



Our Vision

To be the Preferred Brand of Electric Cables in the region whilst strengthening the dominant position in Sri Lanka.

Our Mission

To expand our range of products and the services in the field of electrification.

To be the most competitive in chosen global markets and to achieve continuous growth.

To create an environment that will inculcate a feeling of ownership in our people and their families.

To create a company that will be in the forefront of technology and win the admiration of our customers, suppliers, shareholders and the community.

Foreword

We believe that this catalogue, which carries dimensions, electrical properties and installation data on Power -X Aerial Bundled Cables (ABC) according to the National French standard NFC 33-209:1996 and Australian/New Zealand Standard AS/NZS 3560.1:2000 will help many of our clients in their work.

We also take this opportunity to express our sincere gratitude towards our clients and well wishers with whom we have built a mutually beneficial relationship.

ACL Cables PLC
October 2008



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ACL CABLES PLC

ACL Cables PLC is the largest manufacturer of Cables in Sri Lanka having pioneered the industry in the year 1962. Over the last 4 decades it has grown and developed to be the major supplier of Building wires, XLPE or PVC insulated Armoured Power & Control Cables, Aerial bundled cables etc. holding 45% share of the Sri Lankan Market. In the area of Duty Free projects ACL has maintained a market share of 80%. ACL is proud to have supplied cables to 9 out of the 13 tallest buildings in Colombo, Sri Lanka.

ACL markets its range of XLPE insulated cables under the trade name Power-X. ACL acquired technology for the manufacture of ABC in the year 1989 through a technical co-operation agreement with NOKIA Cables of Finland in order to supply 800km of the product to Lanka Electricity Company on an Asian Development Bank funded tender. Since then ACL has upgraded its technology to surpass National French Standard NFC 33-209 which is considered the most stringent Standard for ABC in the world.

ACL is proud to have surpassed NFC 33-209 since only a few manufactures in the South or South East Asian region have reached the specifications of the standard.

COMPANY'S TECHNOLOGICAL DEVELOPMENT

- 1962 - Company established with technical assistance from Mitsui of Japan.
- 1978 - Introduction of wire drawing facility
- 1981 - Acquisition of technology from Alind of India for drawing & processing of aluminium conductors to jointly manufacture and supply 1400 metric tons of AAC – Fly Conductor for the Ceylon Electricity Board.
- 1985 - Manufacture of armoured power and control cables for the first time in Sri Lanka.
- 1989 - Acquisition of technology to manufacture XLPE insulated Aerial

Bundled Cables from NOKIA of Finland to jointly execute an order for 800km's of that product on an ADB funded tender floated by the Lanka Electricity Company.

- 1993 - Acquisition of technology from NOKIA of Finland to draw and age aluminium alloy rods and the establishment of an aging furnace.
- 1993 - Establishment of ACL Plastics PLC for the manufacture of our own PVC compound.
- 1998 - Successful upgrading of XLPE Extrusion Technology to National French Standard 33-209 and winning a 500km order for Aerial Bundled Cables from the Ceylon Electricity Board.
- 2003 - Introduction of Flexi range of Cables
- 2005 - Introduction of Fire Rated Cables
- 2007 - Commences Aluminium rod mill

CORPORATE HIGHLIGHTS

- 1962 - The company commenced operations as a member of Associated Motorways Group (AMW) of Companies acquiring the name of Associated Cables Limited.
- 1976 - Converts to a Public Limited Liability Company.
- 1978 - Moves out of AMW Group.
- 1982 - Establishment of ACL's own island-wide distribution network.
- 1990 - Change of company name to ACL Cables Limited.
- 1991 - Establishment of ACL Plastics Limited.
- 1995 - Acquisition of Ceylon Bulbs & Electricals Limited.
- 1999 - Purchase of major shares of the second largest cable manufacturer in Sri Lanka.

ABC - Reliability, Safety and Flexibility at Low Cost



SOME OF THE MACHINERY USED FOR THE MANUFACTURE OF Power - X ABC



7 Strand Aluminium Conductor is being stranded on Skip strander



A phase conductor is being extruded with XLPE



Aerial Bundled Cable is being assembled on Bow Cabler



Profile Projector being used to measure insulation thickness of ABC



ABC -Reliability, Safety and Flexibility at Low Cost

CERTIFICATES OF EXCELLENCE



ISO
14001:2006



ISO
9001:2000

ABC - Reliability, Safety and Flexibility at Low Cost



AWARDS OF EXCELLENCE



Taiki Akimoto
5s Merit
Award
2007



Industrial
Excellence Award
In Extra Large
Manufacturing
Category
2007 & 2008



ABC -Reliability, Safety and Flexibility at Low Cost

AWARDS OF EXCELLENCE



National Quality Award
Large Manufacturing
Category
2007

Highest Sri Lankan Award for Quality



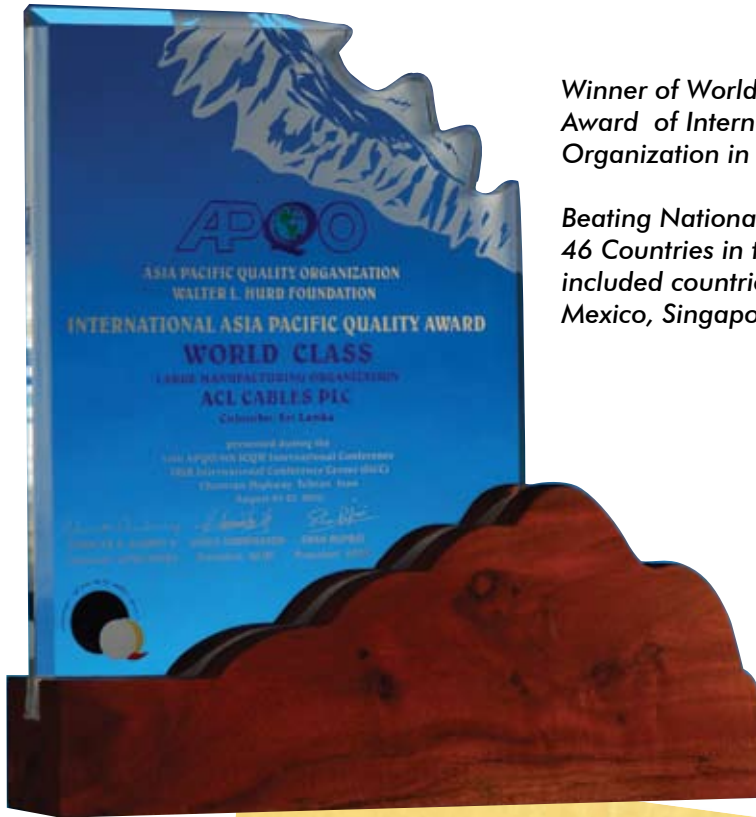
National Productivity
Award
Large Manufacturing
Sector
2007

Highest Sri Lankan Award for Productivity

ABC - Reliability, Safety and Flexibility at Low Cost



INTERNATIONAL AWARD OF EXCELLENCE



Winner of World Class Award or the Highest Award of International Asia Pacific Quality Organization in 2008

Beating National Quality Award Winners of 46 Countries in the Asia Pacific region which included countries such as Japan, Australia, Mexico, Singapore, India, Korea Taiwan etc.



ABC - Reliability, Safety and Flexibility at Low Cost

Power-X Aerial Bundled Cables (ABC)



Technician inspecting an installed ABC line

A self-supporting fully insulated cable system for distribution of power.

ABC is a superbly reliable, safe and economical system for electricity distribution. It is equally suitable for both cities and rural areas. ABC completely outdates Bare Aluminium conductors, which are commonly used for electricity distribution in Asia, Middle East, USA and in certain countries of Europe.

History of ABC

Insulated overhead cable systems have been in use since early 1960's in Europe and North America. The first overhead system in Europe has had a separate catenary wire. However, in countries such as France and Finland the catenary wire was eliminated and the neutral conductor was modified to function as the messenger or the load bearing wire.

In late 1960's Sweden and Scandinavian countries developed a system in which all the phase conductors and the neutral conductor are of the same construction and act together as messenger. This is called the Four Core System.

French system

The French system, as specified by the EDF has a 54.6 mm² insulated neutral conductor, which

act as a messenger. The neutral conductor is made of Aluminium Alloy of high tensile strength to bear weight of the entire cable. The type of insulation is Cross Linked Polyethylene (XLPE). The three phase wires and the neutral conductor with or without street lighting wires are bundled together.

The French system is popular in countries such as France, Italy, Spain, Belgium and Sri Lanka.

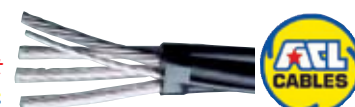
Four Core or German System

Here, all four cores are of the same size and bear full weight and tension of the cable equally. The four cores are made of Aluminium and insulated with either Polyethylene (PE) or XLPE. This system is popular in Germany, Ireland, Australia, UK and Portugal.

Finnish AMKA System

The AMKA system consists of a bare or insulated neutral made of Aluminium Alloy which is called the messenger. Cable will also have insulated phase conductors and may have one or two insulated street lighting conductors. The type of insulation can be PE or XLPE. This system differs from the French system in that neutral is 50 mm² and not 54.6 mm². Furthermore, the French system always calls for XLPE insulated neutral

ABC -Reliability, Safety and Flexibility at Low Cost



conductor. The AMKA system is used in Finland, the Middle East, The Far East, South America and Australia.

Experience of ACL with AB Cables, XLPE Extrusion and Technical Prowess

ACL has adopted XLPE as the preferred insulating material due to its superior thermal current ratings and abrasion resistance. ACL can also provide cables with PE insulation for ABC conforming to any standard.

ACL CABLES have been in the business of manufacturing ABC since 1989, having secured technology from NOKIA CABLES of Finland in that year in order to supply an order for 800km ABC to Lanka Electricity Company (Pvt) Ltd. (LECO) on Asian Development Bank funded tender which the two companies won through a Joint Venture Agreement. With this technological agreement, ACL managed to secure technology for the extrusion of Cross Linked Polyethylene (XLPE), which paved the way for ACL to incorporate same in other products as well.

This initial transfer of technology was further strengthened in the year 1993 by another technical cooperation agreement, which enabled ACL to secure and establish technology, machinery and a turnace to draw and age Aluminium Alloy Conductors.

The cables supplied to LECO in 1989 are still functioning without a complaint and that can be considered ample proof of ACL's determination to do things right even on inception.

Breakthrough technological development of ACL

Since Ceylon Electricity Board (CEB) was insisting on National French Standard NFC 33-209 for the supply of ABC, ACL continued its internal Research and Development work and in

1998 it surpassed the said standard to secure it first large order from the said organization for 500 km. this must be considered a remarkable achievement for ACL since only a handful of suppliers have achieved the NFC 33-209 in the region.

The advantage of achieving this standard and subsequent process improvements developed by ACL earned a first class image for ACL as a supplier of XLPE insulated ABC. In 2003 when one of the largest Corporates in India was looking for a suitable partner for the introduction ABC to New Delhi, ACL was recommended by an Indian agent. This helped ACL to establish contact with the largest Power distributing company in New Delhi and introduce AB Cable know-how. Up to date ACL has supplied more than US\$ 14 million worth of AB Cables to New Delhi, Jaipur and Orissa.

ACL across the world

ACL in addition to supplying the Indian market has exported AB Cables to Bangladesh and Dominican Republic proving Technical Superiority and consistency in Quality. Nearly 25,000km of ABC manufactured since 1989 and supplied to leading Authorities in Sri Lanka and abroad continue to function beautifully without a single complaint This speaks volumes about ACL being the power house for AB Cables in the South and South East Asia.

