 2 Nos
Horizontal Taping Machine - 12 Nos	Chain Hoist 'C' - Simon Taping - 4 Nos	Electronic Tensile Tester - 3 Nos - 0 to 1000 N
Single Twist Bunching Machine	High Speed Bunching Machine - 10 Nos	Dielectric Breakdown Tester & Leakage Current Tester
400 Single Twist Bunching Machine	Chiller - 2 Nos	High Frequency Spark Tester - 8 Nos - 0 to 15 KV AC
Tandem Extrusion Line (Ø50 + 65/35 mm)	Chiller 5 TR	Main Frequency Spark Tester - 2 Nos - 0 to 15 KV AC
Tandem Extruder Line (Ø80+ Ø100/Ø35)	Chiller 10 TR - 2 Nos	Digital Micro Ohm Meter 5 Nos - 1 mΩ to 19.999 kΩ (2 Nos.) & 1 mΩ to 1.9999 kΩ (1 No.)
Tandem Extruder Line (Ø35+ Ø50/Ø35)	Chiller 20 TR	H V Tester 4 Nos - 0-5 / 10 KV
Extruder Machine 20 mm Bi Color	PVC Mixer	Million Mega Ohm Meter 6 Nos - 1 MΩ to 100 GΩ, 1 MΩ to 50 TΩ & 2 MΩ to 20 GΩ
Extruder Machine 45 mm	High Speed Mixer 60 kg	Digital L C R Q Meter
Extruder Machine 45 mm Bi Color	High Speed Mixer 120 kg	Thermal E M F Error Test Apparatus - 0 to 200 mV DC
Extruder Machine 65 mm - 9 Nos	High Speed Mixer 200 kg	Digital M V Source Cum Meter - 0 to 199.9° C
Extruder Machine 70 mm	16 A High Speed Braiding - 3 Nos	Digimatic Caliper - 0 to 300 mm
Extruder Machine 70/35 mm	16 F High Speed Braiding - 2 Nos	Acid Gas Generation Apparatus 2 Nos
Extruder Machine 75 mm - 3 Nos	24 High Speed Braiding - 2 Nos	Swedish Chimney Test Equipment
Extruder Machine 80 mm - 4 Nos	24 A High Speed Braiding - 5 Nos	Water Immersion Test Equipment - Up to 100° C
Extruder Machine 100 mm	24 E High Speed Braiding - 4 Nos	4 Cell Ageing Oven with Data Scanning Logger 2 Nos - 16 Channels
Core Rewinding Machine - 7 Nos	24 F High Speed Braiding	Heating Oven - Up to 200° C
Cooling Tower - 6 Nos	48 High Speed Braiding	Thermal Stability Test Apparatus
GI Rewinding Machine - 20 Nos	3 HP Air Compressor	Water Absorption Test Apparatus Gravimetric
Ceramic Butt Welding Machine	10 HP Air Compressor - 3 Nos	Electronic Balance Weighing Machine - 3 Nos 0 to 180 gms & 10 gms to 3 kgs
Butt Welding Machine - 15 Nos	15 HP Air Compressor	Kelvin Bridge - 0-11 Ω
Electron Beam Accelerator - 2 Nos	20 HP Air Compressor - 2 Nos	Torsion Testing Machine (Digital Control Meter - Up to 99999 Count)
Pairing Machine - 4 Nos	25 HP Air Compressor	Fire Survival Test Equipment
Pairing Back Twist Machine	100 HP Air Compressor - 3 Nos	Static Noise Rejection Ratio Meter - 60 to 100 dB
Laying Machine (7 Bobbins)	Brazing Machine - 4 Nos	H V Break Down Tester - 0 to 2.5 KV DC
Laying Machine (7 Bobbins) - Single Twist	H V Testing - 3 Nos	Transfer Impedance Tester
Laying Machine (13 Bobbins)	Drum Twister Machine	Steel Rule & Test Mandrel Set 0 to 1 Metre
Laying Machine (19 Bobbins) - 4 Nos	630 Single Twister Machine 7 Bobbin	Condition Charmer 2 Nos - 20° C to 40° C (Temp.) & 40 to 80 RH
Laying Machine (37 Bobbins) - 3 Nos	800 Single Twister Machine 12 Bobbin	Insulation Resistance Tester - 0 to 1000 MΩ / 500 V
Laying (42 Bobbin)	1250 Single Twister Machine 19 Bobbin	Hydro Meter 4 Nos - 0.700 - 1.000 g / ml
Armouring Machine (30 Bobbin) - 2 Nos	DT 500 Buncher Machine	Digital Stop Watch 5 Nos - 0 - 24 hrs
Armouring Machine (40 Bobbin)	Scissor Lift 2 ton	Mutual Capacitance Meter - 1.999 nF - 1999.9 nF
Armouring Machine (48 Bobbin) - 4 Nos	Steam Boiler	Length Counter Meter - Up to 99999 mtr
Armouring Machine (72 Bobbin)	PVC Grinder	Tear Resistance Die
Armouring Machine (96 Bobbin)	Hydraulic Press	Coating Thickness Measurement Meter
Extruder Sheathing Machine 80 mm - 2 Nos	PT Stranding & Taping Machine	Digital Multimeter 4 Nos - MΩ
Extruder Sheathing Machine 100 mm	Silicone Rubber Mixing Machine	Inductance Decade Box - 10 mH - 10 H
Cable Rewinding Machine - 5 Nos	65/150 Two Stage Extruder (Compounding Line)	Capacitance Decade Box - 10 pF - 10 μF
GI Rewinding Strip Machine - 2 Nos	60 KVA UPS	Wet & Dry Thermometer 2 Nos - 40° C to +50° C
Off Line Annealer	80 KVA UPS - 2 Nos	Glass Thermometer 05 Nos - 10° C to + 110° C & - 10° C to 250° C
Nickel Plating - 2 Nos	100 KVA UPS	Thermometer 02 Nos - 195° C to 205° C
Pointing Machine - 2 Nos	120 KVA UPS	Digital Anemo Meter - 0 - 45 m/s
Fork Lift - 2 Nos	160 KVA UPS	Digital Thermo Hygrometer 02 Nos - 0 to 95° C / 20 to 99% RH
Auto Clave	200 KVA UPS	Senior Double Kelvin Bridge
HOIST 'A' - Skip	250 KVA UPS - 2 Nos	UV Radiation Test Apparatus
HOIST 'B' - 54 Stranding	320 KVA DG Set	Notch Propagation Tester (Analog)
HOIST 'P' - Stores	365 KVA DG Set	Water Bath (Size 120 cm X 90 cm X 60 cm)
HOIST 'C' - 7 B Laying	600 KVA DG Set	H V Probe Milimeter
HOIST 'E' - 13 Laying	Inkjet Printers - 36 Nos	Abrasion Resistance Tester
HOIST 'E' - 19 Laying - 2 Nos	Laser Printers - 4 Nos	Dynamic Cut Through Tester
		Cable Analyzer
		Universal Testing Machine
		PC Based Crosstalk Attenuation & Impedance Meter Attenuation 0.1 to 20 dB, Cross talk (- 40 to 100 dB), Impedance 199.9Ω to 1.999kΩ
		Network Analyzer (AES)
		Fluke - DSX - 8000
		Toxity Index Tester as per EN 45545-2
		Step Load Tester
		Bending Torsion Tester
		Vibration Tester



OUR CUSTOMERS



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