Eight Decades of Trust & Innovation

UL CABLES

ABOUT US

- Nicco Cables is a 80 year old brand based in India
- Nicco specializes in manufacturing wide range of Wires and Cables
- Nicco has an in-house R&D facility
- Nicco specializes in Compound manufacturing and has a dedicated team for Compounds
- Nicco is the first Company in India to install a 3 MeV Electron Beam Plant form USA for manufacturing irradiated cables
- The manufacturing plant covers an area of 450,000 sq.ft.
- National Accreditation Board for Testing and Calibration Laboratories (NABL) accredited Testing laboratory at plant

NICCO PRODUCES A WIDE RANGE OF CABLES

- Solar & Windmill Cables
- Ethernet Cables (Cat-5e, Cat-6a, Cat-7)
- LT & HT Power & Control Cables (Upto 66 kv)
- Elastomeric & Silicon Cables (Upto 15 kv) for various application
- PTFE, ETFE & FEP Cables
- Flexible Trailing Cables - H07-RNF
- Ethernet Polyurethane Cables
- Rolling Stock Cables
- Ship Building Cables
- Fire Survival Cables (For Nuclear Reactor)
- TREE WIRE / SPACER Cables - 3 layer Track Resistant (upto 35kv)
- Hybrid / Composite and Underwater Cables
- Pressure Tight Cables
- Overhead transmission Conductors (AAAC, ACSR, AAC, ACAR , AL-59)
- Medium Voltage Covered Conductors (MVCC)
- Automotive Cables
- Cable Harnessing

THERMOSET INSULATED WIRES & CABLES - UL44:

APPLICATION:

This product is designed for use in the following applications:

- **Installation Method:**
  - Suitable for installation in conduit and cable trays.
- **Usage Scope:**
  - Applicable for services, feeders, and branch circuits in commercial or industrial environments as per the National Electrical Code (NEC) 2011.
- **Environmental Conditions:**
  - Suitable for use in wet or dry locations.
  - Maximum ambient temperature: 90°C.
- **Special Applications:**
  - Recommended for use in health care facilities in accordance with NEC Section 517.160, where a dielectric constant < 3.5 may be required.
- **Industrial Suitability:**
  - Ideal for environments requiring:
    - Superior insulation toughness
    - Chemical resistance
- **Installation Requirements:**
  - Designed for installation without pulling lubricants.

With Aluminum Alloy (8000 series) Conductor

With Coper Conductor

Summary of the Types, Maximum Conductor Temperature, Voltage Ratings:

Wire Type Designation	Voltage Rating, V	Temperature rating
XHHW-2	600	90°C wet or dry
XHHW	600	75°C wet and 90°C dry
XHH	600	90°C dry
RHH	600 or 2000	90°C dry
RHW-2	600 or 2000	90°C wet or dry
RHW	600 or 2000	75°C wet or dry
SIS	600	90°C dry
R90	600, 1000, 2000	90°C dry
RW75	600, 1000, 2000	75°C wet or dry
RW90	600, 1000, 2000	90°C wet or dry
RWU75	1000	75°C wet or dry
RWU90	1000	90°C wet or dry

SPECIAL FEATURES:

- Heat & Oil Resistant
- Sunlight Resistant
- Gasoline Resistant
- Moisture Resistant
- Smaller cable O.D.
- Excellent electrical, thermal and physical properties
- Excellent resistance to crush, compression cuts and heat deformation
- CT and FT-4 Rating shall be generated for 1/0 AWG and Larger size
- Meets cold bend and cold impact tests at -25°C and -40°C respectively

CONSTRUCTION:

Conductor:

- Stranded Compacted bare AA – 8000 Series Aluminium as per ASTM B-801
- Class B compressed stranded bare copper per ASTM B3 and ASTM B8

Insulation:

- Abrasion moisture and heat resistant, thermoset cross linked Polyethylene (XLPE)
- Conductor sizes 8 AWG and larger are listed and marked sunlight resistant in all colours

Our in-house irradiation-curable XL Compound Grade 'NICRAD 44' will be used on the product covered in this specification.