Why Power-X

The technological improvements so achieved by ACL contributed immensely to the upgrading of quality standards of both ABC and other XLPE insulated cables to world-class standards. ACL in the year 1999 decided to rename the entire range of XLPE insulated cables under the trade name of **Power-X**. Today, ACL market ABC and other XLPE insulated cables under the brand name **Power-X** to highlight the Quality Advantages our valued customers enjoy in using those cables.



Partly stripped ABC to show construction



ABC -Reliability, Safety and Flexibility at Low Cost

How does ABC fare better than Conventional Bare Conductors?

ABC acquire all its superiority and characteristic advantages over bare Conductors due to two factors ;

1. Individual conductors are insulated,
2. They are bundled together.

Advantages of ABC

1. Super safe

Since the individual conductors and the fittings are insulated, accidental electrocution is not possible. Even if a line falls on to the ground continuity of both the electricity supply and safety are ensured.

2. Super Reliability

This is the biggest advantage of ABC. Fully insulated ABC is not subject to short-circuiting due to rainwater or way - leaf interference. Therefore, reliable power supply is ensured even during extreme weather conditions to the delight of both the consumers and Electricity Distributing Authority.

3. Eco- friendly

Bare conductors need clearance of vegetation at the time of installation and for maintenance. The clearance of vegetation either during installation or maintenance can be minimized or totally eliminated with ABC. In fact ABC can be fixed onto a tree, wall or roof since it is fully insulated. Clearance of way-leaf is disliked by residents who live along the route and lead to disputes with Authority. This too can be avoided with ABC.

4. Aesthetically More Pleasing

Any bare system consists of 4 – 5 conductors occupying a larger space. In case of ABC, only one black overhead cable is used. This definitely appears more pleasing than bare conductors.

5. Low cost of maintenance

Due to reduced failure rate and the elimination of regular clearance of way-leaf, the crew required for maintenance and associated costs are less.

6. Possibility of live tapping

Fully insulated line taps can be fitted onto live wire without interruption of electricity. This ensures higher revenue to Authority and customer delight.



Installed very close to a house in a narrow lane

ABC -Reliability, Safety and Flexibility at Low Cost





In harmony with the vegetation and aesthetically more pleasing

7. Pilferage is eliminated

One of the biggest complaints against Bare Conductors is the ease of pilferage of electricity. Fully insulated system of ABC prevents pilferage of power ensuring higher revenue to Authority.

8. Higher revenue and least cost to Authority, Customer delight.

Ultimate result of all the factors mentioned above is customer delight and higher revenue and increased profits to Authority.

9. Pole sharing

The same pole can be shared by the Electricity Authority and the Telecommunication Authority reducing costs to both. Minimize disruption to aesthetic appearance of the area.

10. Ease of Augmentation

The need to enhance the capacity of a particular distribution line can be easily met by stringing another line of ABC below the existing line. No need to replace the earlier line.

11. ABC - install anywhere ability

ABC can be fixed on to any wall, roof, tree etc. since it is comparatively light and above all safe to touch. This makes it ideal for narrow lanes or areas where there is thick vegetation. Digging of roads, which is hated by everybody is not required.

12. Lesser number of fittings

In the case of ABC lesser number of fittings are used since all the cores are together. In the case of Aluminium bare conductors the number of fittings are at least four times higher. This entails more labour and time for installation of a bare conductor system.



ABC -Reliability, Safety and Flexibility at Low Cost



Two Aerial Bundled Cables running parallel to each other. Example of easy augmentation



ABC totally merged with vegetation

13. Lower Impedence

In the case of ABC the total impedance of the cable is lower than that of a bare conductor system of equivalent size. This allows ABC to carry a higher current rating.

14. Corrossion resistance

Since ABC is a fully insulated system metal conductors are not exposed to elements of the nature. Therefore, ABC system is ideal for coastal areas and generally lasts 5 to 10 years longer.

ABC -Reliability, Safety and Flexibility at Low Cost



Biggest myth about ABC - it costs more (?)

Unlike Bare Conductors, ABC has a layer of insulation (PE or XLPE) on each conductor, which increases the initial cost compared to a bare conductor system. This type of comparison is grossly unprofessional and unfair. With ABC number of fittings and cost of installation is reduced. Furthermore, improved reliability, which leads to customer satisfaction, higher revenue and reduced cost to Authority, longer durability of system makes ABC far more economical than Bare Conductors. Studies done in Sri Lanka have shown that ABC system is at least 15% less expensive than an equivalent Bare Conductor System. Improved customer satisfaction and safety have not been taken into the study since they cannot be measured objectively. Therefore, ABC system taken as a whole costs at least 25% less than an equivalent bare conductor system.

In view of the fact that ABC is a superior system compared to Bare Conductor System, the continued use of the latter system is adopted and justified only where initial capital is a constraint.

**ABC really Costs Less
than Bare Conductors
AND**

What's more, it is *simply superior.*



as neat as could be



ABC -Reliability, Safety and Flexibility at Low Cost

CONSTRUCTION OF POWER – X ABC

THERE ARE TWO TYPES OF ABC CABLES ACCORDING TO NFC 33 -209: 1996

ABC

ABC WITHOUT
MESSENGER CUM
NEUTRAL CORE

ABC WITH MESSENGER
CUM NEUTRAL CORE

Phase Conductor

Hard drawn Aluminium with a purity of designation of 1350 as per NFC 31-122 is insulated with black weather resistant cross-linked polyethylene (XLPE) especially developed for damp and arid tropical climates and to withstand wide differences in temperature.

Neutral Messenger

The messenger, which is also the neutral conductor, is made of heat treated high tensile Aluminium Alloy and is insulated with XLPE.

Street Lighting Conductor

Normally 16mm² or 25mm² hard-drawn Aluminium insulated with black weather resistant XLPE. This street lighting conductor will be added to the bundled cable, only on the request made by customers.

Pilot Cores

Normally 1.5mm² untinned Copper insulated with XLPE.

Packing

All Aerial Bundled Cables are supplied in non-returnable wooden drums suitable for outdoor storage. These drums can be treated using suitable preservatives according to the specifications given by customers. Drum lengths and sizes & designs of drums also can be arranged to suit the customer needs.

Different types of Bundled Cables

ACL has the capability to manufacture and test ABC to IEC, NFC, BS & ASTM standards. Furthermore, ACL can manufacture ABC to any standard as required by customer.

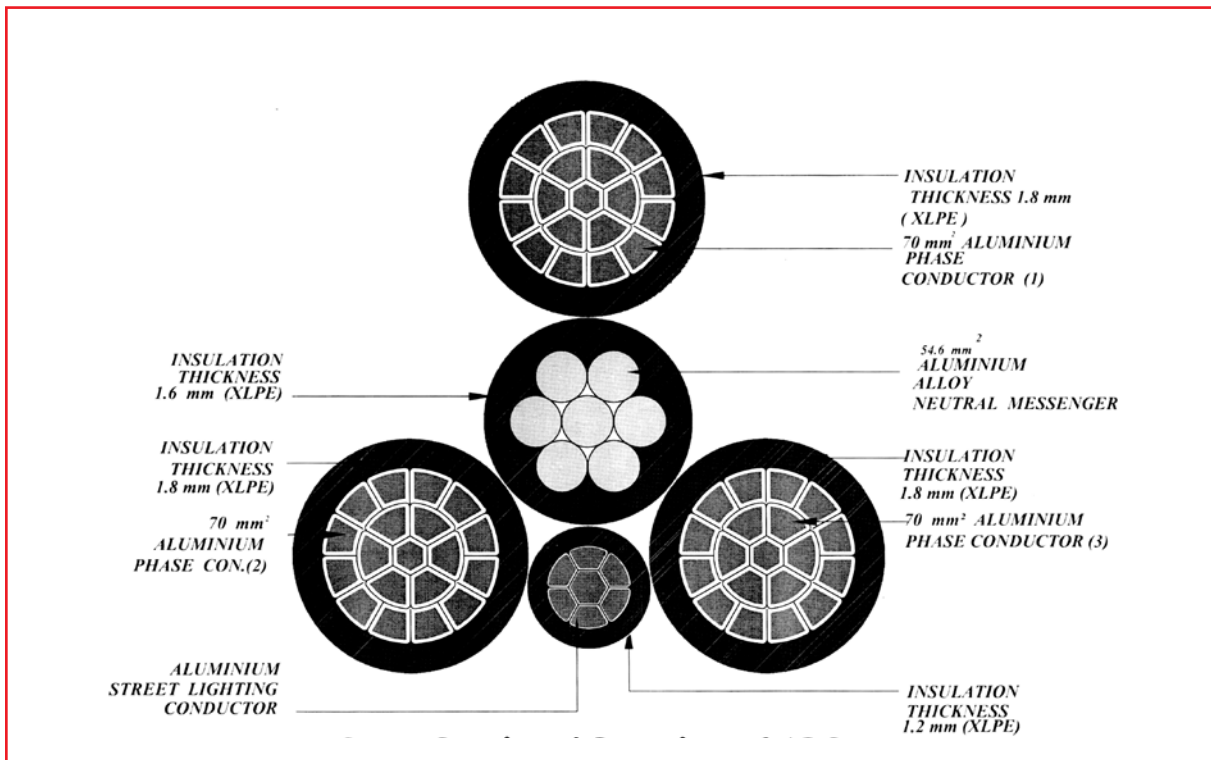
WHY XLPE?

Cross Linked Polyethylene cables are durable, economical, light weight and the properties of the insulation offer considerable advantages over Polyethylene (PE) where current ratings and short circuit ratings are of the primary importance.

The nominal conductor operating temperature of XLPE insulated cable is 90°C where as that of PE is only 70°C. The cable has the advantage of simplicity in construction, lightness in weight besides its excellent electrical, heat, mechanical and anti-chemical corrosion properties.

XLPE cable withstands small bending radius and allowing for easy handling and installation. Furthermore, the splicing and terminating methods for XLPE cables are very simple in comparison with those for other kinds of cables.





