

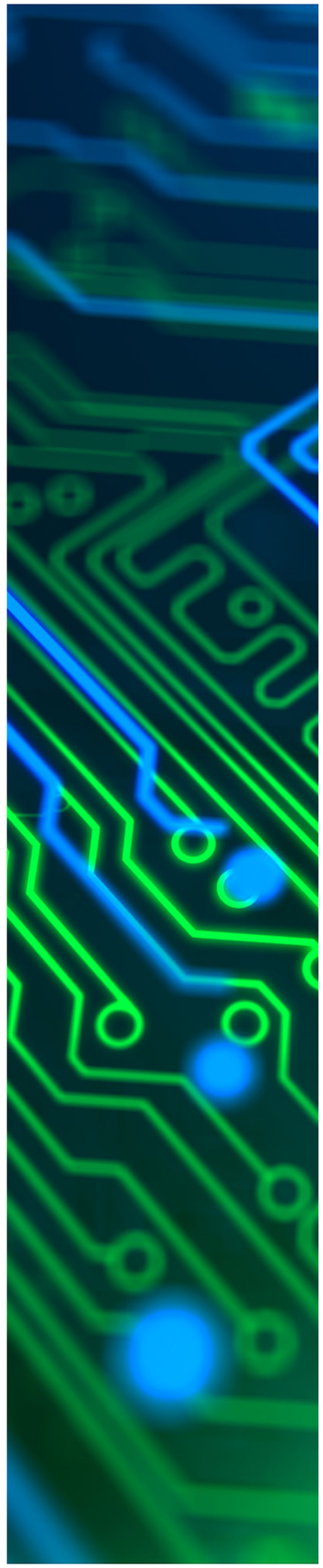
FEICHUN SPECIAL CABLES

Website Address www.reelingcable.com www.feichuncables.com
Whatsapp Account + 86 13855123218
Email Address Zihao.yang@feichuncables.com & Ziyu.huang@feichuncables.com

MEDIUM VOLTAGE CABLES







CONTENTS

PREFACE
- Company Profile 02

VOLTAGE DESIGNATION 04

CONSTRUCTIONAL FEATURES 09

QUALITY ASSURANCE
- Testing Procedure 14
- Advanced Testing Laboratory 16

TECHNICAL SECTION
- Single Core Unarmoured Cables 21
- Single Core Aluminium Wire Armoured Cables 25
- Three Core Unarmoured Cables 45
- Three Core Steel Wire Armoured Cable 49
- Three Core Steel Tape Armoured Cable 65

CURRENT RATING SECTION 70

DE-RATING & GROUP RATING FACTORS 76

SHORT CIRCUIT CURRENT RATING 86

MEDIUM VOLTAGE CABLES FOR SPECIAL APPLICATIONS 90

CABLE LAYING AND INSTALLATION GUIDELINES 98

CABLE DRUM HANDLING GUIDELINES 102



DEDICATED TO DELIVERING EXCELLENCE IN THE CABLE MANUFACTURING INDUSTRY

FEICHUN Industry SAOG develops, manufactures and distributes a totally integrated variety of electrical pro ducts, which include medium voltage power cables, low voltage power & control cables, instrumentation cab les, pilot cables, overhead power transmission line conductors and building wires. FEICHUN also offers c ables with special features and customized solutions.

Our cable and wire products provide a comprehensive range of construction material putting quality, compliance and a strong customer focus at the heart of operations.

MARKET SEGMENTS

- Utilities (Power & Water)
- Building and Construction Industries
- Oil & Gas and Petrochemicals
- Industrial, Mining & Processing Plants
- Transportation & Infrastructure
- Renewables

Being a leading cable supplier, we believe cables are fundamental to every project. By sharing our technical expertise and creating a highly customer-centric approach to how we operate, we can help our clients create cable connections that deliver the performance their projects demand.



VOLTAGE DESIGNATION

VOLTAGE DESIGNATION

A) RATED VOLTAGE:

Rated voltage grade of the cables is designated as U0/U (Um), where:

U0: rated power frequency voltage between phase & earth or metallic screen for which cable is suitable. Also, known as phase voltage or phase to neutral/earth.

U: rated power frequency voltage between phase conductors for which cable is suitable. Also, known as line voltage or phase to phase voltage.

U_m: maximum sustained power frequency voltage between phase conductors for which cable is suitable.

A.1: Rated voltage as per different specifications:

Voltage designations as per IEC 60502-2 & BS 6622 are different & as mentioned in below table, however, the insulation thickness & U_m as per IEC 60502-2 & BS 6622 are same which means cables as per IEC 60502-2 cables can be used for cables as per BS 6622 & vice-versa.

VOLTAGE GRADE AS PER IEC 2-60502	VOLTAGE GRADE AS PER BS EN 6622	NOMINAL INSULATION THICKNESS
3.6/6 (7.2) kV	3.8/6.6 (7.2) kV	2.5 mm (for 10mm² to 185mm²) 2.6 mm (for 240mm²) 2.8 mm (for 300mm²) 3.0 mm (for 400mm²) 3.2 mm (for > 400mm²)
6/10 (12) kV	6.35/11 (12) kV	3.4 mm
8.7/15 (17.5) kV	8.7/15 (17.5) kV	4.5 mm
12/20 (24) kV	12.7/22 (24) kV	5.5 mm
18/30 (36) kV	19/33 (36) kV	8.0 mm

B) SYSTEM CATEGORY:

The rated voltage of the cable for a given application shall be suitable for the operating conditions in the system in which the cable is used. To facilitate the selection of the cable, systems are divided into three categories:

Category A: This category comprises those systems in which any phase conductor that comes in contact with earth or an earth conductor is disconnected from the system within 1 min;

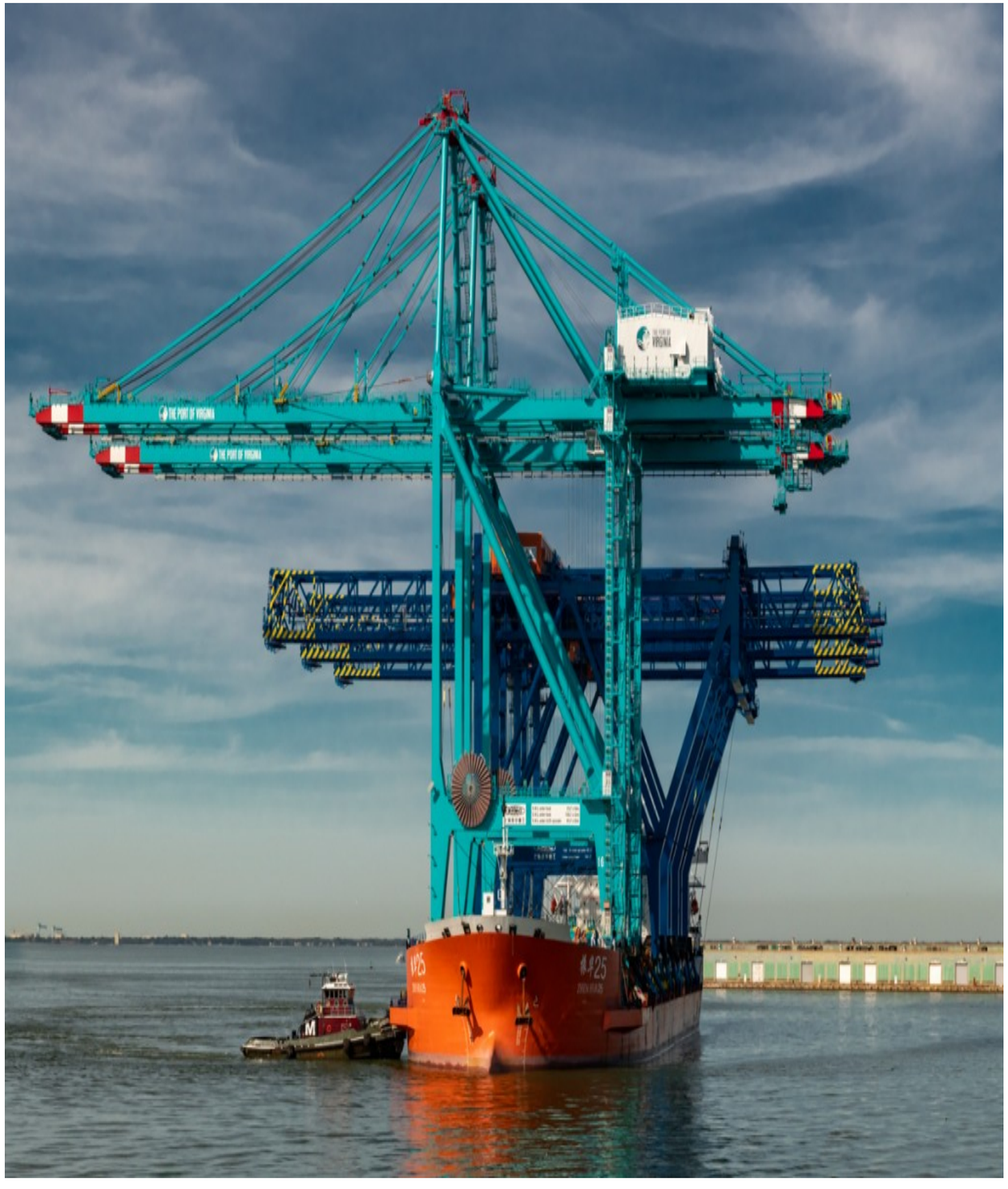
Category B: This category comprises those systems which, under fault conditions, are operated for a short time with one phase earthed. This period, according to IEC 60183, should not exceed 1 h. For cables covered by IEC 60502-2/BS 6622, a longer period, not exceeding 8 h on any occasion, can be tolerated. The total duration of earth faults in any year should not exceed 125 h;

Category C: This category comprises all systems which do not fall into category A or B.

It should be realized that in a system where an earth fault is not automatically and promptly isolated, the extra stresses on the insulation of cables during the earth fault reduce the life of the cables to a certain degree. If the system is expected to be operated fairly often with a permanent earth fault, it may be advisable to classify the system in category C.

The values of U_0 recommended for cables to be used in three-phase systems are listed in below table:

RATED SYSTEM VOLTAGE (kV)	SYSTEM CATEGORY (A/B/C)	HIGHEST SYSTEM VOLTAGE (U_m) (kV)	RATED VOLTAGE GRADE (U_0/U [U_m]) (kV)
6.0 or 6.6	A or B	7.2	3.6/6 (7.2)
6.0 or 6.6	C	7.2	6/10 (12)
10 or 11	A or B	12.0	6/10 (12)
10 or 11	C	12.0	8.7/15 (17.5)
15	A or B	17.5	8.7/15 (17.5)
15	C	17.5	12/20 (24)
20 or 22	A or B	24.0	12/20 (24)
20 or 22	C	24.0	18/30 (36)
30 or 33	A or B	36.0	18/30 (36)
30 or 33	C	36.0	-



MEDIUM VOLTAGE CABLES

MEDIUM VOLTAGE CABLES

CONSTRUCTIONAL FEATURES:

CONDUCTOR
Conductor is the metallic part of cables that is carrying the electric current. Better the conductivity, better is the material. Conductor materials are mainly:
i) Copper
ii) Aluminum

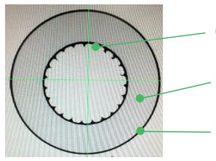
The conductor structure shall comply to the requirements of BS EN 60228 / IEC 60228.

Depending upon the application area, the conductors shall be water-tight.

CONDUCTOR SCREEN
An extruded layer of semi-conductive material is applied over the conductor. This layer acts to smooth out any irregularities and thus reduces the probability of protrusions into the insulating layer. Such protrusions into the insulation or into the semi-conducting layer increase the localized stress that may exceed the breakdown strength of the insulation, so the semi-conductive layer is acting as a stress control layer.

INSULATION
Each core conductor is insulated by extruded cross-linked **polyethylene**. The insulating compound is a developed material suitable for application through CCV technology. Upon customer request, a tree retardant' XLPE (TR-XLPE) insulation is used. The insulation thickness is selected based on the designated voltage grade complying with IEC 60502-2 & BS 6622.

INSULATION SCREEN
Over the insulation, an extruded layer of cross linked semi-conducting compound is applied. This layer, which has a very smooth surface, is a transition form the insulating material where the electric field exists to a conductive metallic screen, where the electric field is zero, so it will reduce the stress enhancement at the insulation layer. The insulation's shield layer could be bonded to the insulation or strippable type for easily removable to facilitate splicing and terminating.



Typical Cross-sectional Diagram of Triple Extrusion MV Layer

METALLIC SCREEN
Metallic screen is provided over the extruded insulation semi-conductive layer which is necessary to cancel out the electric field outside the cable and to provide a low resistance path for charging current to flow to ground. Depending upon the metallic short circuit current rating, the screening can be done either by Metallic Tape or Metallic Wires. Generally, CU Tape & CU Wires are in use. However, various other metallic tapes / wires e.g. Aluminum etc. can also be used.

CORE IDENTIFICATION
Core identification is provided either by provided Colored ID Tape below the metallic screen or by number printing over the Black colored insulation screen.

CORE ASSEMBLY
In case of multi-core cables, the screened cores are laid up together with non-hygroscopic polypropylene (PP) filler. Fillers are used to maintain cable circularity. Extruded bedding material can also be used in place of PP Fillers to maintain the cable circularity. However, it is always recommended to use PP Fillers due to lighter weight & better flexibility. Binder tape is provided to hold the laid-up assembly along with PP Fillers.

SEPARATION SHEATH
Extruded bedding layer serves as a bedding for armour wires / tapes. This also helps to protect the laid-up core assembly from damage. Depending upon the outer sheath material & special flame retardant property, the separation sheath can be of PVC, LSZH & PE.

ARMOURING
Armouring provides mechanical protection against crushing forces. Armour also can serve as an Earth Continuity Conductor (ECC). The Armoring type could be:

- Wire armouring.
- Double Tape armouring.

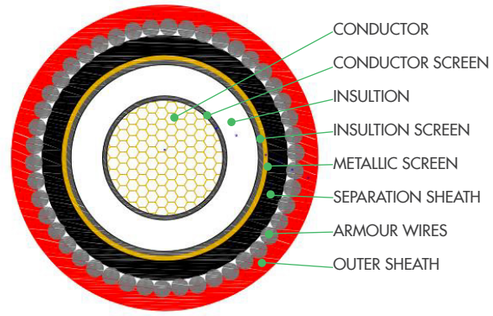
Armouring material can be galvanized steel for multi-core cables and aluminium for single core cables.

Depending upon the cable application & special requirement from customer's end, OCI can provided different kinds of tapes over & below the armouring.

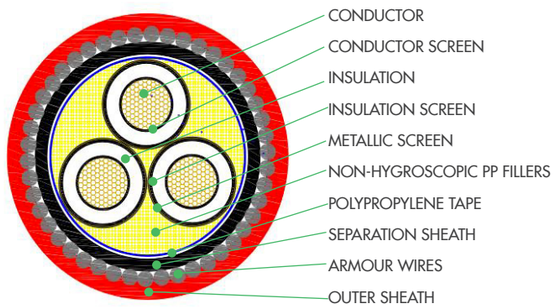
OUTER SHEATH
It is the outer protection part of the cable against the surrounding environment. Depending upon the special properties & the application area, the outer sheath material can be of PVC, LSZH & PE. Properties of different outer sheath material is as explained in table mentioned on next page. As a special application, special additives are added to meet below properties:

- Anti-rodent & termite resistant property.
- UV resistant property.
- Oil resistant property.
- Flame retardant property.

Additionally, on customer's request, a layer of graphite coated, or extruded semi-conductive layer is applied over the outer sheath so as to perform sheath integrity test at site after laying.



Typical Cross-sectional Diagram Of Single Core Armored Medium Voltage Cable



Typical Cross-sectional Diagram Of Three Core Armored Medium Voltage Cable

SPECIAL CHARACTERISTIC

OXYGEN INDEX
The criterion for burning is presence of percentage of oxygen in air. By mixing oxygen and nitrogen at various percentages this test finds at what percentage of oxygen the standard specimen starts burning. Higher the oxygen index higher the resistance to get ignited.

TEMPERATURE INDEX
Temperature index is the temperature at which the oxygen index of the material becomes 21. This test is carried out usually by extrapolation after the oxygen index is measured at various temperatures.

SMOKE DENSITY
This parameter relates to measuring and observing relative amounts of smoke produced by the burning or decomposition of materials. This test is carried out in accordance with ASTM D 2843. The measurements are made in terms of loss of light transmission through a collected volume of smoke produced under control standardized conditions.

ACID GAS EMISSION
During burning of cable materials acid gases are evolved especially hydrogen chloride. The gas emission is evaluated in accordance with test method IEC 60754-1, where approximately 1 gm. of the material is pyrolyzed at 800°C in a combustion tube and resultant gases are analyzed.

FLAME RETARDANCE (IEC 60332-1)
A single cable sample is clamped vertically. The flame is applied for a period of time depending upon the diameter of the cable. The test requirement is that after all burning has ceased the charred or affected portion shall not have reached within 50 mm from the top clamp.

FLAME RETARDANCE TEST (IEC 60332-3)
This test is carried out to check flame retardant properties of bunched cables. Three categories of tests namely category "A", "B" and "C" have been defined according to quantity of combustible material available over unit length. Cable pieces are tied on vertical ladder and flame is applied from a horizontal ladder. After the specified time the burner is removed. All parameters are pre-defined according to specification. The charred portion is measured and compared with the standards to decide on acceptability.

SPECIAL MATERIAL PROPERTY	APPLICABLE TEST STANDARDS	DIFFERENT GRADES OF SHEATHING MATERIAL						
		PVC Type ST 2				ST 8	PE ST 7	
		FR	FRRT	FRLS	FROR	LSZH	PE	FRPE
Oxygen Index	ASTM D 2863	≥ 29	≥29	≥29	≥ 29	≥29	N/A	≥28
Temperature Index	ASTM D 2863	≥ 250°C	≥250°C	≥250°C	≥250°C	≥250°C	N/A	≥250°C
Smoke Density Rating	ASTM D 2843	N/A	N/A	≤ 60%	N/A	N/A	N/A	N/A
Light Transmission	IEC 61034-1 & 2	N/A	N/A	N/A	N/A	≥60%	N/A	≥60%
Acid Gas Generation	IEC 60754-1	N/A	≤17%	≤ 20%	N/A	≤ 0.5%	≤ 0.5%	≤ 0.5%
Flammability Test	IEC 60332-1	Yes	Yes	Yes	Yes	Yes	N/A	Yes
Flammability Test, CAT C	IEC 60332-3-24	Yes	Yes	Yes	Yes	Yes	N/A	Yes
Flammability Test, CAT A	IEC 60332-3-22	Yes	Yes	Yes	Yes	N/A	N/A	N/A
UV Resistance Property	ASTM G 155	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Anti-Rodent & Termite Resistant Property	Choice & No-Choice External Test	Yes	Yes	Yes	Yes	Yes	N/A	N/A

Note: These properties of material & cable are provided as per project requirement and subject to change based on manufacturing practices.

FEICHUN QUALITY ASSURANCE FOR MV CABLES

In order to ensure the best quality products, it is essential to test and inspect the product at each stage of manufacturing including raw materials and finished product.

FEICHUN Quality Assurance System includes:

RAW MATERIALS INSPECTION:
All the raw materials are sourced from internationally approved companies, known for their quality products. Once the material is received with their product certificate, FEICHUN quality team tests and inspects the sam e again. Only those materials which meet FEICHUN internal standards are released for production.

FINISHED PRODUCT INSPECTION:
FEICHUN products are fully tested to the applicable standard to which it is manufactured before leaving the factory.



MV CABLE'S TESTING PROCEDURE

MV CABLE'S
TESTING PROCEDURE

1. ROUTINE TESTS
Routine tests are normally carried out on each manufactured length of cable. The routine tests carried out in our manufacturing facilities are as follows:

a) Measurement of the electrical resistance of conductors;
b) Partial discharge test on cables having cores with conductor screens and insulation screens;
c) Voltage test.

2. SAMPLE TESTS
The sample tests carried out in our manufacturing facilities are as follows:

a) Conductor examination;
b) Check of dimensions;
c) Voltage test for cables of rated voltage above 3.6 / 6 (7.2) kV;
d) Hot set test for XLPE insulations

3. TYPE TESTS
When type tests have been successfully performed on a type of cable covered by this catalogue with a specific conductor cross sectional area and rated voltage, type approval shall be accepted as valid for cables of the same type with other conductor cross-sectional areas and/or rated voltages, provided the following three conditions are all satisfied:

a) The same materials, i.e. insulation and semi-conducting screens, and manufacturing process are used;
b) The conductor cross-sectional area is not larger than that of the tested cable, with the exception that all cross-sectional areas up to and including 630mm² are approved when the cross-sectional area of the previously tested cable is in the range of 95mm² to 630mm² inclusive;
c) The rated voltage is not higher than that of the tested cable.

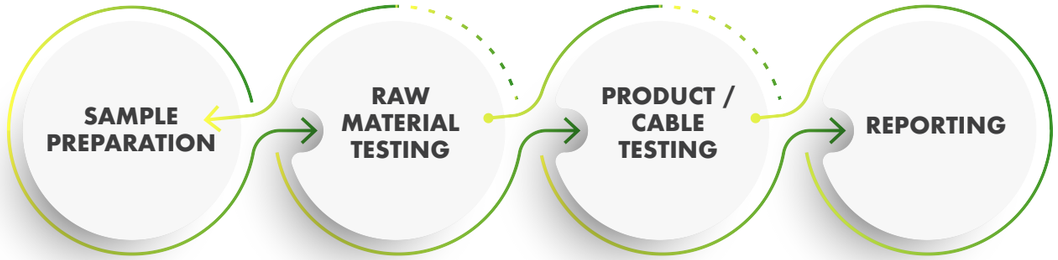
Approval shall be independent of the conductor material.

FEICHUN ' ADVANCED TESTI
NG LABORATORY

FEICHUN ' Advanced Testing Laboratory (ATL) is one of its kind laboratory equipped with modern cabl e testing equipment. ATL has the capability to perform complete cable testing as per the international stan dards. This includes regular tests like complete cable type test, special tests like accelerated ageing test, flame retardancy, smoke density, toxic gas emission, fire tests as per various IEC & BS standards and ma ny more. This lab is fully dedicated to new product developments & specialized cable's testing. Some key highlights of the ATL are:

- Capable of doing complete type test, research and development and specifically Accelerated Ageing test for MV cable which is among few labs in GCC.
- Independent building spanned over 1500 m².
- ATL follows certifications of ISO 9001, ISO 14001, OHSAS 18001 & BASEC Product Certification Requirements (PCR).

ATL CAPABILITIES: HOW WE DO IT?



SOME OF THE TESTING EQUIPMENT'S FROM OMAN CABLE'S ATL LAB ARE LISTED UNDER:
- Accelerated Ageing & HV Breakdown test.

FIRE AND SMOKE TESTING EQUIPMENT'S:
- Smoke density – 3m cube test chamber.
- Vertical flame propagation test chamber.
- Fire survival circuit integrity test BS-6387 'CW&Z'.
- Fire survival circuit integrity test F120 & PH120.
- Cone Calorimeter.
- Oxygen Index test apparatus.

MECHANICAL TESTING:
- Tensile & Elongation.
- Hot set test for insulation.
- Hardness.

MICROSCOPY

ELECTRICAL:
- Volume resistivity.
- Conductivity.

WEATHERABILITY:
- UV testing
- Moisture content testing

HALOGEN & FLUORINE CONTENT

AGING CAPABILITY

1. ACCELERATED AGEING & HV BREAKDOWN EQUIPMENT

This test performed Accelerated ageing followed by High Voltage Breakdown test on medium voltage cable cores is to assess the water tree growth, life expectancy of cables during service life and minimizing Operational risks to ensure system reliability. Our main objective of this test is to provide standardized qualification test method to give reasonable assurance that an extruded, medium-voltage cable design will meet minimum performance requirements in a wet environment.

OCI'S ACCELERATED AGEING TEST TANK



HIGH VOLTAGE BREAKDOWN TRANSFORMER SETUP AT OCI'S ADVANCED TESTING LAB



ACCELERATED AGEING TRANSFORMERS AT OCI'S ADVANCED TESTING LAB





2. OXYGEN INDEX TEST:

This test performed Accelerated ageing followed by High Voltage Breakdown test on medium voltage cable cores is to assess the water tree growth, life expectancy of cables during service life and minimizing Operational risks to ensure system reliability. Our main objective of this test is to provide standardized qualification test method to give reasonable assurance that an extruded, medium-voltage cable design will meet minimum performance requirements in a wet environment.



4. VERTICAL FLAME PROPAGATION TEST

This test chamber is use for assessment of vertical flame spread of vertically mounted bunched wires or cables, electrical or optical under defined conditions.



3. SMOKE DENSITY – 3M CUBE TEST

The 3 Meter Cube is used for measuring smoke emission when electric cables are burned under defined conditions (IEC 61034). An example would be a few cables burned horizontally. These units are produced to meet the specification used in many electric cable tests.





MV Cables
Product Range

SINGLE CORE MEDIUM VOLTAGE CABLE WITH COPPER CONDUCTOR, XLPE INSULATION, CU TAPE METALLIC SCREEN, UNARMOURED & PVC SHEATH

APPLICATION

Suitable for installations indoors: mostly in power supply stations and outdoors: in cable ducts, underground, and on cable trays for industries, switchboards and power stations.

CABLE CONSTRUCTION

Single Core Stranded Annealed Plain Copper Conductor, Extruded Semi-conductive layer of conductor screen, XLPE insulation, Extruded Semi-conductive layer of insulation screen, Copper Tape Metallic Screen and Overall Extruded PVC Outer Sheath.

