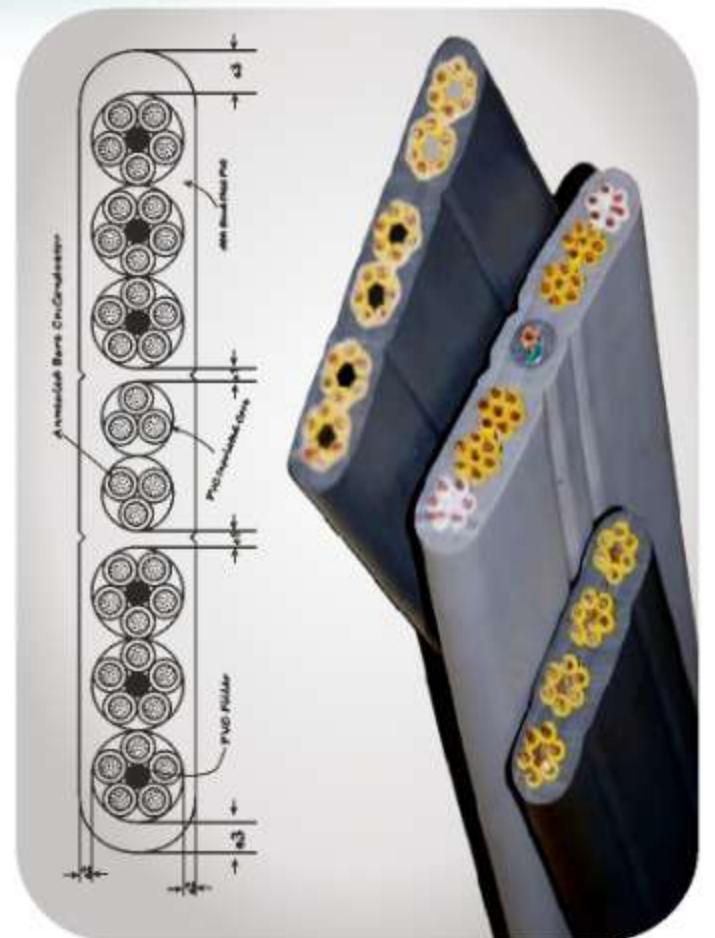




MACROTHERM

Your wire & cable solution company!



www.macrotherm.in

WELCOME TO YOUR WIRE & CABLE SOLUTION COMPANY !

Since the time MACROTHERM started manufacturing Wires & Cables in the year 1992, we've been dedicated to just one objective - "Being best Customer - Focused Wire & Cable Company in the industry". We are steadily progressing towards our goal, and what's helping us get there is our philosophy "To treat everyone as we would like to be treated".

You make Demands We Provide Solutions

We don't just find customers, we develop products for our customers to map cost effective solutions to their challenges, with our Experience, Expertise & Passion...

Good Quality Products

Quality First, without Compromise ! Every - Day. Every - Hour, Every-Second... It's Giving our best Every Time... All the time...

Real Value for Money

To give real value one must add something which cannot be measured with money. We have "Integrity of our products, sincerity of our service & cost-effective solutions."

Prompt Deliveries

Punctuality is the soul of our business. Better pricing & quality gets you in the game. Service wins the game. If we don't do it in time, our competitors will.

Culture at Macrotherm is characterized by the ability to adapt quickly to customer needs & requirements. Relationships with our clients mean everything to us, as building trust and rapport are two key attributes of any successful business.

We are striving to sustain & build on the remarkable success which we've enjoyed since our launch. Our focus then, & now, is to challenge the status quo; working proactively with our customers to find the best solutions & applications to assure 'sustainable' long lasting relationships

Rajesh Sharma, CEO

OUR MISSION



- ▶ To be market-focused, process-centered, developing & delivering innovative solutions.
- ▶ Create values to make a difference.
- ▶ Moving with technological changes in the industry & developing cost effective solutions.
- ▶ Consistently outperform our peers.
- ▶ Zero defect products & services.
- ▶ Total commitment to continuous improvement.