CORE IDENTIFICATION:

Conductor Size from 14 AWG to 2000 KCMIL are marked as sunlight resistant.

COMPLIANCE:

- **Conductor:** UL 44/ASTM B8/NMX-J-012-ANCE/ASTM B231/ASTM B231M/ NMX-J-032-ANCE
- **Insulation Resistance:** UL 2556, CSA C22.2 No. 2556, NMX-J-556-ANCE
- **Cold Bend Test:** UL 2556, CSA C22.2 No. 2556, NMX-J-193-ANCE
- **Cold Impact Test:** UL 2556, CSA C22.2 No. 2556, NMX-J-556-ANCE
- **Flame and Smoke Test:** UL 2556, CSA C22.2 No. 2556, NMX-J-192-ANCE
- **FT-4 Vertical Tray Flame Exposure Test:** UL 2556, CSA C22.2 No. 2556, NMX-J-556-ANCE
- **Fire Propagation:** UL 2556, CSA C22.2 No. 2556, NMX-J-093-ANCE
- **Smoke Emission:** UL 2556, CSA C22.2 No. 2556, NMX-J-474-ANCE
- **Halogen Acid Gas Emission:** UL 2556, CSA C22.2 No. 2556, NMX-J-472-ANCE
- **Weather Resistant:** UL 2556, CSA C22.2 No. 2556, NMX-J-553-ANCE
- **Gasoline & Oil Resistance:** UL 2556, CSA C22.2 No. 2556, NMX-J-556-ANCE
- **Oil Resistance:** UL 2556, CSA C22.2 No. 2556, NMX-J-194-ANCE

AL XHHW, XHHW-2, XHH - UL44:

Conductor size	Insulation thickness			Nominal overall diameter			Approximate Weight per 1000 ft	Allowable ampacity Amp.			Maximum DC resistance at 20°C
AWG or KCMIL	mils	Inch	mm	mils	Inch	mm	lbs	60°C Amp	75°C Amp.	90°C Amp.	Ω/km
8	45	0.045	1.14	225	0.225	5.7	29	35	40	45	3.4464
6	45	0.045	1.14	261	0.261	6.6	39	40	50	60	2.1684
4	45	0.045	1.14	305	0.305	7.7	56	55	65	75	1.3633
2	45	0.045	1.14	361	0.361	9.2	82	75	90	100	0.8573
1	55	0.055	1.40	427	0.427	10.8	107	85	100	115	0.6798
1/0	55	0.055	1.40	448	0.448	11.4	130	100	120	135	0.5387
2/0	55	0.055	1.40	488	0.488	12.4	158	115	135	150	0.4275
3/0	55	0.055	1.40	535	0.535	13.6	195	130	155	175	0.3389
4/0	55	0.055	1.40	587	0.587	14.9	240	150	180	205	0.269
250	65	0.065	1.65	655	0.655	16.6	290	170	205	230	0.2277
300	65	0.065	1.65	700	0.7	17.8	340	195	230	260	0.1896
350	65	0.065	1.65	746	0.746	18.9	392	210	250	280	0.1624
400	65	0.065	1.65	790	0.79	20.1	444	225	270	305	0.1424
500	65	0.065	1.65	865	0.865	22.0	542	260	310	350	0.1139
600	80	0.08	2.03	983	0.983	25.0	665	285	340	385	0.0948
700	80	0.08	2.03	1050	1.05	26.7	768	310	375	420	0.0814
750	80	0.08	2.03	1081	1.081	27.5	819	320	385	435	0.0758
900	80	0.08	2.03	1162	1.162	29.5	980	355	425	480	0.0633
1000	80	0.08	2.03	1220	1.22	31.0	1084	375	445	500	0.0568

CU XHHW, XHHW-2, XHH - UL44:

