

AERIAL BUNCHED CABLES FOR OVERHEAD POWER DISTRIBUTION

KEL Aerial Bunched Cable (ABC) is a very novel concept for Over Head power distribution. When compared to the conventional bare conductor over head distribution system, ABC provides higher safety and reliability, lower power losses and ultimate system economy by reducing installation, maintenance and operative cost. This system is ideal for rural distribution and specially attractive for installation in difficult terrains such as hilly areas, forest areas, coastal areas etc. These cables are being designed, manufactured & tested conforming to IS : 14255 & other international specifications.

ABC is also considered to be the choice for power distribution in congested urban areas with narrow lanes and by-lanes. In developing urban complex, ABC is the better choice because of flexibility for re-routing as demanded by changes in urban development plan.

APPLICATION

ABC can be conveniently used :

- In theft prone areas.
- As replacement of bare lines in Rural areas, in woods and in other localities & narrow streets where the space is limited.
- As replacement of bare lines where reliability of supply is of prime importance.
- As replacement of bare lines where high degree of stability of supply voltage is of importance.
- In hilly terrains where cost of erection of overhead lines or under ground cable becomes very high.
- As reinforcement of existing system without increasing voltage.
- For temporary supplies.

ADVANTAGES

In comparison of bare overhead distribution lines, ABC has very high reliability in maintaining services because power and neutral conductors are insulated with the best dielectric, resulting in the following advantages

- Less fault rate on account of good protection against line and ground fault by high winds or falling trees or birds especially in hilly areas & forests as encountered in Rural distribution networks.

- High Insulation resistance to earth in all seasons and polluted atmospheres. Negligible leakage currents and low losses.
- Multiple circuits of Power and Telephone Cables could be strung in the same set of poles or any other supports like walls etc.
- Better adaptability to run concurrently with existing over-head bare conductor system without any interference.
- High capacitance and low inductance leading to low impedance of lines.
- Lower voltage drop, higher current carrying capacities, vis-a-vis better Voltage Regulation.
- Longer spans and longer distance lines are possible with better system stability.
- ABC Cables are much safer than bare Conductors.
- It can be over hung in dense vegetation and forests.
- Additional connections can be easily and quickly made with hot-line connectors.
- Total lines costs are reduced.
- Maintenance is very easy.
- Very difficult to tap the ABC cables, thus reducing theft which leads to lower distribution losses.

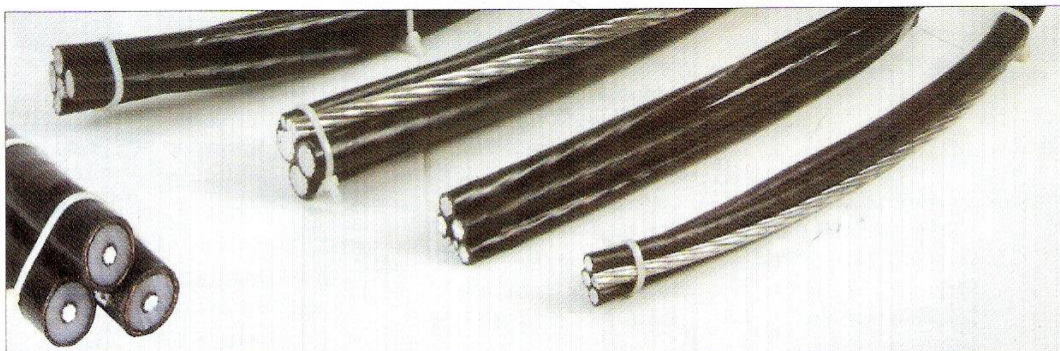
COMPARATIVE COSTS INDEX :

SYSTEM	COST INDEX
U.G. Cable System	1.00
O.H. Bare Conductor System	0.45
ABC System	0.50

RELIABILITY, SAFETY AND FLEXIBILITY

ABC Cables are highly reliable and insulation has been developed to withstand heat, cold and intense sunlight. Disturbance and faults occur five to ten times more often in open wire lines than in ABC Lines. There is no risk in touching the live cable and the insulation reduces the number of short circuit and over-voltage faults in overhead cables during thunderstorms. Few hardware accessories are needed as each one can be used with different sizes of cables. This makes installation and storage easier. Streets can easily be lit only at little extra cost by using the ABC cables that have an extra conductor for lighting. The cable can be supplied with one or two insulated conductors for street lighting.

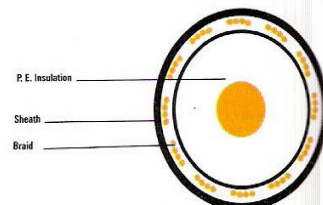
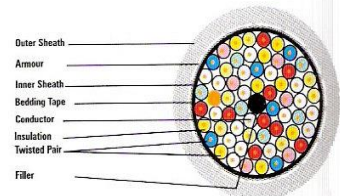
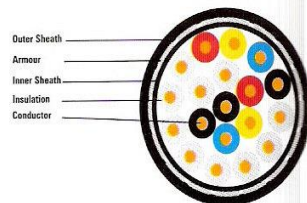
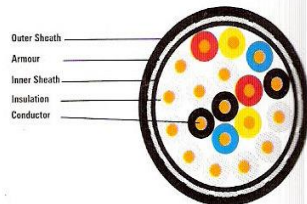
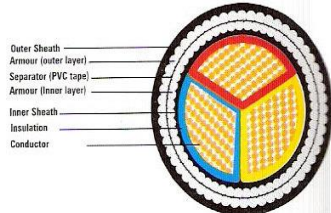
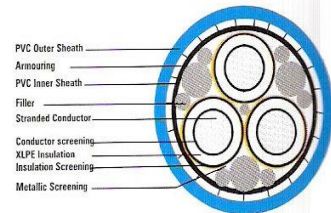
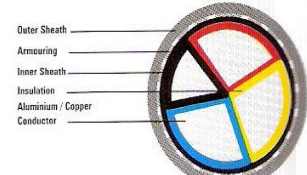
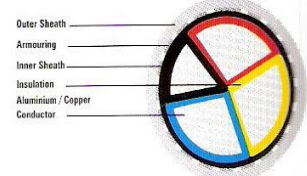
HT & LT AERIAL BUNCHED CABLES