**Cross Sectional Drawing of ABC
3x70+54.6+6+16 sq.mm (N-28)**



Aerial Bundled cables packed in drums at ACL yard being inspected before despatch



ABC -Reliability, Safety and Flexibility at Low Cost

ABC WITHOUT MESSENGER NEUTRAL CORE

600 / 1000 V
NFC 33 - 209 : 1996

2 or 4 x 16 mm² Al/XLPE + K x 1.5 mm² Cu/XLPE ABC

ITEM CODE		UNITS	N - 1	N - 2	N - 3	N - 4
Item Description		mm ²	2 x 16	2x16 + 2x1.5	4 x 16	4x16 + 2x1.5
Nominal Cross - Sectional Area	Phase Conductors	mm ²	16	16	16	16
	Pilot Core	mm ²	-	1.5	-	1.5
Number Of Strands	Phase Conductors	Nos.	7	7	-	7
	Pilot Core	No.	-	1	-	1
Maximum Resistance Of Conductor At 20° C	Phase Conductors	Ω/km	1.91	1.91	1.91	1.91
	Pilot Core	Ω/km	-	12.1	-	12.1
Minimum Breaking Strength	Phase Conductors	daN	190	190	190	190
Nominal Diameter Of Bare Conductors	Phase Conductors	mm	4.8	4.8	4.8	4.8
	Pilot Core	mm	-	1.38	-	1.38
Nominal Thickness Of Insulating Sheath	Phase Conductors	mm	1.2	1.2	1.2	1.2
	Pilot Core	mm	-	1.2	-	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	7.2	7.2	7.2	7.2
	Pilot Core	mm	-	3.8	-	3.8
Current Carrying Capacity	In air at 30°C	A	93	93	83	83
	On facades	A	83	83	75	75
	In conduites in walls	A	72	72	63	63
Voltage Drop	Phase Conductors	V/A/km	3.98	3.98	3.44	3.44
Complete Cable						
Approximate Overall Diameter		mm	15	16	18	19.5
Maximum Lay Pitch		cm	40	40	40	40
Lay Direction			Right	Right	Right	Right
Maximum Short Circuit Rating	for 0.2 Sec	kA	3.38	3.38	3.38	3.38
	for 1.0 Sec	kA	1.51	1.51	1.51	1.51
	for 3.0 Sec	kA	0.87	0.87	0.87	0.87
Minimum Bending Radius		mm	129.6	129.6	129.6	129.6
Approximate Cable Weight		kg/km	133.1	178.4	266.3	311.5
Nominal Drum Length		m	1750	1500	1200	1000
Size of the Drum			D - 2	D - 2	D - 2	D - 2
Drum Weight		kg	138	138	138	138
Gross Weight of Cable + Drum		kg	371	406	458	450

K represents the number of pilot cores, it may be zero 0 or 2

Table-01

ABC - Reliability, Safety and Flexibility at Low Cost



ABC WITHOUT MESSENGER NEUTRAL CORE

600 / 1000 V
NFC 33 - 209 : 1996

2 or 4 x 25 mm² Al/XLPE + K x 1.5 mm² Cu/XLPE ABC

ITEM CODE		UNITS	N - 5	N - 6	N - 7	N - 8
Item Description		mm ²	2 x 25	2x25 + 2x1.5	4 x 25	4x25 + 2x1.5
Nominal Cross - Sectional Area	Phase Conductors	mm ²	25	25	25	25
	Pilot Core	mm ²	-	1.5	-	1.5
Number Of Strands	Phase Conductors	Nos.	7	7	7	7
	Pilot Core	No.	-	1	-	1
Maximum Resistance Of Conductor At 20 ^o C	Phase Conductors	Ω/km	1.20	1.20	1.20	1.20
	Pilot Core	Ω/km	-	12.1	-	12.1
Minimum Breaking Strength	Phase Conductors	daN	300	300	300	300
Nominal Diameter Of Bare Conductors	Phase Conductors	mm	6.0	6.0	6.0	6.0
	Pilot Core	mm	-	1.38	-	1.38
Nominal Thickness Of Insulating Sheath	Phase Conductors	mm	1.4	1.4	1.4	1.4
	Pilot Core	mm	-	1.2	-	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	8.8	8.8	8.8	8.8
	Pilot Core	mm	-	3.8	-	3.8
Current Carrying Capacity	In air at 30 ^o C	A	122	122	111	111
	On facades	A	111	111	99	99
	In conduites in walls	A	95	95	83	83
Voltage Drop	Phase Conductors	V/A/km	2.54	2.54	2.2	2.2
Complete Cable						
Approximate Overall Diameter		mm	18	19.5	22	24
Maximum Lay Pitch		cm	45	45	45	45
Lay Direction			Right	Right	Right	Right
Maximum Short Circuit Rating	for 0.2 Sec	kA	5.28	5.28	5.28	5.28
	for 1.0 Sec	kA	2.36	2.36	2.36	2.36
	for 3.0 Sec	kA	1.36	1.36	1.36	1.36
Minimum Bending Radius		mm	158.4	158.4	158.4	158.4
Approximate Cable Weight		kg/km	203.1	248.4	406.2	451.5
Nominal Drum Length		m	1200	1000	700	600
Size of the Drum			D - 2	D - 2	D - 2	D - 2
Drum Weight		kg	138	138	138	138
Gross Weight of the Cable + Drum		kg	382	386	422	409

K represents the number of pilot cores, it may be zero 0 or 2

Table-02



ABC -Reliability, Safety and Flexibility at Low Cost

ABC WITHOUT MESSENGER NEUTRAL CORE

600 / 1000 V
NFC 33 - 209 : 1996

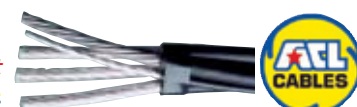
2 or 4 x 35 mm² Al/XLPE + K x 1.5 mm² Cu/XLPE ABC

ITEM CODE		UNITS	N - 9	N - 10	N - 11	N - 12
Item Description		mm ²	2 x 35	2x35 + 2x1.5	4 x 35	4x35 + 2x1.5
Nominal Cross - Sectional Area	Phase Conductors	mm ²	35	35	35	35
	Pilot Core	mm ²	-	1.5	-	1.5
Number Of Strands	Phase Conductors	Nos.	7	7	7	7
	Pilot Core	No.	-	1	-	1
Maximum Resistance Of Conductor At 20 ° C	Phase Conductors	Ω/km	0.868	0.868	0.868	0.868
	Pilot Core	Ω/km	-	12.1	-	12.1
Minimum Breaking Strength	Phase Conductors	daN	420	420	420	420
Nominal Diameter Of Bare Conductors	Phase Conductors	mm	7.0	7.0	7.0	7.0
	Pilot Core	mm	-	1.38	-	1.38
Nominal Thickness Of Insulating Sheath	Phase Conductors	mm	1.6	1.6	1.6	1.6
	Pilot Core	mm	-	1.2	-	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	10.2	10.2	10.2	10.2
	Pilot Core	mm	-	3.8	-	3.8
Current Carrying Capacity	In air at 30°C	A	150	150	138	138
	On facades	A	134	134	123	123
	In conduites in walls	A	116	116	107	107
Voltage Drop	Phase Conductors	V/A/km	1.65	1.65	1.65	1.65
Complete Cable						
Approximate Overall Diameter		mm	21	23	26	28
Maximum Lay Pitch		cm	50	50	50	50
Lay Direction			Right	Right	Right	Right
Maximum Short Circuit Rating	for 0.2 Sec	kA	7.39	7.39	7.39	7.39
	for 1.0 Sec	kA	3.31	3.31	3.31	3.31
	for 3.0 Sec	kA	1.91	1.91	1.91	1.91
Minimum Bending Radius		mm	183.6	183.6	183.6	183.6
Approximate Cable Weight		kg/km	274.5	319.7	549.0	594.2
Nominal Drum Length		m	1200	1200	800	800
Size of the Drum			D - 3	D - 3	D - 3	D - 3
Drum Weight		kg	145	145	145	145
Gross Weight of the Cable + Drum		kg	474	529	584	620

K represents the number of pilot cores, it may be zero 0 or 2

Table-03

ABC -Reliability, Safety and Flexibility at Low Cost



ABC WITHOUT MESSENGER NEUTRAL CORE

600 / 1000 V
NFC 33 - 209 : 1996

2 x 50 mm² Al/XLPE + K x 1.5 mm² Cu/XLPE ABC

ITEM CODE		UNITS	N - 13	N - 14
Item Description		mm ²	2 x 50	2x50 + 2x1.5
Nominal Cross - Sectional Area	Phase Conductors	mm ²	50	50
	Pilot Core	mm ²	-	1.5
Number Of Strands	Phase Conductors	Nos.	7	7
	Pilot Core	No.	-	1
Maximum Resistance Of Conductor At 20 ^o C	Phase Conductors	Ω/km	0.641	0.641
	Pilot Core	Ω/km	-	12.1
Minimum Breaking Strength	Phase Conductors	daN	600	600
Nominal Diameter Of Bare Conductors	Phase Conductors	mm	8.1	8.1
	Pilot Core	mm	-	1.38
Nominal Thickness Of Insulating Sheath	Phase Conductors	mm	1.6	1.6
	Pilot Core	mm	-	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	11.3	11.3
	Pilot Core	mm	-	3.8
Current Carrying Capacity	In air at 30°C	A	168	168
	On facades	A	149	149
	In conduites in walls	A	130	130
Voltage Drop	Phase Conductors	V/A/km	1.27	1.27
Complete Cable				
Approximate Overall Diameter		mm	23	25
Maximum Lay Pitch		cm	55	55
Lay Direction			Right	Right
Maximum Short Circuit Rating	for 0.2 Sec	kA	10.56	10.56
	for 1.0 Sec	kA	4.72	4.72
	for 3.0 Sec	kA	2.73	2.73
Minimum Bending Radius		mm	203.4	203.4
Approximate Cable Weight		kg/km	350.4	395.6
Nominal Drum Length		m	1000	1000
Size of the Drum			D - 3	D - 3
Drum Weight		kg	145	145
Gross Weight of the Cable + Drum		kg	495	541

K represents the number of pilot cores, it may be zero 0 or 2

Table-04



ABC -Reliability, Safety and Flexibility at Low Cost

ABC WITH MESSENGER NEUTRAL CORE

600 / 1000 V
NFC 33 - 209 : 1996

3 x 25 mm² Al / XLPE + N 54.6 mm² + K x 16mm² ABC

ITEM CODE		UNITS	N - 15	N - 16	N - 17	N - 18
Item Description		mm ²	3x25 +54.6	3x25+54.6+1x16	3x25+54.6+2x16	3x25+54.6+3x16
Nominal Cross - Sectional Area	Phase Conductors	mm ²	25	25	25	25
	Neutral Messenger	mm ²	54.6	54.6	54.6	54.6
	Street Lighting Conductor	mm ²	-	16	16	16
Number Of Strands	Phase Conductors	Nos.	7	7	7	7
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance Of Conductor At 20 ^o C	Phase Conductors	Ω/km	1.2	1.2	1.2	1.2
	Neutral Messenger	Ω/km	0.63	0.63	0.63	0.63
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductors	daN	300	300	300	300
	Neutral Messenger	daN	1660	1660	1660	1660
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter Of Strands	Neutral Messenger	mm	3.15	3.15	3.15	3.15
Nominal Diameter Of Bare Conductors	Phase Conductors	mm	6.0	6.0	6.0	6.0
	Neutral Messenger	mm	9.5	9.5	9.5	9.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	190	190	190	190
Nominal Thickness Of Insulating Sheath	Phase Conductors	mm	1.4	1.4	1.4	1.4
	Neutral Messenger	mm	1.6	1.6	1.6	1.6
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	8.8	8.8	8.8	8.8
	Neutral Messenger	mm	12.7	12.7	12.7	12.7
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductors	A	112	112	112	112
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductors	V/A/km	2.2	2.2	2.2	2.2
Complete Cable						
Approximate Overall Diameter		mm	30	30	30	30
Maximum Lay Pitch		cm	80	80	80	80
Lay Direction			Right	Right	Right	Right
Maximum Short Circuit Rating	for 0.2 Sec	kA	5.28	5.28	5.28	5.28
	for 1.0 Sec	kA	2.36	2.36	2.36	2.36
	for 3.0 Sec	kA	1.36	1.36	1.36	1.36
Minimum Bending Radius		mm	229	229	229	229
Approximate Cable Weight		kg/km	514.1	580.7	647.3	713.8
Nominal Drum Length		m	1000	1000	1000	1000
Size of the Drum			D - 5	D - 5	D - 5	D - 5
Drum Weight		kg	225	225	225	225
Gross Weight of the Cable + Drum		kg	739	806	872	939

K represents the number of cores for public lighting, it may be zero 0, 1, 2 or 3