OUR PHILOSOPHY



The world is changing rapidly all around us, and to continue to make strides in our business, we have to look ahead, understand trends that will shape our business for the future, moving expeditiously for what's to come. To get ready for tomorrow...Today !!

OUR STRONG BELIEF



If we work just for money, we'll never make it, but if we always put the customer first, success will be ours. Leave such memorable experiences that they will want to see it again and bring their friends

Our Vision

Customers are invited guests and we are the hosts. It's our job to make customers demands, experience & expectations a little better each day. To create values, to be highly valued by:

Customers we serve

To earn their lifetime loyalty & create memorable experience for our customers, who in turn will tell others about their experience. It's like getting someone else to blow your horn & the sound carries twice as far.

Live Our Values

Respect - Customers deserve for choosing us over our competitor.

Accountability - If it's to be, it's up to us.

Quality - What we do, we do well.

Customer Satisfaction - Topmost priority, as it is a key differentiator.

Focus on the Market

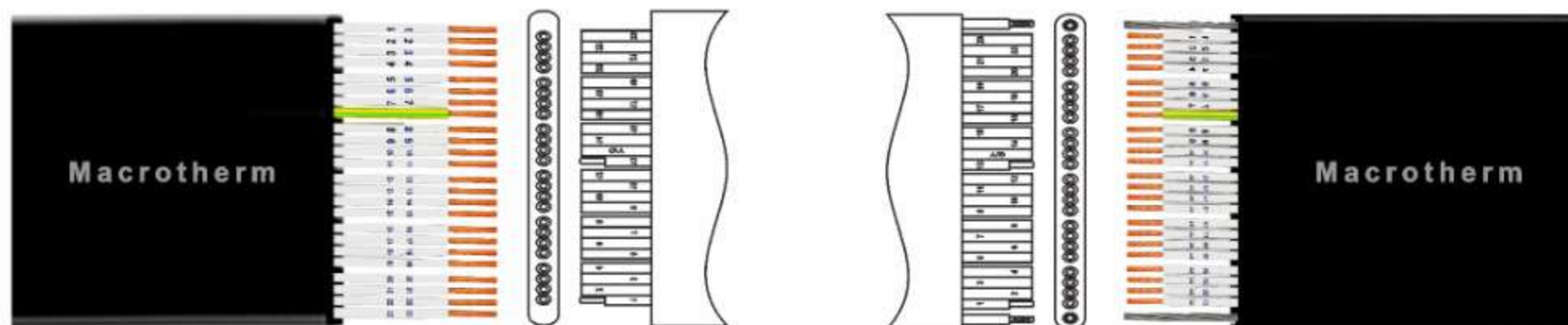
- ▶ Focus on customers' needs.
- ▶ Have courage to change course whenever needed
- ▶ Get out in the market - Listen, observe & learn.
- ▶ Possess a world view
- ▶ Be insatiably curious

Expertise that's helped us secure satisfied clientele, is available to you, all the times, to help you find cost-effective solutions for your wire & cable requirements.

We want to be your wire & cable supplier & will go the extra distance to earn your business. Get it in touch with us ,,,,,Now



MACROTHERM FLAT TRAVELLING CABLES



flat low rise HO5VVH6-F

PRODUCT DESCRIPTION - Flat Traveling Cables, made up of electrolytic copper conductor, which provide an electric connection between an Elevator & dumbwaiter car, and a fixed electrical outlet in the hoist way.

