

# INDUSTRIAL CABLE PROFILE



- EHV Cables upto 220 kV
- HT Power Cables upto 66 kV
- 1.1 kV Power Cables
- 1.1 kV Copper Control Cables



# **ABOUT HAVELLS**

Havells India Limited is a leading Fast Moving Electrical Goods (FMEG) Company and a major power distribution equipment manufacturer with a strong global presence. Havells enjoys enviable market dominance across a wide spectrum of products, including Industrial & Domestic CircuitProtection Devices, Cables & Wires, Motors, Fans, Modular Switches, Home Appliances, Air Conditioners, Electric Water Heaters, Air Purifiers, Power Capacitors, CFL Lamps, Luminaires for Domestic, Commercial and Industrial Applications.

Today, Havells owns some of the most prestigious brands like Havells, Lloyd, Crabtree, Standard and Reo. Its network constitutes of 4000 professionals, over 7575 dealers and 40 branches in the country. Our products are available in 40 countries. The company has 12 state-of the-art manufacturing plants in India located at Haridwar, Baddi, Sahibabad, Faridabad, Assam, Alwar and Neemrana, manufacturing globally acclaimed products, synonymous with excellence and precision in the electrical industry. The company pioneered the concept of exclusive brand showroom in the electrical industry with 'Havells Galaxy'. Today over 415 Havells Galaxies across the country are helping customers, both domestic and commercial, to choose from a wide variety of products for different applications. Havellsbecame the first FMEG Company to offer door step service via its initiative 'Care 360". Thanks to the quality of products and quicker service, it has minimum customer complaints and highest customer satisfaction.

Today, Havells alongwith its brands, have earned the distinction of being the preferred choice of electrical products for discerning individuals and industrial consumers both in India and abroad. Havells offers same quality products for both Indian and International markets. It is committed to keeppowering the world with its state-of-the-art innovations and energy-efficient solutions. Currently over 90% of its product offerings are energy efficient and manufactured in-house. Social and environmental responsibility has been at the forefront of Havells Operating Philosophy and as a result the company consistently contributes to socially responsible activities. For instance, the company is providing midday meal in government schools in Alwar district, covering more than 57000 students per day. The group company, QRG Healthcare runs a 140 bed hospital in Faridabad. In the past, the company has generously contributed to the society during various national calamities like the Bihar Flood, Tsunami and Kargil National Relief Fund, etc.

The essence of Havells' success lies in the expertise of its fine team of professionals, strong relationships with associates and the ability to adapt quickly & efficiently, coupled with the vision to always think ahead.

The company has acquired a number of certifications, like BASEC, UL, ISO 9001, ISO 14001, ISO 45001, ISO 50001 for the Cable Plant, Our Test laboratory has the NABL accreditation for testing of cables and calibration of testing equipment. Today, Havells and its brands have emerged as the preferred choice of electrical products for discerning individuals and industrial consumers both in India and abroad.

#### Certification

Building customer confidence by providing a wide range of quality products and services through team work.



































#### V.R. BANSAL & ASSOCIATES

Chartered Accountants A-69, Vijay Block, Laxmi Nagar, Delhi-110092 Tel.: 22016191, 22433950 • Website : www.cavrb.com

#### TO WHOMSOEVER IT MAY CONCERN

We hereby certify that M/s Havells India Limited having its registered office at 904,  $9^{th}$  Floor, Surya Kiran Building, K G Marg, New Delhi -110001, has made gross revenue from operations during the

Financial Year	Revenue from operations (Cables Segment)	Company's Revenue from operations
2016-2017	2675.61	6,585.96
2017-2018	2683.41	8,260.27
2018-2019	3234.60	10,067.71*
2019-2020	2994.19	9,429.20
2020-2021	3180.17	10,427.92
2021-2022	4645.08	13888.53

\*Figures of 2018-19 is restated due to amalgamation of certain companies with the company and which is effective from April 01, 2018.

This certificate has been issued on the basis of information and explanation given to us and documents produced before us.