Table-05

ABC -Reliability, Safety and Flexibility at Low Cost



ABC WITH MESSENGER NEUTRAL CORE

600 / 1000 V
NFC 33 - 209 : 1996

3 x 35 mm² Al / XLPE + N 54.6 mm² + K x 16mm² ABC

ITEM CODE		UNITS	N - 19	N - 20	N - 21	N - 22
Item Description		mm ²	3x35 +54.6	3x35+54.6+1x16	3x35+54.6+2x16	3x35+54.6+3x16
Nominal Cross - Sectional Area	Phase Conductors	mm ²	35	35	35	35
	Neutral Messenger	mm ²	54.6	54.6	54.6	54.6
	Street Lighting Conductor	mm ²	-	16	16	16
Number Of Strands	Phase Conductors	Nos.	7	7	7	7
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance Of Conductor At 20° C	Phase Conductors	Ω/km	0.868	0.868	0.868	0.868
	Neutral Messenger	Ω/km	0.63	0.63	0.63	0.63
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductors	daN	420	420	420	420
	Neutral Messenger	daN	1660	1660	1660	1660
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter Of Strands	Neutral Messenger	mm	3.15	3.15	3.15	3.15
Nominal Diameter Of Bare Conductors	Phase Conductors	mm	7.0	7.0	7.0	7.0
	Neutral Messenger	mm	9.5	9.5	9.5	9.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	190	190	190	190
Nominal Thickness Of Insulating Sheath	Phase Conductors	mm	1.6	1.6	1.6	1.6
	Neutral Messenger	mm	1.6	1.6	1.6	1.6
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	10.2	10.2	10.2	10.2
	Neutral Messenger	mm	12.7	12.7	12.7	12.7
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductors	A	138	138	138	138
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductors	V/A/km	1.65	1.65	1.65	1.65
Complete Cable						
Approximate Overall Diameter		mm	33	33	33	33
Maximum Lay Pitch		cm	85	85	85	85
Lay Direction			Right	Right	Right	Right
Maximum Short Circuit Rating	for 0.2 Sec	kA	7.39	7.39	7.39	7.39
	for 1.0 Sec	kA	3.31	3.31	3.31	3.31
	for 3.0 Sec	kA	1.91	1.91	1.91	1.91
Minimum Bending Radius		mm	229	229	229	229
Approximate Cable Weight		kg/km	621.2	687.8	754.4	820.9
Nominal Drum Length		m	1000	1000	1000	1000
Size of the Drum			D - 16	D - 16	D - 16	D - 16
Drum Weight		kg	250	250	250	250
Gross Weight of the Cable + Drum		kg	871	938	1004	1071

K represents the number of cores for public lighting, it may be zero 0, 1, 2 or 3

Table-06



ABC -Reliability, Safety and Flexibility at Low Cost

ABC WITH MESSENGER NEUTRAL CORE

600 / 1000 V
NFC 33 - 209 : 1996

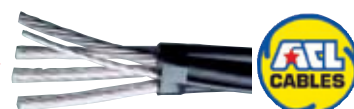
3 x 50 mm² Al / XLPE + N 54.6 mm² + K x 16mm² ABC

ITEM CODE		UNITS	N - 23	N - 24	N - 25	N - 26
Item Description		mm ²	3x50 +54.6	3x50+54.6+1x16	3x50+54.6+2x16	3x50+54.6+3x16
Nominal Cross - Sectional Area	Phase Conductors	mm ²	50	50	50	50
	Neutral Messenger	mm ²	54.6	54.6	54.6	54.6
	Street Lighting Conductor	mm ²	-	16	16	16
Number Of Strands	Phase Conductors	Nos.	7	7	7	7
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance Of Conductor At 20° C	Phase Conductors	Ω/km	0.641	0.641	0.641	0.641
	Neutral Messenger	Ω/km	0.63	0.63	0.63	0.63
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductors	daN	600	600	600	600
	Neutral Messenger	daN	1660	1660	1660	1660
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter Of Strands	Neutral Messenger	mm	3.15	3.15	3.15	3.15
Nominal Diameter Of Bare Conductors	Phase Conductors	mm	8.1	8.1	8.1	8.1
	Neutral Messenger	mm	9.5	9.5	9.5	9.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	190	190	190	190
Nominal Thickness Of Insulating Sheath	Phase Conductors	mm	1.6	1.6	1.6	1.6
	Neutral Messenger	mm	1.6	1.6	1.6	1.6
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	11.3	11.3	11.3	11.3
	Neutral Messenger	mm	12.7	12.7	12.7	12.7
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductors	A	168	168	168	168
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductors	V/A/km	1.27	1.27	1.27	1.27
Complete Cable						
Approximate Overall Diameter		mm	36	36	36	36
Maximum Lay Pitch		cm	90	90	90	90
Lay Direction			Right	Right	Right	Right
Maximum Short Circuit Rating	for 0.2 Sec	kA	10.56	10.56	10.56	10.56
	for 1.0 Sec	kA	4.72	4.72	4.72	4.72
	for 3.0 Sec	kA	2.73	2.73	2.73	2.73
Minimum Bending Radius		mm	229	229	229	229
Approximate Cable Weight		kg/km	735.0	801.6	868.2	934.8
Nominal Drum Length		m	700	700	700	700
Size of the Drum			D - 15	D - 15	D - 15	D-15
Drum Weight		kg	215	215	215	215
Gross Weight of the Cable + Drum		kg	730	776	823	869

K represents the number of cores for public lighting, it may be zero 0, 1, 2 or 3

Table-07

ABC -Reliability, Safety and Flexibility at Low Cost



ABC WITH MESSENGER NEUTRAL CORE

600 / 1000 V
NFC 33 - 209 : 1996

3 x 70 mm² Al / XLPE + N 54.6 mm² + K x 16mm² ABC

ITEM CODE		UNITS	N - 27	N - 28	N - 29	N - 30
Item Description		mm ²	3x70 +54.6	3x70+54.6+1x16	3x70+54.6+2x16	3x70+54.6+3x16
Nominal Cross - Sectional Area	Phase Conductors	mm ²	70	70	70	70
	Neutral Messenger	mm ²	54.6	54.6	54.6	54.6
	Street Lighting Conductor	mm ²	-	16	16	16
Number Of Strands	Phase Conductors	Nos.	#12	#12	#12	#12
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance Of Conductor At 20° C	Phase Conductors	Ω/km	0.443	0.443	0.443	0.443
	Neutral Messenger	Ω/km	0.63	0.63	0.63	0.63
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductors	daN	840	840	840	840
	Neutral Messenger	daN	1660	1660	1660	1660
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter Of Strands	Neutral Messenger	mm	3.15	3.15	3.15	3.15
Nominal Diameter Of Bare Conductors	Phase Conductors	mm	9.9	9.9	9.9	9.9
	Neutral Messenger	mm	9.5	9.5	9.5	9.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	190	190	190	190
Nominal Thickness Of Insulating Sheath	Phase Conductors	mm	1.8	1.8	1.8	1.8
	Neutral Messenger	mm	1.6	1.6	1.6	1.6
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	13.5	13.5	13.5	13.5
	Neutral Messenger	mm	12.7	12.7	12.7	12.7
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductors	A	213	213	213	213
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductors	V/A/km	0.87	0.87	0.87	0.87
Complete Cable						
Approximate Overall Diameter		mm	37.5	37.5	37.5	37.5
Maximum Lay Pitch		cm	100	100	100	100
Lay Direction			Right	Right	Right	Right
Maximum Short Circuit Rating	for 0.2 Sec	kA	14.79	14.79	14.79	14.79
	for 1.0 Sec	kA	6.61	6.61	6.61	6.61
	for 3.0 Sec	kA	3.82	3.82	3.82	3.82
Minimum Bending Radius		mm	243	243	243	243
Approximate Cable Weight		kg/km	975.8	1042.3	1108.9	1175.5
Nominal Drum Length		m	650	650	650	650
Size of the Drum			D - 15	D - 15	D - 15	D - 15
Drum Weight		kg	215	215	215	215
Gross Weight of the Cable + Drum		kg	849	892	936	979

K represents the number of cores for public lighting, it may be zero 0, 1, 2 or 3
#- can be 19 strands based on customer request

Table-08



ABC - Reliability, Safety and Flexibility at Low Cost

ABC WITH MESSENGER NEUTRAL CORE

600 / 1000 V
NFC 33 - 209 : 1996

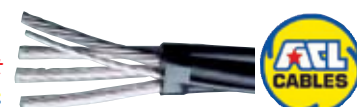
3 x 70 mm² Al / XLPE + N 54.6 mm² + K x 25 mm² ABC

ITEM CODE		UNITS	N - 31	N - 32	N - 33
Item Description		mm ²	3x70+54.6+1x25	3x70+54.6+2x25	3x70+54.6+3x25
Nominal Cross - Sectional Area	Phase Conductors	mm ²	70	70	70
	Neutral Messenger	mm ²	54.6	54.6	54.6
	Street Lighting Conductor	mm ²	25	25	25
Number Of Strands	Phase Conductors	Nos.	#12	#12	#12
	Neutral Messenger	Nos.	7	7	7
	Street Lighting Conductor	Nos.	7	7	7
Maximum Resistance Of Conductor At 20 ^o C	Phase Conductors	Ω/km	0.443	0.443	0.443
	Neutral Messenger	Ω/km	0.63	0.63	0.63
	Street Lighting Conductor	Ω/km	1.20	1.20	1.20
Minimum Breaking Strength	Phase Conductors	daN	840	840	840
	Neutral Messenger	daN	1660	1660	1660
	Street Lighting Conductor	daN	300	300	300
Nominal Diameter Of Strands	Neutral Messenger	mm	3.15	3.15	3.15
Nominal Diameter Of Bare Conductors	Phase Conductors	mm	9.9	9.9	9.9
	Neutral Messenger	mm	9.5	9.5	9.5
	Street Lighting Conductor	mm	6.0	6.0	6.0
Lay Direction	Neutral Messenger		Left	Left	Left
Lay Pitch	Neutral Messenger	mm	190	190	190
Nominal Thickness Of Insulating Sheath	Phase Conductors	mm	1.8	1.8	1.8
	Neutral Messenger	mm	1.6	1.6	1.6
	Street Lighting Conductor	mm	1.4	1.4	1.4
Nominal Insulated Core Diameter	Phase Conductors	mm	13.5	13.5	13.5
	Neutral Messenger	mm	12.7	12.7	12.7
	Street Lighting Conductor	mm	8.8	8.8	8.8
Current Carrying Capacity	Phase Conductors	A	213	213	213
	Street Lighting Conductor	A	111	111	111
Voltage Drop	Phase Conductors	V/A/km	0.87	0.87	0.87
Complete Cable					
Approximate Overall Diameter		mm	40	40	40
Maximum Lay Pitch		cm	100	100	100
Lay Direction			Right	Right	Right
Maximum Short Circuit Rating	for 0.2 Sec	kA	14.79	14.79	14.79
	for 1.0 Sec	kA	6.61	6.61	6.61
	for 3.0 Sec	kA	3.82	3.82	3.82
Minimum Bending Radius		mm	243	243	243
Approximate Cable Weight		kg/km	1077.3	1178.9	1280.4
Nominal Drum Length		m	600	600	600
Size of the Drum			D - 15	D - 15	D - 15
Drum Weight		kg	215	215	215
Gross Weight of the Cable + Drum		kg	861	922	983

K represents the number of cores for public lighting, it may be zero 0, 1, 2 or 3
#- can be 19 strands based on customer request