APPLICATION - Elevator Suspension Cable for Internal & Panoramic Elevators

APPLICABLE STANDARD - EN 50214, IEC 60227-6

CONSTRUCTION

CONDUCTOR - Flexible Class 5 bright annealed bare copper conductor, manufactured from 99.97% pure electrolytic grade copper, with more than 100% conductivity, as per IEC 60228

INSULATION - Specially formulated PVC with a blend of Elastomer, for continuous flexing operation, meeting the requirements of Type 'D' as per IEC 60227-2

CORE IDENTIFICATION - White Insulated Cores printed with numerals & one Y/G for Ground

GROUPING - Structured parallel lay with each group having a rip cord & Steel Rope strength member on request - For Mid / High Rise Application

OUTER SHEATH - Specially formulated PVC with a blend of Elastomer, for continuous flexing operation, meeting the requirements of Type 'ST 5' as per IEC 60227-2, in black color

MECHANICAL PROPERTIES

FREE SUSPENSION LENGTH

45 Mts. (Max.)

TRAVELLING HEIGHT

80 Meters (Max.)

RUNNING SPEED

4 Meters. / Second (Max.)

ACCELERATION

< 0.8 Meters / Second²

OPERATING TEMP.

Mobile Utilization -5°C ~ +70 °C

Fixed Utilization -10°C ~ +70 °C

BENDING RADIUS

Cable Thickness (h) x 10 (Min.)

RECOMMENDED LOOP DIA.

300 mm ± 50 mm

IR CONSTANT at 27°C

36.7 M Ω Km

FLAME RETARDANCE

IEC 60332-1

SHEATH MARKING

dd/mm/yy MACROTHERM<H05VVH6-F>nGx.xx CE sequential metric marking

ELECTRICAL PROPERTIES

RATED VOLTAGE - Control Cores & Earthing Conductor

≤ 1 mm² 300/500 V & ≥ 1.5 mm² 450/750 V

Data element : 300 V

TEST VOLTAGE - Control Cores & Earthing Conductor

≤ 1 mm² - 2 kV (rms) / 15 min. & ≥ 1.5 mm² - 2.5 kV (rms) / 15 min.

Data element : Core to core 1.5 kV (rms) & Core to Shield 800 V (rms).

flat mid rise; sbm

120 Mts. (Max.)

150 Meters (Max.)

6.3 Meters. / Second (Max.)

< 0.8 Meters / Second²

Mobile Utilization -5°C ~ +70 °C

Fixed Utilization -10°C ~ +70 °C

Cable Thickness (h) x 10 (Min.)

400 mm ± 50 mm

36.7 M Ω Km

IEC 60332-1

0.50 ~1.0 mm² - Annealed bare Cu Cond., Special elastomeric blend PVC Insulated & Sheathed Flat Travelling Cable; 300/500 V

AREA mm ²	CONST. Nos - Size	MAX.CR at 20°C Ω/Km	APPROX. DIAMETER H * W (mm)							
			4C	5C	6C	12C	16C	18C	20C	24C
0.50	16/0.20	39.00	3.95 *12.30	3.95 *15.50	3.95 *16.40	3.95 *30.10	3.95 *39.55	3.95 *43.70	3.95 *49.10	3.95 *58.50
0.75	24/0.20	26.00	4.15 *13.00	4.15 *16.45	4.15 *17.50	4.15 *32.40	4.15 *42.80	4.15 *47.40	4.15 *53.15	4.15 *63.50
1.0	32/0.20	19.50	4.30 *13.60	4.30 *17.20	4.30 *18.40	4.30 *34.10	4.30 *45.05	4.30 *49.95	4.30 *56.15	4.30 *67.15

0.75 ~1.0 mm² ; sbm - (Annealed bare Cu Cond., Special elastomeric blend PVC Insulated & Sheathed Flat Travelling Cable; 300/500 V