Conductor size	Insulation thickness			Nominal overall diameter			Approximate Weight per 1000 ft	Allowable ampacity Amp.		Maximum DC resistance at 20°C
AWG or KCMIL	mils	Inch	mm	mils	Inch	mm	lbs	75°C Amp.	90°C Amp.	Ω/km
14	30	0.03	0.76	138	0.138	3.5	26	20	25	8.62
14 (Solid)	30	0.03	0.76	138	0.138	3.5052	25	20	25	8.45
12	30	0.03	0.76	157	0.157	4.0	38	25	30	5.43
12 (Solid)	30	0.03	0.76	157	0.157	4.0	38	25	30	5.31
10	30	0.03	0.76	197	0.197	5.0	58	35	40	3.41
10 (Solid)	30	0.03	0.76	177	0.177	4.5	57	35	40	3.34
8	45	0.045	1.14	256	0.225	5.7	95	50	55	2.14
6	45	0.045	1.14	295	0.261	6.6	144	65	75	1.35
4	45	0.045	1.14	335	0.305	7.7	221	85	95	0.848
2	45	0.045	1.14	394	0.361	9.2	342	115	130	0.534

Conductor size	Insulation thickness			Nominal overall diameter			Approximate Weight per 1000 ft	Allowable ampacity Amp. 75°C	Allowable ampacity Amp. 90°C	Maximum DC resistance at 20°C
AWG or KCMIL	mils	Inch	mm	mils	Inch	mm	lbs	Amp.	Amp.	Ω/km
1	55	0.055	1.4	453	0.427	10.8	436	130	145	0.423
1/0	55	0.055	1.4	492	0.448	11.4	542	150	170	0.335
2/0	55	0.055	1.4	531	0.488	12.4	675	175	195	0.266
3/0	55	0.055	1.4	591	0.535	13.6	845	200	225	0.211
4/0	55	0.055	1.4	650	0.587	14.9	1056	230	260	0.167
250	65	0.065	1.65	709	0.655	16.6	1256	255	290	0.142
300	65	0.065	1.65	768	0.7	17.8	1497	285	320	0.118
350	65	0.065	1.65	807	0.746	18.9	1769	310	350	0.101
400	65	0.065	1.65	866	0.79	20.1	1978	335	380	0.0885
500	65	0.065	1.65	945	0.865	22	2458	380	430	0.0709
600	80	0.08	2.03	1043	0.983	25	2970	420	475	0.059
700	80	0.08	2.03	1122	1.05	26.7	3450	460	520	0.0506
750	80	0.08	2.03	1161	1.081	27.5	3689	475	535	0.0472
900	80	0.08	2.03	1240	1.162	29.5	4407	500	560	0.0393
1000	80	0.08	2.03	1299	1.22	31	4886	545	615	0.0354

Please note:

Data indicated in this table is subject to normal manufacturing tolerances. Regular standard cross-sections are shown in the above table However, we can provide necessary data from 14 AWG up to 2000 KCMIL on request.

THERMOSET PHOTOVOLTAIC (PV) WIRE - UL 4703 600V/ 1000V/ 2000V :

APPLICATION:

- The product is approved for use in solar power applications per the NEC article 690 and is rated 90°C for exposed or concealed wiring in wet or dry locations
- These cables are used for interconnection wiring of grounded and ungrounded Photo Voltaic power systems
- Rated for Direct Burial Conduit

With Aluminum Alloy (8000 series) Conductor

With Coper Conductor

CABLE TYPE	VOLTAGE RATING	TEMPERATURE RATING
RHW- 2	600 V/ 1000 V/ 2000V	90° C WET OR DRY

CONSTRUCTION:

Conductor:

- Class B Compact bare AA – 8000 Series Aluminium Alloy as per ASTM B800 & ASTM B801
- Class B compressed stranded bare copper as per ASTM B3 and ASTM B8

Insulation:

- Abrasion moisture and heat resistant, thermoset cross linked Polyethylene (XLPE)
- Type RHW-2 as per UL44

Our in-house irradiation-curable XL Compound Grade 'NICRAD 44' will be used on the product covered in this specification.