Table-09

ABC - Reliability, Safety and Flexibility at Low Cost



ABC WITH MESSENGER NEUTRAL CORE

600 / 1000 V
NFC 33 - 209 : 1996

3 x 70 mm² Al / XLPE + N 70 mm² + K x 16mm² ABC

ITEM CODE		UNITS	N - 34	N - 35	N - 36	N - 37
Item Description		mm ²	3x70 +N70	3x70+N70 +1x16	3x70+N70 +2x16	3x70+N70 +3x16
Nominal Cross - Sectional Area	Phase Conductors	mm ²	70	70	70	70
	Neutral Messenger	mm ²	70	70	70	70
	Street Lighting Conductor	mm ²	-	16	16	16
Number Of Strands	Phase Conductors	Nos.	#12	#12	#12	#12
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance Of Conductor At 20 ^o C	Phase Conductors	Ω/km	0.443	0.443	0.443	0.443
	Neutral Messenger	Ω/km	0.5	0.5	0.5	0.5
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductors	daN	840	840	840	840
	Neutral Messenger	daN	2050	2050	2050	2050
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter Of Strands	Neutral Messenger	mm	3.50	3.50	3.50	3.50
Nominal Diameter Of Bare Conductors	Phase Conductors	mm	9.9	9.9	9.9	9.9
	Neutral Messenger	mm	10.5	10.5	10.5	10.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	210	210	210	210
Nominal Thickness Of Insulating Sheath	Phase Conductors	mm	1.8	1.8	1.8	1.8
	Neutral Messenger	mm	1.5	1.5	1.5	1.5
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	13.5	13.5	13.5	13.5
	Neutral Messenger	mm	13.5	13.5	13.5	13.5
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductors	A	213	213	213	213
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductors	V/A/km	0.87	0.87	0.87	0.87
Complete Cable						
Approximate Overall Diameter		mm	41	41	41	41
Maximum Lay Pitch		cm	100	100	100	100
Lay Direction			Right	Right	Right	Right
Maximum Short Circuit Rating	for 0.2 Sec	kA	14.79	14.79	14.79	14.79
	for 1.0 Sec	kA	6.61	6.61	6.61	6.61
	for 3.0 Sec	kA	3.82	3.82	3.82	3.82
Minimum Bending Radius		mm	243	243	243	243
Approximate Cable Weight		kg/km	1013.3	1079.9	1146.4	1213.0
Nominal Drum Length		m	600	600	600	600
Size of the Drum			D - 15	D - 15	D - 15	D - 15
Drum Weight		kg	215	215	215	215
Gross Weight of the Cable + Drum		kg	823	863	903	943

K represents the number of cores for public lighting, it may be zero 0, 1, 2 or 3
#- can be 19 strands based on customer request

Table-10



ABC -Reliability, Safety and Flexibility at Low Cost

ABC WITH MESSENGER NEUTRAL CORE

600 / 1000 V
NFC 33 - 209 : 1996

3 x 95 mm² Al / XLPE + N 70 mm² + K x 16mm² ABC

ITEM CODE		UNITS	N - 38	N - 39	N - 40	N - 41
Item Description		mm ²	3x95+N70	3x95+N70+1x16	3x95+N70+2x16	3x95+N70+3x16
Nominal Cross - Sectional Area	Phase Conductors	mm ²	95	95	95	95
	Neutral Messenger	mm ²	70	70	70	70
	Street Lighting Conductor	mm ²	-	16	16	16
Number Of Strands	Phase Conductors	Nos.	19	19	19	19
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance Of Conductor At 20 ^o C	Phase Conductors	Ω/km	0.320	0.320	0.320	0.320
	Neutral Messenger	Ω/km	0.5	0.5	0.5	0.5
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductors	daN	1140	1140	1140	1140
	Neutral Messenger	daN	2050	2050	2050	2050
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter Of Strands	Neutral Messenger	mm	3.50	3.50	3.50	3.50
Nominal Diameter Of Bare Conductors	Phase Conductors	mm	11.2	11.2	11.2	11.2
	Neutral Messenger	mm	10.5	10.5	10.5	10.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	210	210	210	210
Nominal Thickness Of Insulating Sheath	Phase Conductors	mm	1.8	1.8	1.8	1.8
	Neutral Messenger	mm	1.5	1.5	1.5	1.5
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	14.8	14.8	14.8	14.8
	Neutral Messenger	mm	13.5	13.5	13.5	13.5
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductors	A	258	258	258	258
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductors	V/A/km	0.67	0.67	0.67	0.67
Complete Cable						
Approximate Overall Diameter		mm	44	44	44	44
Maximum Lay Pitch		cm	110	110	110	110
Lay Direction			Right	Right	Right	Right
Maximum Short Circuit Rating	for 0.2 Sec	kA	20.07	20.07	20.07	20.07
	for 1.0 Sec	kA	8.98	8.98	8.98	8.98
	for 3.0 Sec	kA	5.18	5.18	5.18	5.18
Minimum Bending Radius		mm	266	266	266	266
Approximate Cable Weight		kg/km	1196.2	1262.8	1329.3	1395.9
Nominal Drum Length		m	500	500	500	500
Size of the Drum			D - 5	D - 5	D - 5	D - 5
Drum Weight		kg	225	225	225	225
Gross Weight of the Cable + Drum		kg	823	856	890	923

K represents the number of cores for public lighting, it may be zero 0, 1, 2 or 3

Table-11

ABC -Reliability, Safety and Flexibility at Low Cost



ABC WITH MESSENGER NEUTRAL CORE

600 / 1000 V
NFC 33 - 209 : 1996

3 x 120 mm² Al / XLPE + N 70 mm² + K x 16mm² ABC

ITEM CODE		UNITS	N - 42	N - 43	N - 44	N - 45
Item Description		mm ²	3x120+N70	3x120+N70+1x16	3x120+N70+2x16	3x120+N70+3x16
Nominal Cross - Sectional Area	Phase Conductors	mm ²	120	120	120	120
	Neutral Messenger	mm ²	70	70	70	70
	Street Lighting Conductor	mm ²	-	16	16	16
Number Of Strands	Phase Conductors	Nos.	19	19	19	19
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance Of Conductor At 20° C	Phase Conductors	Ω/km	0.253	0.253	0.253	0.253
	Neutral Messenger	Ω/km	0.5	0.5	0.5	0.5
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductors	daN	1440	1440	1440	1440
	Neutral Messenger	daN	2050	2050	2050	2050
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter Of Strands	Neutral Messenger	mm	3.50	3.50	3.50	3.50
Nominal Diameter Of Bare Conductors	Phase Conductors	mm	12.2	12.2	12.2	12.2
	Neutral Messenger	mm	10.5	10.5	10.5	10.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	210	210	210	210
Nominal Thickness Of Insulating Sheath	Phase Conductors	mm	1.8	1.8	1.8	1.8
	Neutral Messenger	mm	1.5	1.5	1.5	1.5
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	15.8	15.8	15.8	15.8
	Neutral Messenger	mm	13.5	13.5	13.5	13.5
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductors	A	300	300	300	300
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductors	V/A/km	0.55	0.55	0.55	0.55
Complete Cable						
Approximate Overall Diameter		mm	46	46	46	46
Maximum Lay Pitch		cm	120	120	120	120
Lay Direction			Right	Right	Right	Right
Maximum Short Circuit Rating	for 0.2 Sec	kA	25.35	25.35	25.35	25.35
	for 1.0 Sec	kA	11.34	11.34	11.34	11.34
	for 3.0 Sec	kA	6.55	6.55	6.55	6.55
Minimum Bending Radius		mm	284	284	284	284
Approximate Cable Weight		kg/km	1350.5	1417.1	1483.7	1550.2
Nominal Drum Length		m	450	450	450	450
Size of the Drum			D - 5	D - 5	D - 5	D - 5
Drum Weight		kg	225	225	225	225
Gross Weight of the Cable + Drum		kg	833	863	893	923

K represents the number of cores for public lighting, it may be zero 0, 1, 2 or 3

Table-12



ABC - Reliability, Safety and Flexibility at Low Cost

ABC WITH MESSENGER NEUTRAL CORE

600 / 1000 V
NFC 33 - 209 : 1996

3 x 150 mm² Al / XLPE + N 70 mm² + K x 16mm² ABC

ITEM CODE		UNITS	N - 46	N - 47	N - 48	N - 49
Item Description		mm ²	3x150 +N70	3x150+N70 +1x16	3x150+N70 +2x16	3x150+N70 +3x16
Nominal Cross - Sectional Area	Phase Conductors	mm ²	150	150	150	150
	Neutral Messenger	mm ²	70	70	70	70
	Street Lighting Conductor	mm ²	-	16	16	16
Number Of Strands	Phase Conductors	Nos.	19	19	19	19
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance Of Conductor At 20 ^o C	Phase Conductors	Ω/km	0.206	0.206	0.206	0.206
	Neutral Messenger	Ω/km	0.5	0.5	0.5	0.5
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductors	daN	1800	1800	1800	1800
	Neutral Messenger	daN	2050	2050	2050	2050
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter Of Strands	Neutral Messenger	mm	3.50	3.50	3.50	3.50
Nominal Diameter Of Bare Conductors	Phase Conductors	mm	14.1	14.1	14.1	14.1
	Neutral Messenger	mm	10.5	10.5	10.5	10.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	210	210	210	210
Nominal Thickness Of Insulating Sheath	Phase Conductors	mm	1.7	1.7	1.7	1.7
	Neutral Messenger	mm	1.5	1.5	1.5	1.5
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	17.5	17.5	17.5	17.5
	Neutral Messenger	mm	13.5	13.5	13.5	13.5
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductors	A	344	344	344	344
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductors	V/A/km	0.46	0.46	0.46	0.46
Complete Cable						
Approximate Overall Diameter		mm	48	48	48	48
Maximum / minimum Lay Pitch		cm	115 / 130	115 / 130	115 / 130	115 / 130
Lay Direction			Right	Right	Right	Right
Maximum Short Circuit Rating	for 0.2 Sec	kA	31.69	31.69	31.69	31.69
	for 1.0 Sec	kA	14.17	14.17	14.17	14.17
	for 3.0 Sec	kA	8.18	8.18	8.18	8.18
Minimum Bending Radius		mm	315	315	315	315
Approximate Cable Weight		kg/km	1660.9	1727.5	1794.0	1860.6
Nominal Drum Length		m	400	400	400	400
Size of the Drum			D - 5	D - 5	D - 5	D - 5
Drum Weight		kg	225	225	225	225
Gross Weight of the Cable + Drum		kg	889	916	943	969

K represents the number of cores for public lighting, it may be zero 0, 1, 2 or 3