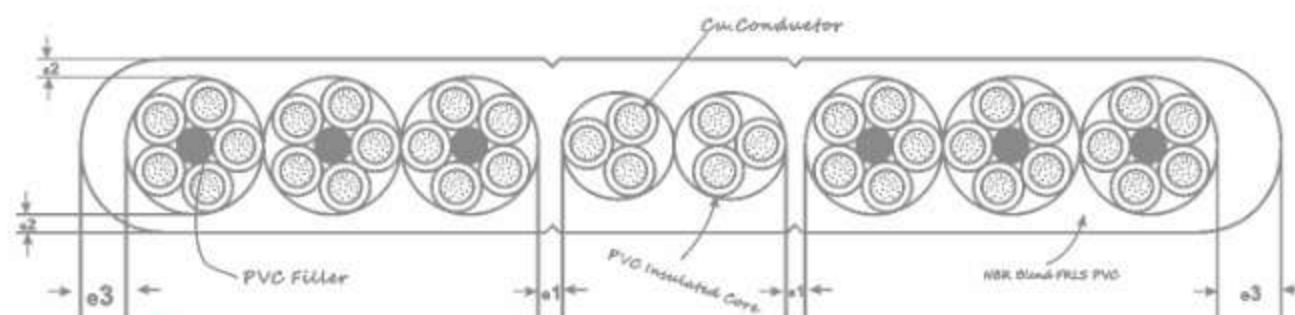
0.75	24/0.20	26.00	-	-	-	4.40 *40.80	4.40 *51.50	-	-	4.40 *71.50
1.0	32/0.20	19.50	-	-	-	4.40 *43.20	4.40 *54.35	-	-	4.40 *76.30



MACROTHERM FLAT TRAVELLING CABLES

0.75 ~ 1.0 mm² ;Bundle Type - Annealed bare Cu Cond., Special elastomeric blend PVC Insulated & Sheathed Bundle Type Flat Travelling Cable; 300/500 V

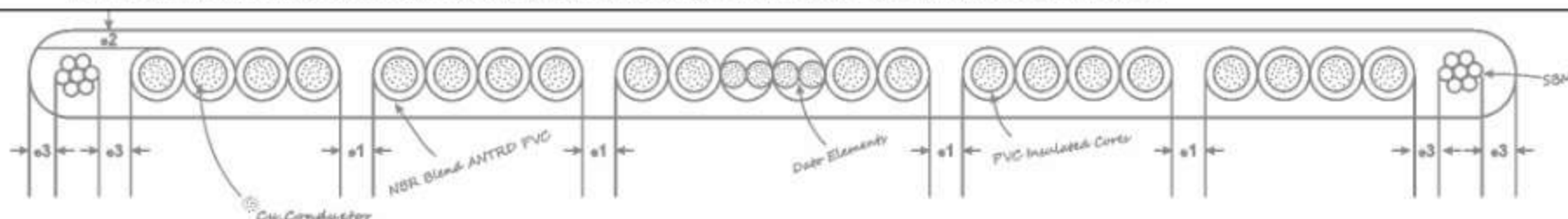
AREA mm ²	CONST. Nos - Size	MAX.CR at 20°C Ω/Km	APPROX. DIAMETER H * W (mm)			
			30C	36C	40C	48C
0.75	24/0.20	26.00	9.20 * 43.20	9.20 * 55.30	9.20 * 56.60	9.20 * 68.10
1.0	32/0.20	19.50	9.80 * 47.10	9.80 * 58.30	9.80 * 60.80	9.80 * 73.10



0.75 mm² ;Composite - Annealed bare Cu Cond., Special elastomeric blend PVC Insulated & Sheathed Composite Flat Travelling Cable with Shielded Data Elements; 300/500 V

AREA mm ²	CONST. Nos - Size	MAX.CR at 20°C Ω/Km	APPROX. DIAMETER H * W (mm)					
			2C*0.75+1P*0.50	10C*0.75+2P*0.50	20C*0.75+2P*0.50	22C*0.75+2P*0.50	24C*0.75+2P*0.50	36C*0.75+2P*0.75+Cat6E
0.75	24/0.20	26.00	5.80 * 12.50	5.80 * 35.45	5.80 * 60.00	5.80 * 61.40	5.80 * 71.60	9.40 * 63.60

Note : Shielded data element 0.50 mm², MAX. CR at 20°C 39 Ω/Km.
Data element PE Insulated and twisted pair, shielding of AL Mylar tape with ATC drain wire.