CABLES RANGE AT A GLANCE

Application	Type & Size	Options
Cables for Power Supply to Residential, Commercial & Industrial units	PVC/XLPE Power cables for 1.1 KV for Electrical Substations as per IS: 1554 - I & IS: 7098 - I Sizes: Single Core 10-1000 sq. mm. Multicore 6-630 sq. mm.	Conductor - Stranded / Solid, Circular / Shaped - Aluminium / Copper Insulation - XLPE / PVC - GP, HR Inner Sheath - PVC - GP / HR / FRLS / FR Unarmoured / Armoured - G. S. Round Wire / Flat Strip or Aluminium Wire / Flat Strip Outer Sheath - PVC - GP / HR / FRLS / FR
Heavy Duty PVC Power cables for Power Generation & Distribution	PVC Power cables upto 3.3 / 3.3 KV grade as per IS: 1554 - II	Conductor - Circular / Shaped - Aluminium / Copper Insulation - PVC / XLPE Innersheath - PVC - GP/HR / FRLS / FR Unarmoured / Armoured - G. S. Round Wire / Flat Strip or Aluminium Wire / Flat Strip Outersheath - PVC-GP/HR/FRLS / FR Earthed / Unearthed
Heavy Duty XLPE Power cables for Power Generation & Distribution	XLPE Power cables upto 33 KV grade as per IS:7098 - I & II Sizes : Single Core : 25 - 1000 sq. mm. Multicore : 25 - 400 sq. mm.	Conductor - Circular / Shaped Insulation - PVC / XLPE Innersheath - PVC-GP/HR/FRLS Unarmoured/Armoured - Round Wire / Flat Strip with conductivity not less than 75% of the Phase Conductor Outer Sheath - PVC-GP/HR/FRLS Earthed / Unearthed
Heavy Duty copper cables for Coal Mines & Refineries	Stranded bright annealed electrolytic copper conductor, PVC /XLPE insulated / PVC sheathed upto and including 3.3 KV as per IS: 1554 - I & II / IS: 7098 - I & II Sizes : Multicore 25 to 400 sq. mm.	Conductor - Circular / Shaped Insulation - PVC / XLPE Innersheath - PVC-GP/HR/FRLS Unarmoured/Armoured - Round Wire / Flat Strip with conductivity not less than 75% of the Phase Conductor Outer Sheath - PVC-GP/HR/FRLS Earthed / Unearthed
Copper Control Cables for Power Switch yard Control / Relay Equipment	Annealed electrolytic copper conductor, PVC / XLPE insulated, PVC sheathed 650 / 1100V grade as per IS: 1554-I & IS: 7098-I Sizes : 1.5 / 2.5 sq. mm. upto 61 core 4 & 6 Sq. mm. upto 4 core	Conductor - Solid / Stranded, Plain / Tinned Insulation - PVC / HR PVC/XLPE Innersheath - PVC / HR PVC / FRLS / FR / Zero Halogen Unarmoured / Armoured - G. S. Round Wire / Flat Strip Outersheath - PVC / HR PVC / FRLS / FR / Zero Halogen Additional Option : Overall shielding with Aluminium mylar tape with 100% coverage & 25% overlap on laid up cores for static noise rejection.
Railway Signalling Cables	Annealed Bare Copper conductor, PVC insulated, cores laid up, PVC sheath as per IRS-S-63 / 89 RDSO & related specifications Sizes : 1.5 & 2.5 sq. mm. upto 61 core 4 & 6 sq. mm. upto 4 core	Screened/Unscreened - Aluminium mylar tape / strip Unarmoured/Armoured - G. S. Round Wire / Flat Strip / Tape Additional Option : Insulation/Inner/Outer Sheath - FR / HR Inner/Outer sheath - FRLS
Telecom / Switch board cables for Indoor Telephones	Annealed Copper conductor, PVC insulated as per DOT TEC Spec No: G / WIR-06 / 02 Sizes : 0.4 / 0.5 / 0.6 / 0.7 / 0.9 mm.	Conductor - Tinned / Plain Insulation - PVC / HR PVC / Nylon Innersheath - PVC / HR PVC / FRLS / Zero Halogen Unarmoured / Armoured - G. S. round wire / Flat Strip / Tape Outer sheath - PVC / HR PVC / FRLS Additional Option - Individual / Overall pair / Shielding / Screening
Coaxial cables for Telecom /Microwave / CATV / MATV Industry	Available in specified RG & UR Series as per MIL-C-17 / BS: 2316 / IS: 5608 / IS: 11967 Sizes : Suitable for Impedance of 50/75/100/125 ohms	Conductor - Plain / Tinned / Copper Clad Steel / Silver Plated Insulation - Solid / Foam / Semi air spaced Screen - Single / Double braid Sheath - PVC / HR PVC / FRLS / PE