1. Conductor
Copper Conductor

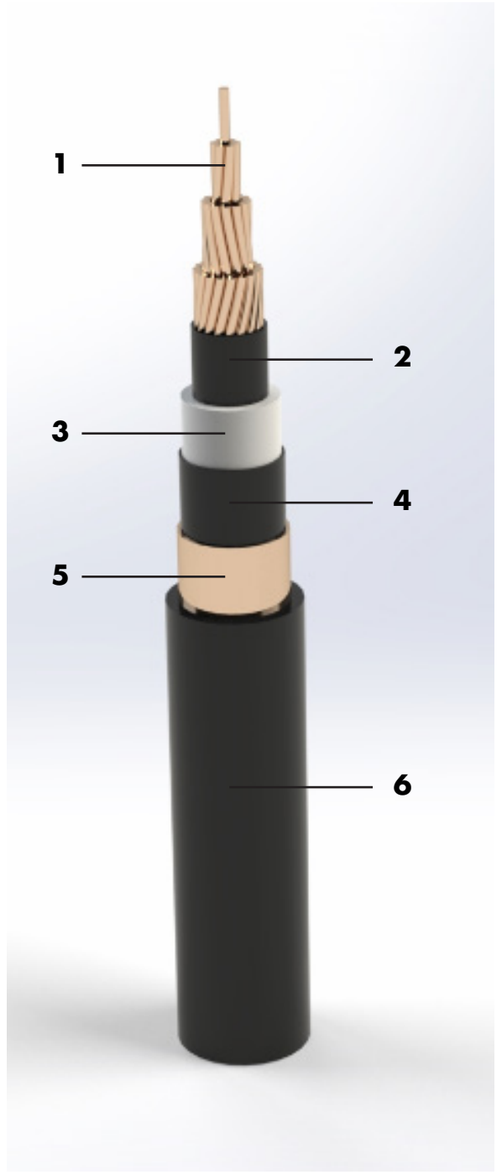
2. Conductor Screen
Semi-conducting Conductor Screen

3. Insulation
XLPE

4. Insulation Screen
Semi-conducting Insulation Screen

5. Metallic Screen
Copper Tape

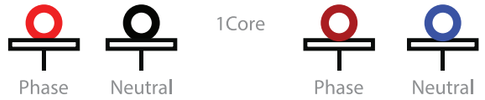
6. Outer Sheath
Extruded Overall PVC Outer Sheath.



APPLICATION STANDARDS

Medium Voltage Cables are designed and tested to meet the requirements of below standard:
IEC 60502-2

CORE COLOUR IDENTIFICATION:



However, FEICHUN also supply a wide range of alternative designs to meet customer's special project requirements.

TYPICAL CHARACTERISTICS:



VOLTAGE GRADE:

IEC 60502-2

- 3.6/6 (7.2) kV
- 6/10 (12) kV
- 8.7/15 (17.5) kV
- 12/20 (22) kV
- 18/30 (36) kV

CABLE INSTALLATION



In ground with protection | In free air Ladders/ Trays | Minimum Bending Radius | In Trench | Internal Cabling

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_o & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(µF/km)	(A/km)
Table 1 : 3.6/6 (7.2)kV or 3.8/6.6 (7.2) kV Earthed System										**(at Uo=3.6 kV)**
25	16.0	445	1000	0.7270	0.928	0.126	0.937	1.623	0.29	0.33
35	17.0	550	1000	0.5240	0.669	0.120	0.680	1.178	0.32	0.36
50	18.5	685	1000	0.3870	0.494	0.116	0.507	0.878	0.36	0.41
70	20.0	890	1000	0.2680	0.343	0.106	0.359	0.622	0.41	0.46
95	21.5	1165	1000	0.1930	0.247	0.101	0.267	0.462	0.47	0.53
120	23.0	1415	1000	0.1530	0.197	0.097	0.220	0.381	0.52	0.59
150	24.5	1690	1000	0.1240	0.160	0.095	0.186	0.322	0.56	0.63
185	26.5	2045	1000	0.0991	0.129	0.092	0.158	0.274	0.61	0.69
240	29.0	2615	1000	0.0754	0.099	0.089	0.133	0.230	0.66	0.75
300	32.0	3225	1000	0.0601	0.080	0.088	0.119	0.206	0.68	0.77
400	35.5	4050	1000	0.0470	0.064	0.086	0.107	0.185	0.72	0.81
500	39.0	5115	1000	0.0366	0.052	0.084	0.099	0.171	0.75	0.85
630	42.5	6495	500	0.0283	0.043	0.082	0.093	0.161	0.84	0.95
800	48.0	8255	500	0.0221	0.036	0.081	0.089	0.154	0.97	1.10
1000	52.0	10225	500	0.0176	0.031	0.079	0.085	0.147	1.07	1.21
Table 2: 6/10 (12)kV or 6.35/11 (12) kV Earthed System										**(at U_o=6 kV)**
25	17.5	495	1000	0.7270	0.928	0.132	0.937	1.623	0.22	0.41
35	19.0	610	1000	0.5240	0.669	0.127	0.681	1.180	0.25	0.47
50	20.0	745	1000	0.3870	0.494	0.121	0.509	0.882	0.28	0.53
70	22.0	965	1000	0.2680	0.343	0.112	0.361	0.625	0.32	0.60
95	23.5	1235	1000	0.1930	0.247	0.106	0.269	0.466	0.36	0.68
120	25.0	1495	1000	0.1530	0.196	0.103	0.221	0.383	0.39	0.74
150	26.5	1765	1000	0.1240	0.160	0.100	0.189	0.327	0.42	0.79
185	28.5	2135	1000	0.0991	0.128	0.097	0.161	0.279	0.46	0.87
240	31.0	2705	1000	0.0754	0.099	0.094	0.137	0.237	0.52	0.98
300	33.0	3290	1000	0.0601	0.080	0.090	0.120	0.208	0.57	1.07
400	36.0	4095	1000	0.0470	0.064	0.087	0.108	0.187	0.64	1.21
500	39.0	5140	500	0.0366	0.052	0.084	0.099	0.171	0.71	1.34
630	43.0	6520	500	0.0283	0.043	0.082	0.093	0.161	0.79	1.49
800	48.5	8300	500	0.0221	0.036	0.082	0.090	0.156	0.91	1.72
1000	52.5	10255	500	0.0176	0.031	0.080	0.086	0.149	1.01	1.90
Table 3: 8.7/15 (17.5)kV Earthed System										**(at U_o=8.7 kV)**
25	20.0	575	1000	0.7270	0.928	0.140	0.939	1.626	0.18	0.49
35	21.0	695	1000	0.5240	0.669	0.134	0.682	1.181	0.20	0.55
50	22.5	830	1000	0.3870	0.494	0.128	0.510	0.883	0.22	0.60
70	24.0	1045	1000	0.2680	0.343	0.118	0.363	0.629	0.25	0.68
95	26.0	1335	1000	0.1930	0.247	0.113	0.272	0.471	0.28	0.77
120	27.5	1600	1000	0.1530	0.196	0.109	0.224	0.388	0.31	0.85
150	29.0	1875	1000	0.1240	0.160	0.106	0.192	0.333	0.33	0.90
185	30.5	2250	1000	0.0991	0.128	0.101	0.163	0.282	0.36	0.98
240	33.0	2815	1000	0.0754	0.099	0.098	0.139	0.241	0.40	1.09
300	35.5	3420	1000	0.0601	0.080	0.095	0.124	0.215	0.44	1.20
400	38.5	4240	1000	0.0470	0.064	0.091	0.111	0.192	0.49	1.34
500	41.5	5295	500	0.0366	0.052	0.088	0.102	0.177	0.55	1.50
630	45.5	6690	500	0.0283	0.042	0.086	0.096	0.166	0.61	1.67
800	50.5	8475	500	0.0221	0.036	0.084	0.091	0.158	0.70	1.91
1000	55.0	10460	500	0.0176	0.031	0.083	0.089	0.154	0.77	2.10

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_o & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(µF/km)	(A/km)
Table 4: 12/20 (24)kV or 12.7/22 (24)kV Earthed System										**(at Uo=12 kV)**
35	23.0	765	1000	0.5240	0.669	0.139	0.683	1.183	0.17	0.64
50	24.5	915	1000	0.3870	0.494	0.133	0.512	0.887	0.19	0.72
70	26.0	1140	1000	0.2680	0.343	0.123	0.364	0.630	0.22	0.83
95	28.0	1435	1000	0.1930	0.247	0.117	0.273	0.473	0.24	0.90
120	29.5	1695	1000	0.1530	0.196	0.113	0.226	0.391	0.26	0.98
150	31.0	1985	1000	0.1240	0.160	0.110	0.194	0.336	0.28	1.06
185	32.5	2355	1000	0.0991	0.128	0.105	0.166	0.288	0.31	1.17
240	35.0	2940	1000	0.0754	0.098	0.101	0.141	0.244	0.34	1.28
300	37.5	3555	1000	0.0601	0.080	0.098	0.127	0.220	0.37	1.39
400	40.5	4380	500	0.0470	0.064	0.094	0.114	0.197	0.41	1.55
500	43.5	5445	500	0.0366	0.051	0.091	0.104	0.180	0.46	1.73
630	47.5	6855	500	0.0283	0.042	0.089	0.098	0.170	0.51	1.92
800	52.5	8655	500	0.0221	0.035	0.087	0.094	0.163	0.58	2.19
1000	57.0	10635	500	0.0176	0.031	0.085	0.090	0.156	0.64	2.41
Table 5: 18/30 (36)kV or 19/33 (36)kV Earthed System										**(at U_o=18 kV)**
50	29.5	1150	1000	0.3870	0.494	0.145	0.515	0.892	0.15	0.85
70	31.5	1395	1000	0.2680	0.343	0.135	0.369	0.639	0.16	0.90
95	33.5	1705	1000	0.1930	0.247	0.129	0.279	0.483	0.18	1.02
120	35.0	1975	1000	0.1530	0.196	0.124	0.232	0.402	0.20	1.13
150	36.0	2265	1000	0.1240	0.159	0.119	0.199	0.345	0.21	1.19
185	38.0	2665	1000	0.0991	0.128	0.115	0.172	0.298	0.23	1.30
240	40.5	3270	500	0.0754	0.098	0.110	0.147	0.255	0.25	1.41
300	42.5	3885	500	0.0601	0.079	0.106	0.132	0.229	0.27	1.53
400	46.0	4755	500	0.0470	0.063	0.102	0.120	0.208	0.30	1.70
500	49.0	5830	500	0.0366	0.051	0.099	0.111	0.192	0.33	1.87
630	53.0	7290	500	0.0283	0.041	0.095	0.103	0.178	0.37	2.09
800	58.0	9125	500	0.0221	0.034	0.093	0.099	0.171	0.42	2.38
1000	62.0	11140	500	0.0176	0.030	0.090	0.095	0.165	0.46	2.60

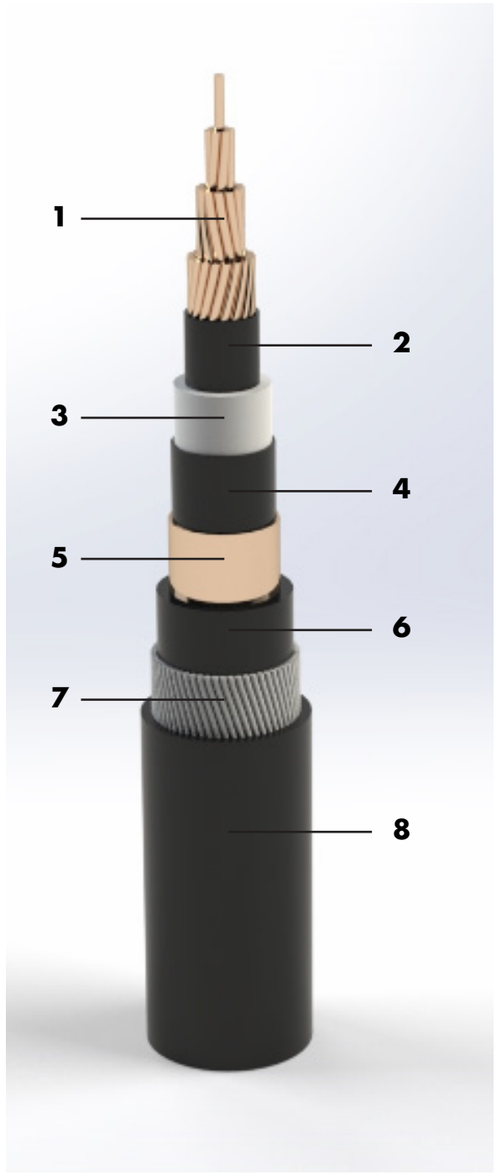
SINGLE CORE MEDIUM VOLTAGE CABLE WITH COPPER CONDUCTOR, XLPE INSULATION, CU TAPE METALLIC SCREEN, ALUMINIUM WIRE ARMOURED & PVC SHEATH.

APPLICATION

Suitable for installations indoors: mostly in power supply stations and outdoors: in cable ducts, underground, and on cable trays for industries, switch-boards and power stations.

CABLE CONSTRUCTION

Single Core Stranded Annealed Plain Copper Conductor, Extruded Semi-conductive layer of conductor screen, XLPE insulation, Extruded Semi-conductive layer of insulation screen, Copper Tape Metallic Screen , Extruded PVC separation sheath, Aluminium Round Wire Armour and Overall Extruded PVC Outer Sheath.



1. Conductor
Copper Conductor

2. Conductor Screen
Semi-conducting Conductor Screen

3. Insulation
XLPE

4. Insulation Screen
Semi-conducting Insulation Screen

5. Metallic Screen
Copper Tape

6. Separation Sheath
Extruded PVC

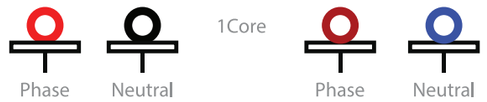
7. Armour
Aluminium Round Wire

8. Outer Sheath
Extruded Overall PVC Outer Sheath.

APPLICATION STANDARDS

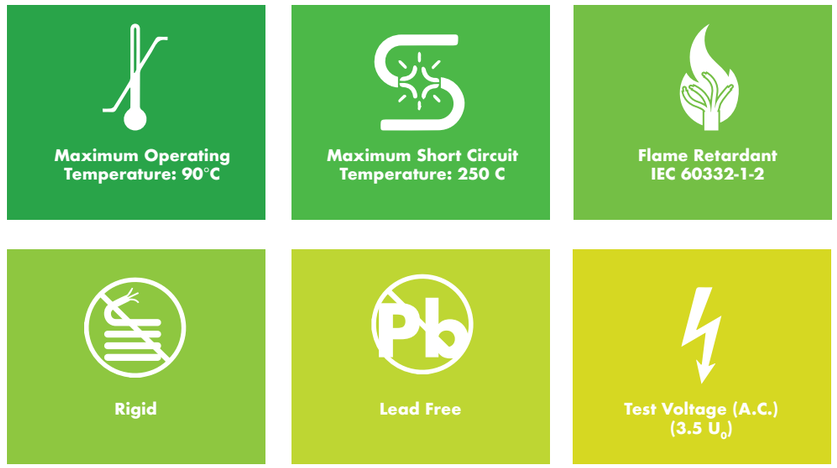
Medium Voltage Cables are designed and tested to meet the requirements of below standard:
IEC 60502-2
BS 6622

CORE COLOUR IDENTIFICATION:



However, FEICHUN also supply a wide range of alternative designs to meet customer's special project requirements.

TYPICAL CHARACTERISTICS:



VOLTAGE GRADE:

IEC 60502-2
- 3.6/6 (7.2) kV
- 6/10 (12) kV
- 8.7/15 (17.5) kV
- 12/20 (22) kV
- 18/30 (36) kV

BS 6622
- 3.8/6.6 (7.2) kV
- 6.35/11 (12) kV
- 8.7/15 (17.5) kV
- 12.7/22 (24) kV
- 19/33 (36) kV

CABLE INSTALLATION



In ground with protection | In free air Ladders/ Trays | Minimum Bending Radius | In Trench | Internal Cabling

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(µF/km)	(A/km)
Table 1 : 3.6/6 (7.2)kV or 3.8/6.6 (7.2) kV Earthed System										**(at Uo=3.6 kV)**
25	21.5	710	1000	0.7270	0.928	0.145	0.939	1.626	0.29	0.33
35	22.5	830	1000	0.5240	0.669	0.138	0.683	1.183	0.32	0.36
50	24.0	985	1000	0.3870	0.494	0.132	0.511	0.885	0.36	0.41
70	25.5	1220	1000	0.2680	0.343	0.122	0.364	0.630	0.41	0.46
95	27.5	1520	1000	0.1930	0.247	0.116	0.273	0.473	0.47	0.53
120	29.0	1785	1000	0.1530	0.196	0.112	0.226	0.391	0.52	0.59
150	30.5	2085	1000	0.1240	0.160	0.109	0.194	0.336	0.56	0.63
185	32.5	2545	1000	0.0991	0.128	0.105	0.166	0.288	0.61	0.69
240	35.5	3160	1000	0.0754	0.098	0.102	0.141	0.244	0.66	0.75
300	38.0	3820	1000	0.0601	0.079	0.099	0.127	0.220	0.68	0.77
400	41.5	4700	500	0.0470	0.064	0.096	0.115	0.199	0.72	0.81
500	46.5	6010	500	0.0366	0.051	0.096	0.109	0.189	0.75	0.85
630	50.5	7485	500	0.0283	0.042	0.092	0.101	0.175	0.84	0.95
800	55.5	9365	500	0.0221	0.035	0.090	0.097	0.168	0.97	1.10
1000	60.0	11440	500	0.0176	0.030	0.088	0.093	0.161	1.07	1.21
Table 2: 6/10 (12)kV or 6.35/11 (12) kV Earthed System										**(at U_0=6 kV)**
25	23.0	790	1000	0.7270	0.928	0.149	0.940	1.628	0.22	0.41
35	24.5	920	1000	0.5240	0.669	0.143	0.684	1.185	0.25	0.47
50	25.5	1070	1000	0.3870	0.494	0.136	0.512	0.887	0.28	0.53
70	27.5	1315	1000	0.2680	0.343	0.126	0.365	0.632	0.32	0.60
95	29.0	1615	1000	0.1930	0.247	0.120	0.275	0.476	0.36	0.68
120	30.5	1895	1000	0.1530	0.196	0.115	0.227	0.393	0.39	0.74
150	33.0	2280	1000	0.1240	0.160	0.114	0.196	0.339	0.42	0.79
185	34.5	2665	1000	0.0991	0.128	0.109	0.168	0.291	0.46	0.87
240	37.0	3275	1000	0.0754	0.098	0.105	0.144	0.249	0.52	0.98
300	39.5	3900	500	0.0601	0.079	0.102	0.129	0.223	0.57	1.07
400	42.5	4775	500	0.0470	0.063	0.097	0.116	0.201	0.64	1.21
500	47.0	6040	500	0.0366	0.051	0.096	0.109	0.189	0.71	1.34
630	51.0	7530	500	0.0283	0.042	0.093	0.102	0.177	0.79	1.49
800	56.0	9395	500	0.0221	0.035	0.091	0.097	0.168	0.91	1.72
1000	60.5	11490	500	0.0176	0.030	0.089	0.094	0.163	1.01	1.90
Table 3: 8.7/15 (17.5)kV Earthed System										**(at U_0=8.7 kV)**
25	25.5	905	1000	0.7270	0.928	0.156	0.941	1.630	0.18	0.49
35	27.0	1040	1000	0.5240	0.669	0.149	0.685	1.186	0.20	0.55
50	28.0	1190	1000	0.3870	0.494	0.142	0.514	0.890	0.22	0.60
70	29.5	1435	1000	0.2680	0.343	0.131	0.367	0.636	0.25	0.68
95	32.0	1825	1000	0.1930	0.247	0.126	0.277	0.480	0.28	0.77
120	34.0	2120	1000	0.1530	0.196	0.122	0.231	0.400	0.31	0.85
150	35.0	2420	1000	0.1240	0.160	0.117	0.198	0.343	0.33	0.90
185	37.0	2825	1000	0.0991	0.128	0.113	0.171	0.296	0.36	0.98
240	39.5	3440	500	0.0754	0.098	0.109	0.147	0.255	0.40	1.09
300	41.5	4075	500	0.0601	0.079	0.105	0.131	0.227	0.44	1.20
400	46.0	5130	500	0.0470	0.063	0.102	0.120	0.208	0.49	1.34
500	49.0	6250	500	0.0366	0.051	0.099	0.111	0.192	0.55	1.50
630	53.5	7745	500	0.0283	0.041	0.096	0.104	0.180	0.61	1.67
800	58.5	9665	500	0.0221	0.034	0.094	0.100	0.173	0.70	1.91
1000	63.0	11760	500	0.0176	0.030	0.091	0.096	0.166	0.77	2.10

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(µF/km)	(A/km)
Table 4: 12/20 (24)kV or 12.7/22 (24)kV Earthed System										**(at Uo=12 kV)**
35	29.0	1140	1000	0.5240	0.669	0.154	0.686	1.188	0.17	0.64
50	30.0	1305	1000	0.3870	0.494	0.146	0.515	0.892	0.19	0.72
70	32.5	1640	1000	0.2680	0.343	0.137	0.369	0.639	0.22	0.83
95	34.5	1965	1000	0.1930	0.247	0.131	0.280	0.485	0.24	0.90
120	36.0	2250	1000	0.1530	0.196	0.125	0.232	0.402	0.26	0.98
150	37.5	2565	1000	0.1240	0.159	0.122	0.200	0.346	0.28	1.06
185	39.0	2965	1000	0.0991	0.128	0.117	0.173	0.300	0.31	1.17
240	41.5	3590	500	0.0754	0.098	0.112	0.149	0.258	0.34	1.28
300	45.0	4410	500	0.0601	0.079	0.110	0.135	0.234	0.37	1.39
400	48.0	5295	500	0.0470	0.063	0.105	0.122	0.211	0.41	1.55
500	51.5	6445	500	0.0366	0.051	0.102	0.114	0.197	0.46	1.73
630	55.5	7950	500	0.0283	0.041	0.098	0.106	0.184	0.51	1.92
800	60.5	9890	500	0.0221	0.034	0.096	0.102	0.177	0.58	2.19
1000	65.0	11980	500	0.0176	0.029	0.093	0.097	0.168	0.64	2.41
Table 5: 18/30 (36)kV or 19/33 (36)kV Earthed System										**(at U_0=18 kV)**
50	36.0	1720	1000	0.3870	0.494	0.157	0.518	0.897	0.15	0.85
70	38.0	1980	1000	0.2680	0.343	0.147	0.373	0.646	0.16	0.90
95	39.5	2330	1000	0.1930	0.247	0.139	0.283	0.490	0.18	1.02
120	41.0	2625	500	0.1530	0.196	0.134	0.237	0.410	0.20	1.13
150	44.0	3105	500	0.1240	0.159	0.132	0.207	0.359	0.21	1.19
185	45.5	3540	500	0.0991	0.128	0.126	0.180	0.312	0.23	1.30
240	48.0	4185	500	0.0754	0.098	0.121	0.156	0.270	0.25	1.41
300	50.5	4880	500	0.0601	0.079	0.117	0.141	0.244	0.27	1.53
400	53.5	5795	500	0.0470	0.063	0.112	0.129	0.223	0.30	1.70
500	57.0	6980	500	0.0366	0.050	0.108	0.119	0.206	0.33	1.87
630	60.5	8505	500	0.0283	0.041	0.104	0.112	0.194	0.37	2.09
800	66.0	10495	500	0.0221	0.034	0.101	0.107	0.185	0.42	2.38
1000	70.5	12635	500	0.0176	0.029	0.098	0.102	0.177	0.46	2.60

SINGLE CORE MEDIUM VOLTAGE CABLE WITH COPPER CONDUCTOR, XLPE INSULATION, CU TAPE METALLIC SCREEN, DOUBLE ALUMINIUM TAPE ARMOURED & PVC SHEATH.

APPLICATION

Suitable for installations indoors: mostly in power supply stations and outdoors: in cable ducts, underground, and on cable trays for industries, switch-boards and power stations.

CABLE CONSTRUCTION

Single Core Stranded Annealed Plain Copper Conductor, Extruded Semi-conductive layer of conductor screen, XLPE insulation, Extruded Semi-conductive layer of insulation screen, Copper Tape Metallic Screen , Extruded PVC separation sheath, Double Aluminium Tape Armour and Overall Extruded PVC Outer Sheath.

1. Conductor
Copper Conductor

2. Conductor Screen
Semi-conducting Conductor Screen

3. Insulation
XLPE

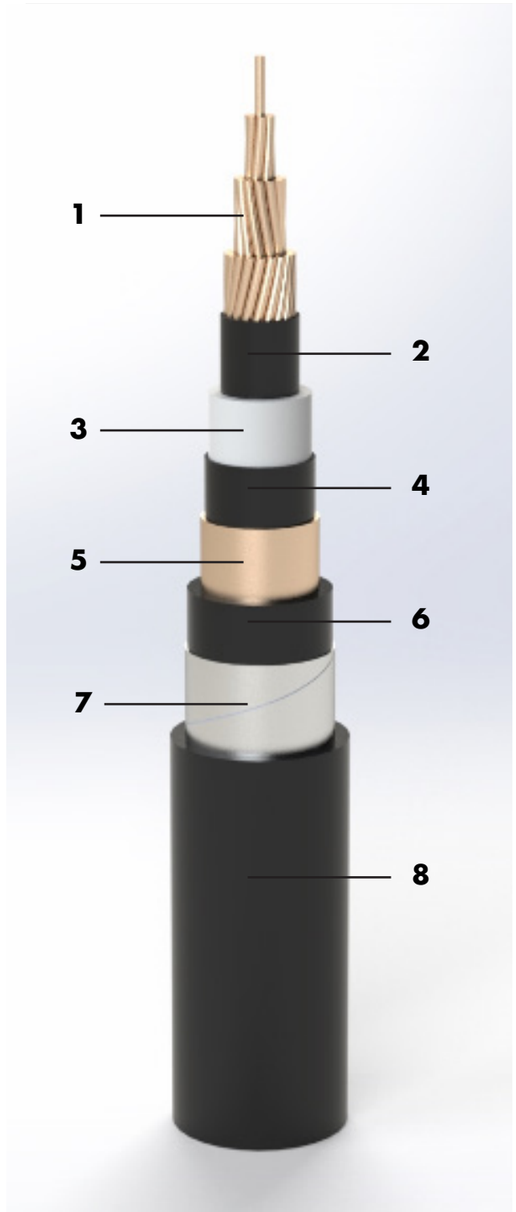
4. Insulation Screen
Semi-conducting Insulation Screen

5. Metallic Screen
Copper Tape

6. Separation Sheath
Extruded PVC

7. Armour
Double Aluminium Tape Armour

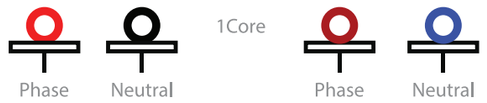
8. Outer Sheath
Extruded Overall PVC Outer Sheath.