1.5 ~ 2.5 mm² - Annealed bare Cu Cond., Special elastomeric blend PVC Insulated & Sheathed Flat Travelling Cable; 450/750 V

AREA mm ²	CONST. Nos - Size	MAX.CR at 20°C Ω/Km	APPROX. DIAMETER H * W (mm)							
			4C	5C	6C	12C	16C	18C	20C	24C
1.5	48/0.20	13.30	4.95 * 15.50	4.95 * 19.60	4.95 * 21.25	4.95 * 39.85	4.95 * 52.75	4.95 * 58.70	4.95 * 65.75	4.95 * 78.45
2.5	80/0.20	7.98	5.65 * 19.25	5.65 * 24.50	5.65 * 26.20	5.65 * 49.50	5.65 * 65.50	5.65 * 72.50	5.65 * 81.40	5.65 * 97.30

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Designations for elevator cables

CENELEC-BASED DESIGNATIONS

Relationship to standards:

H Harmonized standards

Rated voltage:

05 U0/U = 300/500V

07 U0/U = 450/750V

Insulation:

V PVC

Z Special low smoke halogen free flame retardant compound

Sheath:

V PVC

Z Special low smoke halogen free flame retardant compound

Support member:

D3 Strain bearing member

Cable construction:

H6 Flat cables

Conductors:

F Flexible conductor (class 5)

H 05 V V D3 H6 -F



MACROTHERM BUILDING WIRES, INDUSTRIAL WIRES & FLEXIBLE CABLES



PRODUCT - PVC Insulated **Building Wires** for domestic & commercial applications, **Industrial Wires** for switch-gears & control panels, and **Flexible Multicore LT Power & Control Cables** for fixed laying & flexible applications, as per Indian & International standards.

APPLICABLE STANDARD - IS: 694 – 2010, BS 6004 & BS 6500.

CONSTRUCTION - CONDUCTOR - Manufactured using 99.97% pure electrolytic grade bright annealed bare copper, ensuring min. energy losses - greater saving of electrical energy. Conductor, Class 5 as per IS 8130 /BS 6360, made of multiple strands of finely drawn copper wires offering greater flexibility, making routing of wires easy.

INSULATION - Co-extruded Insulation with specially formulated PVC compound with high Insulation Resistance & Di-electric Strength for better electrical properties, as per IS:5831 & international standards.

FOR MUTLI-CORE CABLES

LAYING-UP - Insulated cores are laid-up to form a circular core assembly giving a complete round shape.

SHEATHING - Outer Sheathed with specially formulated PVC Compound with high abrasion resistant, impervious to grease, oil & water etc., as per IS:5831 & international standards.

FEATURES :

- ▶ Online wire drawing with annealing .
- ▶ Co-extruded PVC Insulation, for better Insulation & Electrical properties .
- ▶ Online High Voltage Spark Testing, ensures no weak spots in wires .
- ▶ Automatic on-line critical diameter control .
- ▶ Stringent Quality Control .
- ▶ BIS marked .



HOUSE & INDUSTRIAL WIRES - Annealed bare Copper Conductor, PVC Insulated Wire 1100 V Grade, as per IS: 694 – 2010.

CONDUCTOR		INSULATION		MAX. CR at 20°C Ω/km	Current Carrying Capacity - Amps. (2 Wires Single Phase)	
AREA mm ²	CONSTRUCTION Nos. - Size	THICKNESS mm	DIAMETER mm		In conduit/ Trunking	Un-enclosed, clipped directly to surface or on cable tray
0.50	16/0.20 **	0.60	2.10	39.00	4	5
0.75	24/0.20 **	0.60	2.30	26.00	6	7
1.0	14/0.30 *	0.70	2.70	18.10	11	12
1.0	32/0.20 **	0.60	2.70	19.50	11	12
1.5	22/0.30 *	0.70	3.00	12.10	13	16
1.5	30/0.25, 48/0.20 **	0.70	3.00	13.30	13	16
2.5	36/0.30 *	0.80	3.60	7.41	18	22
2.5	50/0.25, 80/0.20**	0.80	3.60	7.98	18	22
4	56/0.30**	0.80	4.10	4.95	24	29
6	84/0.30**	0.80	4.70	3.30	31	37