> For V. R. Bansal & Associates **Chartered Accountants**

Place: Delhi Date: 27.05.2022 (Firm Registration No. 016534N

Membership No: 093591 UDIN: 122093591 ATTOY B 2576

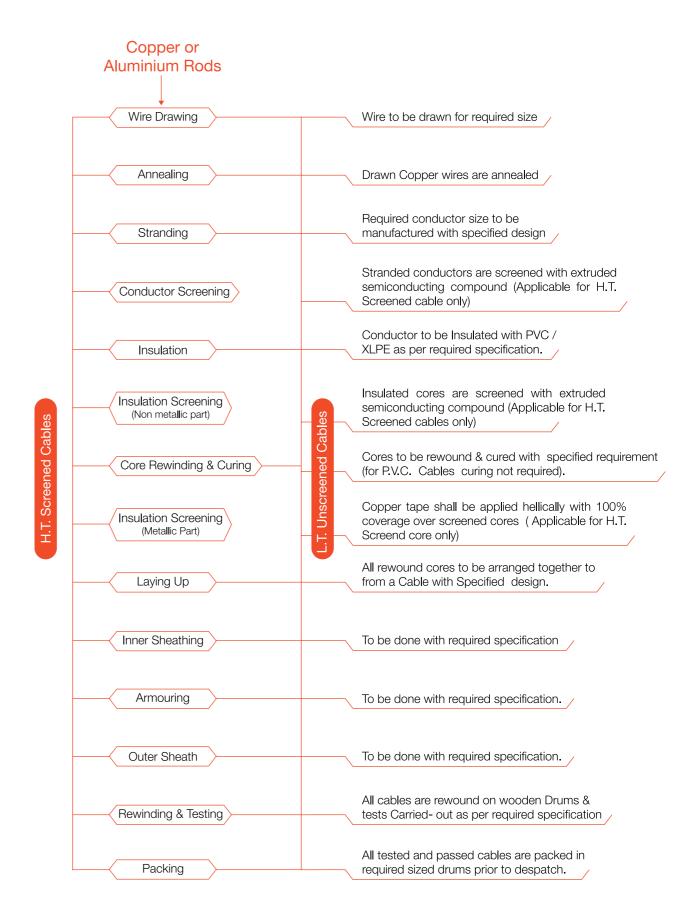
Branch Office: B-11, Sector-2, Noida-201301 Mob.: 9810052850, 9810186101 E-mail: cavrbansals@gmail.com



## Segment Wise Cable Business Performance for Last Five Financial Years

FY Year	ABC HT	CABLE	ABC LT	CABLE	CC C	ABLE	HT C	ABLE	INSTRU.C	C CABLE	LT CA	BLE	Tot	al
	Qty (KM)	Value (Crores)	Qty (KM)	Value (Crores)	Qty (KM)	Value (Crores)								
2017-2018	978	41.76	1315.118	23.38	18495.81	154.83	6268.721	475.30	618.95	4.40	29830.09	666.08	57506.69	1,365.74
2018-2019	1345.77	67.62	4365.222	57.52	20527.27	178.49	9086.221	613.25	334.766	3.57	33477.541	829.82	69136.79	1,750.27
2019-2020	1073.88	46.22	3207.227	31.94	18733.67	157.43	6319.425	531.34	263.008	3.22	31205.938	725.39	60803.15	1,495.54
2020-2021	1004.38	41.49	763.867	14.21	17169.05	140.24	5649.653	405.32	279.485	3.92	29798.957	703.34	54665.39	1,308.51
2021-2022	943.8	53.14	403.41	14.25	16095.84	179.58	5943.292	602.80	353.52	6.98	31546.238	1,072.29	55286.1	1,929.04
Total	5345.82	250.24	10054.84	141.30	91021.64	810.57	33267.31	2,628.01	1849.73	22.08	155858.76	3,996.92	297398.11	7,849.11











# Manufacturing of Cables

Cables with Aluminium and Copper conductor and polymer insulation are manufactured at Havells India Ltd. (Cable Works) Alwar. Essentially cables comprise of conductors, insulation, inner-sheath, armour and outersheath. The brief description of the process is mentioned as under:

#### CONDUCTOR

Havells Cables are available with both aluminum and copper conductors. It is manufactured with solid/Stranded Circular/ Shaped Aluminium / Copper Conductor. Stranding makes Cables flexible and easy to handle while shaping makes them compact.

Compaction is provided to all stranded conductor constructions as under:

- Circular Conductor With one wire in the centre conductor contains 6, 12, 18, 24, 30... wire layers in either unilay or opposite helical directions. The conductor is sized upto 92% compaction.
- Shaped Conductors In all multicore cables from 16 sq. mm size, conductors are "shaped". Compaction degree in multicore power cables is upto 92%.
- 3. Segmental Conductor As a special case Havells cables of 1600 sq. mm are made up of segmental conductors.