SPECIAL FEATURES:

- The Cable passes FT-4 Vertical tray Flame exposure test as per UL 2556, CSA C22.2 No. 2556
- NMX-J-556-ANCE
- The cable having conductor size 12 AWG and larger are listed and marked Sunlight resistant in all colours
- The cable is RoHS compliant, passes -40°C cold bend and cold impact test (optional)
- Passes FV-1/Vertical Flame and FV-2/VW-1 test (optional)
- Flame retardant & Halogen Free
- UV, Ozone Resistant
- Hydrolysis & Moisture Resistant
- Oil and Gasoline Resistant

AL 2000 VOLTS PV CABLE:

Conductor size	Insulation thickness			Nominal overall diameter			Approximate Weight per 1000 ft	Maximum DC resistance at 20°C
AWG or KCMIL	mils	Inch	mm	mils	Inch	mm	lbs	Ω/km
8	85	0.085	2.2	335	0.34	8.5	48	3.52
6	85	0.085	2.2	374	0.37	9.5	62	2.21
4	85	0.085	2.2	413	0.41	10.5	82	1.39
2	85	0.085	2.2	472	0.47	12.0	112	0.875
1	105	0.105	2.7	551	0.55	14.0	149	0.693
1/0	105	0.105	2.7	571	0.57	14.5	175	0.550
2/0	105	0.105	2.7	610	0.61	15.5	208	0.436
3/0	105	0.105	2.7	669	0.67	17.0	245	0.346
4/0	105	0.105	2.7	709	0.71	18.0	296	0.274
250	120	0.120	3.0	787	0.79	20.0	358	0.232
300	120	0.120	3.0	827	0.83	21.0	415	0.194
350	120	0.120	3.0	886	0.89	22.5	469	0.166
400	120	0.120	3.0	925	0.93	23.5	525	0.145
500	120	0.120	3.0	1004	1.00	25.5	636	0.116
600	135	0.135	3.4	1102	1.10	28.0	774	0.0967
700	135	0.135	3.4	1181	1.18	30.0	883	0.0829
750	135	0.135	3.4	1201	1.20	30.5	934	0.0774
900	135	0.135	3.4	1299	1.30	33.0	1107	0.0645
1000	135	0.135	3.4	1358	1.36	34.5	1214	0.0580

Please note:

Data indicated in this table is subject to normal manufacturing tolerances.
Regular standard cross-sections are shown in the above table However, we can provide necessary data from 12 AWG up to 2000 KCMIL for Aluminum and 18 AWG up to 2000 KCMIL for Copper Conductor upon request. 600/1000 V configurations available upon request

SERVICE-ENTRANCE CABLES - UL 854:

Power cables for installation in accordance with Article 338 and other applicable parts of the National Electrical Code (NEC). These cables are for the service-entrance and other (NEC) uses.

Type:

- USE and USE-2 (below-ground)
- Type SE (above-ground)

USE and USE-2 cables:

Type USE and USE-2 cables are single-conductor in sizes through 2000 kcmil or are flat or round multiple-conductor in sizes through 4/0 AWG copper, 300 kcmil Aluminium or Copper-clad Aluminium jacketed and through 2000 kcmil coverless.

The electrical insulation in each cable shall be of material(s) with one of the following ratings:

- 90°C dry, 90°C wet;
- 90°C dry, 75°C wet; or
- 75°C dry, 75°C wet.

Conductor Material: Copper, Copper-clad Aluminium, or an Aluminium alloy

Type RHH / RHW -2 / USE -2 XLPE Insulated Wire:

Single conductor / 14 AWG to 500 KCMil / 600V

Conductor Size AWG (mm²)	Strand Class	Strands	Nominal Insulation Thickness in (mm)	Nominal Cable O.D.in (mm)	Approximate Cable Weight Lbs/ Mft (Kg/Km)
8 AWG (8.37)	Class B	7	.060 (1.5)	0.275 (7.0)	72(107)
6 AWG (13.3)	Class B	7	.060 (1.5)	0.310 (7.9)	106 (158)
4 AWG (21.2)	Class B	7	.060 (1.5)	0.360 (9.1)	160 (238)
2 AWG (33.6)	Class B	7	.060 (1.5)	0.420 (10.7)	243 (362)
1 AWG (42.4)	Class B	19	.080 (2.0)	0.500 (12.7)	311 (463)
1/0 AWG (53.5)	Class B	19	.080 (2.0)	0.540 (13.7)	387 (576)
2/0 AWG (67.4)	Class B	19	.080 (2.0)	0.585 (14.9)	492 (732)
3/0 AWG (85.0)	Class B	19	.080 (2.0)	0.635 (16.1)	611 (909)
4/0 AWG (107)	Class B	19	.080 (2.0)	0.695 (17.7)	740 (1101)
250 KCMIL (127)	Class B	37	.095 (2.4)	0.770 (19.6)	882 (1312)
350 KCMIL (177)	Class B	37	.095 (2.4)	0.875 (22.2)	1213 (1805)
500 KCMIL (253)	Class B	37	.095 (2.4)	1.005 (25.5)	1702 (2533)

The data herein is approximate and subject to normal manufacturing tolerances. These specications are subject to change without notice. We manufacture up to 2000 KCMIL.

With Aluminum Alloy (8000 series) Conductor

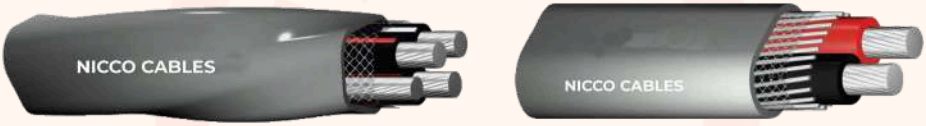
With Coper Conductor

SE CABLES :

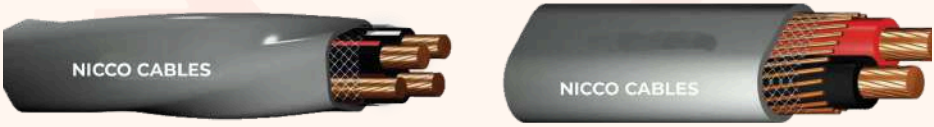
SER and SEU Types:

Voltage grade: 600 Volts
Applications: suitable for both dry and moist applications
Properties: Flame-retardant and resistant to moisture
Conductor type: RHW, RHW-2, XHHW, XHHW-2 (depending on applications)

- A Round Service Electrical Cable (SER) is basically a bare neutral and is up to four conductors. The cable is made to be used in feeder panels and branch circuits above ground.
- Style U flat service electrical cable SEU has two-phase conductors and a concentric neutral. It is unarmed. Due to the stranded neutral conductors that wrap around the cable to form an oval, SEU typically has an oval shape. Like SER, the cable is mostly used as a panel feeder in branch circuits and multifamily residential buildings



UL 854 SE Cable, Al Alloy Conductor



UL 854 SE Cable, CU Conductor

EXISTING CERTIFICATIONS

ISO 9001 / 14001 / 45001

Directorate of Quality Assurance (Navy) [DQAN] Registration Certificate

Defense Research and Development Laboratory (DRDL) Registration Certificate

Integrated Headquarters of Ministry of Defence (IHQ/DEE/MOD)

Research Designs and Standards Organization (RDSO)

American Bureau of Shipping (ABS)

Indian Register of Shipping (IRS)

Underwriters Laboratories (UL)

Central Power Research Institute (CPRI)

Bureau of Indian Standards (BIS)

International Railway Industry Standard (IRIS)

National Accreditation Board for Testing and Calibration Laboratories (NABL)

Det Norske Veritas (DNV)

Nicco Cables Pvt. Ltd.

HEAD OFFICE

Suket Building, 2nd Floor, 20 Ballygunge Circular Road, Kolkata - 700019
PH - 7419888220, Email - info@niccocables.com

PLANT

71, East Ghosh para Road, Authpur, Shyamnagar, North 24 Parganas
West Bengal - 743128

REGIONAL OFFICES

Noida, Chennai, Bhubaneswar, Hyderabad, Mumbai

+91 9830144788 abhyuday@niccocables.com www.niccocables.com