* Conductor construction as per IS 8130 Class 2

** Conductor construction as per IS 8130 Class 5

Current carrying capacity as per IS 3961 Part V – 1968

Standard Colors : Red, Yellow, Blue, Black & Green (for earthing)

Packing : Supplied in 90 / 100 meter coils or as per Customer's requirement

FLEXIBLE MULTI-CORE CABLES - Annealed bare Copper Conductor, PVC Insulated & Sheathed Cable 1100 V Grade, generally as per IS: 694 – 2010.

AREA mm ²	CONST Nos.- size	MAX. CR at 20°C	INSU. THK. mm	AMPACITY (AMPS.)	Approx. Overall Diameter mm												
					2C	3C	4C	5C	6C	7C	10C	12C	16C	24C	28C	30C	37C
0.50	16/0.20	39.0	0.60	4	6.0	6.5	7.0	7.5	8.1	8.1	10.5	11.0	12.2	15.0	15.5	16.2	17.5
0.75	24/0.20	26.0	0.60	7	6.5	7.0	7.5	8.1	9.0	9.0	11.5	12.0	13.4	16.6	16.8	17.8	18.7
1.0	32/0.20	19.5	0.60	12	6.8	7.2	7.9	8.8	9.5	9.5	12.2	12.6	14.2	17.6	17.8	19.1	19.8
1.5	30/0.25	13.3	0.60	16	7.4	7.8	8.8	9.5	10.4	10.4	13.4	13.8	15.5	19.6	20.1	21.0	21.5
2.5	50/0.25	7.98	0.70	22	9.0	9.5	10.5	11.4	12.5	12.5	16.4	16.9	19.0	23.7	24.5	25.5	27.0
4.0	56/0.30	4.95	0.80	29	10.4	11.1	12.2	13.6	15.0	15.0	19.7	20.3	22.8	28.4	29.5	30.0	31.5
6.0	84/0.30	3.30	0.80	37	11.8	12.8	14.0	-	-	-	-	-	-	-	-	-	-
10	80/0.40	1.91	1.0	51	16.0	17.3	19.0	-	-	-	-	-	-	-	-	-	-
16	126/0.40	1.21	1.0	68	18.8	20.0	22.0	-	-	-	-	-	-	-	-	-	-
25	196/0.40	0.780	1.2	86	22.5	24.4	27.1	-	-	-	-	-	-	-	-	-	-

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Flat Submersible

MACROTHERM 3 CORE FLAT CABLES FOR SUBMERSIBLE PUMPS & MOTORS



APPLICATION : 3 Core Flat Submersible Cables used to connect underwater submersible pump-sets with supply lines, for Agriculture, Irrigation, Domestic installation & Outdoor applications viz. Firefighting, Mining & dewatering, Sea water handling & sewage treatment plants. These cables are manufactured considering critical space requirement, protection towards indefinite immersion in water under specified conditions, protection against rainwater & against ingress of small solid foreign bodies.

APPLICABLE STANDARD - IS: 694 – 2010 & BS 6500.

CONSTRUCTION

CONDUCTOR - Manufactured using 99.97% pure electrolytic grade bright annealed bare copper, ensuring min. energy losses - greater saving of electrical energy. Conductor, Class 5 as per IS 8130 /BS 6360, made of multiple strands of finely drawn copper wires offering greater flexibility.

INSULATION - Co-extruded Insulation with specially formulated PVC compound with high Insulation Resistance & Di-electric Strength for better electrical properties, as per IS:5831 & International standards.

SHEATHING - Outer Sheathed with specially formulated PVC Compound with high abrasion resistance, impervious to grease, oil & water etc., as per IS:5831 & International standards.