CROSS SECTIONAL VIEW



CABLES RANGE AT A GLANCE

APPLICATION	TYPE & SIZE	OPTIONS
Flat cables for Submersible Pumps & Motors	Stranded Plain copper, PVC insulated & PVC sheathed of 1.1 KV grade as per IS: 694 Sizes : 3 core - 1.5 to 35 sq. mm.	Insulation - PVC / HR PVC Sheathing - PVC / HR PVC
Instrumentation Signal Cables for Process control & Instrumentation	PVC Sheathed 225/650/ 1100 V grade cables as per BS: 5308 / DIN VDE 0815 & 816 / IS: 1554 / IEC: 189 Sizes : 0.5/0.75/1.0/1.5 sq. mm.	Conductor - Stranded / Solid, plain / tinned Insulation - PVC / HR PVC / PE / Zero Halogen Shielding - Individual Pair / over all pairs Drain wire - Solid / Stranded Innersheath - PVC / HR PVC / Zero Halogen Unarmoured / Armoured - G. S. Round Wire / Flat Strip Outersheath - PVC / HR PVC / FRLS / Zero Halogen
Thermocouple Extension compensating Cables for Boiler / Furnace / Heat Treatment industry	Specified alloy conductor, PVC insulated cores twisted to form pairs, individual / overall pair shielded armoured/unarmoured PVC sheath as per ANSI-MC-96-1 / IS: 8784 / IS: 1554 / IS: 5608 / IEC: 189 Sizes : 0.5/0.75/1.5 sq. mm. upto 24 Pair	Conductor - Chromel - Alumel / Iron Constantan / Copper - Cupro Nickel etc. Insulation - PVC / HR PVC / XLPE Drainwire - Stranded / Solid Innersheath - PVC / HR PVC / FRLS / Zero Halogen Unarmoured / Armoured - G. S. Round Wire / Flat Strip Outersheath - PVC / HR PVC / FRLS / Zero Halogen
Flexible & Cord Cables for appliances, Machine Tools & Equipment Wiring	Multistrand, flexible, bright annealed electrolytic copper conductor, PVC insulated and sheathed upto 1100V as per IS:694 Sizes : Single, Two, Three or Four core upto 6 sq. mm.	Insulation - PVC / HR PVC / FRLS / Zero Halogen Unsheathed / sheathed - PVC / HR PVC / FRLS / Zero Halogen
Wiring Cables for electrical industry	Multistrand, flexible, upto 1100V grade PVC Cables as per IS: 694 Sizes : Single core, 1.0 - 630 sq. mm.	Conductor - Bright Annealed Copper/ Aluminium Insulation - PVC / HR PVC / FRLS PVC/ XLPE / Zero Halogen
Energy Cables for Power Supply to Telephone Exchanges / UPS / Battery Backup / Equipments	PVC Flexible Cables upto 1.1KV grade as per IS:694 Sizes : 1.0 upto 240 sq. mm. Single / Multi core	Conductor - Stranded / Solid bright annealed Copper Insulation - PVC / HR PVC / FRLS / XLPE / Zero Halogen
Air Field Lighting Cables	Stranded plain annealed copper, PVC insulated & PVC sheathed of 5 KV grade Sizes : Single core / Multi Core, 4 to 16 sq. mm.	Insulation - PVC / XLPE
Single Core winding Wires for Submersible Pump Motors	Stranded plain annealed copper HR PVC insulated. 1.1 KV grade as per IS: 8783-4 Sec-1 Conductor sizes: Solid - 0.5 to 4.1 mm Stranded - 19/0.49 mm upto 19/1.16 mm, 27/1.0 mm & 27/1.10 mm etc.	Insulation - HR PVC / XLPE Additional Option : Secondary Insulation - PE. / Nylon / Any special Polymer

CROSS SECTIONAL VIEW

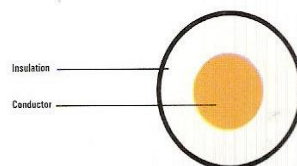
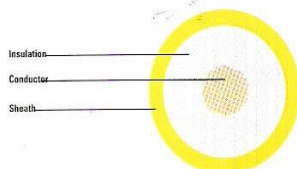
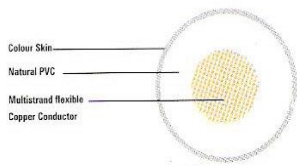
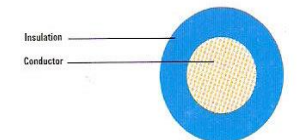
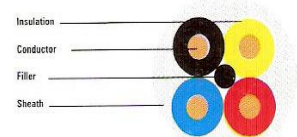
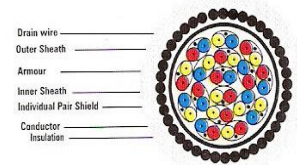
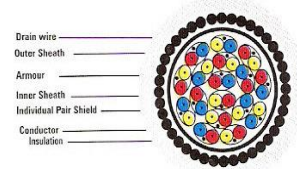
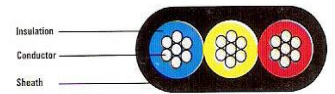


TABLE - I

1.1 KV SINGLE CORE ALUMINIUM CONDUCTOR, PVC INSULATED, HARD DRAWN ALUMINIUM
ARMoured / UNARMoured CABLES CONFORMING TO IS:1554 (PART-I)

Nominal Area of conductor	UNARMoured CABLES				ARMoured CABLES								
	AYY				Nominal thickness of insulation	Single Layer - Wire (AYWaY)				Single Layer - Strip (AYFaY)			
	Nominal thickness of insulation	Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable		Nominal diameter of armour Wire	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal thickness of armour strip	Minimum thickness of outer sheath	Approx. Overall diameter of cable	Approx. weight of cable
Sq. mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km
6	1.0	1.8	9.0	100	1.3	1.4	1.24	12.0	180	-	-	-	-
10	1.0	1.8	10.0	120	1.3	1.4	1.24	13.0	200	-	-	-	-
16	1.0	1.8	11.0	160	1.3	1.4	1.24	14.0	250	-	-	-	-
25	1.2	1.8	13.0	210	1.5	1.4	1.24	15.0	300	-	-	-	-
35	1.2	1.8	14.0	250	1.5	1.4	1.24	16.0	350	-	-	-	-
50	1.4	1.8	16.0	300	1.7	1.4	1.24	18.0	450	-	-	-	-
70	1.4	1.8	17.0	400	1.7	1.4	1.4	20.0	550	-	-	-	-
95	1.6	1.8	19.0	500	1.9	1.6	1.4	22.0	700	1.0	1.4	21.0	650
120	1.6	2.0	21.0	600	1.9	1.6	1.4	24.0	800	1.0	1.4	23.0	750
150	1.8	2.0	23.0	750	2.1	1.6	1.4	26.0	950	1.0	1.4	24.0	900
185	2.0	2.0	25.0	900	2.3	1.6	1.4	29.0	1100	1.0	1.4	27.0	1050
240	2.2	2.0	28.0	1100	2.5	1.6	1.56	32.0	1400	1.0	1.4	30.0	1300
300	2.4	2.0	30.0	1350	2.7	1.6	1.56	33.0	1650	1.0	1.56	32.0	1600
400	2.6	2.2	35.0	1700	3.0	2.0	1.56	39.0	2100	1.0	1.56	37.0	1950
500	3.0	2.2	38.0	2150	3.4	2.0	1.72	42.0	2700	1.0	1.56	40.0	2400
630	3.4	2.4	43.0	2750	3.9	2.0	1.88	48.0	3300	1.0	1.72	45.0	3100
800	3.4	2.4	48.0	3300	3.9	2.0	1.88	52.0	4000	1.0	1.88	49.0	3700
1000	3.4	2.6	52.0	4100	3.9	2.5	2.04	59.0	4900	1.0	2.04	54.60	4600