Table-13

ABC - Reliability, Safety and Flexibility at Low Cost



ABC WITH MESSENGER NEUTRAL CORE

600 / 1000 V
NFC 33 - 209 : 1996

3 x 120 mm² Al / XLPE + N 95 mm² + K x 16mm² ABC

ITEM CODE		UNITS	N - 50	N - 51	N - 52	N - 53
Item Description		mm ²	3x120+N95	3x120+N95+1x16	3x120+95+2x16	3x120+N95+3x16
Nominal Cross - Sectional Area	Phase Conductors	mm ²	120	120	120	120
	Neutral Messenger	mm ²	95	95	95	95
	Street Lighting Conductor	mm ²	-	16	16	16
Number Of Strands	Phase Conductors	Nos.	19	19	19	19
	Neutral Messenger	Nos.	19	19	19	19
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance Of Conductor At 20 ^o C	Phase Conductors	Ω/km	0.253	0.253	0.253	0.253
	Neutral Messenger	Ω/km	0.343	0.343	0.343	0.343
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductors	daN	1440	1440	1440	1440
	Neutral Messenger	daN	2750	2750	2750	2750
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter Of Strands	Neutral Messenger	mm	2.50	2.50	2.50	2.50
Nominal Diameter Of Bare Conductors	Phase Conductors	mm	12.2	12.2	12.2	12.2
	Neutral Messenger	mm	12.5	12.5	12.5	12.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	250	250	250	250
Nominal Thickness Of Insulating Sheath	Phase Conductors	mm	1.8	1.8	1.8	1.8
	Neutral Messenger	mm	1.6	1.6	1.6	1.6
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	15.8	15.8	15.8	15.8
	Neutral Messenger	mm	15.7	15.7	15.7	15.7
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductors	A	300	300	300	300
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductors	V/A/km	0.55	0.55	0.55	0.55
Complete Cable						
Approximate Overall Diameter		mm	47	47	47	47
Maximum Lay Pitch		cm	120	120	120	120
Lay Direction			Right	Right	Right	Right
Maximum Short Circuit Rating	for 0.2 Sec	kA	25.35	25.35	25.35	25.35
	for 1.0 Sec	kA	11.34	11.34	11.34	11.34
	for 3.0 Sec	kA	6.55	6.55	6.55	6.55
Minimum Bending Radius		mm	284	284	284	284
Approximate Cable Weight		kg/km	1413.7	1480.3	1546.9	1613.4
Nominal Drum Length		m	425	425	425	425
Size of the Drum			D - 5	D - 5	D - 5	D - 5
Drum Weight		kg	225	225	225	225
Gross Weight of the Cable + Drum		kg	826	854	882	911

K represents the number of cores for public lighting, it may be zero 0, 1, 2 or 3

Table-14



ABC - Reliability, Safety and Flexibility at Low Cost

ABC WITH MESSENGER NEUTRAL CORE

600 / 1000 V
NFC 33 - 209 : 1996

3 x 150 mm² Al / XLPE + N 95 mm² + K x 16mm² ABC

ITEM CODE		UNITS	N -54	N -55	N -56	N -57
Item Description		mm ²	3x150 +N95	3x150+N95 +1x16	3x150+N95 +2x16	3x150+N95 +3x16
Nominal Cross - Sectional Area	Phase Conductors	mm ²	150	150	150	150
	Neutral Messenger	mm ²	95	95	95	95
	Street Lighting Conductor	mm ²	-	16	16	16
Number Of Strands	Phase Conductors	Nos.	19	19	19	19
	Neutral Messenger	Nos.	19	19	19	19
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance Of Conductor At 20 ^o C	Phase Conductors	Ω/km	0.206	0.206	0.206	0.206
	Neutral Messenger	Ω/km	0.343	0.343	0.343	0.343
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductors	daN	1800	1800	1800	1800
	Neutral Messenger	daN	2750	2750	2750	2750
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter Of Strands	Neutral Messenger	mm	2.50	2.50	2.50	2.50
Nominal Diameter Of Bare Conductors	Phase Conductors	mm	14.1	14.1	14.1	14.1
	Neutral Messenger	mm	12.5	12.5	12.5	12.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	250	250	250	250
Nominal Thickness Of Insulating Sheath	Phase Conductors	mm	1.7	1.7	1.7	1.7
	Neutral Messenger	mm	1.6	1.6	1.6	1.6
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	17.5	17.5	17.5	17.5
	Neutral Messenger	mm	15.7	15.7	15.7	15.7
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductors	A	344	344	344	344
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductors	V/A/km	0.46	0.46	0.46	0.46
Complete Cable						
Approximate Overall Diameter		mm	49	49	49	49
Maximum / minimum Lay Pitch		cm	115 / 130	115 / 130	115 / 130	115 / 130
Lay Direction			Right	Right	Right	Right
Maximum Short Circuit Rating	for 0.2 Sec	kA	31.69	31.69	31.69	31.69
	for 1.0 Sec	kA	14.17	14.17	14.17	14.17
	for 3.0 Sec	kA	8.18	8.18	8.18	8.18
Minimum Bending Radius		mm	315	315	315	315
Approximate Cable Weight		kg/km	1724.1	1790.7	1857.2	1923.8
Nominal Drum Length		m	400	400	400	400
Size of the Drum			D - 5	D - 5	D - 5	D - 5
Drum Weight		kg	225	225	225	225
Gross Weight of the Cable + Drum		kg	915	941	968	995

K represents the number of cores for public lighting, it may be zero 0, 1, 2 or 3

Table-15

ABC -Reliability, Safety and Flexibility at Low Cost



AERIAL BUNDLED CABLE WITH ALUMINIUM CONDUCTORS

600 / 1000 V
AS/NZS 3560.1:2000

2 or 4 Core Al/XLPE ABC

ITEM CODE		UNITS	AS - 1	AS - 2
Item Description		mm ²	2 x 16	4 x 16
Nominal Cross - Sectional Area		mm ²	16	16
Number Of Strands		Nos.	7	7
Maximum Resistance Of Conductor At 20 ° C		Ω/km	1.91	1.91
Minimum Breaking Strength		kN	2.2	2.2
Nominal Diameter Of Bare Conductors		mm	4.7	4.7
Nominal Thickness Of Insulating Sheath		mm	1.3	1.3
Nominal Insulated Core Diameter		mm	7.9	7.9
Current Carrying Capacity	For typical Australian Installation conditions	A	78	74
	For typical New Zealand Installation conditions	A	87	83
Complete Cable				
Approximate Overall Diameter		mm	15.8	19.1
Maximum Lay Length		mm	443	535
Lay Direction			Left	Left
Maximum Short Circuit Rating	for 0.2 Sec	kA	3.38	3.38
	for 1.0 Sec	kA	1.51	1.51
	for 3.0 Sec	kA	0.87	0.87
Minimum Bending Radius		mm	95	115
Approximate Cable Weight		kg/m	0.14	0.28
Nominal Drum Length		m	2000	1000
Size of the Drum			D - 2	D - 3
Drum Weight		kg	138	145
Gross Weight of Cable + Drum		kg	418	425

Table-16



ABC -Reliability, Safety and Flexibility at Low Cost

AERIAL BUNDLED CABLE WITH ALUMINIUM CONDUCTORS

600 / 1000 V
AS/NZS 3560.1:2000

2,3 or 4 Core Al/XLPE ABC

ITEM CODE	UNITS	AS - 3	AS - 4	AS - 5	
Item Description	mm ²	2 x 25	3 x 25	4 x 25	
Nominal Cross - Sectional Area	mm ²	25	25	25	
Number Of Strands	Nos.	7	7	7	
Maximum Resistance Of Conductor At 20 ° C	Ω/km	1.20	1.20	1.20	
Minimum Breaking Strength	kN	3.5	3.5	3.5	
Nominal Diameter Of Bare Conductors	mm	6	6	6	
Nominal Thickness Of Insulating Sheath	mm	1.3	1.3	1.3	
Nominal Insulated Core Diameter	mm	9.2	9.2	9.2	
Current Carrying Capacity	For typical Australian Installation conditions	A	105	97	97
	For typical New Zealand Installation conditions	A	118	109	109
Complete Cable					
Approximate Overall Diameter	mm	18.4	19.8	22.2	
Maximum Lay Length	mm	516	555	622	
Lay Direction		Left	Left	Left	
Maximum Short Circuit Rating	for 0.2 Sec	kA	5.28	5.28	5.28
	for 1.0 Sec	kA	2.36	2.36	2.36
	for 3.0 Sec	kA	1.36	1.36	1.36
Minimum Bending Radius	mm	110	120	135	
Approximate Cable Weight	kg/m	0.2	0.3	0.4	
Nominal Drum Length	m	2000	2000	1000	
Size of the Drum		D - 3	D-45	D - 25	
Drum Weight	kg	145	208	162	
Gross Weight of Cable + Drum	kg	545	808	562	

Table-17

ABC -Reliability, Safety and Flexibility at Low Cost



AERIAL BUNDLED CABLE WITH ALUMINIUM CONDUCTORS

600 / 1000 V
AS/NZS 3560.1:2000

2,3 or 4 Core Al/XLPE ABC

ITEM CODE	UNITS	AS - 6	AS - 7	AS - 8	
Item Description	mm ²	2 x 35	3 x 35	4 x 35	
Nominal Cross - Sectional Area	mm ²	35	35	35	
Number Of Strands	Nos.	7	7	7	
Maximum Resistance Of Conductor At 20° C	Ω/km	0.868	0.868	0.868	
Minimum Breaking Strength	kN	4.9	4.9	4.9	
Nominal Diameter Of Bare Conductors	mm	7	7	7	
Nominal Thickness Of Insulating Sheath	mm	1.3	1.3	1.3	
Nominal Insulated Core Diameter	mm	10.3	10.3	10.3	
Current Carrying Capacity	For typical Australian Installation conditions	A	125	120	120
	For typical New Zealand Installation conditions	A	140	134	134
Complete Cable					
Approximate Overall Diameter	mm	20.6	22.2	24.9	
Maximum Lay Length	mm	3.31	3.31	3.31	
Lay Direction		1.91	1.91	1.91	
Maximum Short Circuit Rating	for 0.2 Sec	kA	7.39	7.39	7.39
	for 1.0 Sec	kA	3.91	3.91	3.91
	for 3.0 Sec	kA	1.91	1.91	1.91
Minimum Bending Radius	mm	125	135	150	
Approximate Cable Weight	kg/m	0.26	0.39	0.52	
Nominal Drum Length	m	2000	1000	1000	
Size of the Drum		D - 3	D - 25	D-45	
Drum Weight	kg	145	162	208	
Gross Weight of Cable + Drum	kg	665	552	728	

Table-18



ABC -Reliability, Safety and Flexibility at Low Cost

AERIAL BUNDLED CABLE WITH ALUMINIUM CONDUCTORS

600 / 1000 V
AS/NZS 3560.1:2000

2,3 or 4 Core Al/XLPE ABC

ITEM CODE	UNITS	AS - 9	AS - 10	AS - 11	
Item Description	mm ²	2 x 50	3 x 50	4 x 50	
Nominal Cross - Sectional Area	mm ²	50	50	50	
Number Of Strands	Nos.	7	7	7	
Maximum Resistance Of Conductor At 20 0 C	W/km	0.641	0.641	0.641	
Minimum Breaking Strength	kN	7	7	7	
Nominal Diameter Of Bare Conductors	mm	8.2	8.2	8.2	
Nominal Thickness Of Insulating Sheath	mm	1.5	1.5	1.5	
Nominal Insulated Core Diameter	mm	11.9	11.9	11.9	
Current Carrying Capacity	For typical Australian Installation conditions	A	150	140	140
	For typical New Zealand Installation conditions	A	168	157	157
Complete Cable					
Approximate Overall Diameter	mm	23.8	25.6	28.7	
Maximum Lay Length	mm	667	717	804	
Lay Direction		Left	Left	Left	
Maximum Short Circuit Rating	for 0.2 Sec	kA	10.56	10.56	10.56
	for 1.0 Sec	kA	4.72	4.72	4.72
	for 3.0 Sec	kA	2.73	2.73	2.73
Minimum Bending Radius	mm	145	155	160	
Approximate Cable Weight	kg/m	0.35	0.53	0.7	
Nominal Drum Length	m	1000	1000	1000	
Size of the Drum		D - 2	D-45	D-45	
Drum Weight	kg	138	208	208	
Gross Weight of Cable + Drum	kg	138	738	908	

