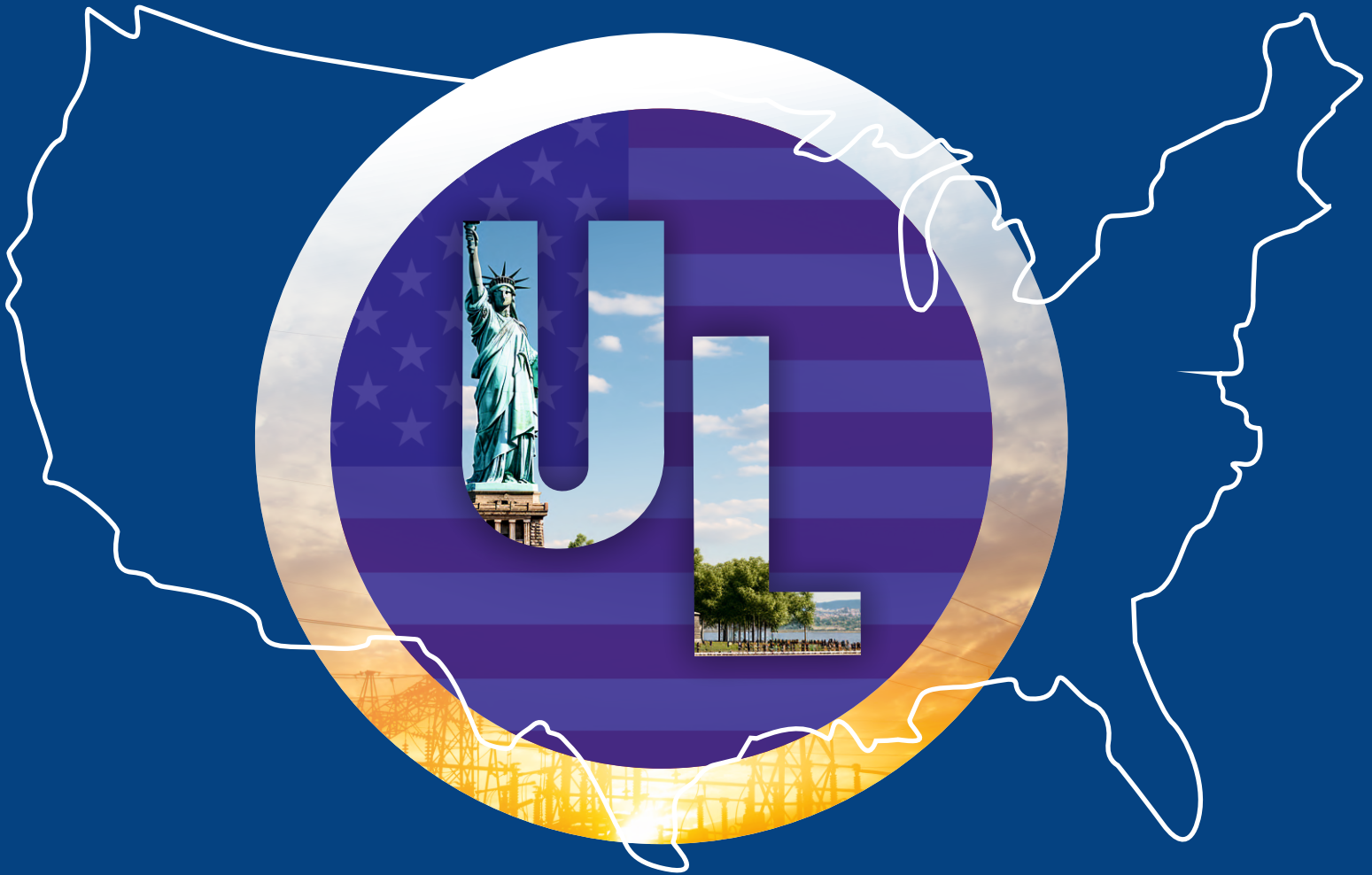




Tomorrow's solutions today



UL CABLES

PRODUCT CATALOGUE

ABOUT APAR

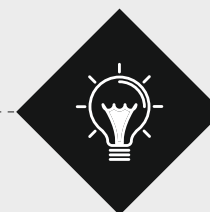
Since its inception in 1958, APAR has always focused on developing a deeper understanding to address the needs of the customers and provide complete custom-made solutions. Over the years we have combined our experience with the right mix of innovative products and execution skills to deliver **tomorrow's solutions today**. With a growing interdependence between all industries, we have ventured into different business verticals to offer holistic solutions to our customers. Today, we operate our business in cable solutions, conductors, speciality oils, lubricants, speciality automotive and polymers.

APAR is a \$1.92 Billion manufacturing conglomerate, exporting to over **140 countries** and **serving 10+ industries**. All these achievements are backed by our innovative products and seamless service that meets the stringent requirements and global standards of customers from USA, Europe, Australia, and world over.



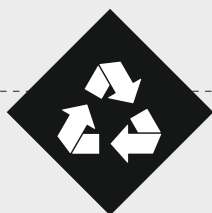
Our Mission

To design & manufacture Building Blocks for Energy Infrastructure, Transportation & Telecommunication Sectors that contribute meaningfully to make this world a more energy efficient, environmentally sustainable and a safer place.



Our Vision

To be a Global Leader in the Energy Infrastructure, Transportation & Telecommunication Sectors by providing the best solutions & value creation for our stakeholders.



The APAR Promise

Nothing supersedes product and service quality for us. We want to be an indispensable part of every success story.

To see our ESG reports please visit: <https://apar.com/apar-esg-report/>



APAR CABLE SOLUTIONS

Leading the innovation curve as one of the world's largest manufacturers of specialized cables

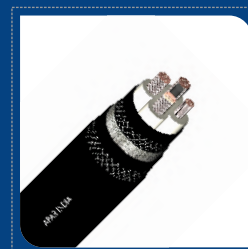
- We have been growing at 5-year CAGR at 15.2%.
- Footprints in 140+ countries.
- Exports contribute to 38.3% of FY 24 revenue.
- Our factories and products have been accredited and certified by the global standards of ISO, NABL, ABS, TUV, UL and more.
- Capability to manufacture cables as per IS, IEC, BS, VDE, AS & NZS and as per other International Standards.
- We cater to various speciality sectors like railway locomotive, coaches, naval ships, submarines, solar plants, windmills, hybrid cables and harnesses. We also supply fibre optic cables and general-purpose wires & cables (fixed and flexible) such as LV, MV and XLPE.



Electrical Power & Control Cables



Light Duty Cable & Wires



Elastomer & E-Beam Cables



Fibre Optic Cables



Specialty Cables & Products



WORLD-CLASS MANUFACTURING CAPABILITIES

World-class equipment, facilities and expertise

-
- 2 cable manufacturing facilities, in South Gujarat, India.
 - Facilities are strategically located 150 Km from the Mumbai seaport for quick export shipments.
 - Vast manufacturing infrastructure of 250,000 SQM.
 - Both our facilities are well equipped with advanced manufacturing infrastructure and accredited with ISO 9001, ISO 14001 and OHSAS 45001.
 - India's only cable company with 5 E-Beam irradiation facilities i.e. 1.2 MeV, 1.5 MeV, two of 2.5 MeV & 3.0 MeV.
 - Annual production capacity for 30,000 MT aluminum & 10,000 MT copper cables.
 - In-house facility to produce nearly all the insulation and sheathing compounds (used for manufacturing cables).
 - Latest plant & machinery sourced from world-renowned suppliers to achieve maximum output without compromising cable quality.
 - Wire drawing machines are from Niehoff, Germany and the electroplating tinning facility is from OTOMEC, Italy.
 - Royale USA, Scholz/ Troester, Germany / Supermac CCV (Dry Cure Dry Cool) Line for XLPE Cables up to 66 kV and State of the art extruders from Troester, Covema, Royale, Rosendahl, Maillefer.
 - Troester, Germany CCV line for rubber cables upto 75 kV.