APPLICATION STANDARDS

Medium Voltage Cables are designed and tested to meet the requirements of below standard:
IEC 60502-2

CORE COLOUR IDENTIFICATION:



However, FEICHUN also supply a wide range of alternative designs to meet customer's special project requirements.

TYPICAL CHARACTERISTICS:



VOLTAGE GRADE:

IEC 60502-2
- 3.6/6 (7.2) kV
- 6/10 (12) kV
- 8.7/15 (17.5) kV
- 12/20 (22) kV
- 18/30 (36) kV

CABLE INSTALLATION



In ground with protection | In free air Ladders/ Trays | Minimum Bending Radius | In Trench | Internal Cabling

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(µF/km)	(A/km)
Table 1 : 3.6/6 (7.2)kV or 3.8/6.6 (7.2) kV Earthed System										**(at Uo=3.6 kV)**
25	20.0	620	1000	0.7270	0.928	0.140	0.939	1.626	0.29	0.33
35	21.5	740	1000	0.5240	0.669	0.135	0.682	1.181	0.32	0.36
50	22.5	880	1000	0.3870	0.494	0.128	0.510	0.883	0.36	0.41
70	24.5	1115	1000	0.2680	0.343	0.119	0.363	0.629	0.41	0.46
95	26.0	1400	1000	0.1930	0.247	0.113	0.272	0.471	0.47	0.53
120	27.5	1670	1000	0.1530	0.196	0.109	0.224	0.388	0.52	0.59
150	29.0	1950	1000	0.1240	0.160	0.106	0.192	0.333	0.56	0.63
185	31.0	2330	1000	0.0991	0.128	0.102	0.164	0.284	0.61	0.69
240	33.5	2930	1000	0.0754	0.099	0.098	0.139	0.241	0.66	0.75
300	36.0	3555	1000	0.0601	0.080	0.096	0.125	0.217	0.68	0.77
400	39.5	4425	500	0.0470	0.064	0.093	0.113	0.196	0.72	0.81
500	43.5	5540	500	0.0366	0.051	0.091	0.104	0.180	0.75	0.85
630	47.5	6980	500	0.0283	0.042	0.089	0.098	0.170	0.84	0.95
800	52.5	8795	500	0.0221	0.035	0.087	0.094	0.163	0.97	1.10
1000	57.0	10830	500	0.0176	0.031	0.085	0.090	0.156	1.07	1.21
Table 2: 6/10 (12)kV or 6.35/11 (12) kV Earthed System										**(at U_0=6 kV)**
25	22.0	700	1000	0.7270	0.928	0.146	0.939	1.626	0.22	0.41
35	23.0	815	1000	0.5240	0.669	0.139	0.683	1.183	0.25	0.47
50	24.5	965	1000	0.3870	0.494	0.133	0.512	0.887	0.28	0.53
70	26.0	1195	1000	0.2680	0.343	0.123	0.364	0.630	0.32	0.60
95	28.0	1495	1000	0.1930	0.247	0.117	0.273	0.473	0.36	0.68
120	29.5	1760	1000	0.1530	0.196	0.113	0.226	0.391	0.39	0.74
150	31.0	2055	1000	0.1240	0.160	0.110	0.194	0.336	0.42	0.79
185	32.5	2430	1000	0.0991	0.128	0.105	0.166	0.288	0.46	0.87
240	35.0	3020	1000	0.0754	0.098	0.101	0.141	0.244	0.52	0.98
300	37.5	3640	500	0.0601	0.080	0.098	0.127	0.220	0.57	1.07
400	40.5	4480	500	0.0470	0.064	0.094	0.114	0.197	0.64	1.21
500	44.0	5570	500	0.0366	0.051	0.092	0.105	0.182	0.71	1.34
630	48.0	7010	500	0.0283	0.042	0.089	0.098	0.170	0.79	1.49
800	53.0	8830	500	0.0221	0.035	0.087	0.094	0.163	0.91	1.72
1000	57.5	10865	500	0.0176	0.030	0.085	0.090	0.156	1.01	1.90
Table 3: 8.7/15 (17.5)kV Earthed System										**(at U_0=8.7 kV)**
25	24.5	800	1000	0.7270	0.928	0.153	0.941	1.630	0.18	0.49
35	25.5	920	1000	0.5240	0.669	0.146	0.685	1.186	0.20	0.55
50	27.0	1075	1000	0.3870	0.494	0.139	0.513	0.889	0.22	0.60
70	28.5	1310	1000	0.2680	0.343	0.129	0.366	0.634	0.25	0.68
95	30.5	1615	1000	0.1930	0.247	0.123	0.276	0.478	0.28	0.77
120	32.0	1890	1000	0.1530	0.196	0.118	0.229	0.397	0.31	0.85
150	33.5	2190	1000	0.1240	0.160	0.115	0.197	0.341	0.33	0.90
185	35.0	2570	1000	0.0991	0.128	0.110	0.169	0.293	0.36	0.98
240	37.5	3170	1000	0.0754	0.098	0.106	0.144	0.249	0.40	1.09
300	40.0	3800	500	0.0601	0.079	0.102	0.129	0.223	0.44	1.20
400	43.0	4660	500	0.0470	0.063	0.098	0.117	0.203	0.49	1.34
500	46.0	5750	500	0.0366	0.051	0.095	0.108	0.187	0.55	1.50
630	50.0	7205	500	0.0283	0.042	0.092	0.101	0.175	0.61	1.67
800	55.5	9060	500	0.0221	0.035	0.090	0.097	0.168	0.70	1.91
1000	60.0	11120	500	0.0176	0.030	0.088	0.093	0.161	0.77	2.10

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(µF/km)	(A/km)
Table 4: 12/20 (24)kV or 12.7/22 (24)kV Earthed System										**(at Uo=12 kV)**
35	27.5	1025	1000	0.5240	0.669	0.151	0.686	1.188	0.17	0.64
50	29.0	1175	1000	0.3870	0.494	0.144	0.515	0.892	0.19	0.72
70	30.5	1425	1000	0.2680	0.343	0.133	0.368	0.637	0.22	0.83
95	32.5	1725	1000	0.1930	0.247	0.127	0.278	0.482	0.24	0.90
120	34.0	2015	1000	0.1530	0.196	0.122	0.231	0.400	0.26	0.98
150	35.5	2305	1000	0.1240	0.159	0.118	0.198	0.343	0.28	1.06
185	37.0	2705	1000	0.0991	0.128	0.113	0.171	0.296	0.31	1.17
240	39.5	3315	500	0.0754	0.098	0.109	0.147	0.255	0.34	1.28
300	42.0	3950	500	0.0601	0.079	0.106	0.132	0.229	0.37	1.39
400	45.0	4810	500	0.0470	0.063	0.101	0.119	0.206	0.41	1.55
500	48.5	5925	500	0.0366	0.051	0.098	0.110	0.191	0.46	1.73
630	52.0	7375	500	0.0283	0.041	0.094	0.103	0.178	0.51	1.92
800	57.5	9265	500	0.0221	0.035	0.092	0.098	0.170	0.58	2.19
1000	62.0	11320	500	0.0176	0.030	0.090	0.095	0.165	0.64	2.41
Table 5: 18/30 (36)kV or 19/33 (36)kV Earthed System										**(at U_0=18 kV)**
50	34.0	1470	1000	0.3870	0.494	0.154	0.517	0.895	0.15	0.85
70	36.0	1720	1000	0.2680	0.343	0.143	0.372	0.644	0.16	0.90
95	37.5	2050	1000	0.1930	0.247	0.136	0.282	0.488	0.18	1.02
120	39.5	2350	1000	0.1530	0.196	0.131	0.236	0.409	0.20	1.13
150	41.0	2670	500	0.1240	0.159	0.127	0.203	0.352	0.21	1.19
185	42.5	3085	500	0.0991	0.128	0.122	0.177	0.307	0.23	1.30
240	45.0	3700	500	0.0754	0.098	0.117	0.153	0.265	0.25	1.41
300	47.5	4370	500	0.0601	0.079	0.113	0.138	0.239	0.27	1.53
400	50.5	5255	500	0.0470	0.063	0.108	0.125	0.217	0.30	1.70
500	54.0	6400	500	0.0366	0.050	0.105	0.116	0.201	0.33	1.87
630	57.5	7880	500	0.0283	0.041	0.101	0.109	0.189	0.37	2.09
800	63.0	9820	500	0.0221	0.034	0.098	0.104	0.180	0.42	2.38
1000	67.5	11910	500	0.0176	0.029	0.095	0.099	0.171	0.46	2.60

SINGLE CORE MEDIUM VOLTAGE CABLE WITH ALUMINIUM CONDUCTOR, XLPE INSULATION, CU TAPE METALLIC SCREEN, UNARMOURED & PVC SHEATH.

APPLICATION

Suitable for installations indoors: mostly in power supply stations and outdoors: in cable ducts, underground, and on cable trays for industries, switch-boards and power stations.

CABLE CONSTRUCTION

Single Core Stranded Aluminium Conductor, Extruded Semi-conductive layer of conductor screen, XLPE insulation, Extruded Semi-conductive layer of insulation screen, Copper Tape Metallic Screen and Overall Extruded PVC Outer Sheath.

1. Conductor
Aluminium Conductor

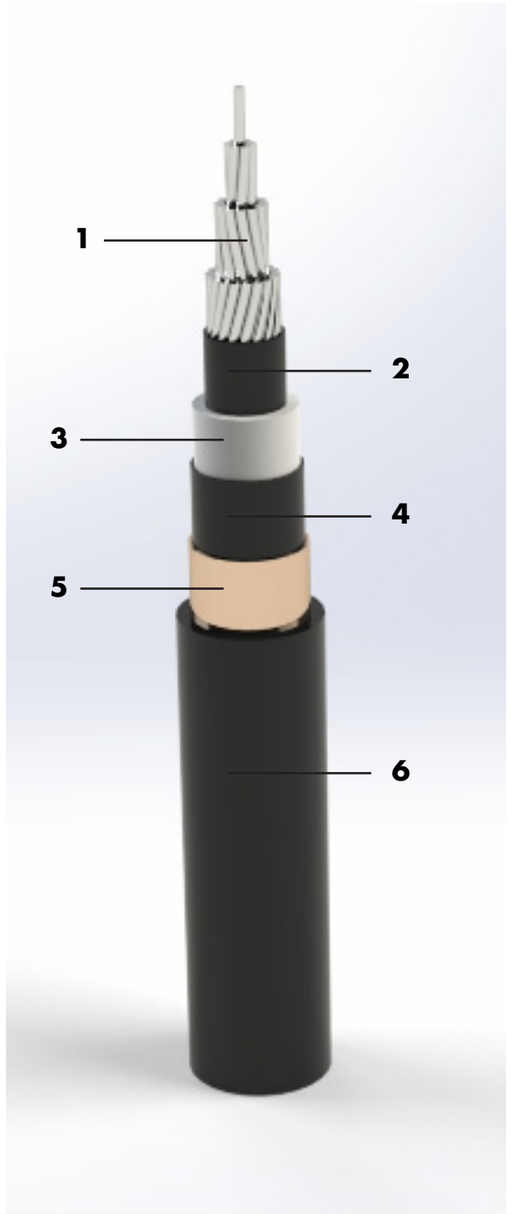
2. Conductor Screen
Semi-conducting Conductor Screen

3. Insulation
XLPE

4. Insulation Screen
Semi-conducting Insulation Screen

5. Metallic Screen
Copper Tape

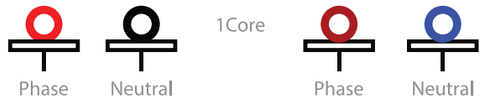
6. Outer Sheath
Extruded Overall PVC Outer Sheath.



APPLICATION STANDARDS

Medium Voltage Cables are designed and tested to meet the requirements of below standard:
IEC 60502-2

CORE COLOUR IDENTIFICATION:



However, FEICHUN also supply a wide range of alternative designs to meet customer's special project requirements.

TYPICAL CHARACTERISTICS:



VOLTAGE GRADE:

IEC 60502-2
- 3.6/6 (7.2) kV
- 6/10 (12) kV
- 8.7/15 (17.5) kV
- 12/20 (22) kV
- 18/30 (36) kV

CABLE INSTALLATION



In ground with protection | In free air Ladders/ Trays | Minimum Bending Radius | In Trench | Internal Cabling

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(µF/km)	(A/km)
Table 1 : 3.6/6 (7.2) kV or 3.8/6.6 (7.2) kV Earthed System										**(at Uo=3.6 kV)**
25	16.0	295	1000	1.2000	1.540	0.126	1.545	2.676	0.29	0.33
35	17.0	340	1000	0.8680	1.110	0.120	1.116	1.933	0.32	0.36
50	18.5	400	1000	0.6410	0.823	0.116	0.831	1.439	0.36	0.41
70	20.0	490	1000	0.4430	0.569	0.106	0.579	1.003	0.41	0.46
95	21.5	595	1000	0.3200	0.411	0.101	0.423	0.733	0.47	0.53
120	23.0	690	1000	0.2530	0.326	0.097	0.340	0.589	0.52	0.59
150	24.5	800	1000	0.2060	0.265	0.095	0.282	0.488	0.56	0.63
185	26.5	930	1000	0.1640	0.212	0.092	0.231	0.400	0.61	0.69
240	29.0	1145	1000	0.1250	0.162	0.089	0.185	0.320	0.66	0.75
300	32.0	1385	1000	0.1000	0.131	0.088	0.158	0.274	0.68	0.77
400	35.5	1700	1000	0.0778	0.103	0.086	0.134	0.232	0.72	0.81
500	39.0	2085	1000	0.0605	0.081	0.084	0.117	0.203	0.75	0.85
630	42.5	2585	500	0.0469	0.065	0.082	0.105	0.182	0.84	0.95
800	48.0	3215	500	0.0367	0.053	0.081	0.097	0.168	0.97	1.10
1000	52.0	3910	500	0.0291	0.044	0.079	0.090	0.156	1.07	1.21
Table 2: 6/10 (12) kV or 6.35/11 (12) kV Earthed System										**(at U_0=6 kV)**
25	17.5	345	1000	1.2000	1.540	0.132	1.546	2.678	0.22	0.41
35	19.0	400	1000	0.8680	1.110	0.127	1.117	1.935	0.25	0.47
50	20.0	460	1000	0.6410	0.823	0.121	0.832	1.441	0.28	0.53
70	22.0	560	1000	0.4430	0.569	0.112	0.580	1.005	0.32	0.60
95	23.5	665	1000	0.3200	0.411	0.106	0.424	0.734	0.36	0.68
120	25.0	775	1000	0.2530	0.325	0.103	0.341	0.591	0.39	0.74
150	26.5	875	1000	0.2060	0.265	0.100	0.283	0.490	0.42	0.79
185	28.5	1025	1000	0.1640	0.212	0.097	0.233	0.404	0.46	0.87
240	31.0	1235	1000	0.1250	0.162	0.094	0.187	0.324	0.52	0.98
300	33.0	1445	1000	0.1000	0.130	0.090	0.158	0.274	0.57	1.07
400	36.0	1750	1000	0.0778	0.103	0.087	0.135	0.234	0.64	1.21
500	39.0	2110	500	0.0605	0.081	0.084	0.117	0.203	0.71	1.34
630	43.0	2610	500	0.0469	0.065	0.082	0.105	0.182	0.79	1.49
800	48.5	3260	500	0.0367	0.053	0.082	0.098	0.170	0.91	1.72
1000	52.5	3945	500	0.0291	0.044	0.080	0.091	0.158	1.01	1.90
Table 3: 8.7/15 (17.5) kV Earthed System										**(at U_0=8.7 kV)**
25	20.0	425	1000	1.2000	1.540	0.140	1.546	2.678	0.18	0.49
35	21.0	480	1000	0.8680	1.110	0.134	1.118	1.936	0.20	0.55
50	22.5	545	1000	0.6410	0.823	0.128	0.833	1.443	0.22	0.60
70	24.0	645	1000	0.4430	0.569	0.118	0.581	1.006	0.25	0.68
95	26.0	765	1000	0.3200	0.411	0.113	0.426	0.738	0.28	0.77
120	27.5	880	1000	0.2530	0.325	0.109	0.343	0.594	0.31	0.85
150	29.0	985	1000	0.2060	0.265	0.106	0.285	0.494	0.33	0.90
185	30.5	1140	1000	0.1640	0.212	0.101	0.235	0.407	0.36	0.98
240	33.0	1350	1000	0.1250	0.162	0.098	0.189	0.327	0.40	1.09
300	35.5	1580	1000	0.1000	0.130	0.095	0.161	0.279	0.44	1.20
400	38.5	1895	1000	0.0778	0.103	0.091	0.137	0.237	0.49	1.34
500	41.5	2265	500	0.0605	0.081	0.088	0.120	0.208	0.55	1.50
630	45.5	2780	500	0.0469	0.065	0.086	0.108	0.187	0.61	1.67
800	50.5	3430	500	0.0367	0.053	0.084	0.099	0.171	0.70	1.91
1000	55.0	4150	500	0.0291	0.044	0.083	0.094	0.163	0.77	2.10

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(µF/km)	(A/km)
Table 4: 12/20 (24)kV or 12.7/22 (24)kV Earthed System										**(at Uo=12 kV)**
35	23.0	555	1000	0.8680	1.110	0.139	1.119	1.938	0.17	0.64
50	24.5	635	1000	0.6410	0.823	0.133	0.834	1.445	0.19	0.72
70	26.0	735	1000	0.4430	0.569	0.123	0.582	1.008	0.22	0.83
95	28.0	865	1000	0.3200	0.411	0.117	0.427	0.740	0.24	0.90
120	29.5	970	1000	0.2530	0.325	0.113	0.344	0.596	0.26	0.98
150	31.0	1095	1000	0.2060	0.265	0.110	0.287	0.497	0.28	1.06
185	32.5	1245	1000	0.1640	0.212	0.105	0.237	0.410	0.31	1.17
240	35.0	1470	1000	0.1250	0.162	0.101	0.191	0.331	0.34	1.28
300	37.5	1710	1000	0.1000	0.130	0.098	0.163	0.282	0.37	1.39
400	40.5	2035	500	0.0778	0.102	0.094	0.139	0.241	0.41	1.55
500	43.5	2415	500	0.0605	0.081	0.091	0.122	0.211	0.46	1.73
630	47.5	2945	500	0.0469	0.064	0.089	0.110	0.191	0.51	1.92
800	52.5	3610	500	0.0367	0.052	0.087	0.101	0.175	0.58	2.19
1000	57.0	4325	500	0.0291	0.043	0.085	0.095	0.165	0.64	2.41
Table 5: 18/30 (36)kV or 19/33 (36)kV Earthed System										**(at U_0=18 kV)**
50	29.5	865	1000	0.6410	0.823	0.145	0.836	1.448	0.15	0.85
70	31.5	990	1000	0.4430	0.569	0.135	0.585	1.013	0.16	0.90
95	33.5	1135	1000	0.3200	0.411	0.129	0.431	0.747	0.18	1.02
120	35.0	1255	1000	0.2530	0.325	0.124	0.348	0.603	0.20	1.13
150	36.0	1375	1000	0.2060	0.265	0.119	0.290	0.502	0.21	1.19
185	38.0	1555	1000	0.1640	0.211	0.115	0.240	0.416	0.23	1.30
240	40.5	1800	500	0.1250	0.162	0.110	0.196	0.339	0.25	1.41
300	42.5	2045	500	0.1000	0.130	0.106	0.168	0.291	0.27	1.53
400	46.0	2410	500	0.0778	0.102	0.102	0.144	0.249	0.30	1.70
500	49.0	2800	500	0.0605	0.080	0.099	0.127	0.220	0.33	1.87
630	53.0	3380	500	0.0469	0.064	0.095	0.115	0.199	0.37	2.09
800	58.0	4085	500	0.0367	0.052	0.093	0.107	0.185	0.42	2.38
1000	62.0	4830	500	0.0291	0.043	0.090	0.100	0.173	0.46	2.60

SINGLE CORE MEDIUM VOLTAGE CABLE WITH ALUMINIUM CONDUCTOR, XLPE INSULATION, CU TAPE METALLIC SCREEN, ALUMINIUM WIRE ARMOURED & PVC SHEATH.

APPLICATION

Suitable for installations indoors: mostly in power supply stations and outdoors: in cable ducts, underground, and on cable trays for industries, switch-boards and power stations.

CABLE CONSTRUCTION

Single Core Stranded Aluminium Conductor, Extruded Semi-conductive layer of conductor screen, XLPE insulation, Extruded Semi-conductive layer of insulation screen, Copper Tape Metallic Screen , Extruded PVC separation sheath, Aluminium Round Wire Armour and Overall Extruded PVC Outer Sheath.

1. Conductor
Aluminium Conductor

2. Conductor Screen
Semi-conducting Conductor Screen

3. Insulation
XLPE

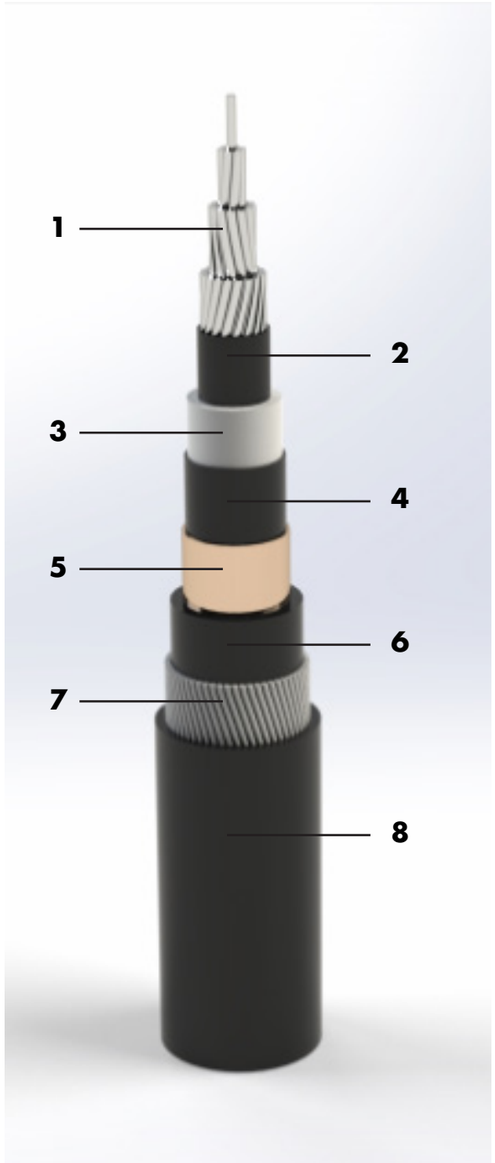
4. Insulation Screen
Semi-conducting Insulation Screen

5. Metallic Screen
Copper Tape

6. Separation Sheath
Extruded PVC

7. Armour
Aluminium Round Wire

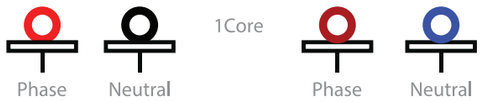
8. Outer Sheath
Extruded Overall PVC Outer Sheath.



APPLICATION STANDARDS

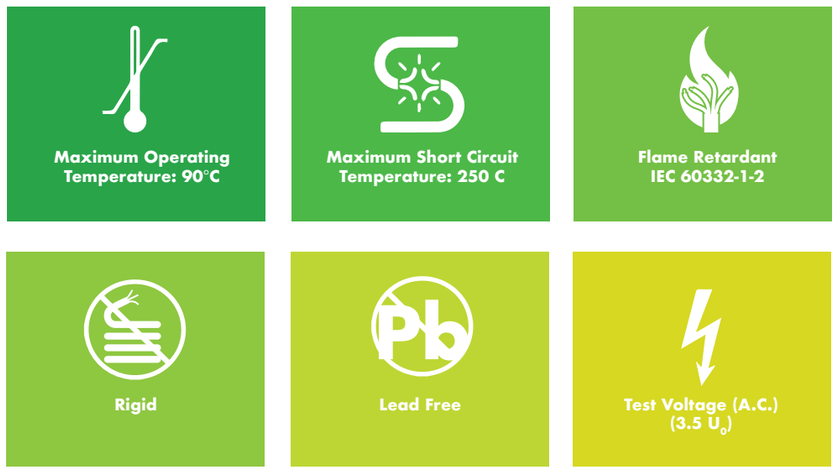
Medium Voltage Cables are designed and tested to meet the requirements of below standard:
IEC 60502-2
BS 6622

CORE COLOUR IDENTIFICATION:



However, FEICHUN also supply a wide range of alternative designs to meet customer's special project requirements.