FEATURES:

- ▶ Online wire drawing with annealing of 99.97% pure electrolytic grade copper rods
- ▶ Co-extruded PVC Insulation, for better Insulation & Electrical properties
- ▶ Online High Voltage Spark Testing, ensures no weak spots in wires
- ▶ Automatic on-line critical diameter control
- ▶ Stringent Quality Control



ISI marked cables meeting the requirements of IS: 694 - 2010

Annealed Bare Copper Conductor, Type A PVC Insulated & ST1 Sheathed 3 Core Flat Cable; Voltage Grade Up to 1100 V

NO. OF CORES	CONDUCTOR		INSULATION		SHEATH		MAX. CR at 20°C Ω/Km	Current Carrying Capacity Amps	HP
	AREA mm²	CONSTRUCTION Nos. - Size	THICKNESS mm	DIA. mm	THICKNESS mm	DIAMETER H * W mm			
3	1.50	30/0.25	0.60	2.70	0.90	4.60 * 10.00	13.30	16	5
3	2.50	50/0.25	0.70	3.40	1.00	5.50 * 12.50	7.98	22	7.5
3	4	56/0.30	0.80	4.00	1.00	6.20 * 14.10	4.95	29	15
3	6	84/0.30	0.80	4.55	1.10	6.90 * 16.30	3.30	37	20
3	10	80/0.40	1.00	5.90	1.40	8.90 * 20.90	1.91	51	30
3	16	126/0.40	1.00	6.90	1.40	9.80 * 23.90	1.21	68	40
3	25	196/0.40	1.20	8.70	2.00	12.70 * 30.00	0.780	86	50

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BENDING RADIUS

Fixed installation 6 * Overall diameter

Occasional 4 * Overall diameter

SAFETY REQUIREMENTS

- Coiled Submersible cable should always be spread out before using, to avoid overheating in use
- Ensure proper joining of the cable in order to avoid failure & short circuit
- Proper care should be taken while inserting the cable in the bore well, to avoid slicing of the Outer Sheath



MACROTHERM UF CABLES FOR IRRIGATION & SPRINKLER SYSTEMS



APPLICATION - Underground Feeder Cables designed for direct burial, run in a trench for all kinds of irrigation systems, golf courses & sprinkler systems, manufactured considering protection against rain-water & against ingress of small solid foreign bodies.

CONSTRUCTION (Single Conductor 18 AWG to 12 AWG & 1 mm² to 4 mm²)

Produced from best quality electrolytic copper, drawn & annealed on-line on automatic machines, ensuring uniform resistance, as per IS:8130 Class 1 & ASTM-B3

Co-extruded Insulation with special grade PVC Type B, generally as per UL Standard 493, for better electrical properties

Two cores laid parallel (For Decoder Cables)

Outer Sheathed with UV & abrasion resistant PE, conforming to ASTM D-1248, Type 3, Class C, Category 5, impervious to grease, oil & water etc. (For Decoder Cables) Temp. Rating - 10°C ~ 75°C

Control Valve/Branch Circuit Control Cables

Solid bare Copper Cond., Type-B PVC Insulated UF Cable for direct burial; 1100 V

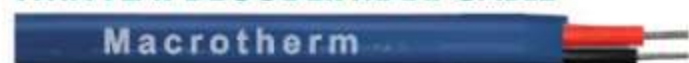
NO. OF CORE	CONDUCTOR		INSULATION		MAX. CR at 20°C Ω/km
	AREA mm ²	CONST. Nos. - Size	THK. mm	DIA. mm	
1	1	1/1.12	1.70	4.50	18.10
1	1.5	1/1.38	1.70	4.75	12.10
1	2	1/1.60	1.70	5.00	9.26
1	2.5	1/1.78	1.70	5.15	7.41
1	4	1/2.24	1.70	5.65	4.61

Solid bare Copper Cond., Type-B PVC Insulated UF Cable for direct burial; 600 V

NO. OF CORE	CONDUCTOR		INSULATION		MAX. CR at 20°C Ω/km
	AREA mm ²	CONST. Nos. - Size	THK. mm	DIA. mm	
1	18	0.82	1/1.04	1.70	21.67
1	16	1.31	1/1.29	1.70	13.42
1	14	2.08	1/1.63	1.70	8.44
1	12	3.31	1/2.05	1.70	5.31