The conductor is manufactured in equal segments and compacted, then laid together. This reduces A.C. losses in the large sized conductor, which are due to skin and proximity effects.

Havells has special construction of conductor to suggest to its customer for meeting their specific need.

Havells copper conductor cables are of the same construction that of cables with Aluminium conductor except for high tensile strength, superior conductivity, better flexibility and ease of jointing, copper cables are used in control, instrumentation, winding, submarine, mining and ship wiring etc. etc applications.

All conductors for Havells cables are manufactured strictly in accordance with National and International specifications.

National specifications IS 8130

International specification IEC 60228 / BS 6360

#### DIELECTRIC INSULATION

Insulation for Havells cables is strictly as per National and International specifications.

Havells cables are designed and manufactured with polymer dielectrics to bear thermal and thermomechanical stresses safely at continuous normal and short circuit temperature conditions.

Havells cables are available with both thermoplastic & thermo setting insulations.

- PVC Cables Thermoplastic dielectric- XLPE Cables Thermo setting dielectric

Havells PVC cables use PVC compounds that take care of over load and short circuit current with both coarse & fine protection systems.

Havells XLPE cables use XLPE compound with anti oxidant stabilizers and traces of aromatic polynuclear hydrocarbon. Thus improving electrical treeing characteristics and mechanical strength of insulation.

Havells cables are friendly during continuous, emergency and short circuit conditions.

Though there is no change in basic design of Havells cables yet the latest manufacturing process gives improved reliability and compactness to cables. The relative thermal expansion during short circuit between dielectric and conductor is therefore limited to minimum both in PVC & XLPE, thus limiting displacement of cores in cables during short circuit.

Insulation for Havells Cables are strictly manufactured and applied over conductor in accordance with National and International specifications:

National Specification IS 5831/IS 7098

International Specifications BS 6746/BS 5467/IEC 60502

#### SCREENING

XLPE Cables with rated voltage over 3300 V shall be provided with conductor and insulation screening as follows:

Conductor Screen Conductor shall be screened with extruded Screen Semiconducting compound as per IS 7098 Part 2.

### Insulation

Insulation screening shall consist of non-metalic

Part in combination with metalic part. Non metalic part shall consist of either semi conducting compound tape applied hellically or extruded layer of semi conducting compound, applied directly over insulation. Over this, metalic part (copper tape) shall be applied hellically with overlap as per IS 7098 Part 2.

To avoid the cavities and voids formation in dielectric particularly on bending operation of cable, perfect bonding of insulation and screening is required. To ensure this Havells applying conductor screen, insulation and insulation screen (non-metalic part) in one operation through tripple extrusion.

#### LAYING UF

Cores are tested on line during production both for physical and electrical characteristics. Control is observed within tight tolerance limits for dimensions in case pf PVC/XLPE insulation. For multicore cables cores are laid up on our latest laying up machine equipped with sector correction equipment. In case of XLPE insulated cores the same are cured so as to impart the requisite characteristics both electrical and mechanical and then are laid up.

#### **INNERSHEATH**

Laid up cables are provided with inner sheath with high quality of PVC which acts as bedding for steel wire / strip armouring. Wherever required, filler cords are provided to maintain the circularity to laid up cables.

In Havells Cable-polymers used for inner sheath are softer than insulation or outer sheath & are compatible with temperature ratings of cables & do not have deleteriocus effect on any other component of cable.

Inner sheath is applied either with extrusion or by wrapping. In Havells Cables though the inner sheath is closely applied on the laid up cores, same can be stripped with ease without damaging insulation.

The inner sheath dimensions are maintained strictly in accordance with laid down specification .

Specification For PVC Cables IS 1554 (Part-I & II)
For XLPE Cables IS 7098 (Part-I & II)

#### ARMOURING

Mechanical protection to the cable is provided with armouring. Havells single core cables are armoured with Aluminium or Aluminium alloy wire/strips, thus avoiding magnetic hysteresis losses on A. C. System.

Multicore cables are provided with galvanised steel wire/strips.

Havells cables are provided with galvanised wire armouring, where cables are to run vertically and are subjected to stresses.

Havells Mining cables are armoured with steel wire and tinned copper wires, so as to provide conductivity of armour more than 75% of main conductor of cable.