QUALITY ASSURANCE & TESTING FACILITIES

- APAR's both facilities are well equipped with advanced testing infrastructure, and are accredited with ISO 9001, ISO 14001 & OHSAS 45001.
- The company's laboratories are accredited by ISO/ IEC 17025:2017 by NABL and has more than 750+ types of test facilities as per various National and International specifications.
- Manufacturing Certified cables as per IEC, UL, BS EN, TuV, AS/NZ.
- High quality test & measuring equipment and laboratory equipment, manned by highly experienced technical personnel ensure that each cable drum is thoroughly tested before getting dispatched.
- Our cables have successfully been type tested from various international and national labs like KEMA, NABL, ERDA, etc.



APAR UL CABLE RANGE

COPPER & ALUMINIUM CABLES

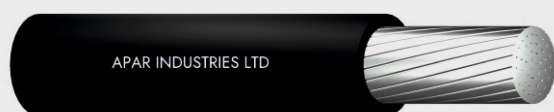
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Aluminium XHHW-2, 600V/1000V XLPE Insulation

600V/1000V, 8000 series Aluminum Alloy Conductor, Cross-linked Polyethylene (XLPE) Insulation. Moisture Resistant High Heat.

Applications

APAR manufactures XHHW-2 8000 series Aluminium conductors which are primarily used in conduit or recognised raceways for service and feeder wiring as specified in the National Electrical Code (NEC). XHHW-2 conductors are used in wet or dry locations at temperatures not exceeding 90°C. Voltage rating for XHHW-2 conductor is 1000 volts, suitable for use in Health Care Facilities as per section 517.160 of the NEC where a dielectric constant of 3.5 or less can be specified. The product is designed to be installed without the application of pulling lubricant.



Construction

We manufacture XHHW-2 Aluminum conductors with 8000 series Aluminum alloy, compact stranded. The insulation is thermoset cross-linked polyethylene which is abrasion, moisture and heat resistant. Available in 6 AWG and larger sizes (sunlight resistant) in 10 colour variants.

Standards & References

Our Aluminium Type XHHW-2 conductors comply with the following :

- ASTM – B800 and either B801 or B836 (SIW).
- Listed per UL Standard 44.
- CSA-cUL certified.
- NOM-ANCE 90°C.
- Federal Specification A-A-59544.
- National Electrical Code, NFPA 70.
- NEMA WC-70 (ICEA S-95-658) construction requirements.
- CT rated - sizes 1/0 AWG and larger (optional).
- FT4 rated - sizes 1/0 AWG and larger (optional).
- Gas & Oil Resistant II - all sizes.
- Sunlight Resistant – sizes 6 AWG and larger.
- RoHS/ Reach Compliant.

Copper XHHW-2, 600V/1000V XLPE Insulation

600V/1000V, Copper Conductor. Cross-Linked Polyethylene (XLPE) Insulation, High-Heat and Moisture Resistant. Sizes 14 through 10 AWG also rated SIS.

Applications

APAR manufactures XHHW-2 copper conductors, primarily used in conduit, cable tray or other recognised raceways for services, feeders, and branch circuit wiring, as specified in the National Electrical Code. XHHW-2 copper conductors can be used in wet or dry locations at a temperature not exceeding 90°C. Voltage rating for XHHW-2 conductor is 600 volts for all sizes and 1000 volts for sizes 8 AWG and larger. Suitable for use in Health Care Facilities as per Section 517.160 of the National Electrical Code where a dielectric constant of less than 3.5 can be specified. The cable is designed to be installed without the application of pulling lubricant.



Construction

We manufacture XHHW-2 copper conductors annealed (soft) copper. Insulation is equipped with abrasion, moisture, and heat resistant thermoset cross-linked polyethylene (XLPE). Conductor sizes 8 AWG and larger available (sunlight resistant). The Colour customisation option is available subject to economic order quantity.

Standards & References

Our XHHW-2 Copper conductors comply with the following:

- ASTM- B3, B8 (7, 19, 37, 61 Strands), B787 (19 Strands).
- UL Standard 44.
- CSA-cUL certified.
- NOM-ANCE 90°C.
- Federal Specification A-A059544.
- CT Rated Sizes 1/0 AWG and Larger (optional).
- Gas and Oil Resistant II size 8 AWG and larger.
- Sunlight (UV) Resistant – S 8 AWG and larger.
- National Electrical Code, NFPA 70.
- NEMA WC 70 construction requirements.
- FT4/IEEE 1202- sizes 350 KCMIL and larger.
- RoHS/ REACH Chemical Limit Compliant.
- RoHS/ Reach Compliant.

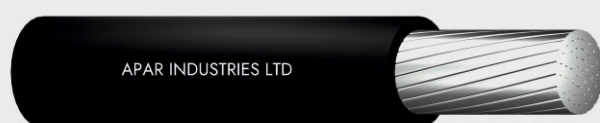


Aluminium RHH, RHW-2, USE-2 Cable

Underground Service Entrance Cable, 600 Volt, Aluminium Alloy Conductor, Cross-linked Polyethylene (XLPE) Insulation, High Heat, Moisture, and Sunlight Resistant. Also Rated THWN-2.

Applications

APAR manufactures RHH or RHW-2 or USE-2 conductors, used with conduits specified in the National Electrical Code. When used as Type USE-2, conductors are suitable for use as underground service entrance conductors for direct burial at conductor temperature not exceeding 90°C. When used as RHW-2 or USE-2, conductor temperatures shall not exceed 90°C in wet or dry locations. The voltage rating for RHW-2 or RHH or USE-2 conductors is 600 volts.



Construction

We manufacture RHH or RHW-2 or USE-2 conductors with 8000 series aluminium alloy, compact stranded. The insulation is an abrasion, moisture, heat and sunlight-resistant black cross-linked polyethylene (XLP). CT rated cables are available upon request sizes 1/0 and larger.

Standards & References

Our RHH or RHW-2, or USE-2 conductors comply with the following:

- ASTM B-800 and B-801.
- UL 44 for RHH or RHW-2.
- UL 854 for USE-2.
- CSA-cUL certified.
- Federal Specification A-A-59544.
- National Electrical Code, NFPA 70, 2011 edition.
- NEMA WC-70 construction requirements.
- RoHS/ Reach Compliant.

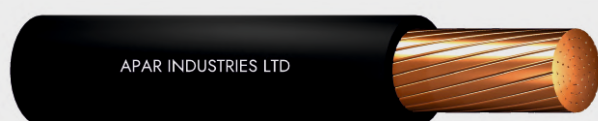


Copper RHH, RHW-2, USE-2 Cable

Underground Service Entrance Cable. 600 Volt, Copper Conductors, Cross-Linked Polyethylene (XLPE) Insulation, High-Heat, Moisture, and Sunlight Resistant. Sizes 6 through 4/0 AWG.

Applications

APAR manufactures RHH or RHW-2 or USE-2 conductors used with conduit as specified in the 2011 National Electrical Code. When used as Type USE-2, the conductor is suitable for use as an underground service entrance cable for direct burial at conductor temperature not exceeding 90°C. When used as RHH, conductor temperature shall not exceed 90°C in dry locations. When used as RHW-2 or USE-2, conductor temperatures shall not exceed 90°C in wet or dry areas. The voltage rating for RHH or RHW-2, or USE-2 conductors is 600 volts.



Construction

We manufacture RHH or RHW-2, or USE-2 copper conductors, annealed (soft) copper. Insulation is an abrasion, moisture, heat, and sunlight resistant black cross-linked polyethylene (XLPE). An optional CT rated product is available upon request for sizes 1/0 and larger.