TYPICAL CHARACTERISTICS:



VOLTAGE GRADE:

IEC 60502-2
- 3.6/6 (7.2) kV
- 6/10 (12) kV
- 8.7/15 (17.5) kV
- 12/20 (22) kV
- 18/30 (36) kV

BS 6622
- 3.8/6.6 (7.2) kV
- 6.35/11 (12) kV
- 8.7/15 (17.5) kV
- 12.7/22 (24) kV
- 19/33 (36) kV

CABLE INSTALLATION



In duct | In ground with protection | In free air Ladders/ Trays | Minimum Bending Radius | In Trench | Internal Cabling

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_o & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(µF/km)	(A/km)
Table 1 : 3.6/6 (7.2) kV or 3.8/6.6 (7.2) kV Earthed System										**(at Uo=3.6 kV)**
25	21.5	560	1000	1.2000	1.540	0.145	1.547	2.679	0.29	0.33
35	22.5	620	1000	0.8680	1.110	0.138	1.119	1.938	0.32	0.36
50	24.0	705	1000	0.6410	0.823	0.132	0.834	1.445	0.36	0.41
70	25.5	815	1000	0.4430	0.569	0.122	0.582	1.008	0.41	0.46
95	27.5	950	1000	0.3200	0.411	0.116	0.427	0.740	0.47	0.53
120	29.0	1065	1000	0.2530	0.325	0.112	0.344	0.596	0.52	0.59
150	30.5	1195	1000	0.2060	0.265	0.109	0.287	0.497	0.56	0.63
185	32.5	1435	1000	0.1640	0.212	0.105	0.237	0.410	0.61	0.69
240	35.5	1690	1000	0.1250	0.162	0.102	0.191	0.331	0.66	0.75
300	38.0	1980	1000	0.1000	0.130	0.099	0.163	0.282	0.68	0.77
400	41.5	2355	500	0.0778	0.102	0.096	0.140	0.242	0.72	0.81
500	46.5	2980	500	0.0605	0.081	0.096	0.126	0.218	0.75	0.85
630	50.5	3575	500	0.0469	0.064	0.092	0.112	0.194	0.84	0.95
800	55.5	4320	500	0.0367	0.052	0.090	0.104	0.180	0.97	1.10
1000	60.0	5125	500	0.0291	0.043	0.088	0.098	0.170	1.07	1.21
Table 2: 6/10 (12) kV or 6.35/11 (12) kV Earthed System										**(at U_o=6 kV)**
25	23.0	640	1000	1.2000	1.540	0.149	1.547	2.679	0.22	0.41
35	24.5	710	1000	0.8680	1.110	0.143	1.119	1.938	0.25	0.47
50	25.5	785	1000	0.6410	0.823	0.136	0.834	1.445	0.28	0.53
70	27.5	915	1000	0.4430	0.569	0.126	0.583	1.010	0.32	0.60
95	29.0	1045	1000	0.3200	0.411	0.120	0.428	0.741	0.36	0.68
120	30.5	1175	1000	0.2530	0.325	0.115	0.345	0.598	0.39	0.74
150	33.0	1390	1000	0.2060	0.265	0.114	0.288	0.499	0.42	0.79
185	34.5	1555	1000	0.1640	0.212	0.109	0.238	0.412	0.46	0.87
240	37.0	1810	1000	0.1250	0.162	0.105	0.193	0.334	0.52	0.98
300	39.5	2055	500	0.1000	0.130	0.102	0.165	0.286	0.57	1.07
400	42.5	2425	500	0.0778	0.102	0.097	0.141	0.244	0.64	1.21
500	47.0	3005	500	0.0605	0.081	0.096	0.126	0.218	0.71	1.34
630	51.0	3620	500	0.0469	0.064	0.093	0.113	0.196	0.79	1.49
800	56.0	4355	500	0.0367	0.052	0.091	0.105	0.182	0.91	1.72
1000	60.5	5175	500	0.0291	0.043	0.089	0.099	0.171	1.01	1.90
Table 3: 8.7/15 (17.5) kV Earthed System										**(at U_o=8.7 kV)**
25	25.5	750	1000	1.2000	1.540	0.156	1.548	2.681	0.18	0.49
35	27.0	830	1000	0.8680	1.110	0.149	1.120	1.940	0.20	0.55
50	28.0	910	1000	0.6410	0.823	0.142	0.835	1.446	0.22	0.60
70	29.5	1030	1000	0.4430	0.569	0.131	0.584	1.012	0.25	0.68
95	32.0	1255	1000	0.3200	0.411	0.126	0.430	0.745	0.28	0.77
120	34.0	1400	1000	0.2530	0.325	0.122	0.347	0.601	0.31	0.85
150	35.0	1530	1000	0.2060	0.265	0.117	0.290	0.502	0.33	0.90
185	37.0	1715	1000	0.1640	0.211	0.113	0.239	0.414	0.36	0.98
240	39.5	1975	500	0.1250	0.162	0.109	0.195	0.338	0.40	1.09
300	41.5	2230	500	0.1000	0.130	0.105	0.167	0.289	0.44	1.20
400	46.0	2785	500	0.0778	0.102	0.102	0.144	0.249	0.49	1.34
500	49.0	3220	500	0.0605	0.080	0.099	0.127	0.220	0.55	1.50
630	53.5	3835	500	0.0469	0.064	0.096	0.115	0.199	0.61	1.67
800	58.5	4620	500	0.0367	0.052	0.094	0.107	0.185	0.70	1.91
1000	63.0	5450	500	0.0291	0.043	0.091	0.101	0.175	0.77	2.10

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_o & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(µF/km)	(A/km)
Table 4: 12/20 (24) kV or 12.7/22 (24) kV Earthed System										**(at Uo=12 kV)**
35	29.0	930	1000	0.8680	1.110	0.154	1.121	1.942	0.17	0.64
50	30.0	1025	1000	0.6410	0.823	0.146	0.836	1.448	0.19	0.72
70	32.5	1235	1000	0.4430	0.569	0.137	0.585	1.013	0.22	0.83
95	34.5	1395	1000	0.3200	0.411	0.131	0.431	0.747	0.24	0.90
120	36.0	1530	1000	0.2530	0.325	0.125	0.348	0.603	0.26	0.98
150	37.5	1675	1000	0.2060	0.265	0.122	0.292	0.506	0.28	1.06
185	39.0	1850	1000	0.1640	0.211	0.117	0.241	0.417	0.31	1.17
240	41.5	2120	500	0.1250	0.162	0.112	0.197	0.341	0.34	1.28
300	45.0	2565	500	0.1000	0.130	0.110	0.170	0.294	0.37	1.39
400	48.0	2950	500	0.0778	0.102	0.105	0.146	0.253	0.41	1.55
500	51.5	3410	500	0.0605	0.080	0.102	0.130	0.225	0.46	1.73
630	55.5	4040	500	0.0469	0.064	0.098	0.117	0.203	0.51	1.92
800	60.5	4845	500	0.0367	0.051	0.096	0.109	0.189	0.58	2.19
1000	65.0	5665	500	0.0291	0.043	0.093	0.102	0.177	0.64	2.41
Table 5: 18/30 (36) kV or 19/33 (36) kV Earthed System										**(at U_o=18 kV)**
50	36.0	1435	1000	0.6410	0.823	0.157	0.838	1.451	0.15	0.85
70	38.0	1580	1000	0.4430	0.569	0.147	0.588	1.018	0.16	0.90
95	39.5	1760	1000	0.3200	0.411	0.139	0.434	0.752	0.18	1.02
120	41.0	1905	500	0.2530	0.325	0.134	0.352	0.610	0.20	1.13
150	44.0	2215	500	0.2060	0.265	0.132	0.296	0.513	0.21	1.19
185	45.5	2430	500	0.1640	0.211	0.126	0.246	0.426	0.23	1.30
240	48.0	2720	500	0.1250	0.162	0.121	0.202	0.350	0.25	1.41
300	50.5	3035	500	0.1000	0.130	0.117	0.175	0.303	0.27	1.53
400	53.5	3445	500	0.0778	0.102	0.112	0.151	0.262	0.30	1.70
500	57.0	3950	500	0.0605	0.080	0.108	0.134	0.232	0.33	1.87
630	60.5	4595	500	0.0469	0.063	0.104	0.122	0.211	0.37	2.09
800	66.0	5450	500	0.0367	0.051	0.101	0.113	0.196	0.42	2.38
1000	70.5	6320	500	0.0291	0.042	0.098	0.107	0.185	0.46	2.60

SINGLE CORE MEDIUM VOLTAGE CABLE WITH ALUMINIUM CONDUCTOR, XLPE INSULATION, CU TAPE METALLIC SCREEN, DOUBLE ALUMINIUM TAPE ARMOURED & PVC SHEATH.

APPLICATION

Suitable for installations indoors: mostly in power supply stations and outdoors: in cable ducts, underground, and on cable trays for industries, switch-boards and power stations.

CABLE CONSTRUCTION

Single Core Stranded Aluminium Conductor, Extruded Semi-conductive layer of conductor screen, XLPE insulation, Extruded Semi-conductive layer of insulation screen, Copper Tape Metallic Screen , Extruded PVC separation sheath, Double Aluminium Tape Armour and Overall Extruded PVC Outer Sheath.

1. Conductor
Aluminium Conductor

2. Conductor Screen
Semi-conducting Conductor Screen

3. Insulation
XLPE

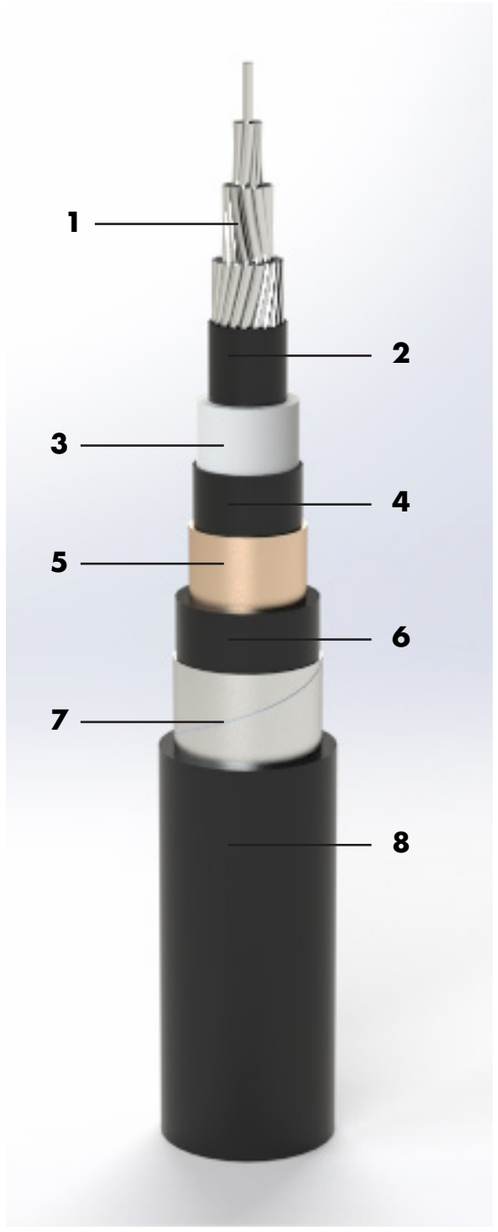
4. Insulation Screen
Semi-conducting Insulation Screen

5. Metallic Screen
Copper Tape

6. Separation Sheath
Extruded PVC

7. Armour
Double Aluminium Tape Armour

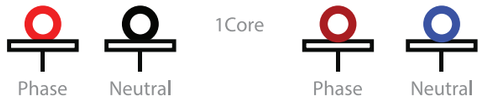
8. Outer Sheath
Extruded Overall PVC Outer Sheath.



APPLICATION STANDARDS

Medium Voltage Cables are designed and tested to meet the requirements of below standard:
IEC 60502-2

CORE COLOUR IDENTIFICATION:



However, FEICHUN also supply a wide range of alternative designs to meet customer's special project requirements.

TYPICAL CHARACTERISTICS:

- Maximum Operating Temperature: 90°C
- Maximum Short Circuit Temperature: 250 C
- Flame Retardant IEC 60332-1-2
- Rigid
- Lead Free
- Test Voltage (A.C.) (3.5 U_0)

VOLTAGE GRADE:

IEC 60502-2
- 3.6/6 (7.2) kV
- 6/10 (12) kV
- 8.7/15 (17.5) kV
- 12/20 (22) kV
- 18/30 (36) kV

CABLE INSTALLATION



In duct | In ground with protection | In free air Ladders/ Trays | Minimum Bending Radius | In Trench | Internal Cabling

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(µF/km)	(A/km)
Table 1 : 3.6/6 (7.2) kV or 3.8/6.6 (7.2) kV Earthed System										**(at Uo=3.6 kV)**
25	20.0	470	1000	1.2000	1.540	0.140	1.546	2.678	0.29	0.33
35	21.5	530	1000	0.8680	1.110	0.135	1.118	1.936	0.32	0.36
50	22.5	600	1000	0.6410	0.823	0.128	0.833	1.443	0.36	0.41
70	24.5	710	1000	0.4430	0.569	0.119	0.581	1.006	0.41	0.46
95	26.0	830	1000	0.3200	0.411	0.113	0.426	0.738	0.47	0.53
120	27.5	950	1000	0.2530	0.325	0.109	0.343	0.594	0.52	0.59
150	29.0	1060	1000	0.2060	0.265	0.106	0.285	0.494	0.56	0.63
185	31.0	1220	1000	0.1640	0.212	0.102	0.235	0.407	0.61	0.69
240	33.5	1460	1000	0.1250	0.162	0.098	0.189	0.327	0.66	0.75
300	36.0	1710	1000	0.1000	0.130	0.096	0.162	0.281	0.68	0.77
400	39.5	2080	500	0.0778	0.102	0.093	0.138	0.239	0.72	0.81
500	43.5	2510	500	0.0605	0.081	0.091	0.122	0.211	0.75	0.85
630	47.5	3070	500	0.0469	0.064	0.089	0.110	0.191	0.84	0.95
800	52.5	3750	500	0.0367	0.052	0.087	0.101	0.175	0.97	1.10
1000	57.0	4515	500	0.0291	0.043	0.085	0.095	0.165	1.07	1.21
Table 2: 6/10 (12) kV or 6.35/11 (12) kV Earthed System										**(at U_0=6 kV)**
25	22.0	550	1000	1.2000	1.540	0.146	1.547	2.679	0.22	0.41
35	23.0	605	1000	0.8680	1.110	0.139	1.119	1.938	0.25	0.47
50	24.5	685	1000	0.6410	0.823	0.133	0.834	1.445	0.28	0.53
70	26.0	790	1000	0.4430	0.569	0.123	0.582	1.008	0.32	0.60
95	28.0	925	1000	0.3200	0.411	0.117	0.427	0.740	0.36	0.68
120	29.5	1040	1000	0.2530	0.325	0.113	0.344	0.596	0.39	0.74
150	31.0	1165	1000	0.2060	0.265	0.110	0.287	0.497	0.42	0.79
185	32.5	1320	1000	0.1640	0.212	0.105	0.237	0.410	0.46	0.87
240	35.0	1555	1000	0.1250	0.162	0.101	0.191	0.331	0.52	0.98
300	37.5	1800	1000	0.1000	0.130	0.098	0.163	0.282	0.57	1.07
400	40.5	2130	500	0.0778	0.102	0.094	0.139	0.241	0.64	1.21
500	44.0	2540	500	0.0605	0.081	0.092	0.123	0.213	0.71	1.34
630	48.0	3100	500	0.0469	0.064	0.089	0.110	0.191	0.79	1.49
800	53.0	3785	500	0.0367	0.052	0.087	0.101	0.175	0.91	1.72
1000	57.5	4555	500	0.0291	0.043	0.085	0.095	0.165	1.01	1.90
Table 3: 8.7/15 (17.5) kV Earthed System										**(at U_0=8.7 kV)**
25	24.5	650	1000	1.2000	1.540	0.153	1.548	2.681	0.18	0.49
35	25.5	710	1000	0.8680	1.110	0.146	1.120	1.940	0.20	0.55
50	27.0	795	1000	0.6410	0.823	0.139	0.835	1.446	0.22	0.60
70	28.5	905	1000	0.4430	0.569	0.129	0.583	1.010	0.25	0.68
95	30.5	1045	1000	0.3200	0.411	0.123	0.429	0.743	0.28	0.77
120	32.0	1165	1000	0.2530	0.325	0.118	0.346	0.599	0.31	0.85
150	33.5	1295	1000	0.2060	0.265	0.115	0.289	0.501	0.33	0.90
185	35.0	1460	1000	0.1640	0.212	0.110	0.239	0.414	0.36	0.98
240	37.5	1705	1000	0.1250	0.162	0.106	0.194	0.336	0.40	1.09
300	40.0	1955	500	0.1000	0.130	0.102	0.165	0.286	0.44	1.20
400	43.0	2315	500	0.0778	0.102	0.098	0.141	0.244	0.49	1.34
500	46.0	2720	500	0.0605	0.081	0.095	0.125	0.217	0.55	1.50
630	50.0	3295	500	0.0469	0.064	0.092	0.112	0.194	0.61	1.67
800	55.5	4020	500	0.0367	0.052	0.090	0.104	0.180	0.70	1.91
1000	60.0	4810	500	0.0291	0.043	0.088	0.098	0.170	0.77	2.10

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(µF/km)	(A/km)
Table 4: 12/20 (24) kV or 12.7/22 (24) kV Earthed System										**(at Uo=12 kV)**
35	27.5	815	1000	0.8680	1.110	0.151	1.120	1.940	0.17	0.64
50	29.0	895	1000	0.6410	0.823	0.144	0.836	1.448	0.19	0.72
70	30.5	1020	1000	0.4430	0.569	0.133	0.584	1.012	0.22	0.83
95	32.5	1155	1000	0.3200	0.411	0.127	0.430	0.745	0.24	0.90
120	34.0	1290	1000	0.2530	0.325	0.122	0.347	0.601	0.26	0.98
150	35.5	1415	1000	0.2060	0.265	0.118	0.290	0.502	0.28	1.06
185	37.0	1595	1000	0.1640	0.211	0.113	0.239	0.414	0.31	1.17
240	39.5	1845	500	0.1250	0.162	0.109	0.195	0.338	0.34	1.28
300	42.0	2110	500	0.1000	0.130	0.106	0.168	0.291	0.37	1.39
400	45.0	2465	500	0.0778	0.102	0.101	0.144	0.249	0.41	1.55
500	48.5	2895	500	0.0605	0.080	0.098	0.127	0.220	0.46	1.73
630	52.0	3465	500	0.0469	0.064	0.094	0.114	0.197	0.51	1.92
800	57.5	4225	500	0.0367	0.052	0.092	0.106	0.184	0.58	2.19
1000	62.0	5005	500	0.0291	0.043	0.090	0.100	0.173	0.64	2.41
Table 5: 18/30 (36) kV or 19/33 (36) kV Earthed System										**(at U_0=18 kV)**
50	34.0	1190	1000	0.6410	0.823	0.154	0.837	1.450	0.15	0.85
70	36.0	1320	1000	0.4430	0.569	0.143	0.587	1.017	0.16	0.90
95	37.5	1480	1000	0.3200	0.411	0.136	0.433	0.750	0.18	1.02
120	39.5	1630	1000	0.2530	0.325	0.131	0.350	0.606	0.20	1.13
150	41.0	1780	500	0.2060	0.265	0.127	0.294	0.509	0.21	1.19
185	42.5	1970	500	0.1640	0.211	0.122	0.244	0.423	0.23	1.30
240	45.0	2230	500	0.1250	0.162	0.117	0.200	0.346	0.25	1.41
300	47.5	2530	500	0.1000	0.130	0.113	0.172	0.298	0.27	1.53
400	50.5	2910	500	0.0778	0.102	0.108	0.149	0.258	0.30	1.70
500	54.0	3370	500	0.0605	0.080	0.105	0.132	0.229	0.33	1.87
630	57.5	3970	500	0.0469	0.063	0.101	0.119	0.206	0.37	2.09
800	63.0	4780	500	0.0367	0.051	0.098	0.110	0.191	0.42	2.38
1000	67.5	5600	500	0.0291	0.042	0.095	0.104	0.180	0.46	2.60

THREE CORE MEDIUM VOLTAGE CABLE WITH COPPER CONDUCTOR, XLPE INSULATION, CU TAPE METALLIC SCREEN, UNARMOURED & PVC SHEATH.

APPLICATION

Suitable for installations indoors: mostly in power supply stations and outdoors: in cable ducts, underground, and on cable trays for industries, switch-boards and power stations.

CABLE CONSTRUCTION

Three Core Stranded Annealed Plain Copper Conductor, Extruded Semi-conductive layer of conductor screen, XLPE insulation, Extruded Semi-conductive layer of insulation screen, Copper Tape Metallic Screen on each core, Fillers of non-hygroscopic polypropylene and Overall Extruded PVC Outer Sheath.

1. Conductor
Copper Conductor

2. Conductor Screen
Semi-conducting Conductor Screen

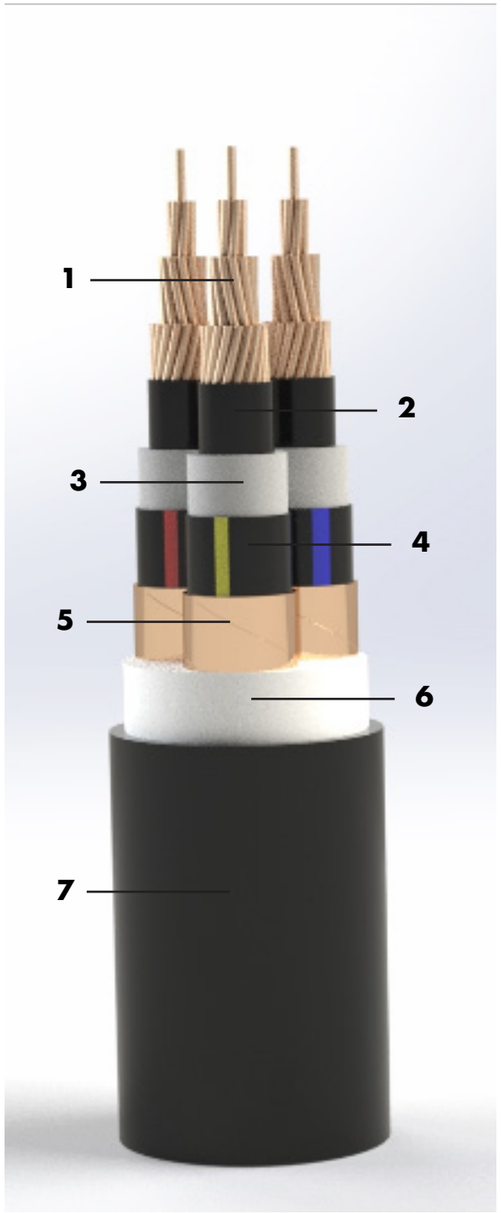
3. Insulation
XLPE

4. Insulation Screen
Semi-conducting Insulation Screen

5. Metallic Screen
Copper Tape

6. Fillers
Non Hygroscopic PP Fillers

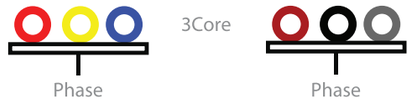
7. Outer Sheath
Extruded Overall PVC Outer Sheath.



APPLICATION STANDARDS

Medium Voltage Cables are designed and tested to meet the requirements of below standard:
IEC 60502-2

CORE COLOUR IDENTIFICATION:



However, FEICHUN *also supply a wide range of alternative designs to meet customer's special project requirements.*

TYPICAL CHARACTERISTICS:



VOLTAGE GRADE:

IEC 60502-2
- 3.6/6 (7.2) kV
- 6/10 (12) kV
- 8.7/15 (17.5) kV
- 12/20 (22) kV
- 18/30 (36) kV

CABLE INSTALLATION



In duct | In ground with protection | In free air Ladders/ Trays | Minimum Bending Radius | In Trench | Internal Cabling

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(µF/km)	(A/km)
Table 1 : 3.6/6 (7.2) kV or 3.8/6.6 (7.2) kV Earthed System										**(at Uo=3.6 kV)**
25	32.5	1420	1000	0.7270	0.928	0.117	0.935	1.619	0.29	0.33
35	34.5	1750	1000	0.5240	0.669	0.111	0.678	1.174	0.33	0.37
50	37.5	2175	1000	0.3870	0.494	0.106	0.505	0.875	0.37	0.42
70	41.0	2850	500	0.2680	0.343	0.098	0.357	0.618	0.42	0.48
95	45.0	3730	500	0.1930	0.247	0.094	0.264	0.457	0.48	0.54
120	48.5	4525	500	0.1530	0.197	0.091	0.217	0.376	0.53	0.60
150	51.5	5385	500	0.1240	0.160	0.089	0.183	0.317	0.57	0.64
185	55.5	6525	500	0.0991	0.129	0.086	0.155	0.268	0.62	0.70
240	61.0	8345	500	0.0754	0.099	0.083	0.129	0.223	0.68	0.77
300	67.0	10305	500	0.0601	0.081	0.082	0.115	0.199	0.69	0.78
400	74.5	12940	500	0.0470	0.065	0.080	0.103	0.178	0.73	0.83

Table 2: 6/10 (12) kV or 6.35/11 (12) kV Earthed System										**(at U_0=6 kV)**
25	36.5	1625	1000	0.7270	0.928	0.125	0.936	1.621	0.23	0.43
35	39.0	1980	1000	0.5240	0.669	0.119	0.680	1.178	0.25	0.47
50	41.5	2415	500	0.3870	0.494	0.113	0.507	0.878	0.28	0.53
70	45.5	3115	500	0.2680	0.343	0.105	0.359	0.622	0.32	0.60
95	49.0	3995	500	0.1930	0.247	0.100	0.266	0.461	0.36	0.68
120	52.5	4810	500	0.1530	0.197	0.096	0.219	0.379	0.40	0.75
150	55.5	5690	500	0.1240	0.160	0.094	0.186	0.322	0.43	0.81
185	59.5	6850	500	0.0991	0.129	0.090	0.157	0.272	0.47	0.89
240	64.5	8660	500	0.0754	0.099	0.087	0.132	0.229	0.53	1.00
300	69.5	10565	500	0.0601	0.080	0.085	0.117	0.203	0.58	1.09
400	76.5	13140	250	0.0470	0.065	0.082	0.105	0.182	0.65	1.23

Table 3: 8.7/15 (17.5) kV Earthed System										**(at U_0=8.7 kV)**
25	41.5	1910	500	0.7270	0.928	0.134	0.938	1.625	0.19	0.52
35	44.0	2280	500	0.5240	0.669	0.127	0.681	1.180	0.20	0.55
50	47.0	2740	500	0.3870	0.494	0.121	0.509	0.882	0.23	0.63
70	50.5	3460	500	0.2680	0.343	0.112	0.361	0.625	0.26	0.71
95	54.0	4370	500	0.1930	0.247	0.106	0.269	0.466	0.29	0.79
120	57.5	5210	500	0.1530	0.197	0.102	0.222	0.385	0.31	0.85
150	60.5	6110	500	0.1240	0.160	0.100	0.189	0.327	0.34	0.93
185	64.5	7290	500	0.0991	0.128	0.096	0.160	0.277	0.37	1.01
240	69.5	9140	500	0.0754	0.099	0.092	0.135	0.234	0.41	1.12
300	74.5	11050	500	0.0601	0.080	0.090	0.120	0.208	0.45	1.23
400	81.5	13700	250	0.0470	0.064	0.086	0.107	0.185	0.50	1.37

Table 4: 12/20 (24) kV or 12.7/22 (24) kV Earthed System										**(at Uo=12 kV)**
35	48.5	2575	500	0.5240	0.669	0.134	0.682	1.181	0.18	0.68
50	51.0	3050	500	0.3870	0.494	0.127	0.510	0.883	0.20	0.75
70	55.0	3790	500	0.2680	0.343	0.118	0.363	0.629	0.22	0.83
95	58.5	4720	500	0.1930	0.247	0.112	0.271	0.469	0.25	0.94
120	62.0	5580	500	0.1530	0.196	0.108	0.224	0.388	0.27	1.02
150	65.0	6495	500	0.1240	0.160	0.104	0.191	0.331	0.29	1.09
185	69.0	7730	500	0.0991	0.128	0.100	0.162	0.281	0.31	1.17
240	74.0	9585	500	0.0754	0.099	0.096	0.138	0.239	0.35	1.32
300	79.5	11555	250	0.0601	0.080	0.094	0.123	0.213	0.38	1.43
400	86.0	14210	250	0.0470	0.064	0.090	0.110	0.191	0.42	1.58

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(µF/km)	(A/km)
Table 5: 18/30 (36) kV or 19/33 (36) kV Earthed System										**(at U_0=18 kV)**
50	62.5	3970	500	0.3870	0.494	0.141	0.514	0.890	0.15	0.85
70	66.5	4765	500	0.2680	0.343	0.130	0.367	0.636	0.17	0.96
95	70.0	5755	500	0.1930	0.247	0.124	0.276	0.478	0.19	1.07
120	73.5	6665	500	0.1530	0.196	0.119	0.229	0.397	0.20	1.13
150	76.5	7630	500	0.1240	0.160	0.115	0.197	0.341	0.22	1.24
185	80.5	8890	250	0.0991	0.128	0.110	0.169	0.293	0.23	1.30
240	85.5	10855	250	0.0754	0.098	0.106	0.144	0.249	0.26	1.47
300	90.5	12900	250	0.0601	0.079	0.102	0.129	0.223	0.28	1.58
400	97.5	15660	250	0.0470	0.064	0.098	0.117	0.203	0.31	1.75

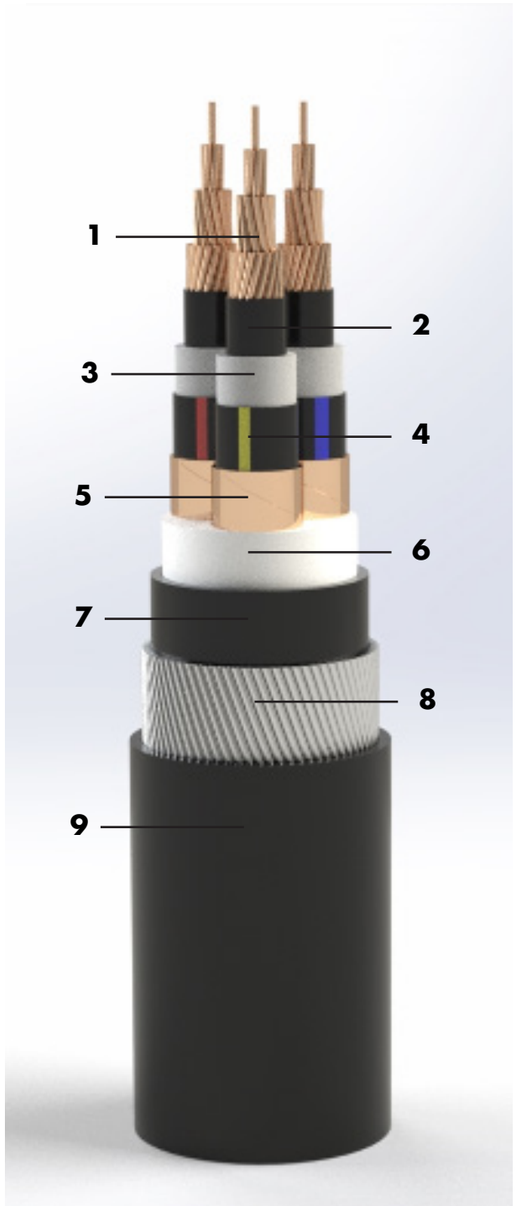
THREE CORE MEDIUM VOLTAGE CABLE WITH COPPER CONDUCTOR, XLPE INSULATION, CU TAPE METALLIC SCREEN, GALVANISED STEEL WIRE ARMOURED & PVC SHEATH.