Havells cables armour wires/strips are of low resistivity material and meet the requirements of IS 3975.

Havells armoured cables are with almost 95% armour coverage.

#### **OUTER SHEATH**

All Havells Cables are provided with PVC/polymer outer sheath.

Havells Cables are manufactured with various characteristics of sheathing compounds

General purpose sheathing Compound ST1
Heat resistant Compound for sheath (H.R.) ST2

Fire Retardant Low IEC 754 Part I

Smoke Compound IEC 60332 Part I & III

(FRLS) IEEE 383

ASTM-2843 ASTM-2863 to EIL Specn.

Flame Retartant Compound (FR) to EIL Specr Ultra Voilet Radiations Resistance Compound to ASTM G-53.

Anti Rodent and Anti Termite Compound.



PVC compounds used for Havells Cables are of various grades to meet specifications IS 5831.

In order to be identified, Havells Cables have their name embossed/printed/indented on outersheath at regular intervals on the outer sheath of Havells Cables, Voltage Grade, cable size, trade name & year of manufacture are embossed, as desired.

Cables are sequentially marked for length at every metre throughout its length.

#### FINAL TESTING

Each Havells Cable is tested for all applicable Routine Tests.

From a lot of Cable one cable of each type is tested for Type tests, as per relevant specifications.

Havells conduct its testing at Havell's India Ltd. cable plant at Alwar for acceptance test as per specification.

Testing of Havells Cables are carried out as per Havells Work Standards for testing, besides applicable standards.

#### ADVANTAGES OF PVC CABLES

- 1. A non-hygroscopic insulation almost unaffected by moisture.
- 2. Non-migration of compound permitting vertical installation.
- Complete protection against most forms of electrolytic and chemical corrosion.
- 4. A tough and resilient sheath with excellent fire resisting qualities.
- 5. Good ageing characterstics.

### NABL Testing Laboratory

Havells India Ltd has emphasised on product quality by demonstrating quality evaluation for wires & cables at international level by obtaining NABL National accreditation board for calibration & testing laborites) for testing & DSIR recognised technology center at cable division. NABL is an autonomous body which is working under the Department of Science & Research Industry (Govt. of India).

ADVANTAGES OF XLPE CABLES

endure short circuit stresses.

4. For a short time it can withstand maximum 130 °C and is favourable to

6. Because of the thermosetting process taking place due the effect of

7. Due to the chemical cross-linking internal stresses are reduced.

Consequently the material is less sensitive during manufacturing

The thermal resistivity of cross-linked material is favourably low,

10. The excellent mechanical features of the insulation improves the

11. The resistance of the XLPE to acids, alkalies is outstanding and is often

5. It is less sensitive to the setting of the network protection.

cross linking, the crack resistance is increased.

process to the setting of the cooling gradient.

9. The low dielectric loss is a significant advantage.

compensating the adverse environmental influences.

compared to thermoplastic material.

protection against external effects.

1. Higher Current Rating.

Longer Service Life.

2. Higher Short Circuit Rating.

National accreditation board for testing and calibration to boast of, it is the first-of-its-kind private facility in india. The lab fully equipped as per international standard to test XLPE cables upto 220 kV grade, PVC cables, Flexible cables, aerial bunched cables, photovoltaic cables, instrumentation cables, fire survival cables.

The lab cover indian standards, British standard, International electrotechnical commission (IEC) standards, TUV-Germany standards, American society for testing and material (ASTM) standards and institute of electrical & electronics engineers (IEEE) standards along with eight type of different fire test to demonstrate fire-retardant behavior in cable.