Standards & References

Our RHH or RHW-2, or USE-2 conductors comply with the following:

- ASTM - B3, B8 (7, 19, 37, 61 Strands), B787 (19 Wire Combination Unilay Strand).
- UL Standard 44 for RHH or RHW-2.
- UL Standard 854 for USE-2.
- CSA-cUL certified.
- Federal Specification A-A-59544.
- National Electrical Code, NFPA 70 - 2011 edition.
- NEMA WC 70 construction requirements.
- RoHS/ Reach Compliant.

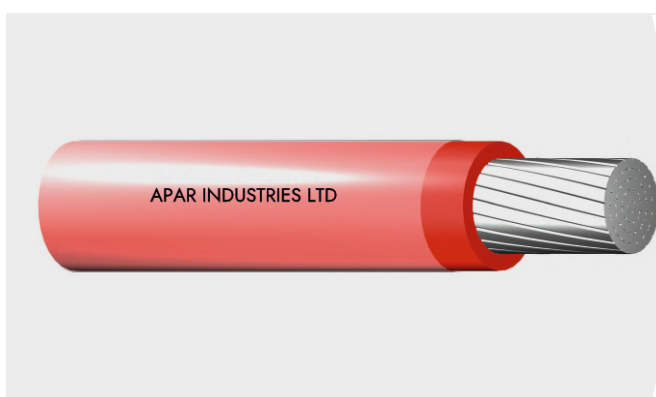


Aluminium THHN/THWN Wires & Cables

600 Volt 8000 series Aluminium Alloy Conductor, Thermoplastic Insulation/Nylon Sheath. Heat, Moisture, Gasoline, Oil, and Sunlight Resistant.

Applications

APAR manufactures Aluminium THHN Wire & Cable with 8000 series Aluminium alloy conductors are primarily used in conduit and cable trays for services, feeders and branch circuits in commercial or industrial applications as specified in the 2011 National Electrical Code. Type THHN or T90 Nylon conductor is suitable for use in dry locations at a temperature not exceeding 90°C. Type THWN-2 or TWN75, the conductor is ideal for use in wet or dry areas at a temperature not exceeding 75°C or 90°C when exposed to oil or coolant. Voltage for all applications is 600 volts. The cable should be installed without the application of pulling lubricant.



Construction

We manufacture THHN conductor with 8000 series aluminium alloy, compact stranded. Insulated with a tough heat and moisture-resistant polyvinyl chloride (PVC), over which nylon (polyamide) or UL-listed equal jacket is applied. Conductor sizes 1/0 AWG and larger are listed and marked sunlight resistant in colours. Available in black, white, red, blue, purple, green, yellow, orange, brown, and grey. Also available in striped configurations. Some colours are subject to economic order quantity.

Standards & References

Our Aluminium THHN conductors comply with the following:

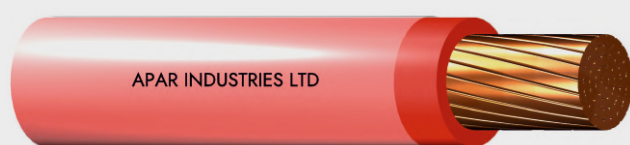
- ASTM B-800 and either B-801 or B836 (SIW).
- UL Standard 83.
- CSA-cUL certified.
- CSA Standard C22.2 75.
- Federal Specification A-A-59544.
- VW-1 – Sizes 4 through 1 AWG (optional).
- CT- Sizes 1/0 AWG and larger sizes rated for CT use.
- FT1 - Sizes 4 AWG through 750 kcmil.
- T90 Nylon – Sizes 4 AWG through 750 kcmil.
- TWN 75 – Sizes 8 AWG through 750 kcmil.
- National Electrical Code, NFPA 70.
- NEMA WC-70 construction requirements.
- Gas & Oil Resistant II - all sizes.
- Sunlight Resistant – sizes 6 AWG and larger.
- RoHS/ Reach Compliant.

Copper THHN/THWN Wires & Cables

600 Volts. Copper Conductor. Thermoplastic Insulation/Nylon Sheath, Heat, Moisture, Gasoline and Oil Resistant II. All sizes rated THHN and THWN (sizes 14, 12, and 10 AWG) or THWN- 2 (sizes 8 AWG and larger). Also rated MTW and AWM.

Applications

APAR manufactures THHN copper conductors are primarily used in conduit and cable trays for services, feeders and branch circuits in commercial or industrial applications as specified in the National Electrical Code. Voltage for all applications is 600 volts. THHN copper conductors are designed to be installed without applying a pulling lubricant.



These conductors have multiple ratings. Depending upon the product application, allowable temperatures are as follows:

- ▶ THHN or T90 Nylon- dry locations not exceeding 90°C.
- ▶ THWN-2- wet or dry areas not exceeding 75°C or 90°C when exposed to oil.
- ▶ THWN- wet locations not exceeding 75°C or dry locations not exceeding 90°C or places not exceeding 75°C when exposed to oil.
- ▶ TWN75- wet locations not exceeding 75°C.
- ▶ MTW- wet locations or when exposed to oil at a temperature not exceeding 60°C or dry areas not exceeding 90°C (with ampacity limited to that for 75°C conductor temperature per NFPA 79).
- ▶ AWM- dry locations not exceeding 105°C only when rated and used as an appliance wiring material.

Construction

APAR manufactures THHN copper conductors are made with soft drawn copper. Sizes 14 through 4/0 AWG use a combination-unilay stranding while 250 kcmil and larger sizes use compressed copper stranding. The wire is covered with tough heat and moisture resistant PVC insulation with an overall nylon jacket. Available in black, white, red, blue, purple, green, yellow, orange, brown, and grey. Also available in striped configurations. Some colours are subject to economic order quantity. Marked as THHN in all sizes. Also marked as THWN-2 in sizes 8 AWG and larger or marked as THWN in sizes 14, 12, and 10 AWG. Marked sunlight resistant in sizes 2 AWG and larger.

Standards & References

Our THHN copper conductors comply with the following:

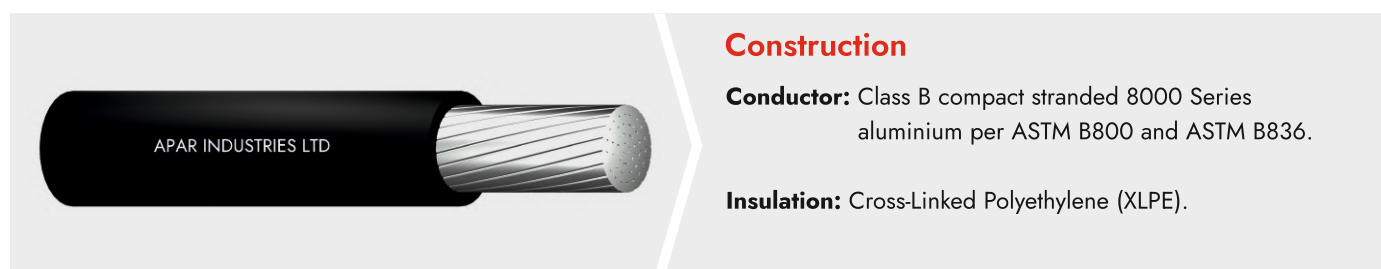
- ASTM - B3, B8, and B787 (19 Wire combination unilay- stranded).
- UL Standards 83, 758, 1063, and 1581, CSA-cUL certified.
- CSA C22.2 No. 75, T90 Nylon/TWN75 sizes through 1000 kcmil.
- NOM-ANCE 90°C.
- Federal Specification A-A-59544.
- National Electrical Code, NFPA 70.
- VW-1 - Sizes 14 through 1 AWG (optional).
- Sunlight Resistant — sizes 2 AWG and larger.
- MTW - Stranded constructions only.
- NEMA WC-70 (ICEA S-95-658) construction requirements.
- CT Rated in Sizes 1/0 AWG and larger.
- FT1 - all sizes.
- AWM - Sizes 14 through 6 AWG.
- RoHS/ Reach Compliant.