APPLICATION

Suitable for installations indoors: mostly in power supply stations and outdoors: in cable ducts, underground, and on cable trays for industries, switch-boards and power stations.

CABLE CONSTRUCTION

Three Core Stranded Annealed Plain Copper Conductor, Extruded Semi-conductive layer of conductor screen, XLPE insulation, Extruded Semi-conductive layer of insulation screen, Copper Tape Metallic Screen on each core, Fillers of non-hygroscopic polypropylene, Extruded PVC Separation Sheath, Galvanized Steel Wire Armour and Overall Extruded PVC Outer Sheath.



1. Conductor
Copper Conductor

2. Conductor Screen
Semi-conducting Conductor Screen

3. Insulation
XLPE

4. Insulation Screen
Semi-conducting Insulation Screen

5. Metallic Screen
Copper Tape

6. Fillers
Non Hygroscopic PP Fillers

7. Separation Sheath
Extruded PVC

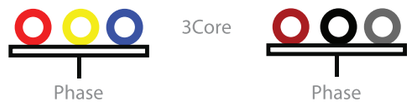
8. Armour
Galvanised Steel Wire

9. Outer Sheath
Extruded Overall PVC Outer Sheath.

APPLICATION STANDARDS

Medium Voltage Cables are designed and tested to meet the requirements of below standard:
IEC 60502-2
BS 6622

CORE COLOUR IDENTIFICATION:



However, FEICHUN also supply a wide range of alternative designs to meet customer's special project requirements.

TYPICAL CHARACTERISTICS:



VOLTAGE GRADE:

IEC 60502-2
- 3.6/6 (7.2) kV
- 6/10 (12) kV
- 8.7/15 (17.5) kV
- 12/20 (22) kV
- 18/30 (36) kV

BS 6622
- 3.8/6.6 (7.2) kV
- 6.35/11 (12) kV
- 8.7/15 (17.5) kV
- 12.7/22 (24) kV
- 19/33 (36) kV

CABLE INSTALLATION



In duct | In ground with protection | In free air Ladders/ Trays | Minimum Bending Radius | In Trench | Internal Cabling

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(μF/km)	(A/km)
Table 1 : 3.6/6 (7.2) kV or 3.8/6.6 (7.2) kV Earthed System										**(at Uo=3.6 kV)**
25	38.5	2735	1000	0.7270	0.928	0.117	0.935	1.619	0.29	0.33
35	41.0	3150	500	0.5240	0.669	0.111	0.678	1.174	0.33	0.37
50	45.0	4070	500	0.3870	0.494	0.106	0.505	0.875	0.37	0.42
70	48.5	4940	500	0.2680	0.343	0.098	0.357	0.618	0.42	0.48
95	52.5	5980	500	0.1930	0.247	0.094	0.264	0.457	0.48	0.54
120	56.0	6975	500	0.1530	0.197	0.091	0.217	0.376	0.53	0.60
150	59.0	7975	500	0.1240	0.160	0.089	0.183	0.317	0.57	0.64
185	63.0	9315	500	0.0991	0.129	0.086	0.155	0.268	0.62	0.70
240	69.0	11430	500	0.0754	0.099	0.083	0.129	0.223	0.68	0.77
300	76.5	14545	250	0.0601	0.081	0.082	0.115	0.199	0.69	0.78
400	84.5	17760	250	0.0470	0.065	0.080	0.103	0.178	0.73	0.83
Table 2: 6/10 (12) kV or 6.35/11 (12) kV Earthed System										**(at U_0=6 kV)**
25	44.0	3460	500	0.7270	0.928	0.125	0.936	1.621	0.23	0.43
35	46.0	3945	500	0.5240	0.669	0.119	0.680	1.178	0.25	0.47
50	49.0	4530	500	0.3870	0.494	0.113	0.507	0.878	0.28	0.53
70	53.0	5405	500	0.2680	0.343	0.105	0.359	0.622	0.32	0.60
95	57.0	6510	500	0.1930	0.247	0.100	0.266	0.461	0.36	0.68
120	60.5	7485	500	0.1530	0.197	0.096	0.219	0.379	0.40	0.75
150	63.5	8540	500	0.1240	0.160	0.094	0.186	0.322	0.43	0.81
185	67.5	9905	500	0.0991	0.129	0.090	0.157	0.272	0.47	0.89
240	74.0	12760	500	0.0754	0.099	0.087	0.132	0.229	0.53	1.00
300	79.5	15040	250	0.0601	0.080	0.085	0.117	0.203	0.58	1.09
400	86.0	18010	250	0.0470	0.065	0.082	0.105	0.182	0.65	1.23
Table 3: 8.7/15 (17.5) kV Earthed System										**(at U_0=8.7 kV)**
25	49.0	4025	500	0.7270	0.928	0.134	0.938	1.625	0.19	0.52
35	51.5	4490	500	0.5240	0.669	0.127	0.681	1.180	0.20	0.55
50	54.5	5100	500	0.3870	0.494	0.121	0.509	0.882	0.23	0.63
70	58.0	6000	500	0.2680	0.343	0.112	0.361	0.625	0.26	0.71
95	62.0	7110	500	0.1930	0.247	0.106	0.269	0.466	0.29	0.79
120	65.5	8150	500	0.1530	0.197	0.102	0.222	0.385	0.31	0.85
150	68.5	9190	500	0.1240	0.160	0.100	0.189	0.327	0.34	0.93
185	74.0	11390	500	0.0991	0.128	0.096	0.160	0.277	0.37	1.01
240	79.5	13615	250	0.0754	0.099	0.092	0.135	0.234	0.41	1.12
300	84.5	15845	250	0.0601	0.080	0.090	0.120	0.208	0.45	1.23
400	91.5	18895	250	0.0470	0.064	0.086	0.107	0.185	0.50	1.37
Table 4: 12/20 (24) kV or 12.7/22 (24) kV Earthed System										**(at Uo=12 kV)**
35	56.0	5025	500	0.5240	0.669	0.134	0.682	1.181	0.18	0.68
50	59.0	5650	500	0.3870	0.494	0.127	0.510	0.883	0.20	0.75
70	63.0	6595	500	0.2680	0.343	0.118	0.363	0.629	0.22	0.83
95	67.0	7735	500	0.1930	0.247	0.112	0.271	0.469	0.25	0.94
120	71.5	9510	500	0.1530	0.196	0.108	0.224	0.388	0.27	1.02
150	74.5	10660	500	0.1240	0.160	0.104	0.191	0.331	0.29	1.09
185	79.0	12140	250	0.0991	0.128	0.100	0.162	0.281	0.31	1.17
240	84.0	14315	250	0.0754	0.099	0.096	0.138	0.239	0.35	1.32
300	89.0	16635	250	0.0601	0.080	0.094	0.123	0.213	0.38	1.43
400	96.0	19725	250	0.0470	0.064	0.090	0.110	0.191	0.42	1.58

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(μF/km)	(A/km)
Table 5: 18/30 (36) kV or 19/33 (36) kV Earthed System										**(at U_0=18 kV)**
50	72.0	7990	500	0.3870	0.494	0.141	0.514	0.890	0.15	0.85
70	76.0	9000	500	0.2680	0.343	0.130	0.367	0.636	0.17	0.96
95	80.0	10235	250	0.1930	0.247	0.124	0.276	0.478	0.19	1.07
120	83.5	11385	250	0.1530	0.196	0.119	0.229	0.397	0.20	1.13
150	86.5	12500	250	0.1240	0.160	0.115	0.197	0.341	0.22	1.24
185	90.5	14105	250	0.0991	0.128	0.110	0.169	0.293	0.23	1.30
240	96.0	16365	250	0.0754	0.098	0.106	0.144	0.249	0.26	1.47
300	101.0	18740	250	0.0601	0.079	0.102	0.129	0.223	0.28	1.58
400	108.0	21970	250	0.0470	0.064	0.098	0.117	0.203	0.31	1.75

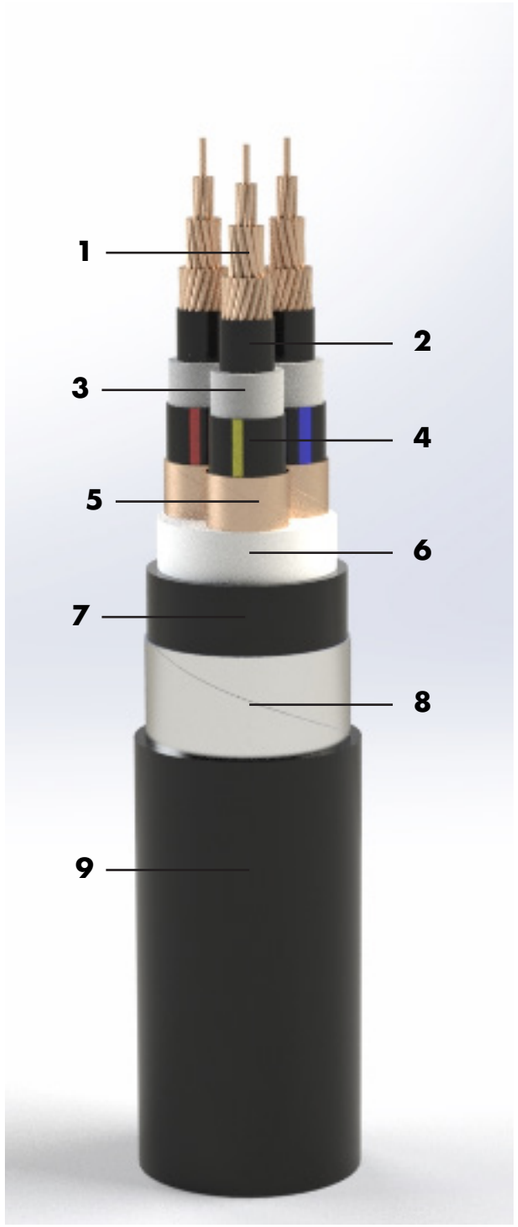
THREE CORE MEDIUM VOLTAGE CABLE WITH COPPER CONDUCTOR, XLPE INSULATION, CU TAPE METALLIC SCREEN, GALVANIZED DOUBLE STEEL TAPE ARMOURED & PVC SHEATH.

APPLICATION

Suitable for installations indoors: mostly in power supply stations and outdoors: in cable ducts, underground, and on cable trays for industries, switch-boards and power stations.

CABLE CONSTRUCTION

Three Core Stranded Annealed Plain Copper Conductor, Extruded Semi-conductive layer of conductor screen, XLPE insulation, Extruded Semi-conductive layer of insulation screen, Copper Tape Metallic Screen on each core, Fillers of non-hygroscopic polypropylene, Extruded PVC Separation Sheath, Galvanized Double Steel tape Armour and Overall Extruded PVC Outer Sheath.



1. Conductor
Copper Conductor

2. Conductor Screen
Semi-conducting Conductor Screen

3. Insulation
XLPE

4. Insulation Screen
Semi-conducting Insulation Screen

5. Metallic Screen
Copper Tape

6. Fillers
Non Hygroscopic PP Fillers

7. Separation Sheath
Extruded PVC

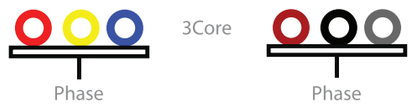
8. Armour
Double Steel Tape Armour

9. Outer Sheath
Extruded Overall PVC Outer Sheath.

APPLICATION STANDARDS

Medium Voltage Cables are designed and tested to meet the requirements of below standard:
IEC 60502-2

CORE COLOUR IDENTIFICATION:



However, FEICHUN also supply a wide range of alternative designs to meet customer's special project requirements.

TYPICAL CHARACTERISTICS:



VOLTAGE GRADE:

IEC 60502-2
- 3.6/6 (7.2) kV
- 6/10 (12) kV
- 8.7/15 (17.5) kV
- 12/20 (22) kV
- 18/30 (36) kV

CABLE INSTALLATION



Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(μF/km)	(A/km)
Table 1 : 3.6/6 (7.2) kV or 3.8/6.6 (7.2) kV Earthed System										(at Uo=3.6 kV)
25	36.5	2120	1000	0.7270	0.928	0.117	0.935	1.619	0.29	0.33
35	39.0	2505	1000	0.5240	0.669	0.111	0.678	1.174	0.33	0.37
50	42.0	3005	500	0.3870	0.494	0.106	0.505	0.875	0.37	0.42
70	45.5	3775	500	0.2680	0.343	0.098	0.357	0.618	0.42	0.48
95	49.5	4715	500	0.1930	0.247	0.094	0.264	0.457	0.48	0.54
120	53.0	5605	500	0.1530	0.197	0.091	0.217	0.376	0.53	0.60
150	56.0	6530	500	0.1240	0.160	0.089	0.183	0.317	0.57	0.64
185	60.0	7770	500	0.0991	0.129	0.086	0.155	0.268	0.62	0.70
240	66.0	9740	500	0.0754	0.099	0.083	0.129	0.223	0.68	0.77
300	72.0	11850	500	0.0601	0.081	0.082	0.115	0.199	0.69	0.78
400	81.0	15520	250	0.0470	0.065	0.080	0.103	0.178	0.73	0.83
Table 2: 6/10 (12) kV or 6.35/11 (12) kV Earthed System										(at U_0=6 kV)
25	41.0	2420	500	0.7270	0.928	0.125	0.936	1.621	0.23	0.43
35	43.0	2820	500	0.5240	0.669	0.119	0.680	1.178	0.25	0.47
50	46.0	3335	500	0.3870	0.494	0.113	0.507	0.878	0.28	0.53
70	49.5	4105	500	0.2680	0.343	0.105	0.359	0.622	0.32	0.60
95	53.5	5090	500	0.1930	0.247	0.100	0.266	0.461	0.36	0.68
120	57.5	6020	500	0.1530	0.197	0.096	0.219	0.379	0.40	0.75
150	60.5	6965	500	0.1240	0.160	0.094	0.186	0.322	0.43	0.81
185	64.5	8230	500	0.0991	0.129	0.090	0.157	0.272	0.47	0.89
240	70.0	10185	500	0.0754	0.099	0.087	0.132	0.229	0.53	1.00
300	75.0	12200	250	0.0601	0.080	0.085	0.117	0.203	0.58	1.09
400	83.0	15780	250	0.0470	0.065	0.082	0.105	0.182	0.65	1.23
Table 3: 8.7/15 (17.5) kV Earthed System										(at U_0=8.7 kV)
25	46.0	2830	500	0.7270	0.928	0.134	0.938	1.625	0.19	0.52
35	48.5	3245	500	0.5240	0.669	0.127	0.681	1.180	0.20	0.55
50	51.5	3780	500	0.3870	0.494	0.121	0.509	0.882	0.23	0.63
70	55.0	4580	500	0.2680	0.343	0.112	0.361	0.625	0.26	0.71
95	59.0	5590	500	0.1930	0.247	0.106	0.269	0.466	0.29	0.79
120	62.5	6530	500	0.1530	0.197	0.102	0.222	0.385	0.31	0.85
150	65.5	7490	500	0.1240	0.160	0.100	0.189	0.327	0.34	0.93
185	69.5	8810	500	0.0991	0.128	0.096	0.160	0.277	0.37	1.01
240	75.0	10775	500	0.0754	0.099	0.092	0.135	0.234	0.41	1.12
300	81.5	13640	250	0.0601	0.080	0.090	0.120	0.208	0.45	1.23
400	88.0	16540	250	0.0470	0.064	0.086	0.107	0.185	0.50	1.37
Table 4: 12/20 (24) kV or 12.7/22 (24) kV Earthed System										(at Uo=12 kV)
35	53.0	3655	500	0.5240	0.669	0.134	0.682	1.181	0.18	0.68
50	56.0	4205	500	0.3870	0.494	0.127	0.510	0.883	0.20	0.75
70	59.5	5025	500	0.2680	0.343	0.118	0.363	0.629	0.22	0.83
95	63.5	6085	500	0.1930	0.247	0.112	0.271	0.469	0.25	0.94
120	67.0	7020	500	0.1530	0.196	0.108	0.224	0.388	0.27	1.02
150	70.5	8030	500	0.1240	0.160	0.104	0.191	0.331	0.29	1.09
185	74.5	9350	500	0.0991	0.128	0.100	0.162	0.281	0.31	1.17
240	81.0	12160	250	0.0754	0.099	0.096	0.138	0.239	0.35	1.32
300	86.0	14290	250	0.0601	0.080	0.094	0.123	0.213	0.38	1.43
400	93.0	17235	250	0.0470	0.064	0.090	0.110	0.191	0.42	1.58

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(μF/km)	(A/km)
Table 5: 18/30 (36) kV or 19/33 (36) kV Earthed System										(at U_0=18 kV)
50	67.5	5420	500	0.3870	0.494	0.141	0.514	0.890	0.15	0.85
70	71.5	6295	500	0.2680	0.343	0.130	0.367	0.636	0.17	0.96
95	75.5	7425	500	0.1930	0.247	0.124	0.276	0.478	0.19	1.07
120	80.5	9215	250	0.1530	0.196	0.119	0.229	0.397	0.20	1.13
150	83.5	10280	250	0.1240	0.160	0.115	0.197	0.341	0.22	1.24
185	87.5	11730	250	0.0991	0.128	0.110	0.169	0.293	0.23	1.30
240	92.5	13870	250	0.0754	0.098	0.106	0.144	0.249	0.26	1.47
300	98.0	16120	250	0.0601	0.079	0.102	0.129	0.223	0.28	1.58
400	104.5	19140	250	0.0470	0.064	0.098	0.117	0.203	0.31	1.75

THREE CORE MEDIUM VOLTAGE CABLE WITH ALUMINIUM CONDUCTOR, XLPE INSULATION, CU TAPE METALLIC SCREEN, UNARMOURED & PVC SHEATH.

APPLICATION

Suitable for installations indoors: mostly in power supply stations and outdoors: in cable ducts, underground, and on cable trays for industries, switch-boards and power stations.

CABLE CONSTRUCTION

Three Core Stranded Aluminium Conductor, Extruded Semi-conductive layer of conductor screen, XLPE insulation, Extruded Semi-conductive layer of insulation screen, Copper Tape Metallic Screen on each core, Fillers of non-hygroscopic polypropylene and Overall Extruded PVC Outer Sheath.

1. Conductor
Aluminium Conductor

2. Conductor Screen
Semi-conducting Conductor Screen

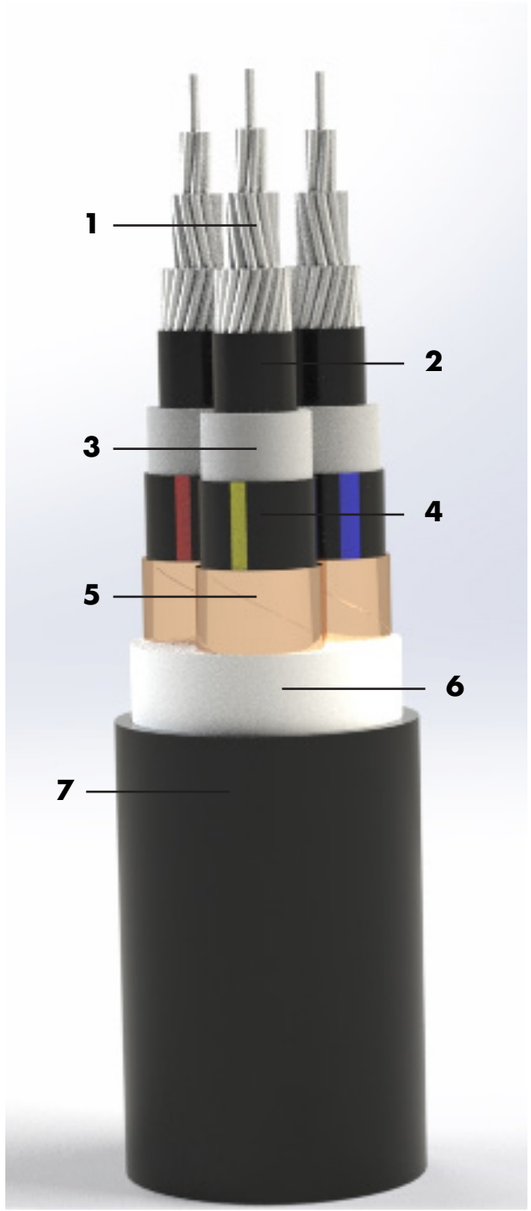
3. Insulation
XLPE

4. Insulation Screen
Semi-conducting Insulation Screen

5. Metallic Screen
Copper Tape

6. Fillers
Non Hygroscopic PP Fillers

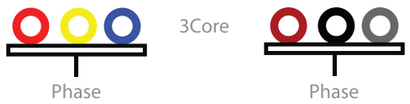
7. Outer Sheath
Extruded Overall PVC Outer Sheath.



APPLICATION STANDARDS

Medium Voltage Cables are designed and tested to meet the requirements of below standard:
IEC 60502-2

CORE COLOUR IDENTIFICATION:



However, FEICHUN also supply a wide range of alternative designs to meet customer's special project requirements.