# Cable range at a glance

Application	Type & Size	Options	Cross Sectional View
Cables for Power Supply to Residential, Commercial & Industrial units	PVC/XLPE Power cables for 1.1 & 3.3 kV for Electrical Substations as per IS 1554-I & 2/ IS 7098-1 & 2 Sizes: Single Core 10 sq. mm - 1000 sq. mm Multicore 6 sq. mm - 630 sq. mm	Conductor - Stranded / Solid, Circular / Shaped Aluminium / Copper Insulation - PVC / HR PVC Inner Sheath - PVC / HR PVC / FRLS / PVC Unarmoured / Armoured - G.S. Round Wire/ Flat Strip or Aluminum Wire / Flat Strip Outer Sheath - PVC/ HR PVC/ FRLS PVC	Outer - Sheath Amouring Inner - Sheath Insulation Insulation Abministry Copper Conductor
Cables for Power Supply to Residential, Commercial & Industrial units	PVC/XLPE Power cables for 1.1 & 3.3 kV for Electrical Substations as per IS 1554-I & 2/ IS 7098-1 & 2 Sizes: Single Core 10 sq. mm - 1000 sq. mm Multicore 6 sq. mm - 630 sq. mm	Conductor - Stranded / Solid, Circular / Shaped Aluminium / Copper Insulation - PVC / HR PVC Inner Sheath - PVC / HR PVC / FRLS / PVC Unarmoured / Armoured - G.S. Round Wire/ Flat Strip or Aluminum Wire / Flat Strip Outer Sheath - LSZH Compound	Outer - Sheath Amouring Inner - Sheath Insulation Alaminium Copper Conductor
Heavy Duty XLPE Power cables for Power Generation Distribution	XLPE Power cables upto 19/33 kV grade 33 kV (E) as per IS 7098 - II Sizes: Single Core: 25 sq. mm - 1000 sq. mm Multicore: 25 sq. mm - 400 sq. mm	Conductor - Circular/Shaped - Aluminum/Copper Insulation - XLPE Innersheath - PVC / HR PVC / FRLS Unarmoured / Armoured - G.S Round Wire / Flat Strip or Aluminum Wire / Flat Strip Outersheath - PVC / HR PVC / FRLS	PVC Outer Sheath Amounting PVC Inner Sheath Filte Stranded Conductor Conductor Screening Jul PE Institution Insulation Screening Metalic Screening
Heavy Duty XLPE Power cables for Power Generation Distribution	XLPE Power cables upto 19/33 kV grade 33 kV (E) as per IS 7098 - II Sizes: Single Core: 25 sq. mm- 1000 sq. mm Multicore: 25 sq. mm - 400 sq. mm	Conductor - Circular/Shaped - Aluminum/Copper Insulation - XLPE Innersheath - PVC / HR PVC / FRLS Unarmoured / Armoured - G.S Round Wire / Flat Strip or Aluminum Wire / Flat Strip Outer Sheath - LSZH Compound	PIC Cular-Sheath Amounty PPC Inter-Sheath Fill res-Sheath Conductor Conductor Streening VLPE resultion Insultion Governing Medials Screening
EHV XLPE Power cables for Transmission"	EHV Cables grade upto 132 kV as per IS 7098 - III Sizes:Single Core: 240 sq. mm - 2500 sq. mm	Single core Copper or Aluminium/Semicon/ XLPE insulated/Semicon/Water swellable tape/ Corrugated Aluminium sheathed or Laminated Aluminium Tape, Armoured or Unarmoured, PVC or PE Sheathed	OuterSheath  Metallic Screeing Insulation Screeing  VLPE Insulation  Conductor Screeing  Conductor Y
Arial Bunched/ Bundled required for over head power distribution	PE/XLPE insulated 1.1 kV to 33 kV as per IS 14255 & IS 7098-I & II	Conductor - Stranded Circular compacted Aluminium Insulation - PE/XLPE Messenger conductor - All Aluminium Alloy-Bare/ Insulated Street Light Cond Stranded Circular Compacted Aluminium, Bare/Insulated	Outer Sheath Out Tage Screening Insulation Screening VI.PE Insulation Conductor Screening Conductor AAA Messarger Conductor
Fire Survival Cables for fire hazardous/ prone areas new	Annealed electrolytic copper conductor, heat barrier, XLPE, LSZH inner sheath G.S. wire and LSZH outer sheath as per IS 7098-I/BS 7846 testing as per IEC 331 & BS 6387	Conductor - Solid/Stranded, Plain /Tinned Heat Barrier - Mica Tape Insulation - XLPE Innersheath - LSZH Compound Armoured - G.S. Round Wire/ Flat Strip Outersheath - LSZH Compound	Conductor Glass Mica Tape Insulation Inner Sheath Amour Cuter Sheath
Solar cable for Solar plant <b>new</b>	Trinned cooper XLPO insulated & LSZH sheathed 1100 Vac/ 1800 Vdc as per TUV specifications 2PFG - 1169/08-2007	Conductor - Flexible trinned copper Insulation - Cross linked polyolefin compound Sheath - XLPO/ LSZH Compound	Conductor- Placidic terrord
Copper Control Cables for Power Switch yard Control / Relay Equipment	Annealed electrolytic copper conductor, PVC/XLPE insulated, PVC sheathed 650 V / 1100 V grade as per IS 1554-I & IS 7098-I Sizes: 1.5 sq. mm / 2.5 sq. mm upto 61 core 4 sq. mm & 6 sq. mm upto 4 core	Conductor - Solid/Stranded, Plain /Tinned Insulation - PVC/HR PVC/XLPE Innersheath - PVC/HR PVC/FRLS/Zero Halogen Unarmoured / Armoured - G.S. Round Wire / Flat Strip Outersheath - PVC/HR PVC/FRLS/Zero Halogen Additional Option: Overall shielding with Aluminum mylar tape with 100% coverage & 25% overlap on laid up cores for static noise rejection.	Outer Sheath Amour Inner Sheath Consider Ensistion