Aluminium 2000 Volts PV Type Cable

Single Conductor Photovoltaic (Type PV) Power Cable 2000 Volt Aluminum Conductor XLPE Insulation. Sizes 1/0 AWG through 1000 kcmil. Heat and Moisture Resistant RoHS.

Applications

The cable is available in sizes 6 AWG through 1000 kcmil. The product is approved for solar power applications per the NEC article 690 and is rated 90°C for exposed or concealed wiring in wet or dry locations. Individual conductors are stranded aluminium alloy covered with cross-linked polyethylene (XLPE) insulation and is rated for direct burial. The cable is sunlight resistant, RoHS compliant passes -40°C cold bends.



Construction

Conductor: Class B compact stranded 8000 Series aluminium per ASTM B800 and ASTM B836.

Insulation: Cross-Linked Polyethylene (XLPE).

Standards & References

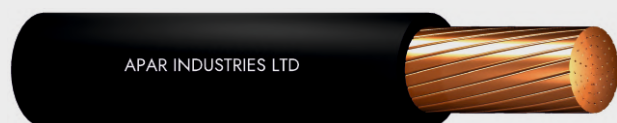
- Stranded Aluminum Alloy Conductors.
- ASTM 836 Compact Round Aluminum Conductors.
- UL 854 for USE-2.
- UL 44 for Type RHW-2.
- UL 4703 for Type PV.
- CSA-cUL certified.

Copper 2000 Volts PV Type Cable

Single Conductor Photovoltaic (Type PV) Power Cable 2000 Volt Copper Conductor XLPE Insulation. Sizes 12 AWG through 4/0 AWG. Heat and Moisture Resistant RoHS.

Applications

APAR's 2000 Volt power cables are suited for use in wet and dry areas, conduits, ducts, trays, direct burial, aerial supported by a messenger, and where superior electrical properties are desired. These cables can operate continuously at the conductor temperature, not in excess of 90°C for normal operation in wet and dry locations.



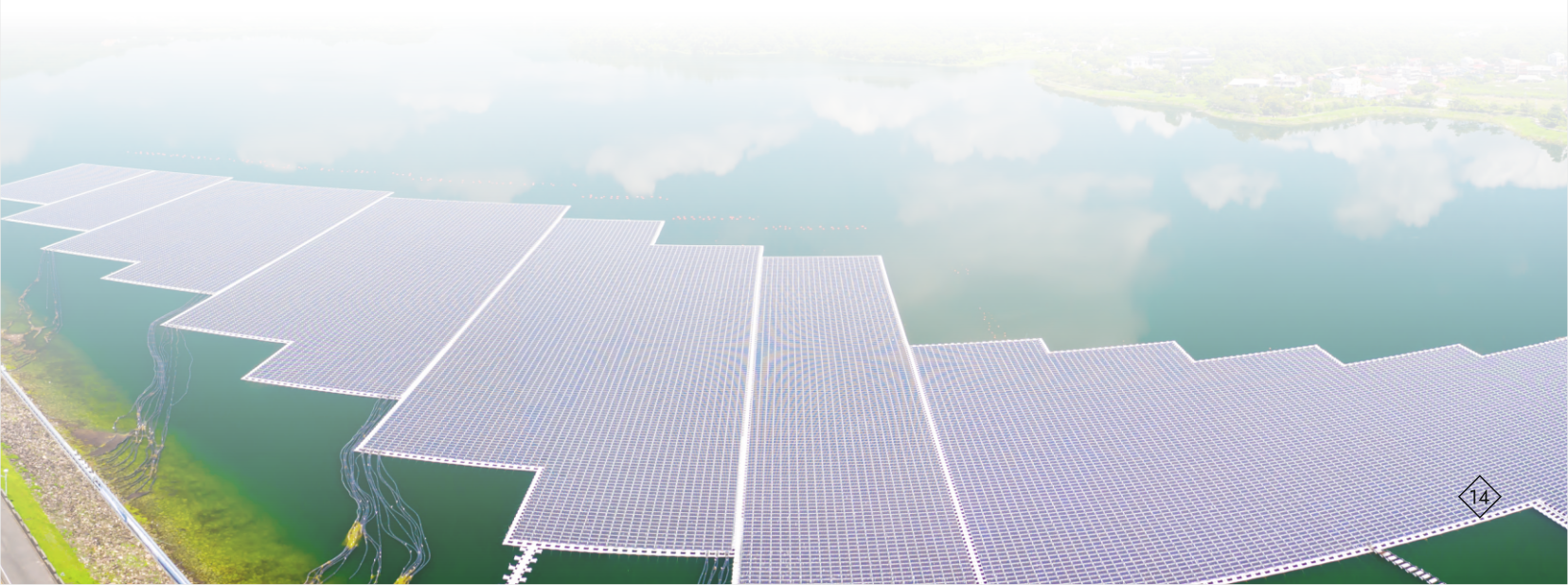
Construction

Conductor: Class B compressed stranded bare copper per ASTM B3 and ASTM B8.

Insulation: Cross-Linked Polyethylene (XLPE).

Standards & References

- ASTM B3 Soft or Annealed Copper.
- ASTM B8 Concentric-lay-standard copper.
- UL 44 Thermoset Insulated wires and cables.
- UL 4703 for Type PV.
- CSA-cUL certified.

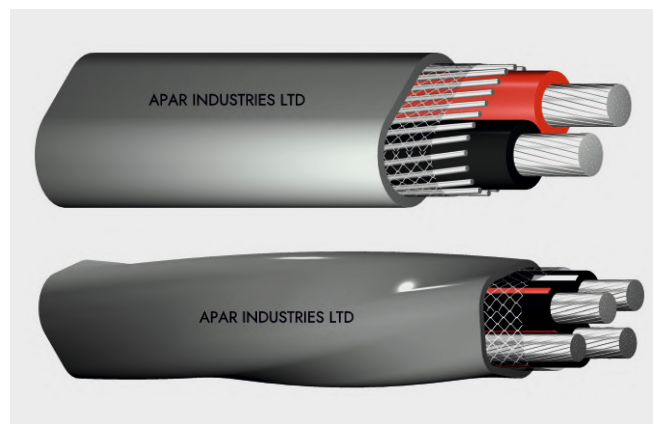


Aluminium Service Entrance (SE) Cable

Type SE, Style SER and SEU Service Entrance Cable, 600 Volt. 8000 series Aluminium Alloy Conductors. Individual Conductors Rated XHHW or THHN/THWN Jacket and Inner Conductors are Sunlight Resistant.

Applications

APAR manufactures Type SE, service entrance cable used to convey power from the service drop to the meter base and from the meter base to the distribution panel board. The cable can be used in all applications where Type SE cable is permitted. SE can be used in wet or dry above-ground locations at a temperature not exceeding 90°C. The voltage rating is 600 volts.



Construction

APAR's Type SE cable is constructed with 8000 series aluminium alloy compacted stranded conductors. The conductors are covered with a sunlight resistant Type XHHW-2 or Type THHN/THWN-2-insulation. A reinforcement tape is wrapped around the conductors for added strength and conformity. A grey sunlight-resistant polyvinyl chloride (PVC) outer jacket covers the entire assembly. Style SEU cable has two-phase conductors surrounded by a concentric neutral, while the SER style has two, three or four-phase conductors and a bare neutral.

APAR's Type SER Cable's phase conductors are identified by a coloured stripe on the insulation.