TABLE - 2

1.1 KV TWO CORE ALUMINIUM CONDUCTOR, PVC INSULATED, ARMoured / UNARMoured
ALUMINIUM CABLES CONFORMING TO IS : 1554 (Part I)

Nominal Area of conductor	Nominal thickness of insulation	Minimum thickness of Inner sheath	UNARMoured CABLES			ARMoured CABLES							
			AYY			Single Layer - Wire (AYWY)				Single Layer - Strip (AYFY)			
			Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal diameter of armour Wire	Minimum thickness of outer sheath	Approx. Overall diameter of cable	Approx. weight of cable	Nominal thickness of armour Strip	Minimum thickness of outer sheath	Approx. Overall diameter of cable	Approx. weight of cable
Sq. mm.	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km
6	1.0	0.3	1.8	17.0	300	1.4	1.24	19.0	660	-	-	-	-
10	1.0	0.3	1.8	18.0	400	1.4	1.24	20.0	750	-	-	-	-
16	1.0	0.3	1.8	17.0	330	1.6	1.4	20.0	750	0.8	1.4	18.0	580
25	1.2	0.3	2.0	19.0	450	1.6	1.4	22.0	900	0.8	1.4	20.0	700
35	1.2	0.3	2.0	21.0	550	1.6	1.4	23.0	1030	0.8	1.4	22.0	800
50	1.4	0.3	2.0	24.0	700	1.6	1.56	26.0	1300	0.8	1.4	25.0	1000
70	1.4	0.3	2.0	26.0	850	1.6	1.56	29.0	1500	0.8	1.56	27.0	1200
95	1.6	0.4	2.2	30.0	1150	2.0	1.56	33.0	2050	0.8	1.56	30.0	1550
120	1.6	0.4	2.2	32.0	1300	2.0	1.72	35.0	2400	0.8	1.56	32.0	1800
150	1.8	0.4	2.4	34.0	1600	2.0	1.72	37.0	2760	0.8	1.72	35.0	2100
185	2.0	0.5	2.4	38.0	2000	2.0	1.88	41.0	3200	0.8	1.88	38.0	2500
240	2.2	0.5	2.6	42.0	2500	2.5	2.04	47.0	4200	0.8	2.04	43.0	3100
300	2.4	0.6	2.8	46.0	3000	2.5	2.20	50.0	5000	0.8	2.20	48.0	3700
400	2.6	0.7	3.2	52.0	3800	3.15	2.52	58.0	6600	0.8	2.36	53.0	4500
500	3.0	0.7	3.4	54.0	4800	3.15	2.84	64.0	8000	0.8	2.68	56.0	5600
630	3.4	0.7	3.8	65.0	6000	4.0	3.00	72.0	11000	0.8	2.84	66.0	6900

TABLE - 3
1.1 KV THREE CORE ALUMINIUM CONDUCTOR, PVC INSULATED, ARMoured / UNARMoured
ALUMINIUM CABLES CONFORMING TO IS:1554 (part-I)

Nominal Area of conductor	Nominal thickness of insulation	Minimum thickness of inner sheath	UNARMoured CABLES			ARMoured CABLES							
			AYY			Single Layer - Wire (AYWY)				Single Layer - Strip (AYFY)			
			Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal diameter of armour Wire	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal thickness of armour strip	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable
Sq. mm.	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km
6	1.0	0.3	1.8	18.0	360	1.4	1.24	19.0	700	-	-	-	-
10	1.0	0.3	1.8	19.0	460	1.4	1.4	21.0	900	-	-	-	-
16	1.0	0.3	1.8	19.0	440	1.6	1.4	21.0	950	0.8	1.4	20.0	700
25	1.2	0.3	2.0	22.0	620	1.6	1.4	23.0	1100	0.8	1.4	23.0	900
35	1.2	0.3	2.0	24.0	740	1.6	1.4	26.0	1300	0.8	1.4	24.0	1000
50	1.4	0.3	2.0	27.0	940	1.6	1.56	29.0	1600	0.8	1.56	27.0	1300
70	1.4	0.4	2.2	30.0	1200	2.0	1.56	33.0	2150	0.8	1.56	31.0	1600
95	1.6	0.4	2.2	34.0	1600	2.0	1.72	37.0	2650	0.8	1.56	35.0	2000
120	1.6	0.4	2.2	37.0	1900	2.0	1.72	39.0	3000	0.8	1.72	37.0	2401
150	1.8	0.5	2.4	40.0	2300	2.0	1.88	43.0	3550	0.8	1.88	41.0	2800
185	2.0	0.5	2.6	44.0	2750	2.5	2.04	49.0	4600	0.8	1.88	46.0	3400
240	2.2	0.6	2.8	50.0	3500	2.5	2.2	54.0	5600	0.8	2.2	51.0	4200
300	2.4	0.6	3.0	55.0	4300	2.5	2.36	59.0	6600	0.8	2.36	56.0	5050
400	2.6	0.7	3.4	62.0	5450	3.15	2.68	68.0	8700	0.8	2.52	63.0	6300
500	3.0	0.7	3.6	69.0	6900	3.15	3.0	75.0	11000	0.8	2.84	70.0	7800
630	3.4	0.7	4.0	77.0	8700	4.0	3.0	84.0	14000	0.8	3.0	78.0	9700