Application	Type & Size	Options	Cross Sectional View
Flat cables for Submersible Pumps & Motors	Stranded Plain copper, PVC insulated & PVC sheathed of 1.1 kV grade as per IS 694 Sizes: 3 core - 1.5 sq. mm to 50 sq. mm	Insulation - PVC / HR PVC Sheathing - PVC / HR PVC	Irealistion Conductor Sheath
Instrumentation Signal Cables for Process control & Instrumentation	PVC Sheathed 225/650/1100 V grade cables as per BS 5308 / DIN VDE 0815 & 816 / IS 1554 / IEC 189 Sizes: 0.5 sq. mm / 0.75 sq. mm / 1.0 sq. mm / 1.5 sq. mm	Conductor - Standed / Solid, plain / tinned Insulation - PVC / HR PVC / P.E / Zero Halogen Shielding - Individual Pair / over all pairs Drain wire - Solid Stranded Innersheath - PVC / HR PVC Zero Halogen Unarmoured/Armoured-G.S. Round Wire, Flat Strip Outersheath - PVC / HR PVC/ FRLS / Zero Halogen Compound	Data Wee Cute Shouth From Shouth Data Wee Periodual Per Shouth Conductor From State Conductor From State From Shouth From Shou
Flexible & Cord Cables for appliances, Machine Tools & Equipment Wiring	Multistrand, flexible, bright annealed electrolytic copper conductor, PVC insulated and sheathed upto 1100 V as per IS 694 Sizes: Single, Two, Three or Four core upto 25 sq. mm	Insulation - PVC / HR PVC / FRLS / Zero Halogen Unsheathed /Sheathed - PVC / HR PVC / FRLS	Conductor Irradistion Filter Sheath
Wiring Cables for electrical industry	Multistrand Flexible, upto 1100 V grade PVC Cables as per IS 694 Sizes: Single core 1.0 sq. mm - 630 sq. mm	Conductor - Bright Annealed Copper Insulation - PVC/ HR PVC/ FRLS PVC / Zero Halogen	Iraulation Conductor
Energy Cables for Power Supply to Telephone Exchanges / UPS / Battery Backup / Equipments	PVC Flexible Cables upto 1.1 kV grade as per IS 694 Sizes: 1.0 sq. mm upto 240 sq. mm Single / Multi Core	Conductor - Stranded / annealed Copper Insulation FR - Flame retardant PVC Insulated industrial cables 1100 V with S3 features  FR-LSH PVC Insulated industrial cables 1100 V  Iffe Line 3  Iffe Line 3  Iffe Squard	Color Sian  Natural PVC  Multistrand Flookie Copper Conductor
Energy Cables for Power Supply to Telephone Exchanges / UPS / Battery Backup / Equipments	Flexible Cables upto 1.1 kV grade as per IS 694 Sizes: 1.0 sq. mm upto 240 sq. mm Single / Multi Core	Conductor - Stranded / annealed Copper Insulation-HFFR Insulated industrial cables 1100 V  Life Shield	Color Sidn  Natural PVC  Multistrand Flowbie Copper Conductor
Air Field Lighting Cables	Stranded plain annealed copper, PVC insulated & PVC sheathed of 5 kV grade Sizes: Single core & Two core in 6 sq.mm, 16 sq.mm & 25 sq.mm	Insulation - PVC / XLPE	Insulation Conductor Sheath
FS Wire new	Flexible Cables upto 450/750 V generally to BS 7211 Sizes: 1.0 upto 240 sq. mm Single Core	Conductor - Stranded Flexible Copper Insulation - Glass mica tape & HFFR Compound	Color Skin  Natural PVC  Glass Mice tops  Multitative Flacific  Copper Constudior
Telecom / Switch board cables for Indoor Telephones	Annealed Copper conductor, PVC Insulated as per DOT TEC Spec No: G/WIR-06/02 Sizes: 0.4 sq. mm / 0.5 sq. mm / 0.6 sq. mm / 0.7 sq. mm / 0.9 sq. mm	Conductor - Tinned / Plain Insulation - PVC / HR PVC / Nylon Innersheath - PVC / HR PVC / FRLS Unarmoured / Armoured - G.S. round wire / Flat Strip Outer sheath - PVC/HR PVC/FRLS Additlonal Option - Individual / Overall pair/ Shielding / Screening	Outer Sheath Amour Inner Sheath Conductor Installation
Coaxial cables for Telcom / icrowave / CATV / MATV industry	Available in specified RG & UR Series as per MIL-C-17 / BS 2316 / IS 5608 / IS 11967 Sizes: Suitable for Impedance of 50 0hm / 75 0hm / 100 0hm / 125 0hm	Conductor - Plain / Tinned / Copper Clad Steel / Silver Plated Insulation - Solid / Foam / Semi air spaced Screen - Single / Double braid Sheath - PVC / HR PVC / FRLS / P.E	P.E. Insulation Sheath Braid