3 Conductor – Black and Black with Red Stripe.

4 Conductor – Black, Black with White Stripe and Black with Red Stripe.

5 Conductor – Black, Black with White Stripe, Black with Red Stripe and Black with Blue Stripe.

Standards & References

Our Type SE cable complies with the following:

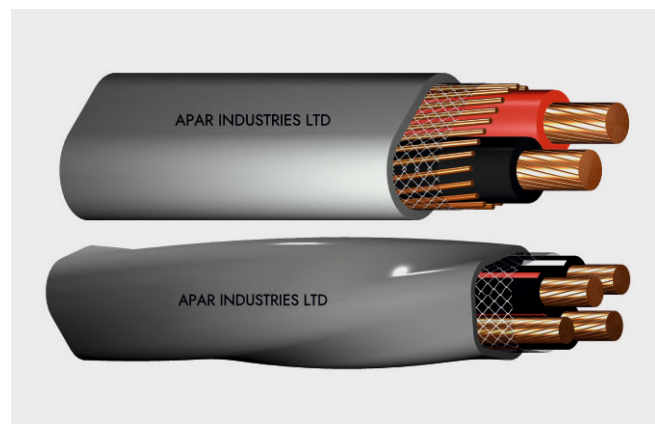
- ASTM B800 and either B801 or B836 (SIW).
- UL Standard 44 for XHHW-2.
- UL 854 for USE-2.
- CSA-cUL certified.
- Federal Specification A-A-59544.
- National Electrical Code, NFPA 70.
- RoHS/Reach Compliant.

Copper Service Entrance (SE) Cable

SE, Style SER and SEU Service Entrance Cable, 600 Volt. Individual Conductors Rated XHHW-2 or THHN/THWN. Jacket and Individual Conductors Sunlight Resistant.

Applications

APAR manufactures Type SE, service entrance cable, primarily used to convey power from the service drop to the meter base and from the meter base to the distribution panel board. The cable can be used in all applications where Type SE cable is permitted. SER may be used in wet or dry locations at temperatures not exceeding 90°C. The voltage rating is 600 volts.



Construction

We manufacture type SE cable with sunlight resistant Type XHHW-2 conductors or Type THHN/THWN conductors. Copper conductors are annealed (soft) copper. Cable assembly plus reinforcement tape are jacketed with sunlight resistant grey polyvinyl chloride (PVC). Available as 1 conductor with a concentric ground, 2 conductors with a round or concentric ground, or 3 conductors with a bare ground. SE cable is jacketed with grey sunlight-resistant polyvinyl chloride (PVC).

Standards & References

Our Type SE cable complies with the following:

- ASTM- All applicable standards.
- UL Standard 44 for XHHW-2 conductors.
- UL Standard 854.
- CSA-cUL certified.
- Federal Specification A-A-59544.
- National Electrical Code, NFPA 70. 2011 edition.
- RoHS/ Reach compliance.



600 Volts Triplex Secondary Underground Distribution Cable

600 Volt, Aluminium Conductors, Cross-linked Polyethylene (XLP) Insulation.

Applications

APAR manufactures Triplex Secondary Underground Distribution cable for secondary distribution and underground service at 600 volts or less, either direct burial or in ducts.



Construction

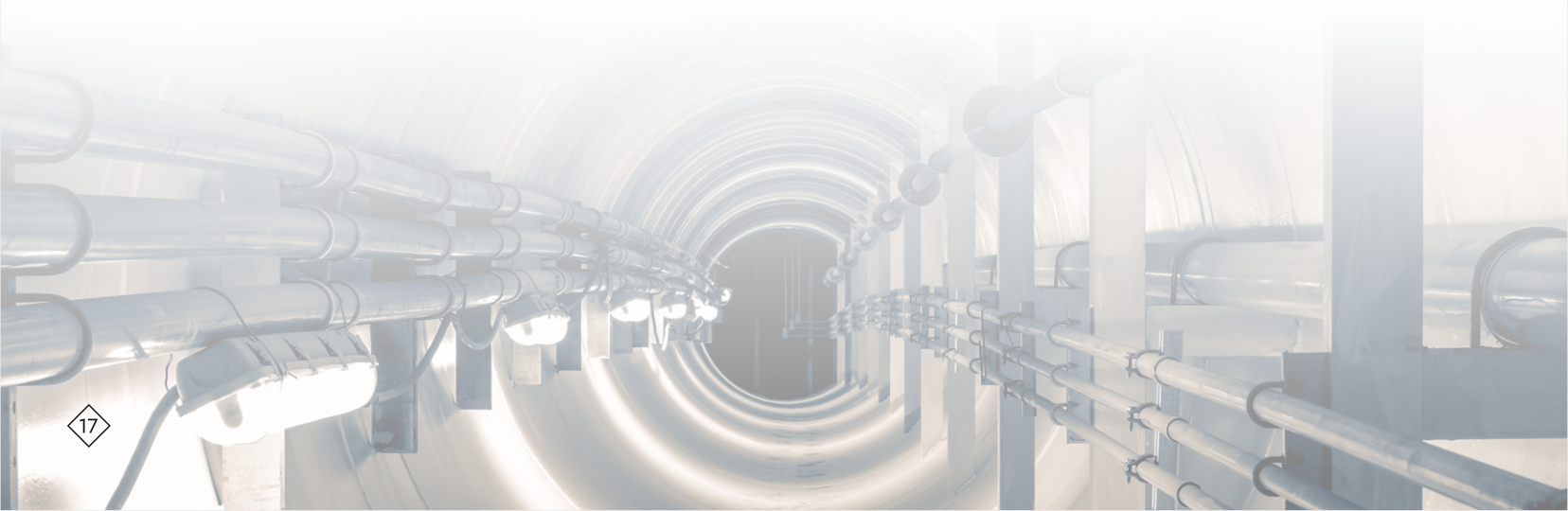
Conductors are stranded, compressed 1350-H19, H16, or H26 aluminium, insulated with cross-linked polyethylene. Neutrals are triple yellow extruded stripes. Cables with "YES" neutrals have sequential footage markers. Conductors are durably surface printed for identification. Two-phase conductors and one neutral conductor are cabled together to produce the triplex cable configuration. Conductors are also available paralleled.

Standards & References

We manufacture triplex or paralleled 600 volts secondary Underground Distribution cable that meets or exceeds the following applicable ASTM specifications:

- B-230 aluminium 1350-H19 wire for electrical purposes.
- B-231 aluminium 1350 conductors, concentric-lay-stranded.
- B-609 aluminium 1350 round wire, annealed and intermediate tempers, for electrical purposes.
- B-901 compressed round stranded aluminium conductors using a single input wire.

The cable meets or exceeds all applicable requirements of ICEA S-105-692 for cross-linked polyethylene insulated conductors and UL Standard 854 for Type USE-2.



600 Volts Quadruplex Secondary Underground Distribution Cable

600 Volt, Aluminium Conductors, Cross-linked Polyethylene (XLP) Insulation.

Applications

APAR manufactures Quadruplex cable used for secondary distribution and underground service at 600 volts or less, either direct burial or in ducts.



Construction

Conductors are stranded, compressed 1350-H16/H26 aluminium, insulated with cross-linked polyethylene. Neutrals are identified by a triple yellow extruded stripe. Cables with "YES" neutrals have sequential footage markers. Conductors are durably surface printed for identification. Three-phase conductors and one neutral conductor are cabled together to produce the Quadruplex cable configuration.

Standards & References

We manufacture Quadruplex or paralleled 600 volts secondary Underground Distribution cable that meets or exceeds the following applicable ASTM specifications:

- B230 Aluminum, 1350-H19 Wire for Electrical Purposes.
- B231 Aluminum 1350 Conductors, Concentric-Lay-Stranded.
- B609 Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes.
- B901 Compressed Round Stranded Aluminum Conductors Using Single Input Wire.