TABLE -4
1.1 KV 3 ½ CORE ALUMINIUM CONDUCTOR, PVC INSULATED, ARMoured / UNARMoured
ALUMINIUM CABLES CONFORMING TO IS : 1554 (Part I)

Nominal Area of conductor	Nominal thickness of insulation (main /Neutral)	Minimum thickness of Inner Sheath	UNARMoured CABLES			ARMoured CABLES							
			AYY			Single Layer - Wire (AYWY)				Single Layer - Strip (AYFY)			
			Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal diameter of armour Wire	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal thickness of armour Strip	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable
Sq. mm.	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km
25	1.2/1.0	0.3	2.0	24.0	700	1.6	1.4	26.0	1300	0.8	1.40	24.0	1000
35	1.2/1.0	0.3	2.0	26.0	850	1.6	1.4	23.0	1450	0.8	1.40	26.0	1200
50	1.4/1.2	0.3	2.0	29.0	1050	1.6	1.56	31.0	1800	0.8	1.56	30.0	1500
70	1.4/1.2	0.4	2.2	32.0	1400	2.0	1.56	36.0	2400	0.8	1.56	34.0	1800
95	1.6/1.4	0.4	2.2	36.0	1800	2.0	1.72	39.0	3000	0.8	1.56	37.0	2300
120	1.6/1.4	0.5	2.4	40.0	2200	2.0	1.88	43.0	3500	0.8	1.72	41.0	2800
150	1.8/1.4	0.5	2.4	44.0	2600	2.0	1.88	47.0	4000	0.8	1.88	45.0	3200
185	2.0/1.6	0.5	2.6	48.0	3200	2.5	2.04	53.0	5200	0.8	2.04	49.0	3900
240	2.2/1.6	0.6	3.0	54.0	4100	2.5	2.36	58.0	6400	0.8	2.20	55.0	4800
300	2.4/1.8	0.6	3.2	62.0	5000	3.15	2.52	66.0	8200	0.8	2.36	61.0	5800
400	2.6/2.0	0.7	3.4	68.0	6300	3.15	2.68	75.0	9900	0.8	2.68	69.0	7300
500	3.0/2.2	0.7	3.8	77.0	8000	4.0	3.00	84.0	13500	0.8	2.84	77.0	9000
630	3.4/2.4	0.7	4.0	87.0	10000	4.0	3.00	92.0	16000	0.8	3.00	87.0	11500

TABLE - 5

1.1 KV FOUR CORE ALUMINIUM CONDUCTOR, PVC INSULATED, ARMoured / UNARMoured

ALUMINIUM CABLES CONFORMING TO IS : 1554 (Part I)

Nominal Area of Conductor	Nominal thickness of insulation	Minimum thickness of Inner sheath	UNARMoured CABLES			ARMoured CABLES							
			AYY			Single Layer - Wire (AYWY)				Single Layer - Strip (AYFY)			
			Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal Diameter of armour Wire	Minimum thickness of outer Sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal thickness of armour Strip	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable
Sq. mm.	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km
6	1.0	0.3	1.8	18.0	390	1.4	1.24	21.0	880	-	-	-	-
10	1.0	0.3	1.8	20.0	540	1.6	1.40	22.0	900	0.8	1.40	21.0	750
16	1.0	0.3	2.0	20.0	560	1.6	1.40	23.0	1120	0.8	1.40	22.0	860
25	1.2	0.3	2.0	25.0	750	1.6	1.40	27.0	1400	0.8	1.40	25.0	1100
35	1.2	0.3	2.0	27.0	940	1.6	1.56	30.0	1600	0.8	1.40	28.0	1300
50	1.4	0.4	2.2	31.0	1250	2.0	1.56	34.0	2200	0.8	1.56	32.0	1600
70	1.4	0.4	2.2	34.0	1550	2.0	1.56	37.0	2650	0.8	1.56	35.0	2000
95	1.6	0.4	2.4	39.0	2050	2.0	1.72	42.0	3300	0.8	1.72	41.0	2600
120	1.6	0.5	2.4	43.0	2400	2.0	1.88	47.0	3850	0.8	1.88	43.0	3050
150	1.8	0.5	2.6	47.0	2950	2.5	2.04	51.0	4850	0.8	1.88	48.0	3600
185	2.0	0.6	2.8	52.0	3650	2.5	2.20	56.0	5800	0.8	2.04	53.0	4300
240	2.2	0.6	3.0	58.0	4600	2.5	2.36	62.0	7000	0.8	2.36	59.0	5400
300	2.4	0.7	3.4	60.0	5000	3.15	2.68	72.0	9200	0.8	2.52	67.0	6600
400	2.6	0.7	3.6	68.0	6250	3.15	2.84	79.0	11000	0.8	2.84	74.0	8200
500	3.0	0.7	4.0	77.0	8000	4.0	3.00	90.0	15000	0.8	3.00	83.0	10500
630	4.0	0.7	4.0	87.0	10000	4.0	3.00	99.0	18000	0.8	3.00	93.0	13000

TABLE - 6

1.1 KV 1.5 Sq. mm STRANDED COPPER CONDUCTOR, PVC INSULATED, ARMoured / UNARMoured

COPPER CONTROL CABLES CONFORMING TO IS : 1554 (Part I)