TYPICAL CHARACTERISTICS:

- Maximum Operating Temperature: 90°C
- Maximum Short Circuit Temperature: 250 C
- Flame Retardant IEC 60332-1-2
- Rigid
- Lead Free
- Test Voltage (A.C.) (3.5 U_0)

VOLTAGE GRADE:

IEC 60502-2
- 3.6/6 (7.2) kV
- 6/10 (12) kV
- 8.7/15 (17.5) kV
- 12/20 (22) kV
- 18/30 (36) kV

CABLE INSTALLATION



In ground with protection | In free air Ladders/ Trays | Minimum Bending Radius | In Trench | Internal Cabling

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(μF/km)	(A/km)
Table 1 : 3.6/6 (7.2) kV or 3.8/6.6 (7.2) kV Earthed System										**(at Uo=3.6 kV)**
25	32.5	965	1000	1.2000	1.540	0.117	1.544	2.674	0.29	0.33
35	34.5	1115	1000	0.8680	1.110	0.111	1.116	1.933	0.33	0.37
50	37.5	1320	1000	0.6410	0.823	0.106	0.830	1.438	0.37	0.42
70	41.0	1625	500	0.4430	0.569	0.098	0.577	0.999	0.42	0.48
95	45.0	2005	500	0.3200	0.411	0.094	0.422	0.731	0.48	0.54
120	48.5	2345	500	0.2530	0.326	0.091	0.338	0.585	0.53	0.60
150	51.5	2695	500	0.2060	0.266	0.089	0.280	0.485	0.57	0.64
185	55.5	3170	500	0.1640	0.212	0.086	0.229	0.397	0.62	0.70
240	61.0	3910	500	0.1250	0.162	0.083	0.182	0.315	0.68	0.77
300	67.0	4735	500	0.1000	0.131	0.082	0.155	0.268	0.69	0.78
400	74.5	5850	500	0.0778	0.103	0.080	0.130	0.225	0.73	0.83
Table 2: 6/10 (12) kV or 6.35/11 (12) kV Earthed System										**(at U_0=6 kV)**
25	36.5	1170	1000	1.2000	1.540	0.125	1.545	2.676	0.23	0.43
35	39.0	1345	1000	0.8680	1.110	0.119	1.116	1.933	0.25	0.47
50	41.5	1565	500	0.6410	0.823	0.113	0.831	1.439	0.28	0.53
70	45.5	1890	500	0.4430	0.569	0.105	0.579	1.003	0.32	0.60
95	49.0	2275	500	0.3200	0.411	0.100	0.423	0.733	0.36	0.68
120	52.5	2630	500	0.2530	0.326	0.096	0.340	0.589	0.40	0.75
150	55.5	3000	500	0.2060	0.265	0.094	0.281	0.487	0.43	0.81
185	59.5	3490	500	0.1640	0.212	0.090	0.230	0.398	0.47	0.89
240	64.5	4225	500	0.1250	0.162	0.087	0.184	0.319	0.53	1.00
300	69.5	5000	500	0.1000	0.131	0.085	0.156	0.270	0.58	1.09
400	76.5	6055	250	0.0778	0.103	0.082	0.132	0.229	0.65	1.23
Table 3: 8.7/15 (17.5) kV Earthed System										**(at U_0=8.7 kV)**
25	41.5	1455	500	1.2000	1.540	0.134	1.546	2.678	0.19	0.52
35	44.0	1650	500	0.8680	1.110	0.127	1.117	1.935	0.20	0.55
50	47.0	1885	500	0.6410	0.823	0.121	0.832	1.441	0.23	0.63
70	50.5	2240	500	0.4430	0.569	0.112	0.580	1.005	0.26	0.71
95	54.0	2650	500	0.3200	0.411	0.106	0.424	0.734	0.29	0.79
120	57.5	3030	500	0.2530	0.325	0.102	0.341	0.591	0.31	0.85
150	60.5	3420	500	0.2060	0.265	0.100	0.283	0.490	0.34	0.93
185	64.5	3935	500	0.1640	0.212	0.096	0.233	0.404	0.37	1.01
240	69.5	4705	500	0.1250	0.162	0.092	0.186	0.322	0.41	1.12
300	74.5	5485	500	0.1000	0.131	0.090	0.159	0.275	0.45	1.23
400	81.5	6615	250	0.0778	0.103	0.086	0.134	0.232	0.50	1.37
Table 4: 12/20 (24) kV or 12.7/22 (24) kV Earthed System										**(at Uo=12 kV)**
35	48.5	1940	500	0.8680	1.110	0.134	1.118	1.936	0.18	0.68
50	51.0	2195	500	0.6410	0.823	0.127	0.833	1.443	0.20	0.75
70	55.0	2570	500	0.4430	0.569	0.118	0.581	1.006	0.22	0.83
95	58.5	3000	500	0.3200	0.411	0.112	0.426	0.738	0.25	0.94
120	62.0	3400	500	0.2530	0.325	0.108	0.342	0.592	0.27	1.02
150	65.0	3805	500	0.2060	0.265	0.104	0.285	0.494	0.29	1.09
185	69.0	4375	500	0.1640	0.212	0.100	0.234	0.405	0.31	1.17
240	74.0	5150	500	0.1250	0.162	0.096	0.188	0.326	0.35	1.32
300	79.5	5985	250	0.1000	0.130	0.094	0.160	0.277	0.38	1.43
400	86.0	7125	250	0.0778	0.103	0.090	0.137	0.237	0.42	1.58

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(μF/km)	(A/km)
Table 5: 18/30 (36) kV or 19/33 (36) kV Earthed System										**(at U_0=18 kV)**
50	62.5	3115	500	0.6410	0.823	0.141	0.835	1.446	0.15	0.85
70	66.5	3545	500	0.4430	0.569	0.130	0.584	1.012	0.17	0.96
95	70.0	4030	500	0.3200	0.411	0.124	0.429	0.743	0.19	1.07
120	73.5	4485	500	0.2530	0.325	0.119	0.346	0.599	0.20	1.13
150	76.5	4940	500	0.2060	0.265	0.115	0.289	0.501	0.22	1.24
185	80.5	5535	250	0.1640	0.212	0.110	0.239	0.414	0.23	1.30
240	85.5	6420	250	0.1250	0.162	0.106	0.194	0.336	0.26	1.47
300	90.5	7335	250	0.1000	0.130	0.102	0.165	0.286	0.28	1.58
400	97.5	8575	250	0.0778	0.102	0.098	0.141	0.244	0.31	1.75

THREE CORE MEDIUM VOLTGAE CABLE WITH ALUMINIUM CONDUCTOR, XLPE INSULATION, CU TAPE METALLIC SCREEN, GALVANISED STEEL WIRE ARMOURED & PVC SHEATH.

APPLICATION

Suitable for installations indoors: mostly in power supply stations and outdoors: in cable ducts, underground, and on cable trays for industries, switch-boards and power stations.

CABLE CONSTRUCTION

Three Core Stranded Aluminium Conductor, Extruded Semi-conductive layer of conductor screen, XLPE insulation, Extruded Semi-conductive layer of insulation screen, Copper Tape Metallic Screen on each core, Fillers of non-hygroscopic polypropylene, Extruded PVC Separation Sheath, Galvanized Steel Wire Armour and Overall Extruded PVC Outer Sheath.

1. Conductor
Aluminium Conductor

2. Conductor Screen
Semi-conducting Conductor Screen

3. Insulation
XLPE

4. Insulation Screen
Semi-conducting Insulation Screen

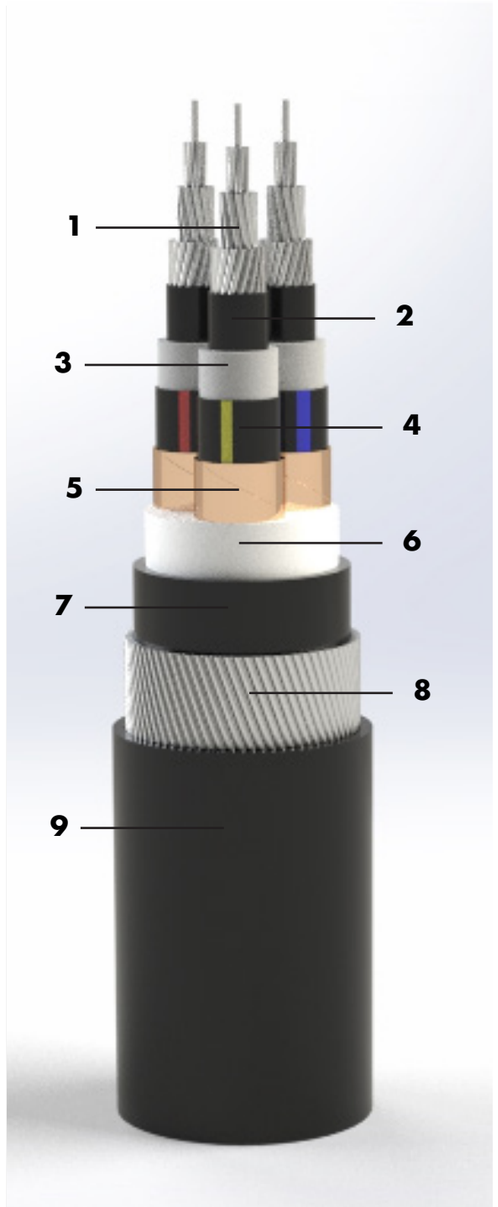
5. Metallic Screen
Copper Tape

6. Fillers
Non Hygroscopic PP Fillers

7. Separation Sheath
Extruded PVC

8. Armour
Galvanised Steel Wire

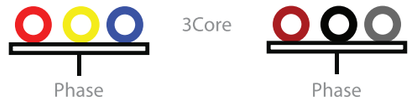
9. Outer Sheath
Extruded PVC Outer Sheath.



APPLICATION STANDARDS

Medium Voltage Cables are designed and tested to meet the requirements of below standard:
IEC 60502-2
BS 6622

CORE COLOUR IDENTIFICATION:



However, FEICHUN also supply a wide range of alternative designs to meet customer's special project requirements.

TYPICAL CHARACTERISTICS:



VOLTAGE GRADE:

IEC 60502-2
- 3.6/6 (7.2) kV
- 6/10 (12) kV
- 8.7/15 (17.5) kV
- 12/20 (22) kV
- 18/30 (36) kV

BS 6622
- 3.8/6.6 (7.2) kV
- 6.35/11 (12) kV
- 8.7/15 (17.5) kV
- 12.7/22 (24) kV
- 19/33 (36) kV

CABLE INSTALLATION



In ground with protection | In free air Ladders/ Trays | Minimum Bending Radius | In Trench | Internal Cabling

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(μF/km)	(A/km)
Table 1 : 3.6/6 (7.2) kV or 3.8/6.6 (7.2) kV Earthed System										(at Uo=3.6 kV)
25	38.5	2280	1000	1.2000	1.540	0.117	1.544	2.674	0.29	0.33
35	41.0	2515	500	0.8680	1.110	0.111	1.116	1.933	0.33	0.37
50	45.0	3215	500	0.6410	0.823	0.106	0.830	1.438	0.37	0.42
70	48.5	3715	500	0.4430	0.569	0.098	0.577	0.999	0.42	0.48
95	52.5	4260	500	0.3200	0.411	0.094	0.422	0.731	0.48	0.54
120	56.0	4795	500	0.2530	0.326	0.091	0.338	0.585	0.53	0.60
150	59.0	5285	500	0.2060	0.266	0.089	0.280	0.485	0.57	0.64
185	63.0	5960	500	0.1640	0.212	0.086	0.229	0.397	0.62	0.70
240	69.0	6995	500	0.1250	0.162	0.083	0.182	0.315	0.68	0.77
300	76.5	8980	250	0.1000	0.131	0.082	0.155	0.268	0.69	0.78
400	84.5	10675	250	0.0778	0.103	0.080	0.130	0.225	0.73	0.83
Table 2: 6/10 (12) kV or 6.35/11 (12) kV Earthed System										(at U_0=6 kV)
25	44.0	3005	500	1.2000	1.540	0.125	1.545	2.676	0.23	0.43
35	46.0	3310	500	0.8680	1.110	0.119	1.116	1.933	0.25	0.47
50	49.0	3680	500	0.6410	0.823	0.113	0.831	1.439	0.28	0.53
70	53.0	4185	500	0.4430	0.569	0.105	0.579	1.003	0.32	0.60
95	57.0	4785	500	0.3200	0.411	0.100	0.423	0.733	0.36	0.68
120	60.5	5305	500	0.2530	0.326	0.096	0.340	0.589	0.40	0.75
150	63.5	5850	500	0.2060	0.265	0.094	0.281	0.487	0.43	0.81
185	67.5	6550	500	0.1640	0.212	0.090	0.230	0.398	0.47	0.89
240	74.0	8325	500	0.1250	0.162	0.087	0.184	0.319	0.53	1.00
300	79.5	9475	250	0.1000	0.131	0.085	0.156	0.270	0.58	1.09
400	86.0	10925	250	0.0778	0.103	0.082	0.132	0.229	0.65	1.23
Table 3: 8.7/15 (17.5) kV Earthed System										(at U_0=8.7 kV)
25	49.0	3570	500	1.2000	1.540	0.134	1.546	2.678	0.19	0.52
35	51.5	3855	500	0.8680	1.110	0.127	1.117	1.935	0.20	0.55
50	54.5	4245	500	0.6410	0.823	0.121	0.832	1.441	0.23	0.63
70	58.0	4780	500	0.4430	0.569	0.112	0.580	1.005	0.26	0.71
95	62.0	5390	500	0.3200	0.411	0.106	0.424	0.734	0.29	0.79
120	65.5	5970	500	0.2530	0.325	0.102	0.341	0.591	0.31	0.85
150	68.5	6500	500	0.2060	0.265	0.100	0.283	0.490	0.34	0.93
185	74.0	8035	500	0.1640	0.212	0.096	0.233	0.404	0.37	1.01
240	79.5	9180	250	0.1250	0.162	0.092	0.186	0.322	0.41	1.12
300	84.5	10280	250	0.1000	0.131	0.090	0.159	0.275	0.45	1.23
400	91.5	11805	250	0.0778	0.103	0.086	0.134	0.232	0.50	1.37
Table 4: 12/20 (24) kV or 12.7/22 (24) kV Earthed System										(at Uo=12 kV)
35	56.0	4390	500	0.8680	1.110	0.134	1.118	1.936	0.18	0.68
50	59.0	4800	500	0.6410	0.823	0.127	0.833	1.443	0.20	0.75
70	63.0	5375	500	0.4430	0.569	0.118	0.581	1.006	0.22	0.83
95	67.0	6010	500	0.3200	0.411	0.112	0.426	0.738	0.25	0.94
120	71.5	7330	500	0.2530	0.325	0.108	0.342	0.592	0.27	1.02
150	74.5	7970	500	0.2060	0.265	0.104	0.285	0.494	0.29	1.09
185	79.0	8785	250	0.1640	0.212	0.100	0.234	0.405	0.31	1.17
240	84.0	9880	250	0.1250	0.162	0.096	0.188	0.326	0.35	1.32
300	89.0	11065	250	0.1000	0.130	0.094	0.160	0.277	0.38	1.43
400	96.0	12635	250	0.0778	0.103	0.090	0.137	0.237	0.42	1.58

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(μF/km)	(A/km)
Table 5: 18/30 (36) kV or 19/33 (36) kV Earthed System										(at U_0=18 kV)
50	72.0	7135	500	0.6410	0.823	0.141	0.835	1.446	0.15	0.85
70	76.0	7780	500	0.4430	0.569	0.130	0.584	1.012	0.17	0.96
95	80.0	8510	250	0.3200	0.411	0.124	0.429	0.743	0.19	1.07
120	83.5	9205	250	0.2530	0.325	0.119	0.346	0.599	0.20	1.13
150	86.5	9815	250	0.2060	0.265	0.115	0.289	0.501	0.22	1.24
185	90.5	10750	250	0.1640	0.212	0.110	0.239	0.414	0.23	1.30
240	96.0	11930	250	0.1250	0.162	0.106	0.194	0.336	0.26	1.47
300	101.0	13175	250	0.1000	0.130	0.102	0.165	0.286	0.28	1.58
400	108.0	14880	250	0.0778	0.102	0.098	0.141	0.244	0.31	1.75

THREE CORE MEDIUM VOLTAGE CABLE WITH ALUMINIUM CONDUCTOR, XLPE INSULATION, CU TAPE METALLIC SCREEN, GALVANIZED DOUBLE STEEL TAPE ARMOURED & PVC SHEATH.

APPLICATION

Suitable for installations indoors: mostly in power supply stations and outdoors: in cable ducts, underground, and on cable trays for industries, switch-boards and power stations.

CABLE CONSTRUCTION

Three Core Stranded Aluminium Conductor, Extruded Semi-conductive layer of conductor screen, XLPE insulation, Extruded Semi-conductive layer of insulation screen, Copper Tape Metallic Screen on each core, Fillers of non-hygroscopic polypropylene, Extruded PVC Separation Sheath, Galvanized Double Steel tape Armour and Overall Extruded PVC Outer Sheath.

1. Conductor
Aluminium Conductor

2. Conductor Screen
Semi-conducting Conductor Screen

3. Insulation
XLPE

4. Insulation Screen
Semi-conducting Insulation Screen

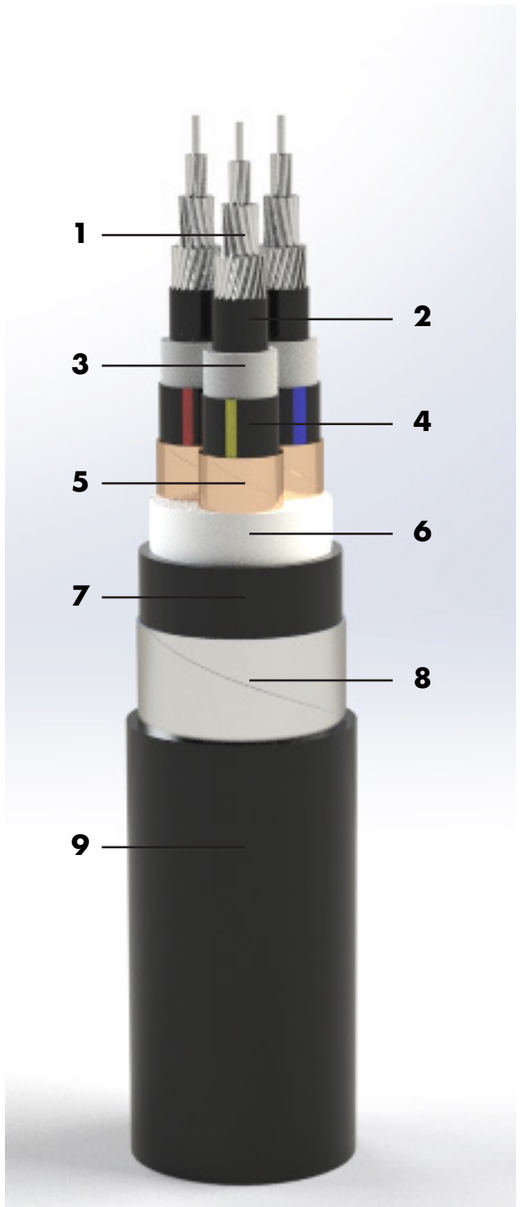
5. Metallic Screen
Copper Tape

6. Fillers
Non Hygroscopic PP Fillers

7.Separation Sheath
Extruded PVC

8. Armour
Double Steel Tape Armour

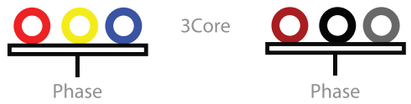
9. Outer Sheath
Overall PVC Outer Sheath.



APPLICATION STANDARDS

Medium Voltage Cables are designed and tested to meet the requirements of below standard:
IEC 60502-2

CORE COLOUR IDENTIFICATION:



However, FEICHUN also supply a wide range of alternative designs to meet customer's special project requirements.

TYPICAL CHARACTERISTICS:



VOLTAGE GRADE:

IEC 60502-2
- 3.6/6 (7.2) kV
- 6/10 (12) kV
- 8.7/15 (17.5) kV
- 12/20 (22) kV
- 18/30 (36) kV

CABLE INSTALLATION



Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(μF/km)	(A/km)
Table 1 : 3.6/6 (7.2) kV or 3.8/6.6 (7.2) kV Earthed System										(at Uo=3.6 kV)
25	36.5	1665	1000	1.2000	1.540	0.117	1.544	2.674	0.29	0.33
35	39.0	1870	1000	0.8680	1.110	0.111	1.116	1.933	0.33	0.37
50	42.0	2150	500	0.6410	0.823	0.106	0.830	1.438	0.37	0.42
70	45.5	2550	500	0.4430	0.569	0.098	0.577	0.999	0.42	0.48
95	49.5	2995	500	0.3200	0.411	0.094	0.422	0.731	0.48	0.54
120	53.0	3425	500	0.2530	0.326	0.091	0.338	0.585	0.53	0.60
150	56.0	3840	500	0.2060	0.266	0.089	0.280	0.485	0.57	0.64
185	60.0	4415	500	0.1640	0.212	0.086	0.229	0.397	0.62	0.70
240	66.0	5305	500	0.1250	0.162	0.083	0.182	0.315	0.68	0.77
300	72.0	6285	500	0.1000	0.131	0.082	0.155	0.268	0.69	0.78
400	81.0	8435	250	0.0778	0.103	0.080	0.130	0.225	0.73	0.83
Table 2: 6/10 (12) kV or 6.35/11 (12) kV Earthed System										(at U_0=6 kV)
25	41.0	1965	500	1.2000	1.540	0.125	1.545	2.676	0.23	0.43
35	43.0	2185	500	0.8680	1.110	0.119	1.116	1.933	0.25	0.47
50	46.0	2480	500	0.6410	0.823	0.113	0.831	1.439	0.28	0.53
70	49.5	2885	500	0.4430	0.569	0.105	0.579	1.003	0.32	0.60
95	53.5	3370	500	0.3200	0.411	0.100	0.423	0.733	0.36	0.68
120	57.5	3840	500	0.2530	0.326	0.096	0.340	0.589	0.40	0.75
150	60.5	4275	500	0.2060	0.265	0.094	0.281	0.487	0.43	0.81
185	64.5	4875	500	0.1640	0.212	0.090	0.230	0.398	0.47	0.89
240	70.0	5750	500	0.1250	0.162	0.087	0.184	0.319	0.53	1.00
300	75.0	6635	250	0.1000	0.131	0.085	0.156	0.270	0.58	1.09
400	83.0	8695	250	0.0778	0.103	0.082	0.132	0.229	0.65	1.23
Table 3: 8.7/15 (17.5) kV Earthed System										(at U_0=8.7 kV)
25	46.0	2375	500	1.2000	1.540	0.134	1.546	2.678	0.19	0.52
35	48.5	2610	500	0.8680	1.110	0.127	1.117	1.935	0.20	0.55
50	51.5	2930	500	0.6410	0.823	0.121	0.832	1.441	0.23	0.63
70	55.0	3355	500	0.4430	0.569	0.112	0.580	1.005	0.26	0.71
95	59.0	3870	500	0.3200	0.411	0.106	0.424	0.734	0.29	0.79
120	62.5	4345	500	0.2530	0.325	0.102	0.341	0.591	0.31	0.85
150	65.5	4800	500	0.2060	0.265	0.100	0.283	0.490	0.34	0.93
185	69.5	5455	500	0.1640	0.212	0.096	0.233	0.404	0.37	1.01
240	75.0	6340	500	0.1250	0.162	0.092	0.186	0.322	0.41	1.12
300	81.5	8075	250	0.1000	0.131	0.090	0.159	0.275	0.45	1.23
400	88.0	9450	250	0.0778	0.103	0.086	0.134	0.232	0.50	1.37
Table 4: 12/20 (24) kV or 12.7/22 (24) kV Earthed System										(at Uo=12 kV)
35	53.0	3020	500	0.8680	1.110	0.134	1.118	1.936	0.18	0.68
50	56.0	3355	500	0.6410	0.823	0.127	0.833	1.443	0.20	0.75
70	59.5	3805	500	0.4430	0.569	0.118	0.581	1.006	0.22	0.83
95	63.5	4365	500	0.3200	0.411	0.112	0.426	0.738	0.25	0.94
120	67.0	4840	500	0.2530	0.325	0.108	0.342	0.592	0.27	1.02
150	70.5	5340	500	0.2060	0.265	0.104	0.285	0.494	0.29	1.09
185	74.5	5995	500	0.1640	0.212	0.100	0.234	0.405	0.31	1.17
240	81.0	7725	250	0.1250	0.162	0.096	0.188	0.326	0.35	1.32
300	86.0	8725	250	0.1000	0.130	0.094	0.160	0.277	0.38	1.43
400	93.0	10150	250	0.0778	0.103	0.090	0.137	0.237	0.42	1.58

Cable size	Physical Dimensions			Electrical Parameters						
	Cable OD (Approx.)	Cable Weight (Approx.)	Standard Drum Length	DC Resistance at 20°C (Max)	AC Resistance at 90°C (Approx.)	Reactance at 50Hz. (Approx.)	Impedance at 50Hz. (Approx.)	Voltage Drop (Approx.)	Capacitance at 50Hz. (Approx.)	Charging current at U_0 & 50 Hz (Approx.)
(mm²)	(mm)	(kg/km)	(m)	(Ω/km)	(Ω/km)	(Ω/km)	(Ω/km)	(mV/A/m)	(μF/km)	(A/km)
Table 5: 18/30 (36) kV or 19/33 (36) kV Earthed System										(at U_0=18 kV)
50	67.5	4565	500	0.6410	0.823	0.141	0.835	1.446	0.15	0.85
70	71.5	5075	500	0.4430	0.569	0.130	0.584	1.012	0.17	0.96
95	75.5	5705	500	0.3200	0.411	0.124	0.429	0.743	0.19	1.07
120	80.5	7035	250	0.2530	0.325	0.119	0.346	0.599	0.20	1.13
150	83.5	7590	250	0.2060	0.265	0.115	0.289	0.501	0.22	1.24
185	87.5	8375	250	0.1640	0.212	0.110	0.239	0.414	0.23	1.30
240	92.5	9435	250	0.1250	0.162	0.106	0.194	0.336	0.26	1.47
300	98.0	10555	250	0.1000	0.130	0.102	0.165	0.286	0.28	1.58
400	104.5	12050	250	0.0778	0.102	0.098	0.141	0.244	0.31	1.75



Current Rating Section

TABLE 01: SUSTAINED CURRENT RATINGS - SINGLE CORE COPPER CONDUCTOR MV CABLES

CABLE TYPE:

SINGLE CORE COPPER CONDUCTOR XLPE INSULATED CABLES

VOLTAGE GRADE :

3.6/6 (7.2) kV to 18/30 (36) kV

APPLICABLE STANDARD:

IEC 60502-2

CABLE SIZE	ARMOURED CABLES			UN-AMOURED CABLES		
	GROUND AT 20°C	DUCT AT 20°C	AIR AT 30°C	GROUND AT 20°C	DUCT AT 20°C	AIR AT 30°C
mm²	(A)	(A)	(A)	(A)	(A)	(A)
25	137	131	162	140	132	163
35	164	155	196	166	157	198
50	193	183	234	196	186	238
70	234	223	291	239	227	296
95	278	265	353	285	271	361
120	315	301	406	323	308	417
150	349	334	460	361	343	473
185	391	376	524	406	387	543
240	446	430	611	469	447	641
300	495	478	692	526	504	735
400	551	534	788	590	564	845
500	593	578	873	655	635	956
630	646	632	975	731	712	1095
800	693	682	1074	806	789	1241
1000	731	721	1156	873	859	1373

LAYING CONDTIONS:

- Maximum conductor temperature- 90° C
- Ambient air temperature - 30° C
- Ground temperature- 20° C
- [illegible]- 0.8m
- [illegible]ity of soil- 1.5 K.m/W
- Thermal resistivity of earthenware ducts- 1.2 K.m/W
- Both-end Bonding system.
- 3 Single core cables installed in trefoil touching formation (installation in one common duct in case of the cables installed in duct)

TABLE 02: SUSTAINED CURRENT RATINGS - SINGLE CORE ALUMINIUM CONDUCTOR MV CABLES

CABLE TYPE:

SINGLE CORE ALUMINIUM CONDUCTOR XLPE INSULATED CABLES

VOLTAGE GRADE :

3.6/6 (7.2) kV to 18/30 (36) kV

APPLICABLE STANDARD:

IEC 60502-2

CABLE SIZE	ARMOURED CABLES			UN-AMOURED CABLES		
	GROUND AT 20°C	DUCT AT 20°C	AIR AT 30°C	GROUND AT 20°C	DUCT AT 20°C	AIR AT 30°C
mm²	(A)	(A)	(A)	(A)	(A)	(A)
25	107	101	126	108	102	127
35	127	121	152	129	122	154
50	150	142	182	152	144	184
70	182	174	226	186	176	230
95	217	207	275	221	210	280
120	246	235	317	252	240	324
150	274	262	360	281	267	368
185	309	297	413	317	303	424
240	355	342	485	367	351	502
300	397	383	552	414	397	577
400	448	434	638	470	451	673
500	494	482	724	528	512	770
630	549	537	824	599	583	896
800	601	592	927	672	658	1033
1000	648	639	1020	743	731	1167

LAYING CONDTIONS:

- Maximum conductor temperature- 90° C
- Ambient air temperature - 30° C
- Ground temperature- 20° C
- [illegible]ng- 0.8m
- [illegible]tivity of soil- 1.5 K.m/W
- Thermal resistivity of earthenware ducts- 1.2 K.m/W
- Both-end Bonding system.
- 3 Single core cables installed in trefoil touching formation (installation in one common duct in case of the cables installed in duct)

TABLE 03: SUSTAINED CURRENT RATINGS - THREE CORE COPPER CONDUCTOR MV CABLES

CABLE TYPE:

THREE CORE COPPER CONDUCTOR XLPE INSULATED CABLES

VOLTAGE GRADE :

3.6/6 (7.2) KV TO 18/30 (36) KV

APPLICABLE STANDARD:

IEC 60502-2

CABLE SIZE	ARMOURED CABLES			UN-AMOURED CABLES		
	GROUND AT 20°C	DUCT AT 20°C	AIR AT 30°C	GROUND AT 20°C	DUCT AT 20°C	AIR AT 30°C
mm²	(A)	(A)	(A)	(A)	(A)	(A)
25	129	112	143	129	112	142
35	154	134	172	153	133	170
50	181	158	205	181	158	204
70	220	194	253	221	193	253
95	263	232	307	262	231	304
120	298	264	352	298	264	351
150	332	296	397	334	297	398
185	374	335	453	377	336	455
240	431	387	529	434	390	531
300	482	435	599	489	441	606
400	541	492	683	553	501	696

LAYING CONDTIONS:

- Maximum conductor temperature- 90° C
- Ambient air temperature - 30° C
- Ground temperature- 20° C
- Depth of laying- 0.8m
- Thermal resistivity of soil- 1.5 K.m/W
- Thermal resistivity of earthenware ducts- 1.2 K.m/W
- Both-end Bonding system.