The cable meets or exceeds all applicable requirements of ICEA S-105-692 for cross-linked polyethylene insulated conductors and UL Standard 854 for Type USE-2.



Aluminium 2000 Volts EPR-CPE Cable

Aluminium Conductor AA-8000 Series Aluminium alloy, Compacted stranded, 2000 Volt, EPR/CPE Insulation/Jacket, Sizes 1/0 AWG through 1000 kcmil, Sunlight Resistant, Oil Resistant I, temperatures of -40°C to +90°C.

Applications

APAR manufactures Wind cable is available in sizes 1/0 AWG through 1000 kcmil. The cable is specifically useful for the application that requires conductor insulation up to 2000 volts in a wind turbine for generator and step-up transformers. The cable is suited for use in wet and dry locations at temperatures of -40°C to +90°C.



Standards & References

- Type RHH/RHW-2 per UL 44.
- Type RHH/RHW-2, 90°C Wet/Dry, 2000V.
- CSA listed RW90, RW90-TC 1kV.
- Type USE-2/ cable tray rated.
- Sunlight resistant, oil resistant I, -40C.
- RoHS compliant.
- CSA C22.2 No. 38.
- CSA-cUL certified.



Medium Voltage Power Cable

Applications

Medium voltage UD-P suitable for Primary Underground Distribution System buried directly or installed in underground ducts or conduits or exposed to sunlight for above ground application.



Construction

Conductor: Water Blocked Bare aluminum or copper, stranded class B conductor.

Conductor Shield: : Extruded semi-conducting compound.

Insulation: TR-XLPE/EPR (100% / 133% insulation level).

Insulation Shield: Extruded strippable semi-conducting Compound.

Tape over insulation shield: Water swellable semi conducting tape.

Concentric Neutral: Copper wire metallic shield

Tape over concentric neutral: Water swellable semi conducting tape.

Outer Jacket: XLPE / PVC (105° C) / EPR / CPE & LLDP (90°C).

Standards & References

- UL 1072: Listed as MV 90 / MV 105.
- ASTM B230 & B231: Aluminum conductor.
- ASTM B3: Copper conductor.
- ASTM B609 Standard Specification for Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes.
- ICEA S-94-649: AEIC CS-8.
- TR-XLPE/EPR/CPE.



UL 493 - Underground Feeder and Branch Circuit Cable

Applications

Copper UF-B cable is typically utilized as a feeder for outdoor post lamps, pumps, and other equipment or devices connected from a distribution point within a building, in accordance with the 2011 National Electrical Code. UF-B cable is suitable for underground installation, including direct burial. It can also be employed for interior branch circuit wiring in residential or agricultural settings, provided that conductor temperatures do not exceed 90°C (with ampacity limited to 60°C conductors), as specified by the National Electrical Code. Additionally, UF-B cable is approved for use in applications allowed for NMC under Section 334.10(B) of the National Electrical Code. The voltage rating for UF-B cable is 600 volts.



Construction

Copper UF-B cable is manufactured as a 2 or 3 conductor cable, with or without a ground wire. The copper conductors are made of annealed (soft) copper, either solid or compressed stranded. The phase conductors are insulated with polyvinyl chloride (PVC) and covered with a nylon jacket, with color coding for easy identification. The entire cable is encased in a gray PVC jacket that is resistant to sunlight, moisture, and fungus.

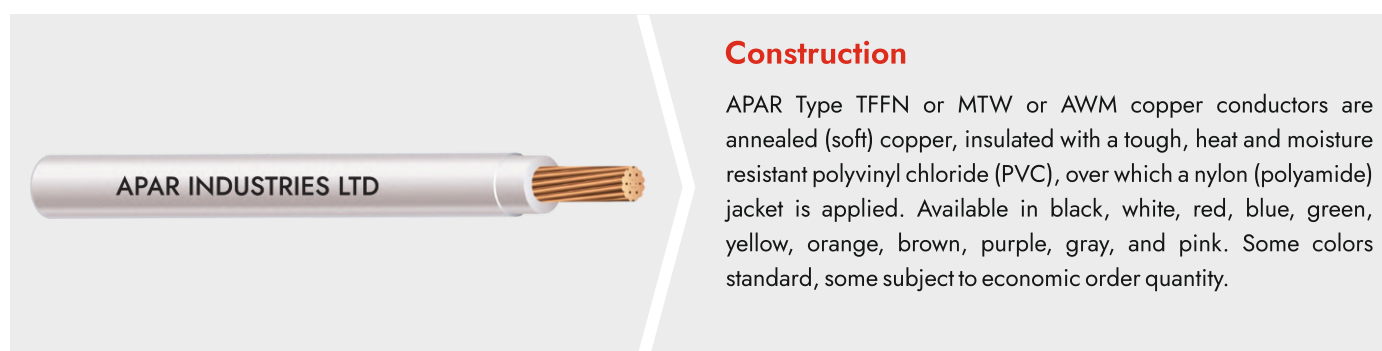
Standards & References

- ASTM - B3 and B-8.
- UL Standard 83.
- UL Standard 493.
- Federal Specification A-A-59544.
- National Electrical Code, NFPA 70, 2011 Edition.
- RoHS/ REACH.

UL 66 - Copper TFFN

Applications

- TFFN or MTW or AWM may be used as fixture wire, machine tool wiring, or appliance wiring material as specified in the National Electrical Code.
- Voltage for all applications is 600 volts.
- Allowable temperatures are as follows: TFFN- Dry locations not to exceed 90°C MTW- Wet locations or when exposed to oil or coolant at temperatures not to exceed 60°C.
- MTW- Dry locations at Temperatures not to exceed 90°C (with ampacity limited to that for 75°C conductor temperature per NFPA 79).
- AWM- When rated as appliance wiring material in dry locations, conductor temperatures not to exceed 105°C.
- TEWN- Wet or dry locations conductor temperatures not to exceed 105°C.



Construction

APAR Type TFFN or MTW or AWM copper conductors are annealed (soft) copper, insulated with a tough, heat and moisture resistant polyvinyl chloride (PVC), over which a nylon (polyamide) jacket is applied. Available in black, white, red, blue, green, yellow, orange, brown, purple, gray, and pink. Some colors standard, some subject to economic order quantity.

Standards & References

- APAR Type TFFN or MTW or AWM complies with: ASTM- All Applicable Standards.
- UL Standards 66, 758, and 1063.
- National Electrical Code, NFPA 70, 2011 Edition.
- RoHS/REACH.



Portable Power Cord

Applications

The APAR Type W cable is a robust industrial cable designed for flexible, portable, and heavy-duty applications, compliant with NEC Article 400. It is suitable for continuous submersion in water, making it ideal for submersible pumps, and can be used in light to medium-duty mining operations. The cable is resistant to sunlight and oil, remains highly flexible, and performs well in cold conditions. It is NEC® approved as Type RHH/RHW-2, rated for 90°C in both wet and dry environments, and meets FT-1 and FT-5 flame test standards.



Construction

Conductor: Bare, soft drawn, annealed, flexible, rope-lay stranded copper per ASTM B3/B172.

Separator Tape: Non-conducting tape applied between the conductor and insulation to facilitate stripping.

Insulation: Ethylene Propylene Diene Monomer (EPDM)
Reinforcement Binder: Reinforcing twine.

Jacket: Black, flame resistant, thermosetting Chlorinated Polyethylene (CPE).

Standards & References

- ASTM B3 Soft or Annealed Copper Wire.
- ASTM B172 Standard Specification for Rope-Lay-Stranded Copper Conductors Having Bunch-Stranded Copper Conductors.
- UL 44 Thermoset-Insulated Wires and Cables.
- UL 1650 Standard for Portable Power Cable.
- MSHA Approved.
- RoHS-2 (European Directive 2011/65/EU).