Table-19

ABC -Reliability, Safety and Flexibility at Low Cost



AERIAL BUNDLED CABLE WITH ALUMINIUM CONDUCTORS

600 / 1000 V
AS/NZS 3560.1:2000

2 or 4 Core Al/XLPE ABC

ITEM CODE	UNITS	AS - 12	AS - 13	AS - 14	
Item Description	mm ²	4 x 70	2 x 95	4 x 95	
Nominal Cross - Sectional Area	mm ²	70	95	95	
Number of Strands	Nos.	19	19	19	
Maximum Resistance Of Conductor At 20 ° C	Ω/km	0.443	0.320	0.320	
Minimum Breaking Strength	kN	9.8	13.3	13.3	
Nominal Diameter of Bare Conductors	mm	9.9	11.6	11.6	
Nominal Thickness of Insulating Sheath	mm	1.5	1.7	1.7	
Nominal Insulated Core Diameter	mm	13.6	15.9	15.9	
Current Carrying Capacity	For typical Australian Installation conditions	A	175	230	215
	For typical New Zealand Installation conditions	A	196	258	241
Complete Cable					
Approximate Overall Diameter	mm	32.8	31.8	38.4	
Maximum Lay Length	mm	919	891	1076	
Lay Direction		Left	Left	Left	
Maximum Short Circuit Rating	for 0.2 Sec	kA	14.79	20.07	20.07
	for 1.0 Sec	kA	6.61	8.98	8.98
	for 3.0 Sec	kA	3.82	5.18	5.18
Minimum Bending Radius	mm	285	285	345	
Approximate Cable Weight	kg/m	0.96	0.68	1.35	
Nominal Drum Length	m	750	1000	500	
Size of the Drum		D-45	D - 25	D-45	
Drum Weight	kg	208	162	208	
Gross Weight of Cable + Drum	kg	928	842	883	

Table-20



ABC -Reliability, Safety and Flexibility at Low Cost

AERIAL BUNDLED CABLE WITH ALUMINIUM CONDUCTORS

600 / 1000 V
AS/NZS 3560.1:2000

4 Core Al/XLPE ABC

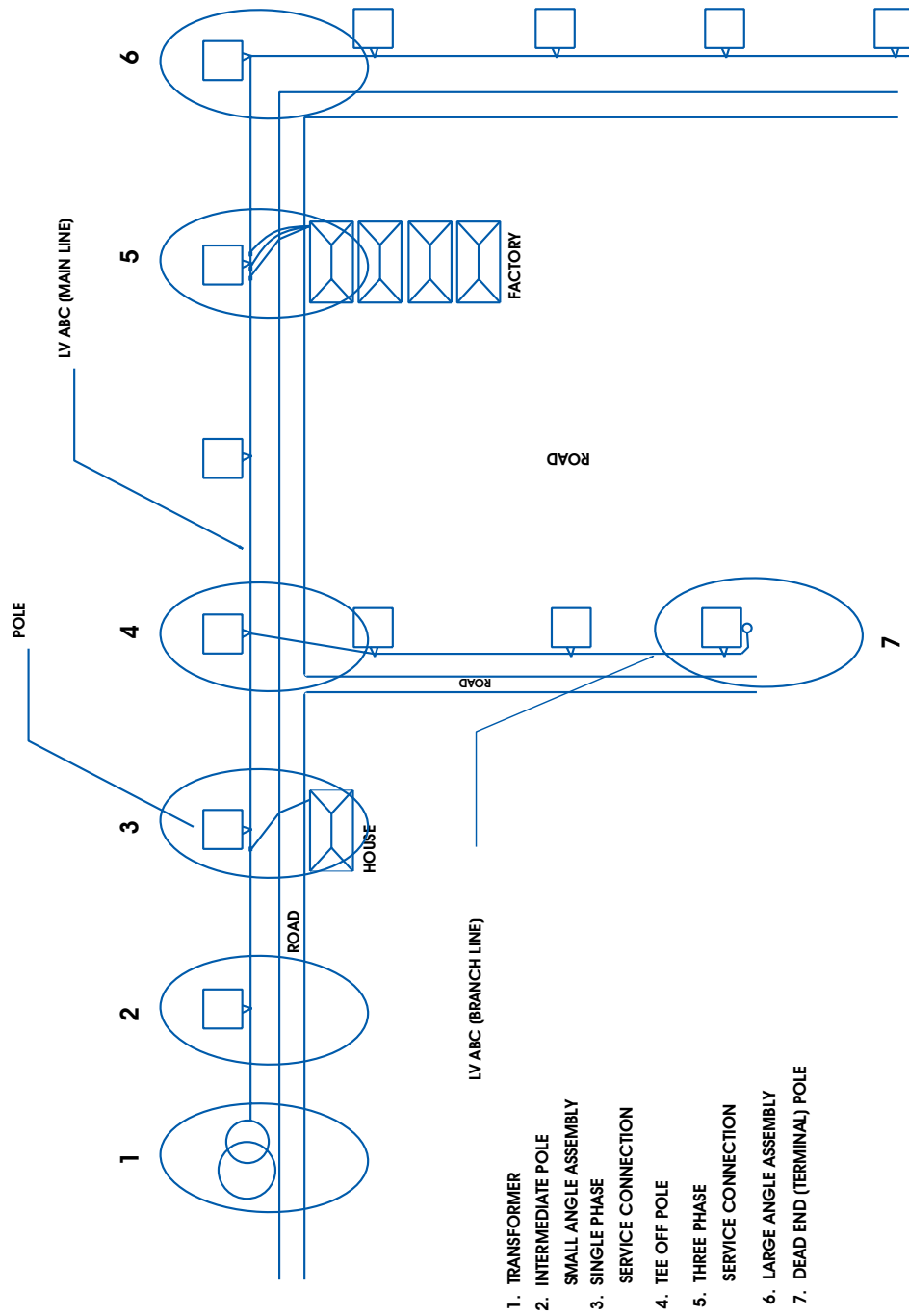
ITEM CODE		UNITS	AS - 15	AS - 16
Item Description		mm ²	4 x 120	4 x 150
Nominal Cross - Sectional Area		mm ²	120	150
Number Of Strands		Nos.	19	19
Maximum Resistance Of Conductor At 20 0 C		W/km	0.253	0.206
Minimum Breaking Strength		kN	16.8	21.0
Nominal Diameter Of Bare Conductors		mm	13.2	14.5
Nominal Thickness Of Insulating Sheath		mm	1.7	1.7
Nominal Insulated Core Diameter		mm	17.5	18.9
Current Carrying Capacity	For typical Australian Installation conditions	A	250	280
	For typical New Zealand Installation conditions	A	280	314
Complete Cable				
Approximate Overall Diameter		mm	42.2	45.6
Maximum Lay Length		mm	1182	1277
Lay Direction			Left	Left
Maximum Short Circuit Rating	for 0.2 Sec	kA	25.35	31.69
	for 1.0 Sec	kA	11.34	14.17
	for 3.0 Sec	kA	6.55	8.18
Minimum Bending Radius		mm	380	410
Approximate Cable Weight		kg/m	1.66	2.02
Nominal Drum Length		m	500	500
Size of the Drum			D - 45	D - 10
Drum Weight		kg	208	418
Gross Weight of Cable + Drum		kg	1038	1428

Table-21

ABC -Reliability, Safety and Flexibility at Low Cost

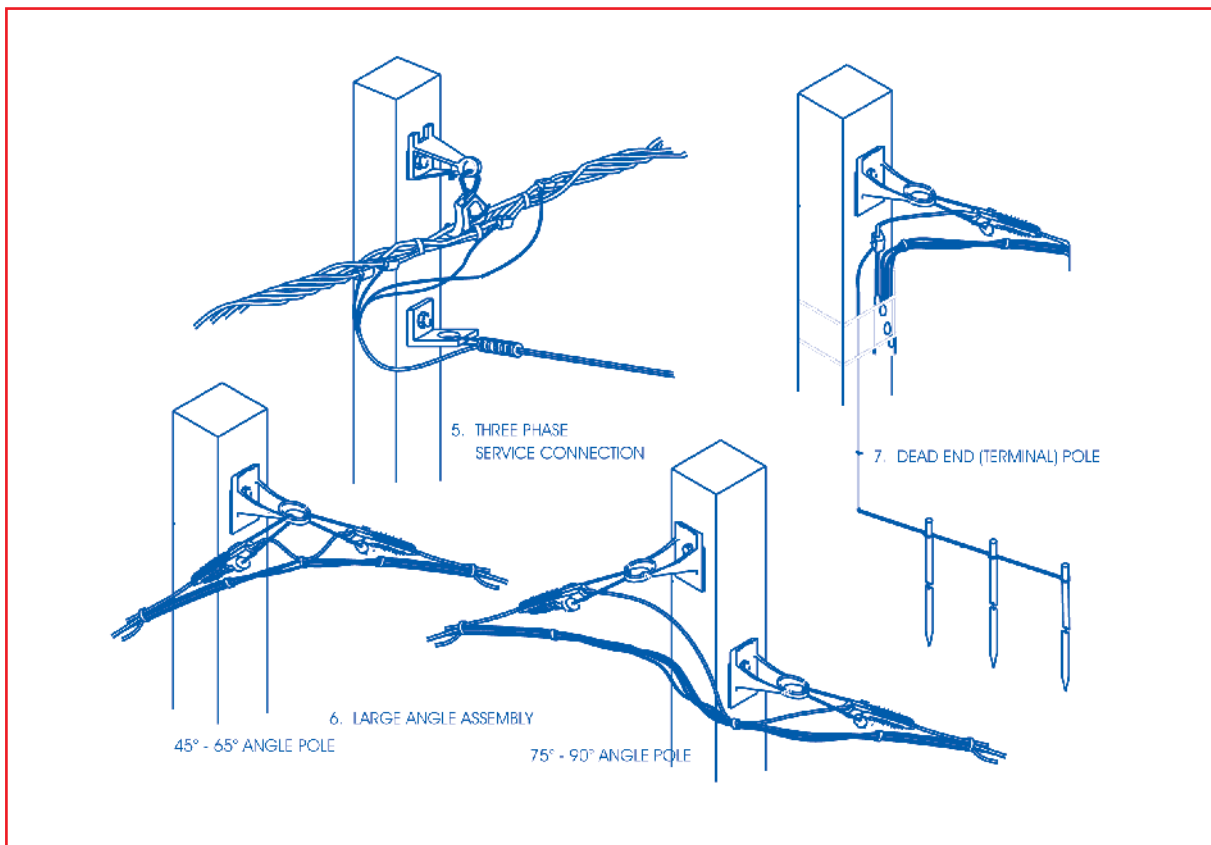
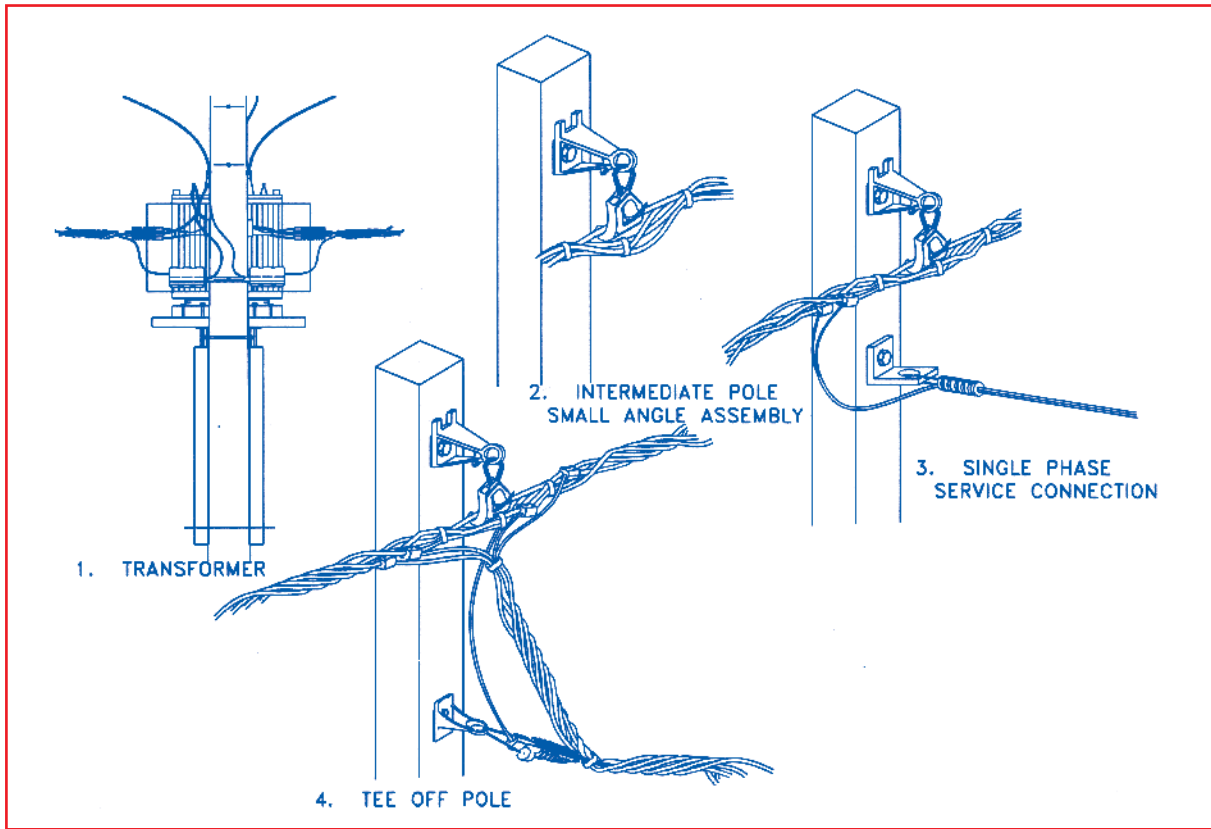