# LIST OF MAJOR CUSTOMER

#### SECTOR -1 GOVERNMENT ORGANIZATION

S. No.	Name of Customer	S. No.	Name of Customer
1	Engineers India Ltd	11	Department of Atomic Energy
2	NTPC	12	Airport Authority of India
3	NHPC	13	Electricity Department, UT Chandigarh
4	BHEL	14	NDMC
5	Power Grid Corporation of India Ltd.	15	EPIL
6	Steel Authority Of India	16	Electricity Department, Pondicherry
7	Eastern Railway, Fairlie Place, Kolkata	17	NTECL Vallor
8	Nuclear Power Corporation Ltd.	18	Aravali Power Corporation Ltd. (IGSTPP)
9	BEST Bombay	19	Durgapur Power Ltd.
10	Damodar Valley Corporation, kolkata		

#### STATE ELECTRICITY BOARD

S. No.	Name of Customer	S. No.	Name of Customer
1	Jaipur Vidhyut Vitran Nigam Limited	19	Uttarkhand Power Corporation Ltd.
2	Jodhpur Vidhyut Vitran Nigam Limited	20	MVVNL, Lucknow
3	Rajasthan Rajya Vidhyut Vitran Nigam Limited	21	PUVVNL , Varanasi
4	Ajmer Vidhyut Vitran Nigam Limited	22	PVVNL, Meerut
5	Kerela State Electricity Board	23	DVVNL, Agra
6	Madhya Pradesh State Electricity Board	24	CPDCL of AP ltd, Hyderabad
7	Gujrat Energy Transmission Corporation ltd.	25	APGENCO of AP ltd, Hyderabad
8	Uttar Gujrat Vij company ltd.	26	EPDCL of AP ltd, Vishakhapatnam
9	Dakshin Gujrat Vij company ltd.	27	NPDCL of AP ltd, Warangal
10	Paschim Gujrat Vij company ltd.	28	DPDCL of AP ltd, Triputi
11	Madhya Gujrat Vij company ltd.	29	WBSECL
12	Maharastra State electricity Distribution Corporation ltd.	30	North Delhi Power Limited, New Delhi
13	Maharastra State electricity Generation Corporation ltd.	31	CESC Limited
14	Maharastra State electricity Transmisssion Corpn.	32	TANGEDCO
15	Uttar Haryana Bijli Vitran Nigam, Ltd.	33	BSES Limited
16	Dakshin Haryana Bijli Vitran Nigam, Ltd.	34	HPSEB
17	BESCOM , Bangalore	35	NTECL , Chennai
18	Noida Power Corporation Ltd.		

#### SECTOR - 2 OIL & GAS CORPORATION

S. No.	Name of Customer	S. No.	Name of Customer
1	Indian Oil Corporation Ltd	10	MRPL, Mangalore
2	IOCL- PIPE LINE PROJECT	11	CPCL, Chennai
3	IOCL - REFINERY (8 Cities)	12	Boingaigaon Refinery & Petro Ltd. Assam
4	Gas Authority of India Ltd.	13	Haldia Perto Chemicals
5	Bharat Petroleum Corporation Ltd.	14	Reliance Industries Itd.
6	Hindustan Petroleum Corporation Ltd.	15	Reliance Petroleum Itd.
7	Mittal Petroleum	16	Kochi Petroleum ltd.
8	Oil India Ltd.	17	ESSAR Oil
9	Numaligarh Refinery Ltd.		