Radio Head Cable

Applications

APAR Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments. It was developed to reduce installation complexity and costs at Cellular sites. The cable allows mobile operators deploying an RRH architecture to standardize the RRH installation process. The cable combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It may eliminate the need for junction boxes as well as works in conjunction with and can connect multiple RRHs with a single feeder.



Construction

1. Aluminium corrugated armor with outstanding bending characteristics – Minimizes installation time and enables mechanical protection and shielding.
2. Same accessories as 1-1/4" coaxial cable.
3. Outer conductor grounding – Utilizes same grounding methods as coaxial cable.
4. Lightweight solution and compact design – Decreases tower loading.
5. Robust cabling – Eliminates need for expensive cable trays and ducts Installation of tight bundled fiber optic cable pairs directly to the RRH – Reduces CAPEX and wind load by eliminating need for interconnection
6. Optical fiber and power cables housed in single corrugated cable – Saves CAPEX by standardizing RRH cable installation and reducing installation requirements
7. UL-Listed, flame-retardant jacket, UV protected assemblies - Allows both indoor and outdoor applications
8. Maximum robustness – Fully armored cable includes riser trunk and top outdoor breakout



DG Cable

Applications

This category covers multi-conductor, nonintegrally jacketed, distributed generation (DG) cable. This cable is intended for use with specific distributed generation equipment/devices such as photovoltaic modules, inverters, solar trackers, etc. DG cable is suitable for use between cable trays and utilization equipment.



Construction

These cables are constructed with or without:

- One bare or one or more insulated grounding conductor(s).
- One or more twisted pairs used for signal or communication, all under an overall jacket.

Standards & References

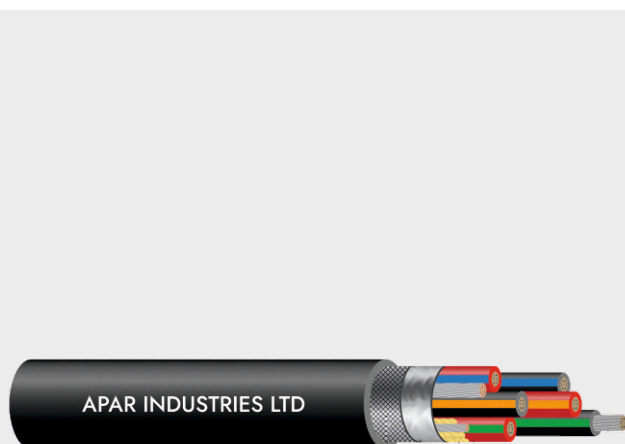
- ASTM-B, B-3.
- UL standard 83 for THHN/ THWN-2.
- UL Standard 3003.
- RoHS environmental conductive requirement.



Cellular Power Cable

Applications

APAR Tray Cable is suitable for use in industrial power or control circuits. Primary installations include cable trays, raceways and outdoor locations where supported by a messenger. These constructions are listed for exposed runs (TC-ER) per NEC 336.10. Type TC in sizes 8 AWG and larger is listed for direct burial and for use in Class 1, Division 2 hazardous locations and Class 1 Control circuits. This cable may be used at temperatures not to exceed 75°C in wet locations and 90°C in dry locations.



Construction

Conductor: Class K Stranded Tinned Copper per ASTM B33, B172 & B174. #8 and #6 AWG 19 Strand per ASTM B787.

Insulation: Polyvinyl Chloride (PVC) Insulated Conductors with Nylon Sheath.

Color: 2 Conductor Construction - BLK, RED.

Color: 6 Conductor Construction-BLK-BLU/RED-BLU/BLK-ORG/RED-ORG/BLK-GRN/RED-GRN.

Ground: Tinned Copper.

Drain Wire: Tinned Copper.

Phase Size: 12awg. **Drain Size/Strands:** 16awg/7.

Phase Size: 10awg. **Drain Size/Strands:** 14awg/7.

Phase Size: 8 and 6 awg. **Drain Size/Strands:** 12awg/7.

Filler: Polypropylene as needed to make round.

Tape Shield: Aluminum/Poly/Aluminum (3-Layer) applied Helically over cabled assembly.

Braid Shield: 34 AWG Tinned Copper with 85% coverage applied over Tape Shield.

Overall Jacket: Black sunlight resistant.

2 Conductor: Thermoplastic Elastomer (TPE) Jacket.

6 Conductor: Polyvinyl Chloride (PVC) Jacket.

Standards & References

- ASTM B3 Soft or Annealed Copper Wire.
- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire.
- ASTM B172 Standard Specification for Rope-Lay-Stranded Copper Conductors Having Bunch-Stranded Copper Conductors.
- ASTM B174 Standard Specification for Bunch-Stranded Copper.
- ASTM B787 19 Wire Combination Unilay-Stranded Copper Conductors.
- UL 83 Thermoplastic Insulated Wires and Cables.

Low-Voltage Landscape Lighting Cable

Applications

- Outdoor Low-Voltage Underground Landscape Lighting Cable is designed for landscape, security, and outdoor accent lighting applications that not to exceed 150 volts.
- Landscape Lighting Cable is Sunlight Resistant suitable for Direct Burial Stranded Copper Conductor Black PVC Insulation/Jacket.