Number of Cores	Nominal thickness of insulation	Minimum thickness of Inner sheath	UNARMoured CABLES			ARMoured CABLES							
			YY			Single Layer - Wire (YWWY)				Single Layer - Strip (YFY)			
			Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal diameter of armour Wire	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal thickness of armour Strip	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable
	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km
2	0.8	0.3	1.8	13.0	210	1.4	1.24	15.0	480	-	-	-	-
3	0.8	0.3	1.8	13.0	230	1.4	1.24	16.0	520	-	-	-	-
4	0.8	0.3	1.8	14.0	270	1.4	1.24	17.0	590	-	-	-	-
5	0.8	0.3	1.8	15.0	320	1.4	1.24	18.0	660	-	-	-	-
6	0.8	0.3	1.8	16.0	340	1.4	1.24	19.0	700	-	-	-	-
7	0.8	0.3	1.8	16.0	360	1.4	1.24	19.0	720	-	-	-	-
8	0.8	0.3	1.8	17.0	410	1.4	1.24	20.0	800	-	-	-	-
9	0.8	0.3	1.8	18.0	460	1.4	1.24	21.0	900	-	-	-	-
10	0.8	0.3	1.8	20.0	480	1.4	1.4	22.0	950	-	-	-	-
12	0.8	0.3	1.8	20.0	550	1.6	1.4	23.0	1110	0.8	1.24	21.0	870
14	0.8	0.3	1.8	21.0	600	1.6	1.4	24.0	1180	0.8	1.4	22.0	920
16	0.8	0.3	1.8	22.0	700	1.6	1.4	26.0	1290	0.8	1.4	24.0	1030
19	0.8	0.3	2.0	24.0	770	1.6	1.4	27.0	1390	0.8	1.4	25.0	1120
24	0.8	0.3	2.0	27.0	960	1.6	1.4	30.0	1680	0.8	1.4	28.0	1360
27	0.8	0.3	2.0	28.0	1040	1.6	1.4	31.0	1780	0.8	1.4	29.0	1440
30	0.8	0.3	2.0	29.0	1130	1.6	1.4	32.0	1900	0.8	1.4	30.0	1550
37	0.8	0.3	2.0	32.0	1320	1.6	1.4	34.0	2170	0.8	1.4	32.0	1790
44	0.8	0.3	2.0	35.0	1650	1.6	1.56	39.0	2890	0.8	1.56	36.0	2140
61	0.8	0.4	2.2	39.0	2110	2.0	1.56	41.0	3400	0.8	1.56	40.0	2670

Note: These Cables are available with solid Conductors also.

TABLE - 7

1.1 KV 2.5 Sq.mm STRANDED COPPER CONDUCTOR, PVC INSULATED, ARMOURED / UNARMOURED
COPPER CONTROL CABLES CONFORMING TO IS : 1554 (Part I)

Number of Cores	Nominal thickness of insulation	Minimum thickness of Inner sheath	UNARMOURED CABLES			ARMOURED CABLES							
			YY			Single Layer - Wire (YWW)				Single Layer - Strip (YFY)			
			Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal diameter of armour Wire	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal thickness of armour Strip	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable
	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km
2	0.9	0.3	1.8	14.0	260	1.4	1.24	16.0	560	-	-	-	-
3	0.9	0.3	1.8	15.0	300	1.4	1.24	17.0	620	-	-	-	-
4	0.9	0.3	1.8	16.0	350	1.4	1.24	18.0	700	-	-	-	-
5	0.9	0.3	1.8	17.0	400	1.4	1.24	19.0	780	-	-	-	-
6	0.9	0.3	1.8	18.0	450	1.4	1.24	20.0	860	-	-	-	-
7	0.9	0.3	1.8	18.0	470	1.4	1.24	20.0	880	-	-	-	-
8	0.9	0.3	1.8	20.0	540	1.4	1.4	22.0	1080	-	-	-	-
9	0.9	0.3	1.8	21.0	610	1.6	1.4	24.0	1190	0.8	1.4	23.0	940
10	0.9	0.3	1.8	23.0	640	1.6	1.4	25.0	1270	0.8	1.4	24.0	980
12	0.9	0.3	2.0	23.0	760	1.6	1.4	27.0	1390	0.8	1.4	25.0	1110
14	0.9	0.3	2.0	24.0	830	1.6	1.4	28.0	1490	0.8	1.4	26.0	1180
16	0.9	0.3	2.0	25.0	960	1.6	1.4	29.0	1640	0.8	1.4	27.0	1330
19	0.9	0.3	2.0	28.0	1060	1.6	1.4	30.0	1770	0.8	1.4	29.0	1450
24	0.9	0.3	2.0	31.0	1320	1.6	1.56	35.0	2180	0.8	1.4	33.0	1780
27	0.9	0.3	2.0	32.0	1440	1.6	1.56	36.0	2330	0.8	1.4	33.0	1930
30	0.9	0.3	2.0	33.0	1570	1.6	1.56	37.0	2480	0.8	1.56	35.0	2070
37	0.9	0.4	2.2	37.0	1920	2.0	1.56	40.0	3140	0.8	1.56	38.0	2440
40	0.9	0.4	2.2	41.0	2290	2.0	1.56	45.0	3700	0.8	1.56	42.0	2870
61	0.9	0.4	2.2	44.0	2950	2.0	1.72	49.0	4510	0.8	1.56	46.0	3630

Note: These Cables are available with solid Conductors also.