TABLE 04: SUSTAINED CURRENT RATINGS - THREE CORE ALUMINIUM CONDUCTOR MV CABLES

CABLE TYPE:

THREE CORE ALUMINIUM CONDUCTOR XLPE INSULATED CABLES

VOLTAGE GRADE :

3.6/6 (7.2) KV TO 18/30 (36) KV

APPLICABLE STANDARD:

IEC 60502-2

CABLE SIZE	ARMOURED CABLES			UN-AMOURED CABLES		
	GROUND AT 20°C	DUCT AT 20°C	AIR AT 30°C	GROUND AT 20°C	DUCT AT 20°C	AIR AT 30°C
mm²	(A)	(A)	(A)	(A)	(A)	(A)
25	100	87	111	100	87	110
35	119	104	133	119	103	132
50	140	123	159	140	122	158
70	171	150	196	171	150	196
95	204	180	238	203	179	236
120	232	206	274	232	205	273
150	259	231	309	260	231	309
185	293	262	354	294	262	355
240	338	304	415	340	305	415
300	380	343	472	384	346	475
400	432	393	545	438	398	552

LAYING CONDTIONS:

- Maximum conductor temperature- 90° C
- Ambient air temperature - 30° C
- Ground temperature- 20° C
- Depth of laying- 0.8m
- Thermal resistivity of soil- 1.5 K.m/W
- Thermal resistivity of earthenware ducts- 1.2 K.m/W
- Both-end Bonding system.

De-Rating & Group Rating Factors

DE-RATING FACTORS AND GROUP RATING FACTORS

TABLE AA: DE-RATING FACTORS FOR AMBIENT GROUND TEMPERATURE OTHER THAN 20°C:

AMBIENT GROUND TEMPERATURE (°C)	10	15	20	25	30	35	40	45	50
De-rating Factor	1.07	1.04	1.00	0.96	0.93	0.89	0.85	0.80	0.76

TABLE BB: DE-RATING FACTORS FOR AMBIENT AIR TEMPERATURE OTHER THAN 30°C:

AMBIENT AIR TEMPERATURE (°C)	20	25	30	35	40	45	50	55	60
De-rating Factor	1.08	1.04	1.00	0.96	0.91	0.87	0.82	0.76	0.71

TABLE CC: DE-RATING FACTORS FOR DEPTHS OF LAYING OTHER THAN 0,8 M FOR DIRECT BURIED CABLES IN GROUND

DEPTH OF LAYING (m)	SINGLE-CORE CABLES		THREE-CORE CABLES
	NOMINAL CONDUCTOR SIZE (mm^2)		
	≤185 mm^2	>185 mm^2	
0.5	1.04	1.06	1.04
0.6	1.02	1.04	1.03
1	0.98	0.97	0.98
1.25	0.96	0.95	0.96
1.5	0.95	0.93	0.95
1.75	0.94	0.91	0.94
2	0.93	0.90	0.93
2.5	0.91	0.88	0.91
3	0.90	0.86	0.90

TABLE DD: DE-RATING FACTORS FOR DEPTHS OF LAYING OTHER THAN 0,8 M FOR CABLES IN DUCT

DEPTH OF LAYING (m)	SINGLE-CORE CABLES		THREE-CORE CABLES
	NOMINAL CONDUCTOR SIZE (mm^2)		
	≤185 mm^2	>185 mm^2	
0.5	1.04	1.05	1.03
0.6	1.02	1.03	1.02
1	0.98	0.97	0.99
1.25	0.96	0.95	0.97
1.5	0.95	0.93	0.96
1.75	0.94	0.92	0.95
2	0.93	0.91	0.94
2.5	0.91	0.89	0.93
3	0.90	0.88	0.92

TABLE EE: DE-RATING FACTORS FOR DIFFERENT SOIL THERMAL RESISTIVITIES

TABLE EE.1: DE-RATING FACTORS FOR SOIL THERMAL RESISTIVITIES OTHER THAN 1,5 K.M/W FOR DIRECT BURIED IN GROUND, SINGLE-CORE CABLES

NOMINAL AREA OF CONDUCTOR (mm^2)	VALUES OF SOIL THERMAL RESISTIVITY (K.m/W)						
	0.7	0.8	0.9	1	2	2.5	3
16	1.29	1.24	1.19	1.15	0.89	0.82	0.75
25	1.30	1.25	1.20	1.16	0.89	0.81	0.75
35	1.30	1.25	1.21	1.16	0.89	0.81	0.75
50	1.32	1.26	1.21	1.16	0.89	0.81	0.74
70	1.33	1.27	1.22	1.17	0.89	0.81	0.74
95	1.34	1.28	1.22	1.18	0.89	0.80	0.74
120	1.34	1.28	1.22	1.18	0.88	0.80	0.74
150	1.35	1.28	1.23	1.18	0.88	0.80	0.74
185	1.35	1.29	1.23	1.18	0.88	0.80	0.74
240	1.36	1.29	1.23	1.18	0.88	0.80	0.73
300	1.36	1.30	1.24	1.19	0.88	0.80	0.73
400 & above	1.37	1.30	1.24	1.19	0.88	0.79	0.73

TABLE EE.2 : DE-RATING FACTORS FOR SOIL THERMAL RESISTIVITIES OTHER THAN 1,5 K.M/W SINGLE-CORE CABLES IN BURIED DUCTS:

NOMINAL AREA OF CONDUCTOR (mm^2)	VALUES OF SOIL THERMAL RESISTIVITY (K.m/W)						
	0.7	0.8	0.9	1	2	2.5	3
16	1.20	1.17	1.14	1.11	0.92	0.85	0.79
25	1.21	1.17	1.14	1.12	0.91	0.85	0.79
35	1.21	1.18	1.15	1.12	0.91	0.84	0.79
50	1.21	1.18	1.15	1.12	0.91	0.84	0.78
70	1.22	1.19	1.15	1.12	0.91	0.84	0.78
95	1.23	1.19	1.16	1.13	0.91	0.84	0.78
120	1.23	1.20	1.16	1.13	0.91	0.84	0.78
150	1.24	1.20	1.16	1.13	0.91	0.83	0.78
185	1.24	1.20	1.17	1.13	0.91	0.83	0.78
240	1.25	1.21	1.17	1.14	0.91	0.83	0.77
300	1.25	1.21	1.17	1.14	0.90	0.83	0.77
400 & above	1.25	1.21	1.17	1.14	0.90	0.83	0.77

TABLE EE.3 : DE-RATING FACTORS FOR SOIL THERMAL RESISTIVITIES OTHER THAN 1,5 K.M/W FOR DIRECT BURIED IN GROUND, THREE-CORE CABLES:

NOMINAL AREA OF CONDUCTOR (mm^2)	VALUES OF SOIL THERMAL RESISTIVITY (K.m/W)						
	0.7	0.8	0.9	1	2	2.5	3
16	1.23	1.19	1.16	1.13	0.91	0.84	0.78
25	1.24	1.20	1.16	1.13	0.91	0.84	0.78
35	1.25	1.21	1.17	1.13	0.91	0.83	0.78
50	1.25	1.21	1.17	1.14	0.91	0.83	0.77
70	1.26	1.21	1.18	1.14	0.90	0.83	0.77
95	1.26	1.22	1.18	1.14	0.90	0.83	0.77
120	1.26	1.22	1.18	1.14	0.90	0.83	0.77
150	1.27	1.22	1.18	1.15	0.90	0.83	0.77
185	1.27	1.23	1.18	1.15	0.90	0.83	0.77
240	1.28	1.23	1.19	1.15	0.90	0.83	0.77
300	1.28	1.23	1.19	1.15	0.90	0.82	0.77
400	1.28	1.23	1.19	1.15	0.90	0.82	0.76

TABLE EE.4 : DE-RATING FACTORS FOR SOIL THERMAL RESISTIVITIES OTHER THAN 1,5 K.M/W FOR THREE-CORE CABLES IN DUCTS:

NOMINAL AREA OF CONDUCTOR (mm^2)	VALUES OF SOIL THERMAL RESISTIVITY (K.m/W)						
	0.7	0.8	0.9	1	2	2.5	3
16	1.12	1.11	1.09	1.08	0.94	0.89	0.84
25	1.14	1.12	1.10	1.08	0.94	0.89	0.84
35	1.14	1.12	1.10	1.08	0.94	0.88	0.84
50	1.14	1.12	1.10	1.08	0.94	0.88	0.84
70	1.15	1.13	1.11	1.09	0.94	0.88	0.83
95	1.15	1.13	1.11	1.09	0.94	0.88	0.83
120	1.15	1.13	1.11	1.09	0.93	0.88	0.83
150	1.16	1.13	1.11	1.09	0.93	0.88	0.83
185	1.16	1.14	1.11	1.09	0.93	0.87	0.83
240	1.16	1.14	1.12	1.10	0.93	0.87	0.82
300	1.17	1.14	1.12	1.10	0.93	0.87	0.82
400	1.17	1.14	1.12	1.10	0.92	0.86	0.81

TABLE FF: GROUP RATING FACTORS FOR DIFFERENT LAYING FORMATIONS IN GROUND

TABLE FF.1: GROUP RATING FACTORS FOR GROUPS OF THREE-CORE CABLES IN HORIZONTAL FORMATION LAID DIRECT IN THE GROUND:

NUMBER OF CABLES IN GROUP	SPACING BETWEEN CABLE CENTRES (mm)				
	Touching	200	400	600	800
2	0.80	0.86	0.90	0.92	0.94
3	0.69	0.77	0.82	0.86	0.89
4	0.62	0.72	0.79	0.83	0.87
5	0.57	0.68	0.76	0.81	0.85
6	0.54	0.65	0.74	0.80	0.84
7	0.51	0.63	0.72	0.78	0.83
8	0.49	0.61	0.71	0.78	-
9	0.47	0.60	0.70	0.77	-
10	0.46	0.59	0.69	-	-
11	0.45	0.57	0.69	-	-
12	0.43	0.56	0.68	-	-



TABLE FF.2: GROUP RATING FACTORS FOR GROUPS OF THREE-PHASE CIRCUITS OF SINGLE-CORE CABLES LAID DIRECT IN THE GROUND:

NUMBER OF CABLES IN GROUP	SPACING BETWEEN CABLE CENTRES (mm)				
	Touching	200	400	600	800
2	0.73	0.83	0.88	0.90	0.92
3	0.60	0.73	0.79	0.83	0.86
4	0.54	0.68	0.75	0.80	0.84
5	0.49	0.63	0.72	0.78	0.82
6	0.46	0.61	0.70	0.76	0.81
7	0.43	0.58	0.68	0.75	0.80
8	0.41	0.57	0.67	0.74	-
9	0.39	0.55	0.66	0.73	-
10	0.37	0.54	0.65	-	-
11	0.36	0.53	0.64	-	-
12	0.35	0.52	0.64	-	-



TABLE GG : GROUP RATING FACTORS FOR DIFFERENT LAYING FORMATIONS IN DUCT

TABLE GG.1: GROUP RATING FACTORS FOR GROUPS OF THREE-CORE CABLES IN SINGLE WAY DUCTS IN HORIZONTAL FORMATION:

NUMBER OF CABLES IN GROUP	SPACING BETWEEN CABLE CENTRES (mm)				
	Touching	200	400	600	800
2	0.85	0.88	0.92	0.94	0.95
3	0.75	0.80	0.85	0.88	0.91
4	0.69	0.75	0.82	0.86	0.89
5	0.65	0.72	0.79	0.84	0.87
6	0.62	0.69	0.77	0.83	0.87
7	0.59	0.67	0.76	0.82	0.86
8	0.57	0.65	0.75	0.81	-
9	0.55	0.64	0.74	0.80	-
10	0.54	0.63	0.73	-	-
11	0.52	0.62	0.73	-	-
12	0.51	0.61	0.72	-	-

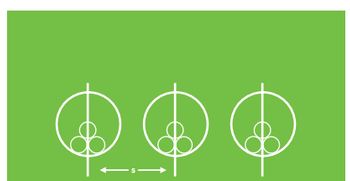


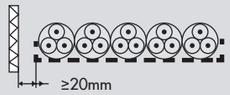
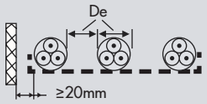
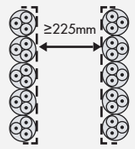
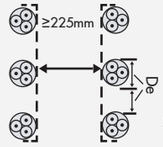
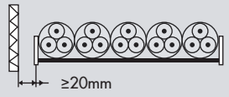
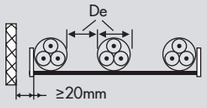
TABLE GG.2: GROUP RATING FACTORS FOR GROUPS OF THREE-PHASE CIRCUITS OF SINGLE-CORE CABLES IN DUCTS:

NUMBER OF CABLES IN GROUP	SPACING BETWEEN CABLE CENTRES (mm)				
	Touching	200	400	600	800
2	0.78	0.85	0.89	0.91	0.93
3	0.66	0.75	0.81	0.85	0.88
4	0.59	0.70	0.77	0.82	0.86
5	0.55	0.66	0.74	0.80	0.84
6	0.51	0.64	0.72	0.78	0.83
7	0.48	0.61	0.71	0.77	0.82
8	0.46	0.60	0.70	0.76	-
9	0.44	0.58	0.69	0.76	-
10	0.43	0.57	0.68	-	-
11	0.42	0.56	0.67	-	-
12	0.40	0.55	0.67	-	-



TABLE HH : GROUP RATING FACTORS FOR DIFFERENT LAYING FORMATIONS IN AIR

TABLE HH.1: DE-RATING FACTORS FOR GROUPS OF MORE THAN ONE MULTI-CORE CABLE IN AIR:

METHOD OF INSTALLATION		NUMBER OF TRAYS	NUMBER OF CABLES					
			1	2	3	4	6	9
Cables on perforated trays	Touching 	1	1.00	0.88	0.82	0.79	0.76	0.73
		2	1.00	0.87	0.80	0.77	0.73	0.68
		3	1.00	0.86	0.79	0.76	0.71	0.66
	Spaced 	1	1.00	1.00	0.98	0.95	0.91	-
		2	1.00	0.99	0.96	0.92	0.87	-
		3	1.00	0.98	0.95	0.91	0.85	-
Cables on vertical perforated trays	 Touching	1	1.00	0.88	0.82	0.78	0.73	0.72
		2	1.00	0.88	0.81	0.76	0.71	0.70
	 Spaced	1	1.00	0.91	0.89	0.88	0.87	-
		2	1.00	0.91	0.88	0.87	0.85	-
Cables on ladder supports, cleats etc.	Touching 	1	1.00	0.87	0.82	0.80	0.79	0.78
		2	1.00	0.86	0.80	0.78	0.76	0.73
		3	1.00	0.85	0.79	0.76	0.73	0.70
	Spaced 	1	1.00	1.00	1.00	1.00	1.00	-
		2	1.00	0.99	0.98	0.97	0.96	-
		3	1.00	0.98	0.97	0.96	0.93	-

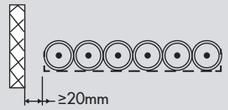
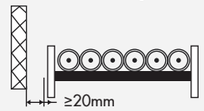
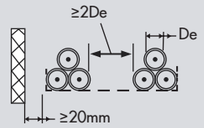
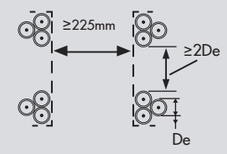
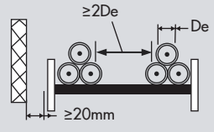
NOTE 1: *Values given are averages for the cable types and range of conductor sizes considered. The spread of values is generally less than %5.*

NOTE 2: *Factors apply to single layer groups of cables as shown above and do not apply when cables are installed in more than one layer touching each other. Values for such installations may be significantly lower and must be determined by an appropriate method.*

NOTE 3: *Values are given for vertical spacings between trays of 300 mm and at least 20 mm between trays and wall. For closer spacing, the factors should be reduced.*

NOTE 4: *Values are given for horizontal spacing between trays of 225 mm with trays mounted back to back. For closer spacing, the factors should be reduced.*

TABLE HH.2: DE-RATING FACTORS FOR GROUPS OF MORE THAN ONE CIRCUIT OF SINGLE-CORE CABLES IN FREE AIR:

METHOD OF INSTALLATION		NUMBER OF TRAYS	NUMBER OF THREE-PHASE CIRCUITS (NOTE 5)			USE AS A MULTIPLIER TO RATING FOR
			1	2	3	
Perforated Trays (Note 3)	Touching 	1	0.98	0.91	0.87	Three cables in horizontal formation
		2	0.96	0.87	0.81	
		3	0.95	0.85	0.76	
Ladder supports cleats, etc. (Note 3)	Touching 	1	1.00	0.97	0.96	Three cables in horizontal formation
		2	0.98	0.93	0.89	
		3	0.97	0.90	0.86	
Perforated Trays (Note 3)		1	1.00	0.98	0.96	
		2	0.97	0.93	0.89	
		3	0.96	0.92	0.86	
Vertical Perforated Trays (Note 4)	Spaced 	1	1.00	0.91	0.89	Three cables in trefoil formation
		2	1.00	0.90	0.86	
Ladder supports cleats, etc. (Note 3)		1	1.00	1.00	1.00	
		2	0.97	0.95	0.93	
		3	0.96	0.94	0.90	

NOTE 1: *Values given are averages for the cable types and range of conductor sizes considered. The spread of values is generally less than 5 %.*

NOTE 2: *Factors are given for single layers of cables (or trefoil groups) as shown in the table and do not apply when cables are installed in more than one layer touching each other. Values for such installations may be significantly lower and should be determined by an appropriate method.*

NOTE 3: *Values are given for vertical spacings between trays of 300 mm. For closer spacing, the factors should be reduced.*

NOTE 4: *Values are given for horizontal spacing between trays of 225 mm with trays mounted back to back. For closer spacing, the factors should be reduced.*

NOTE 5: *For circuits having more than one cable in parallel per phase, each three phase set of conductors should be considered as a circuit for the purpose of this table.*



Short Circuit Current Rating

SHORT CIRCUIT CURRENT
RATING OF CONDUCTOR

Short circuit rating is dependent upon various factor as list below:
a) Conductor material.
b) Maximum continuous operating temperature & maximum temperature at short circuit.
c) Fault duration.

$$Isc = \frac{(k*A)}{(\sqrt{t})}$$

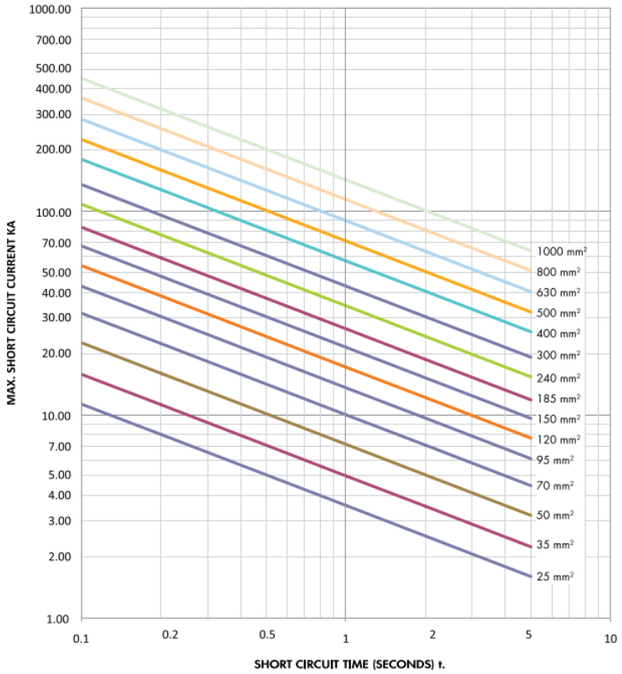
where,
Isc: Short circuit current rating
k: Constant (factor dependent upon operating temperature & short circuit temperature
A: Total cross-sectional area (mm^2)
t: Time duration (sec)

For XLPE insulated cables, the short circuit current rating of copper conductor is calculated by formula mentioned above, considering continuous operating temperature as 90°C and short circuit temperature as 250°C.

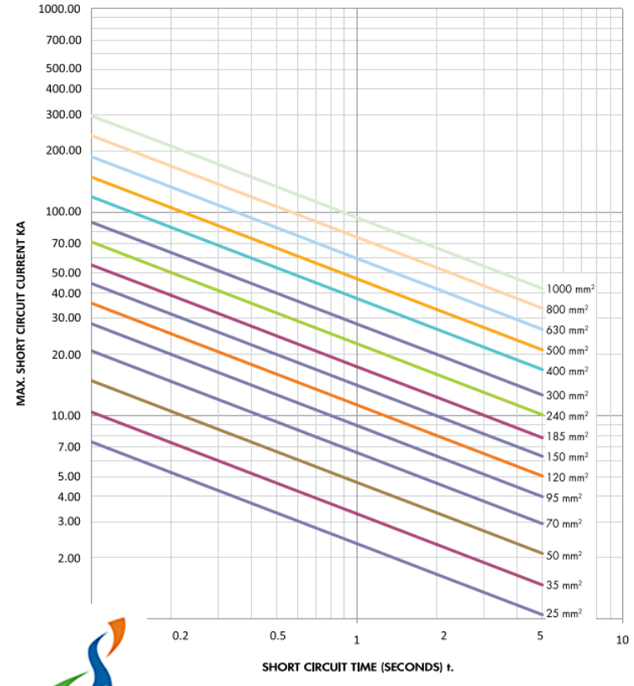
For Copper conductor, the constant 'k' is 0.143, and,
For Aluminium conductor, the constant 'k' is 0.094.

CONDUCTOR SIZE	COPPER CONDUCTOR		ALUMINIUM CONDUCTOR	
	SHORT CIRCUIT RATING FOR 1 SEC.	SHORT CIRCUIT RATING FOR 5 SEC.	SHORT CIRCUIT RATING FOR 1 SEC.	SHORT CIRCUIT RATING FOR 5 SEC.
mm^2	(kA)	(kA)	(kA)	(kA)
25	3.58	1.60	2.35	1.05
35	5.01	2.24	3.29	1.47
50	7.15	3.20	4.70	2.10
70	10.01	4.48	6.58	2.94
95	13.59	6.08	8.93	3.99
120	17.16	7.67	11.28	5.04
150	21.45	9.59	14.10	6.31
185	26.46	11.83	17.39	7.78
240	34.32	15.35	22.56	10.09
300	42.90	19.19	28.20	12.61
400	57.20	25.58	37.60	16.82
500	71.50	31.98	47.00	21.02
630	90.09	40.29	59.22	26.48
800	114.40	51.16	75.20	33.63
	143.00	63.95	94.00	42.04

A) SHORT CIRCUIT CURRENT RATING CURVE FOR COPPER CONDUCTOR, XLPE INSULATION.



B) SHORT CIRCUIT CURRENT RATING CURVE FOR ALUMINIUM CONDUCTOR, XLPE INSULATION.