Standard Colors : White, Red, Blue, Black & Green (for Earthing) | **Packing** : Supplied In 500 / 762 Meter Coils

TWIN FLAT DECODER MAXI CABLE



Solid bare Copper Cond., Type-B PVC Insulated & UV Stabilized PE Sheathed UF Cable for direct burial; Voltage Grade Up to 600 V

NO. OF CORES	CONDUCTOR		INSULATION		SHEATH		MAX. CR at 20°C Ω/km
	AREA mm ²	CONST. Nos. - Size	THK. mm	DIA. mm	THK. mm	DIA. (H*W) mm	
2	16	1/1.29	1.60	4.50	1.20	6.90*11.45	13.42
2	14	1/1.63	1.60	4.80	1.20	7.20*12.05	8.44

TWIN TWISTED DECODER CABLE



Solid bare Copper Cond., Type-B PVC Insulated, Twisted & UV Stabilized PE Sheathed UF Cable for direct burial; Voltage Grade Up to 600 V

No. OF CORES	CONDUCTOR		INSULATION		SHEATH		MAX. CR at 20°C Ω/km
	AREA mm ²	CONST. Nos. - Size	THK. mm	DIA. mm	THK. mm	DIA. mm	
2	16	1/1.29	1.20	3.70	0.90	9.20	13.42
2	14	1/1.63	1.20	4.00	0.90	9.90	8.44

Standard Sheath Colors : Red & Blue | **Packing** : Supplied in 500 / 762 meter wooden drums

MACROTHERM CATHODIC PROTECTION SYSTEM CABLES

HMWPE CPS Cables with outstanding dielectric strength and moisture & chemical resistance, providing protection against organic & inorganic substances are used as header cables, and to make anode lead, positive feed, negative return & test cables.

Kynar/HMWPE CPS Cables with exceptional chemical resistance in presence of chlorine, sulfuric acid & hydrochloric acid, and abrasion & moisture resistant are used for anode ground-bed installations where chlorine & hydrogen gases are generated.

Reference Standards - Generally as per ICEA-S-95-658 (MENA WC 70) & as per IEC 60502-1.

Conductor - Stranded copper conductor, conforming to ASTM Specification B 3, B 8, IEC 60228 class2.

Insulation - HMWPE conforming to ASTM D-1248, Type 3, Class C, Category 5, Grades E4 & E5. & **Insulation** - PVDF (Kynar)

Outer Sheath - HMWPE conforming to ASTM D-1248, Type 3, Class C, Category 5 (all colors).

Max. Operating Temp. 90°C

AREA mm ²	MAX. CR @ 20°C Ω/km		HMWPE		KYNAR / HMWPE		
	BARE COPPER	TINNED COPPER	INSU. THK. (Nom. - mm)	Appx. Dia. mm	INSU. THK. (Nom. - mm)	SHEATH THK. (Min. - mm)	Appx. Dia. mm
4	4.61	4.70	2.30	7.2	0.51	1.65	7.0
6	3.08	3.11	2.30	7.8	0.51	1.65	7.6
10	1.83	1.84	2.79	9.7	0.51	1.65	8.5
16	1.15	1.16	2.79	10.7	0.51	1.65	9.6
25	0.727	0.734	2.79	12.0	0.51	1.65	10.8
35	0.524	0.529	2.79	13.2	0.51	1.65	12.0
50	0.387	0.391	3.18	15.4	0.51	1.65	13.4
70	0.268	0.270	3.18	17.2	0.76	1.65	15.8



FLAT Travelling Elevator cables Flexible Wires & Cables Multi-Core CABLES Flexible submersible cables Under Ground FIRE RETARDANT BUILDING WIRES FEEDER CABLES Cathodic Protection System Cables Automotive Wires & Cables Braided Cables SWITCH gear wires Instrumentation Cables Control Cables



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