#### **SECTOR - 3 CEMENT**

S. No.	Name of Customer	S. No.	Name of Customer
1	ACC cement	7	Aditya birla Cement
2	Amrit Cement	8	Adhunik Cement
3	Vicat Sagar Cement	9	Mysore Cement
4	Raghuram Cement	10	L&T Cement
5	Ultratec Cement	11	Grasim Cement
6	JP Cement	12	Shree Cement, Beawar, Ajmer

#### SECTOR - 4 CORPORATE HOUSES

S. No.	Name of Customer	S. No.	Name of Customer
1	Reliance Energy	8	JSW Steel
2	Jai Prakash Industries Ltd. , New Delhi	9	TATA Steel
3	Monenet Ispat & Energy Ltd.	10	VISA Steel
4	Grasim Industries Ltd.	11	INDUS BUILDWELL ltd.
5	Jindal Steel & Power	12	Schneider electric
6	BILT graphics paper products ltd.	13	Adani Group
7	Welspun, Mumbai		

#### SECTOR - 5 PROMINENT EXPORT CUSTOMERS

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S. No.	Name of Customer	S. No.	Name of Customer
1	Ethio Cement, Ethiopia	21	Toyo Engineering Ltd., Japan
2	Mohan Energy Corporation Ltd.	22	Indorama ELEME Fertilizers & Chemicals Ltd., Nigeria
3	Angelique International,	23	Indorama Petrochemicals Ltd., Nigeria
4	Inter Trade Commercial services TANESCO, Tanzania	24	Hoima Sugar, Uganda
5	Afghan Solar, Afghanistan	25	Kakira Sugar, Uganda
6	VEETEK Nigeria	26	Technofab Engineering, (for Tanzania)
7	Nimra Jeddah Electric Est Saudi Arabia	27	World Trade Center, Nigeria
8	True Liberty Electrical & Contracting Company, Kuwait	28	Varun Beverages, Zambia
9	African Commodities Dubai (for Nigeria)	29	Geo Steel, LLC, Georgia
10	Duraplast INC, Liberia	30	Kati Substation, Mali
11	Yangaon Transformers, Myanmar	31	NET Health Ltd., Tanzania
12	UB Engineering, Dubai	32	VA Tech Wabag, (for Nepal)
13	Kinyara Sugar, Uganda	33	Kolam International, D.R. Congo
14	Silver Spring, Uganda	34	Nithya Paper, Srilanka
15	Supereme Electricals, Kolkata (for Nigeria)	35	Alacrity Production Systems Limited, Nigeria
16	Roofings & Rolling mills , Uganda	36	Arun Fabricators, Mauritius
17	Sameer Agriculture Kenya	37	Venture Global Tech, Qatar for RLOC Project
18	SESCO, Saudi Arabia	38	Anlima Energy, 110 MW Power Project Chittagong, Bangladesh
19	NIPP/PHCN, Nigeria	39	Hosaf Power, 114 MW Power Project Chittagong, Bangladesh
20	Polygroup, Ghana		

#### SECTOR - 6 EPC CONTRACTORS

S. No.	Name of Customer	S. No.	Name of Customer
1	ABB Limited	7	Alstom - Power Automation Systems
2	Larsen & Toubro - ECC	8	ESSAR Projects
3	Siemens	9	Sterling & Willson
4	Mcnally Bharat	10	Punj Lloyd
5	Sudhir Power projects Ltd.	11	Areva T & D Ltd.
6	A 2 Z maintainence and constuctions	12	Thyssenkrupp, Pune

#### SECTOR - 7 FERTILIZER

S. No.	Name of Customer	S. No.	Name of Customer
1	National Fertilizer Ltd.	4	IFFCO
2	ESSAR (Fertilizer)	5	Kanpur Fertilizers
3	Matrix		







Actual products may vary in colour, design, description and colour combination etc.

Although every effort has been made to ensure accuracy in the compilation of the technical detail within this publication. Specifications & performance data are constantly changing. Current details should therefore be checked with Havells Group.

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