TABLE - 8

1.1 KV SINGLE CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, HARD DRAWN ALUMINIUM
ARMOURED / UNARMOURED CABLES CONFORMING TO IS:7098 (PART-I)

Nominal Area of conductor	UNARMOURED CABLES				ARMOURED CABLES								
	A2XY				Nominal thickness of insulation	Single Layer - Wire (A2XWαY)				Single Layer - Strip (A2XFαY)			
	Nominal thickness of insulation	Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable		Nominal diameter of armour Wire	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal Thickness of armour Strip	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable
Sq. mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km
6	0.7	1.8	8.2	80	1.0	1.4	1.24	10.5	130	-	-	-	-
10	0.7	1.8	9.2	100	1.0	1.4	1.24	11.5	160	-	-	-	-
16	0.7	1.8	10.5	130	1.0	1.4	1.24	13.0	200	-	-	-	-
25	0.9	1.8	12.0	180	1.2	1.4	1.24	14.0	300	-	-	-	-
35	0.9	1.8	13.0	230	1.2	1.4	1.24	15.0	350	-	-	-	-
50	1.0	1.8	15.0	300	1.3	1.4	1.24	17.0	420	-	-	-	-
70	1.1	1.8	16.0	370	1.4	1.4	1.24	19.0	520	-	-	-	-
95	1.1	1.8	18.0	460	1.4	1.6	1.4	22.0	650	1.0	1.4	21.0	600
120	1.2	1.8	20.0	550	1.5	1.6	1.4	24.0	750	1.0	1.4	23.0	700
150	1.4	2.0	22.0	620	1.7	1.6	1.4	25.0	850	1.0	1.4	24.0	800
185	1.6	2.0	24.0	820	1.9	1.6	1.4	28.0	1000	1.0	1.4	26.0	950
240	1.7	2.0	27.0	1000	2.0	1.6	1.4	30.0	1250	1.0	1.4	30.0	1200
300	1.8	2.0	30.0	1200	2.1	1.6	1.56	33.0	1500	1.0	1.56	32.0	1400
400	2.0	2.2	33.0	1550	2.4	2.0	1.56	38.0	1900	1.0	1.56	36.0	1750
500	2.2	2.2	36.0	1900	2.6	2.0	1.56	41.0	2350	1.0	1.56	39.0	2150
630	2.4	2.2	40.0	2400	2.8	2.0	1.72	46.0	2900	1.0	1.72	44.0	2700
800	2.6	2.4	47.0	3000	3.1	2.0	1.88	51.0	3600	1.0	1.72	48.0	3350
1000	2.8	2.6	51.0	3750	3.3	2.5	2.04	56.0	4600	1.0	1.88	54.0	4100

TABLE - 9

1.1 KV TWO CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, ARMoured / UNARMoured

ALUMINIUM CABLES CONFORMING TO IS : 7098 (Part I)

Nominal Area of conductor	Nominal thickness of insulation	Minimum thickness of Inner sheath	UNARMoured CABLES			ARMoured CABLES							
			A2XY			Single Layer - Wire (A2XWY)				Single Layer - Strip (A2XFY)			
			Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal diameter of armour Wire	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal thickness of armour Strip	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable
Sq. mm.	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km
6	0.7	0.3	1.8	14.5	330	1.4	1.24	16.0	550	-	-	-	-
10	0.7	0.3	1.8	17.0	350	1.4	1.24	18.0	650	-	-	-	-
16	0.7	0.3	1.8	17.0	370	1.4	1.40	18.5	700	-	-	-	-
25	0.9	0.3	2.0	19.0	400	1.6	1.40	21.0	850	0.8	1.40	20.0	650
35	0.9	0.3	2.0	20.0	480	1.6	1.40	23.0	950	0.8	1.40	21.0	750
50	1.0	0.3	2.0	22.0	590	1.6	1.40	25.0	1100	0.8	1.40	23.0	900
70	1.1	0.3	2.0	25.0	760	1.6	1.56	28.0	1400	0.8	1.56	26.0	1100
95	1.1	0.4	2.2	28.0	1000	2.0	1.56	31.0	1850	0.8	1.56	29.0	1350
120	1.2	0.4	2.2	31.0	1200	2.0	1.56	34.0	2150	0.8	1.56	31.0	1600
150	1.4	0.4	2.2	33.0	1400	2.0	1.72	37.0	2450	0.8	1.72	34.0	1900
185	1.6	0.5	2.4	37.0	1750	2.0	1.88	40.0	2900	0.8	1.72	37.0	2250
240	1.7	0.5	2.6	41.0	2000	2.5	2.04	45.0	3850	0.8	1.88	42.0	2800
300	1.8	0.6	2.8	44.0	2700	2.5	2.20	49.0	4450	0.8	2.04	45.0	3300
400	2.0	0.6	3.0	48.0	3350	2.5	2.36	52.0	5350	0.8	2.36	50.0	4100
500	2.2	0.7	3.4	54.0	4200	3.15	2.68	60.0	7100	0.8	2.52	55.0	5000
630	2.4	0.7	3.6	62.0	5300	3.15	2.84	66.0	8500	0.8	2.68	63.0	6100

TABLE - 10

1.1KV THREE CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, ARMoured / UNARMoured

ALUMINIUM CABLES CONFORMING TO IS:7098 (PART-I)

Nominal Area of conductor	Nominal thickness of insulation	Minimum thickness of Inner sheath	UNARMoured CABLES			ARMoured CABLES							
			A2XY			Single Layer - Wire (A2XWY)				Single Layer - Strip (A2XFY)			
			Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal diameter of armour Wire	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal thickness of armour Strip	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable
Sq. mm.	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km
6	0.7	0.3	1.8	16.0	330	1.4	1.24	18.5	650	-	-	-	-
10	0.7	0.3	1.8	18.0	400	1.4	1.24	20.0	750	-	-	-	-
16	0.7	0.3	1.8	18.5	420	1.6	1.40	20.5	800	0.8	1.40	19.0	590
25	0.9	0.3	2.0	21.0	530	1.6	1.40	23.0	1000	0.8	1.40	21.0	800
35	0.9	0.3	2.0	22.0	640	1.6	1.40	25.0	1200	0.8	1.40	23.0	950
50	1.0	0.3	2.0	25.0	800	1.6	1.56	29.0	1450	0.8	1.40	26.0	1100
70	1.1	0.4	2.2	30.0	1100	2.0	1.56	32.0	2000	0.8	1.56	29.0	1450
95	1.1	0.4	2.2	32.0	1350	2.0	1.56	35.0	2350	0.8	1.56	32.0	1750
120	1.2	0.4	2.2	35.0	1650	2.0	1.72	39.0	2750	0.8	1.56	35.0	2100
150	1.4	0.5	2.4	39.0	2050	2.0	1.88	43.0	3250	0.8	1.72	40.0	2500
185	1.6	0.5	2.6	43.0	2500	2.5	2.04	48.0	4200	0.8	1.88	44.0	3000
240	1.7	0.6	2.8	49.0	3150	2.5	2.20	53.0	5100	0.8	2.04	50.0	3750
300	1.8	0.6	3.0	53.0	3850	2.5	2.36	58.0	6000	0.8	2.20	54.0	4500
400	2.0	0.7	3.2	59.0	4850	3.15	2.68	65.0	7950	0.8	2.52	60.0	5650
500	2.2	0.7	3.6	66.0	6100	3.15	2.84	72.0	9500	0.8	2.68	66.0	6900
630	2.4	0.7	3.8	73.0	7650	4.0	3.00	81.0	12600	0.8	2.84	74.0	8550