Line Diagram of a Typical Low Voltage XLPE Insulated Aerial Bundled Cable Distribution Line



ABC -Reliability, Safety and Flexibility at Low Cost

DIAGRAMS OF INSTALLED ABC FITTINGS

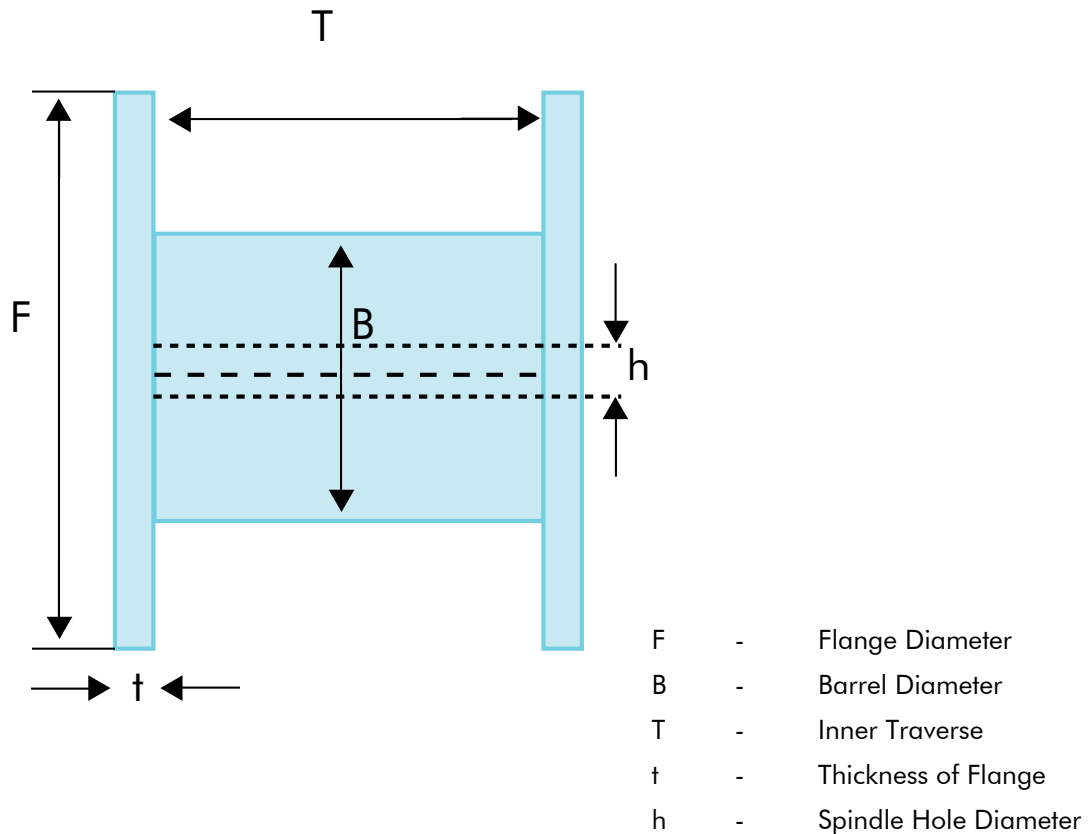


ABC -Reliability, Safety and Flexibility at Low Cost



DETAILS OF DRUMS USED FOR ABC

DRUM NO	DRUM SIZES IN inches					DRUM SIZES IN mm				
	(F	X	B	X	T)	(F	X	B	X	T)
D2	44	X	20	X	22	1118	X	508	X	559
D3	44	X	20	X	36	1118	X	508	X	914
D25	54	X	20	X	23	1372	X	508	X	584
D45	56	X	22	X	36	1422	X	559	X	914
D5	56	X	28	X	36	1422	X	711	X	914
D15	56	X	24	X	36	1422	X	609.6	X	914
D16	60	X	28	X	36	1524	X	711.2	X	914



Note : t = 76.2 mm
h = 95mm for all above drums



ABC -Reliability, Safety and Flexibility at Low Cost

RECOMMENDATIONS FOR STORAGE AND TRANSPORT OF ABC

- ❑ Cables shall be protected from all damage during storage and transport.
 - ❑ The drums shall be transported upright in all cases (with their axis horizontal). Any movement of drums shall be prevented during transport.
 - ❑ Loading and unloading shall be carried out with appropriate equipment, which cannot damage the cables and drums.
 - ❑ Full drums shall be rolled only over short distances and on solid flat ground, and only in the direction indicated on the drums. Cable ends shall be fixed securely.
- b) The method of laying;
 - c) Adverse external factors;
 - d) potential attack by fauna and flora.
- ❑ When cables are laid horizontally without being tensioned, for example on walls or ceilings, the distance between brackets shall be approximately 0.6 m (1m if the cables are installed vertically). When cables are installed under tension on poles for example, appropriate clamps shall be used.

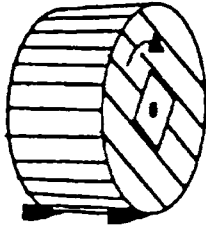
RECOMMENDATIONS FOR LAYING AND INSTALLATION OF ABC

- ❑ Cables shall be laid and used in such a way that their properties are not impaired. In this context, the following points shall be considered.
 - a) Operating conditions, such as concentration of insulated cables, the effect of external heat sources, solar radiation, etc.;
- ❑ During installation, the bending radius measured on the inner generatrix of the complete cable shall be not less than 18 D (which are given in tables relevant to each size of cable), where D is the diameter of the largest core.
 - ❑ In the case of laying with controlled bending, in other words bending over a form at a temperature greater than or equal to 15°C, the above bending radius may be halved.

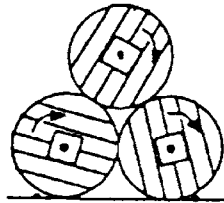
MINIMUM BENDING RADIUS



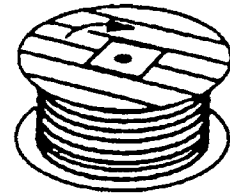
Diagrammatic instructions on handling and storage of drums of ABC



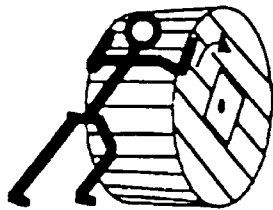
Keep the drum upright, using wedges or other appropriate devices in the heels of the flanges



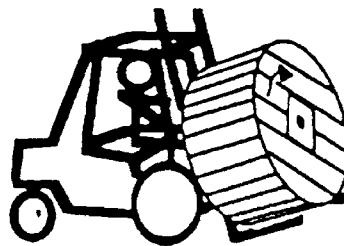
Drums may be stacked flange on flange, provided that they are lagged. The lower layer of drums shall be wedged throughout.



Never lay the drums on their flanges.

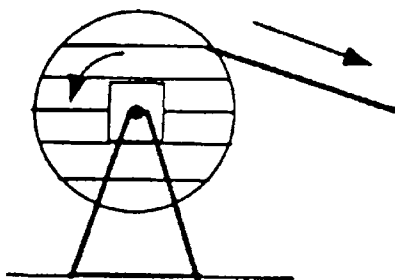
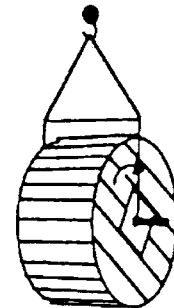


Roll the drum in the direction of winding of the turns

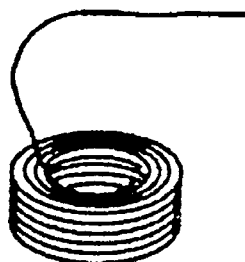


Drums may be banded with cranes or fork-lift trucks

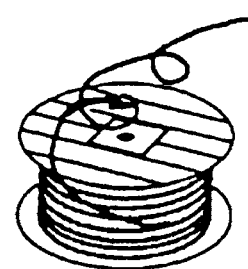
TRANSPORT



Unreel like this

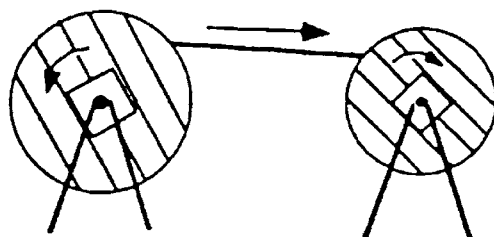


Coils may be unwound like this, according to the manufacturer's instructions

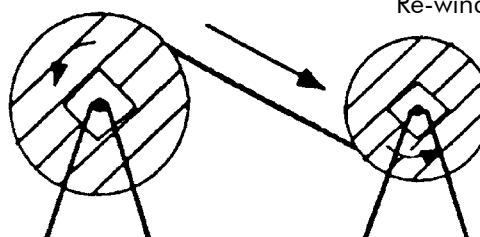


Never unreel in this way

Unreeing



Recommended method



Not recommended

Re-winding



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