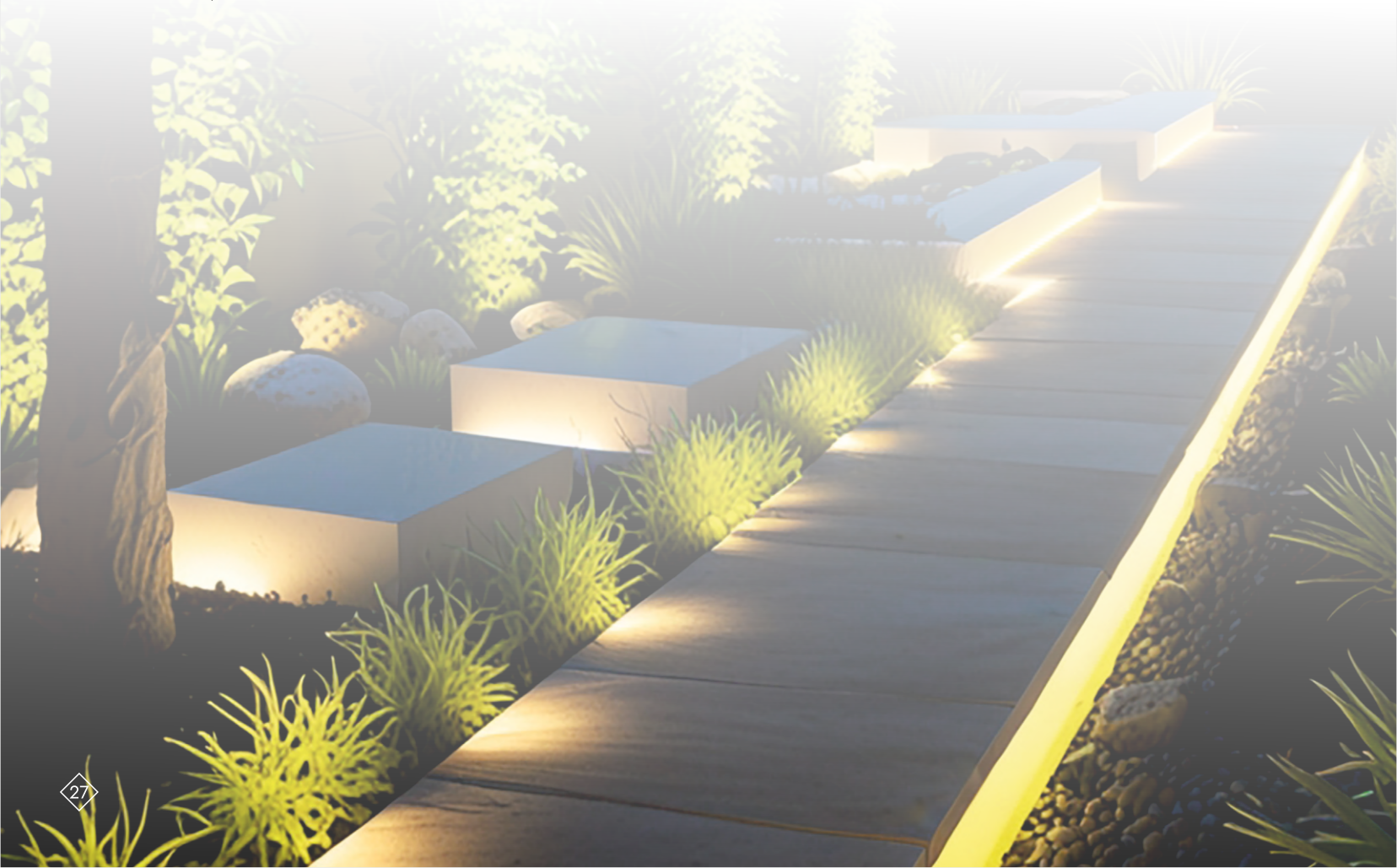


Construction

- Two fully annealed bare stranded copper conductors.
- Insulation/Jacket: Premium-grade PVC -20°C to +60°C.
- Final assembly: Insulated/Jacketed conductors duplexed in a flat construction for easy tear-down during installation.
- Color: Black is standard Available in white or brown, but subject to minimum order quantity.

Standards & References


- Meets UL Subj 1493 cUL standards C22.2 35, CSA class 5834-01.
- UL Underground Low-Energy Circuit Cable for Outdoor Lighting.
- C(UL) Low-Voltage Landscape Lighting (LVLL).
- EU RoHS Directive.
- Legend: XX AWG X/C UNDERGROUND LOW ENERGY CIRCUIT CABLE SUNLIGHT RESISTANT 60C 150V (UL) CSA LVLL 60C 30V Ft1, Ft2.



Appliance Cables & Wires As Per UL-758

Applications

APAR Cables is a major supplier of appliance cables & wires manufactured to various international standards, including UL-758.



Construction

Appliance wires can be insulated and sheathed in polymers and thermoset materials including PVC (Polyvinyl Chloride), Neoprene, LLDPE, MDPE or HDPE (Linear low-density, medium-density or high-density Polyethylene), PTFE (Polytetrafluoroethylene), PP (Polypropylene) and TPU (Thermoplastic Polyurethane). These cables and wires can be shielded with metallic braid or tapes to offer mechanical protection.

Standards & References

Internal wiring for factory equipment may only require the cable to be insulated - having a protective outersheath is not a mandatory requirement of UL-758 standard. It should be noted though that where the cables are used externally to connect equipment they must be sheathed. The insulation and sheathing material will determine the extent to which the cable is resistant to oils and greases, UV light, and moisture ingress.



UL62 SOOW - PVC or Rubber flexible Cord

Applications

TYPE SOOW Cable is for use in heavy-duty industrial applications where flexibility and durability is required. SOOW is designed for extra hard usage on industrial equipment, heavy tools, motor and welding leads, power extensions, portable machinery, sound equipment, portable stage lights, marine dockside power and mining applications. Constructed of color-coded synthetic oil, ozone and water resistant rubber (EPDM) insulation and an oil resistant thermoset chlorinated polyethylene (CPE) jacket, SOOW is rated for indoor/outdoor use.

SOOW flexible rubber cords carry a 600 volt rating. They are also manufactured as a 300 volt rated Junior Service cord designated as SOOW. Using the key, a SOOW cord is a 300 volt (junior service) elastomer plastic oil resistant inner and outer jacket portable cord.


SOOW -

S for Service

O for Oil-resistant insulation

O for Oil-resistant jacket

W for Weather and Water resistance



Construction

Conductors: Bare, annealed copper per ASTM B-3 Flexible, bunch-stranded per UL-62.

Separator: A paper tape is applied between the conductor and insulation to facilitate stripping.

Insulation: Color coded synthetic rubber (EPDM) oil and water resistant per UL-62.

Jacket: Black Chlorinated Polyethylene (CPE).

Cabling: Conductors are assembled round with fillers as needed.

Temperature Range: -40°C to +90°C.

Voltage Rating: 600 Volts for SOOW.

Standards & References

- Type SOOW Cords/Cable meets or exceeds the applicable requirements of the following standards and specifications:
- UL Standard 62 for Flexible Cords.
- CSA Standard 22.2 No. 49 for Flexible Cords.
- MSHA flame resistance for mining applications.
- NEC Article 400.
- RoHS Compliant.

SOOW offers:

- Excellent resistance to oils, acids, chemicals, water, ozone, extreme temperatures, cuts, tears and abrasion.
- Sunlight resistant.
- Flame retardant.
- Indoor/outdoor rated.
- Highly flexible.
- Maximum continuous conductor temperature: 90°C DRY.

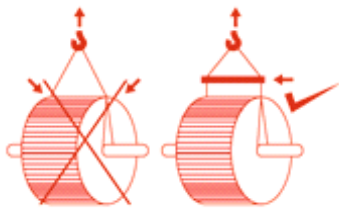
Reel Handling

APAR's cables should be installed by trained professionals in accordance with good engineering practices, recognised codes of practices, local statutory requirements and IEEE wiring regulations.

Electrical cables are often supplied in heavy reels, and handling these reels can constitute a safety hazard. Proper handling of cable reels decreases the probability of accidental damage of cable, material and personnel.

Following are the number of key safety issues to keep in mind while handling the cable reels:

Lifting the cable reel by crane



Use proper stops to prevent reel rolling



Reel rolling as shown direction



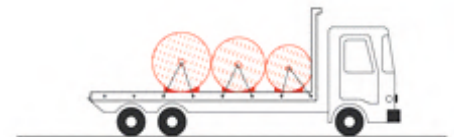
Lifting reel correctly on fork truck



Do not lay reel on flanges



Secure reels adequately before transportation



CABLE LAYING & INSTALLATION PROCEDURES

- Take proper precautions to avoid any mechanical damage to the cables before and during installation.
- Exceeding the manufacturer's recommended maximum pulling tensions should be avoided as this can damage the cables.
- If cables are being installed in ducts, the correct size of the duct should be consulted and used.
- The type of jointing and filling compounds employed should be chemically compatible with the cable materials.
- The cable support system must be apt to avoid damage to the cable.
- Repeated over-voltage testing can lead to premature failure of the cable.
- The selection of cable glands, accessories and any associated tools should take account of all aspects of intended use. Any semi-conducting coating present on the over sheath should be removed for a suitable distance from joints and terminations.
- Exercise proper care with single-core cables to ensure that the bonding and earthing arrangements are adequate to cater for circulating currents in screen(s).





Corporate Office

APAR Industries Limited
APAR House, Corporate Park, V N Purav Marg
Chembur, Mumbai 400 071, India

Tel: +91 22 25263400 / 6780 0400

Fax: +91 22 25246326

Email: corporate@apar.com

Web: www.apar.com

Registered Office

301 / 306, Panorama Complex,
RC Dutt Road, Vadodara 390 007, INDIA

Tel: +91 265 2323 175 / 2323 176

Web: www.apar.com

 [@aparindustrieslimited](#)  [@AparIndustriesLtd](#)  [apar_industries_limited](#)  [@AparIndustries](#)  [Apar Industries Limited](#)

Send your enquiry to: corporate@apar.com