TABLE - 11
1.1 KV 3 1/2 CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, ARMoured / UNARMoured
ALUMINIUM CABLES CONFORMING TO IS : 7098 (Part I)

Nominal Area of conductor	Nominal thickness of insulation (main /neutral)	Minimum thickness of Inner sheath	UNARMoured CABLES			ARMoured CABLES							
			A2XY			Single Layer - Wire (A2XWY)				Single Layer - Strip (A2XFY)			
			Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal diameter of armour Wire	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal thickness of armour Strip	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable
Sq. mm.	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km
25	0.9/0.7	0.3	2.0	22.0	610	1.6	1.40	25.0	1100	0.8	1.40	23.0	900
35	0.9/0.7	0.3	2.0	24.0	730	1.6	1.40	27.0	1300	0.8	1.40	25.0	1050
50	1.0/0.9	0.3	2.0	27.0	920	1.6	1.56	30.0	1600	0.8	1.40	28.0	1250
70	1.1/0.9	0.4	2.2	31.0	1250	2.0	1.56	35.0	2200	0.8	1.56	32.0	1650
95	1.1/1.0	0.4	2.2	34.0	1550	2.0	1.56	38.0	2650	0.8	1.56	35.0	2000
120	1.2/1.1	0.4	2.2	38.0	1900	2.0	1.72	42.0	3150	0.8	1.72	39.0	2450
150	1.4/1.1	0.5	2.4	43.0	2300	2.0	1.88	46.0	3650	0.8	1.72	43.0	2850
185	1.6/1.1	0.5	2.6	46.0	2850	2.5	2.04	51.0	4750	0.8	1.88	48.0	3450
240	1.7/1.2	0.6	2.8	52.0	3600	2.5	2.20	56.0	5750	0.8	2.04	53.0	4300
300	1.8/1.4	0.6	3.0	57.0	4400	2.5	2.36	60.0	6750	0.8	2.20	57.0	5100
400	2.0/1.6	0.7	3.4	65.0	5600	3.15	2.68	71.0	9000	0.8	2.52	66.0	6450
500	2.2/1.7	0.7	3.6	73.0	7000	3.15	2.84	79.0	11000	0.8	2.68	74.0	7950
630	2.4/1.8	0.7	4.0	82.0	8900	4.0	3.00	88.0	14500	0.8	3.00	82.0	9900

TABLE - 12
1.1 KV FOUR CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, ARMoured / UNARMoured
ALUMINIUM CABLES CONFORMING TO IS : 7098 (Part I)

Nominal Area of conductor	Nominal thickness of insulation	Minimum thickness of Inner Sheath	UNARMoured CABLES			ARMoured CABLES							
			A2XY			Single Layer - Wire (A2XWY)				Single Layer - Strip (A2XFY)			
			Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal Diameter of armour Wire	Minimum thickness of outer Sheath	Approx. overall diameter of cable	Approx. weight of cable	Nominal thickness of armour Strip	Minimum thickness of outer sheath	Approx. overall diameter of cable	Approx. weight of cable
Sq. mm.	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km
6	0.7	0.3	1.8	18.5	350	1.4	1.24	19.5	600	-	-	-	-
10	0.7	0.3	1.8	20.0	400	1.4	1.40	21.0	670	-	-	-	-
16	0.7	0.3	1.8	20.0	450	1.6	1.40	22.5	925	0.8	1.40	20.0	700
25	0.9	0.3	2.0	24.0	660	1.6	1.40	26.0	1200	0.8	1.40	24.0	950
35	0.9	0.3	2.0	26.0	800	1.6	1.40	28.0	1450	0.8	1.40	27.0	1150
50	1.0	0.3	2.0	29.0	1000	1.6	1.56	32.0	1750	0.8	1.56	30.0	1400
70	1.1	0.4	2.2	34.0	1410	2.0	1.56	37.0	2400	0.8	1.56	34.0	1800
95	1.1	0.4	2.2	37.0	1750	2.0	1.72	40.0	2900	0.8	1.56	37.0	2200
120	1.2	0.5	2.4	41.0	2150	2.0	1.88	44.0	3500	0.8	1.72	41.0	2700
150	1.4	0.5	2.6	45.0	2650	2.5	2.04	49.0	4500	0.8	1.88	46.0	3200
185	1.6	0.5	2.8	50.0	3250	2.5	2.20	54.0	5250	0.8	2.04	51.0	3900
240	1.7	0.6	3.0	56.0	4100	2.5	2.36	61.0	6400	0.8	2.20	57.0	4850
300	1.8	0.7	3.2	63.0	5050	3.15	2.52	68.0	8350	0.8	2.36	63.0	5850
400	2.0	0.7	3.6	70.0	6400	3.15	2.84	76.0	10000	0.8	2.68	71.0	7300
500	2.2	0.7	3.8	79.0	8000	4.0	3.00	86.0	13500	0.8	2.84	79.0	9000
630	2.4	0.7	4.0	88.0	10000	4.0	3.00	94.0	16000	0.8	3.00	88.0	11000