Medium Voltage Cables for Special Applications

MV CABLES WITH WATER-BLOCKING PROPERTY

APPLICATION

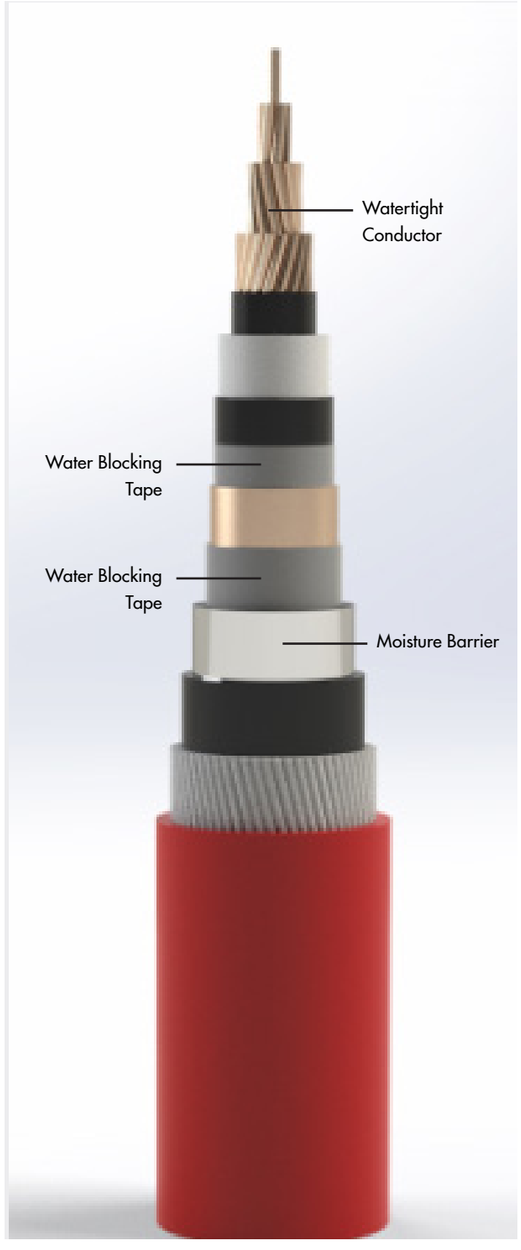
Water-tight cables are best suited for installation in wet location.

CONSTRUCTIONAL FEATURES

FEICHUN has the capability to manufacture medium voltage cables with longitudinal & radial water blocking properties. Conductor is designed with crushable water blocking tapes & yarns followed by semi-conductive water-blocking tapes to secure water blocking properties. MV Cables can also be manufactured with water-tight metallic screen by providing water-blocking tapes.

SPECIAL PROPERTIES

- Longitudinal water-blocking property.
- Radial water-blocking property.



Typical Construction for MV Cables with water blocking properties

MV CABLES FOR OIL & GAS INDUSTRY

APPLICATION

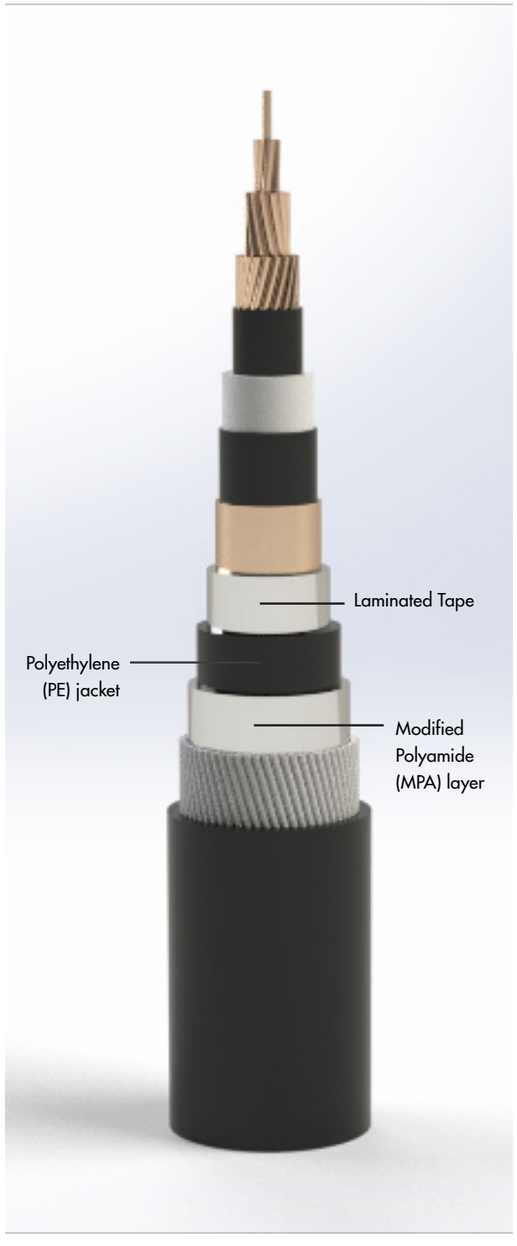
These cables are suitable for installations in chemical or petroleum plants, or any hostile environment where protection against hydrocarbons & other chemical substances is required.

CONSTRUCTIONAL FEATURES

FEICHUN has the capability to manufacture me dium voltage grade cables with
Lead Sheath & Drylam (an alternate option to Lead Sheathed cables).

SPECIAL PROPERTIES

- Hydrocarbons concentration immersion test.
- Chemical resistance property.
- Radial water-blocking property.
- Corrosion resistant.
- Flame retardant property as per IEC 60332-3-22 Cat A.



Typical constructional diagram for Single Core Copper DRYLAM Armored MV Cable

MV CABLES WITH FLAME RETARDANT & LOW SMOKE PROPERTY

APPLICATION

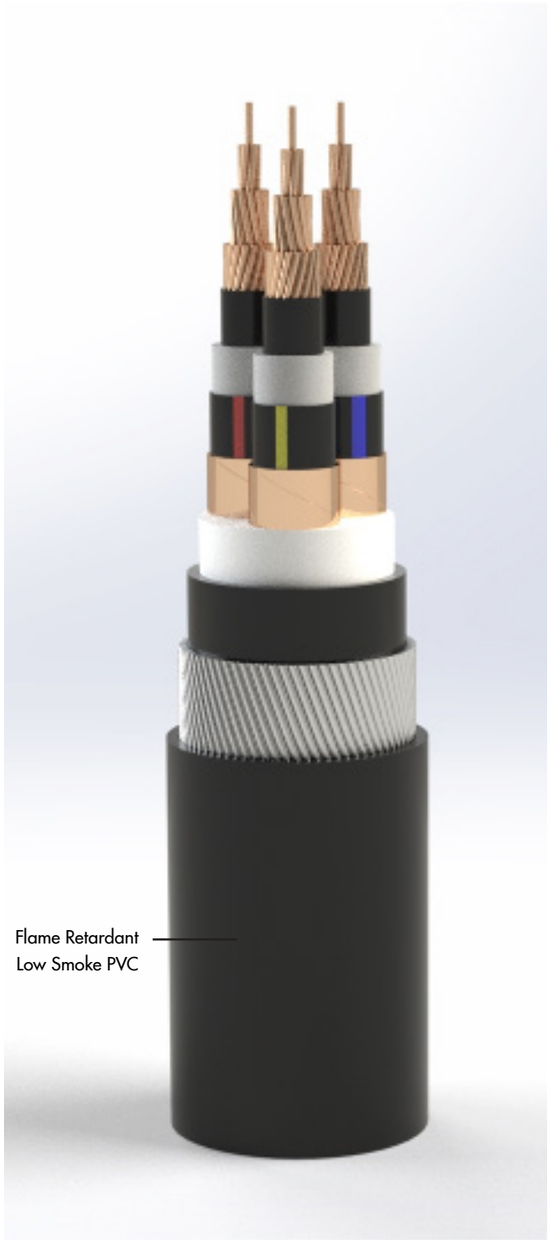
These cables are suitable for installations in fire prone area where flame retardant property is must to have with low smoke property.

CONSTRUCTIONAL FEATURES

FEICHUN has the capability to manufacture medi um voltage grade cables with Flame Retardant Low Smoke PVC Outer Sheath.

SPECIAL PROPERTIES

- Oxygen index of 30 (Min.) when tested as per ASTM D 2863.
- Temperature index of 250°C (Min.) when tested as per ASTM D 2863.
- Acid gas generation max. 20% by weight as per IEC 60754-1.
- Smoke density rating 60% (Max.) as per ASTM D 2843.
- Flame retardant property as per IEC 60332-3-22 Cat A / IEC 60332-3-24 Cat C.



MV CABLES WITH LOW SMOKE ZERO HALOGEN PROPERTY

APPLICATION

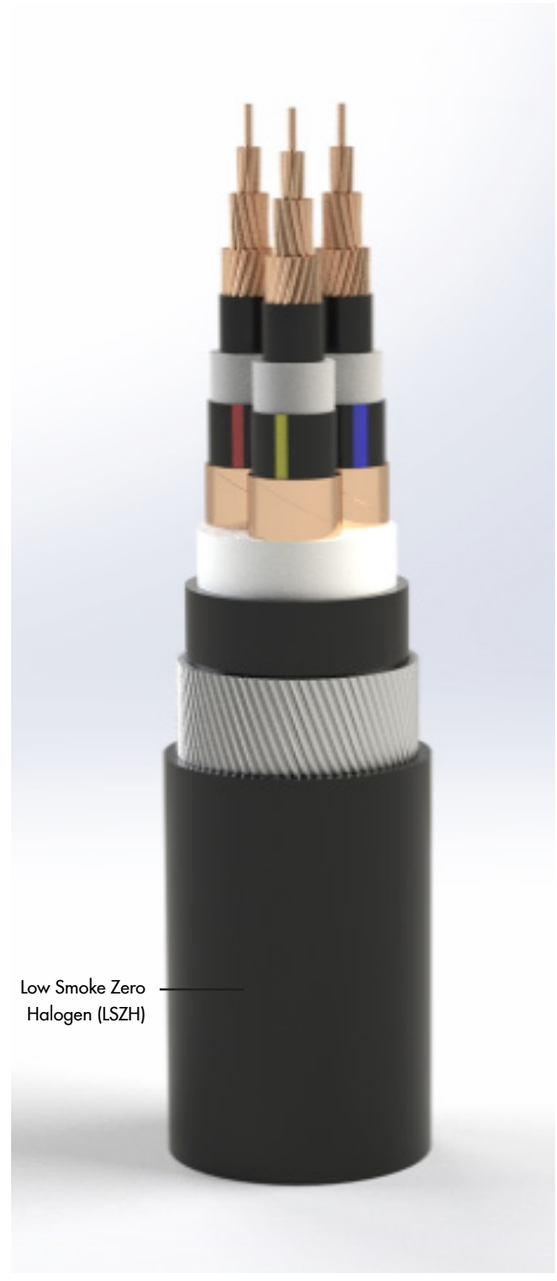
These cables are suitable for installations in where human life is at great risk due to fire & toxic smoke. E.g. Oil & gas sector, hospitals, airports etc.

CONSTRUCTIONAL FEATURES

FEICHUN has the capability to manufacture me dium voltage grade cables with Low Smoke Zer o Halogen (LSZH) Outer Sheath.

SPECIAL PROPERTIES

- Oxygen index of 29 (Min.) when tested as per ASTM D 2863.
- Temperature index of 250°C (Min.) when tested as per ASTM D 2863.
- Acid gas generation max. 0.5% by weight as per IEC 60754-1.
- Min. light transmission 60%, as per IEC 61034 (Part 1 & 2).
- Flame retardant property as per IEC 60332-3-22 Cat A / IEC 60332-3-24 Cat C.



MV CABLES FOR VARIABLE FREQUENCY DRIVES (VFD) APPLICATION

APPLICATION

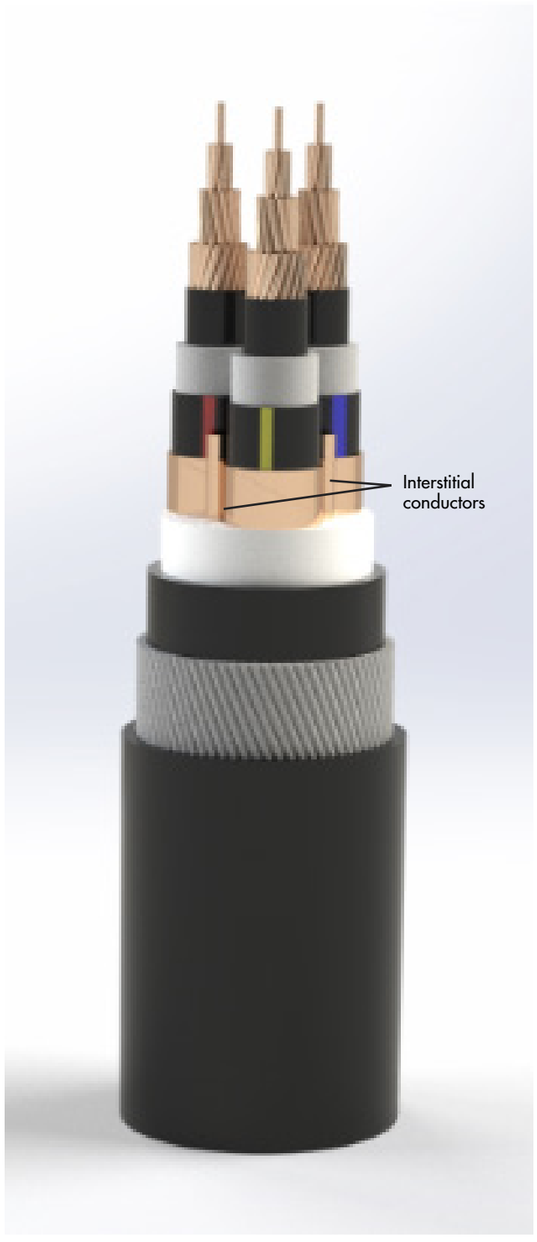
These cables are suitable for industrial installations.

CONSTRUCTIONAL FEATURES

FEICHUN has the capability to manufacture medium voltage grade cables with interstitial bare conductor(s). Size of interstitial conductor(s) shall be equal to half of the phase conductor. Interstitial conductor can be one or three, depending upon the requirement.

SPECIAL PROPERTIES

Cables with interstitial conductors.





Cable Laying & Installation Guidelines

CABLE LAYING AND INSTALLATION GUIDELINES

A) SELECTION OF ROUTE:

A.1 The selection of the route should first be decided keeping in view the immediate and ultimate use of the cable as an integrated part of the transmission and distribution system.

A.2 For a feeder run, that side of the street which presents the least obstacles and the fewest roadway crossings is naturally chosen, but if a distributor is being laid concurrently with feeders, prospects of future consumers may influence the decision on this point. In such cases. distributors should always be laid nearest to the buildings.

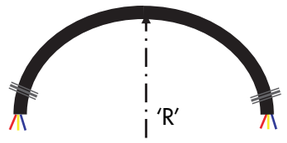
A.3 For transporting the cable drums to work site, it is necessary to check the road conditions, whether it has loose soil, is marshy, water logged, etc. including turns and widths. Special attention should be paid to the load bearing capacity of the bridges and culverts and other obstructions which fall in route.

A.4 If possible, cables should be laid along the footpath rather than the carriage way. Plans for future building projects should be considered. The route should be, as far as possible, away from parallel running gas. water pipes and telephone / telecommunication cables.

A.5 Suitable locations for cable joints and end terminations should be selected as required.

B) MINIUM PERMISSIBLE BENDING RADIUS:

B.1 The cable should not be bent to a sharp radius. Minimum recommended bending radius 'R' should be maintained during installation.



B.2 Minimum recommended radius during installation shall be maintained as mentioned below:

CABLE TYPE	1CORE	3CORE
Un-armoured Cables	20 x OD	15 x OD
Wire Armoured Cables	15 x OD	12 x OD
Tape Armoured Cables	20 x OD	15 x OD
Armoured Lead Sheathed Cables	20 x OD	17 x OD
Armoured Drylam Cables	17 x OD	17 x OD

C) MINIMUM TEMPERATURE DURING INSTALLATION

nstalled when both the cable and ambient temperatures are above 0°C and have been previous 24 hours before installation.

D) MAXIMUM PERMISSIBLE PULLING FORCE

Maximum pulling force is the force above which cables are not recommended to get pulled. Cables are pulled with various methods e.g. Stocking, Pulling Eyes, Winch. Maximum pulling force is calculated as mentioned below:

D.1 Cables when pulled with Stocking:
The maximum permissible pulling force when pulled with stocking, depends upon the cable type i.e. Armoured & Un-Armoured.

D.1.1. Maximum pulling force for Un-armoured cables, 'P'
$P = 5 \times [\text{Cable OD}]^2$ (mm) …….. Newton

D.1.2. Maximum pulling force for Armoured cables, 'P'
$P = 9 \times [\text{Cable OD}]^2$ (mm) …….. Newton

D.2 Cables when pulled by Pulling Eye:
When the cables are pulled by gripping the conductor directly with pulling eye, The maximum permissible pulling force, depends upon the conductor material & their cross-sectional area.

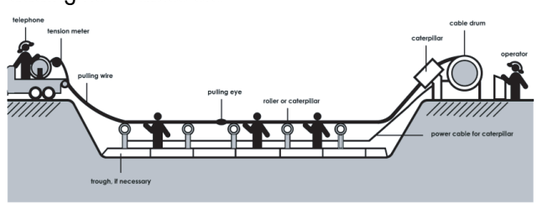
D.2.1. Maximum pulling force for Copper Conductor, 'P'
$P = 50\ N/mm^2 \times$ Total Cross-sectional Area (mm^2) …….. Newton

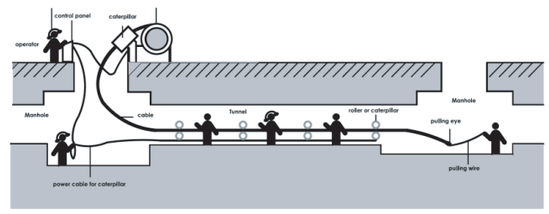
D.2.2. Maximum pulling force for Aluminium Conductor, 'P'
$P = 30\ N/mm^2 \times$ Total Cross-sectional Area (mm^2) …….. Newton

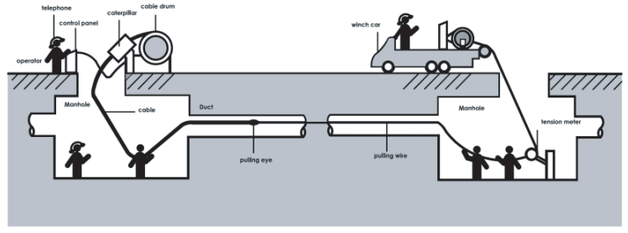
E) CABLE LAYING METHODS

The conventional methods of cable laying are:
a) Laying direct in ground.
b) Drawing in ducts.
c) Laying on racks in air.
d) Laying on racks inside a cable tunnel.
e) Laying along buildings or structures.

The best choice of any cable laying methods depends upon the actual installation conditions, initial cost of laying, cable type, maintenance and repair charges, desired ease in replacement of any cable or adding new cables etc.



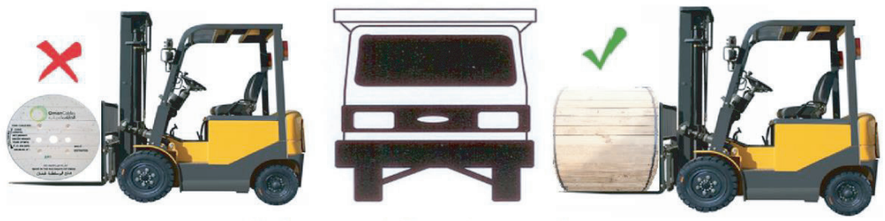




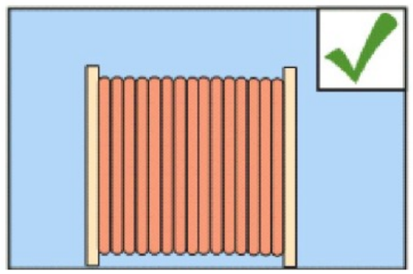


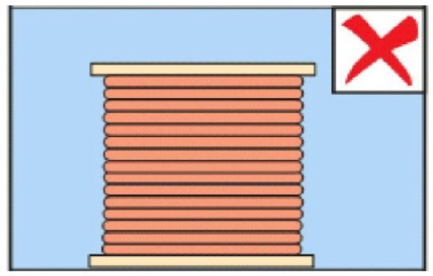
Cable Drum Handling Guidelines

CABLE DRUM
HANDLING PROCEDURE

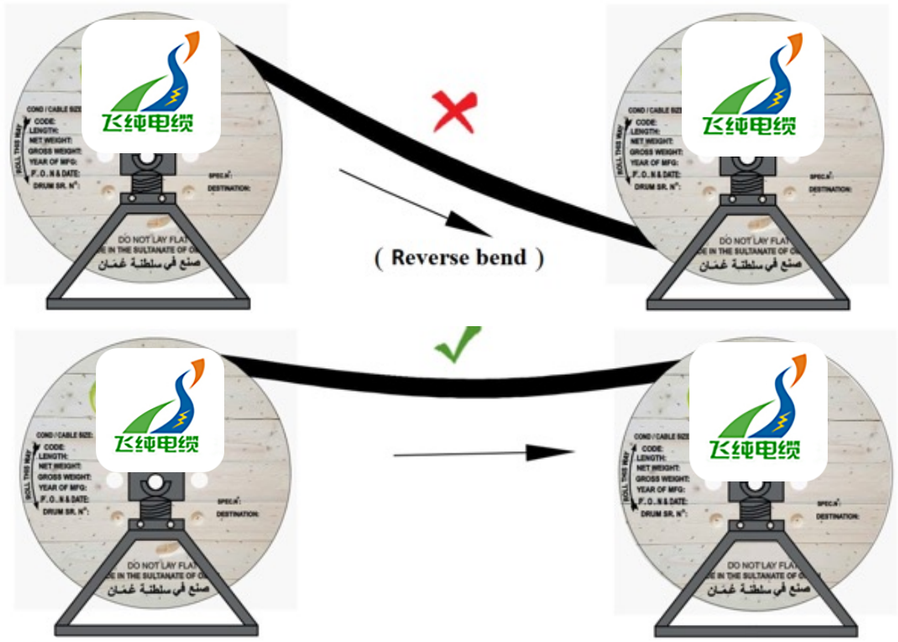


Lift drums on fork trucks correctly

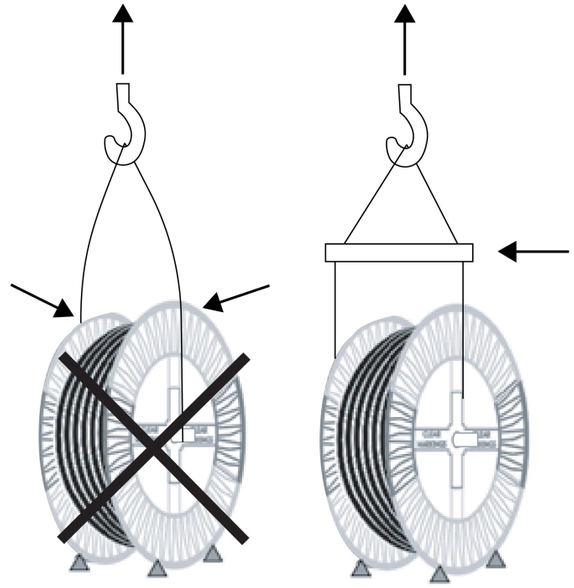




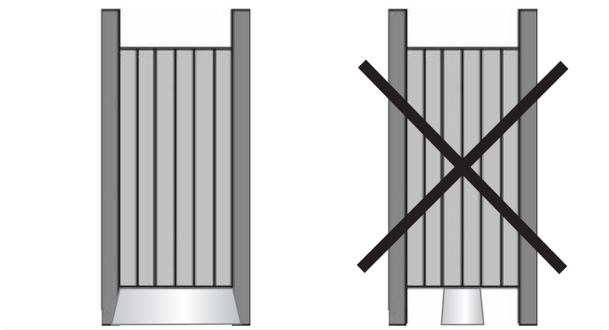
Cable drum shall be placed has shown in above figure.



Cable drum re-winding shall be done as shown in above figure.



Lift the cable drums using crane & support.



Use proper wedges to prevent drum rolling

QUALITY ASSURANCE

In order to ensure the best quality assurance system, it is extremely desirable to test and inspect the product at each stage of manufacturing including raw materials and finished product.

FEICHUN have the following Quality Assurance System:-

A. Raw Materials Inspection
B. In-process inspection
C. Finished product inspection

RAW MATERIALS INSPECTION:

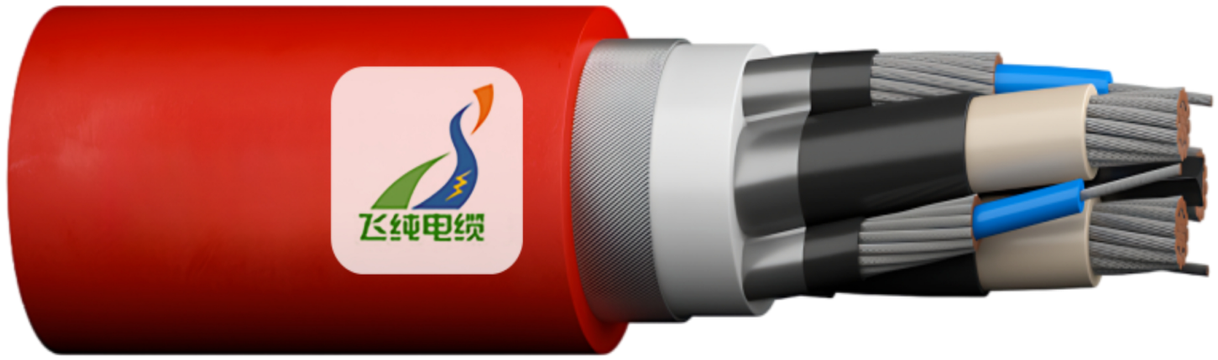
All the raw materials are procured only from internationally approved companies known for their quality products and once the material is received with their product certification, FEICHUN quality team tests and inspects the same again. Only those materials which meet FEICHUN internal standards are released for production.

IN-PROCESS INSPECTION:

A team of well experienced and qualified personnel, dedicated to quality, inspects and test all the In-Process materials at every stage and materials complies to the specified requirements are only released for next process.

FINISHED PRODUCT INSPECTION:

FEICHUN products before lea ving ware house undergo the entire applicable test according to the standard to which it is manufactured. Routine tests are carried out for conformity to the specifications on 100% cable d rums. Sample tests and type tests are carried out at regular intervals as per the applicable standards to conform the product quality.





FEICHUN SPECIAL CABLES

Website Address www.reelingcable.com www.feichuncables.com

Whatsapp Account + 86 13855123218

Email Address Zihao.yang@feichuncables.com & Ziyu.huang@feichuncables.com