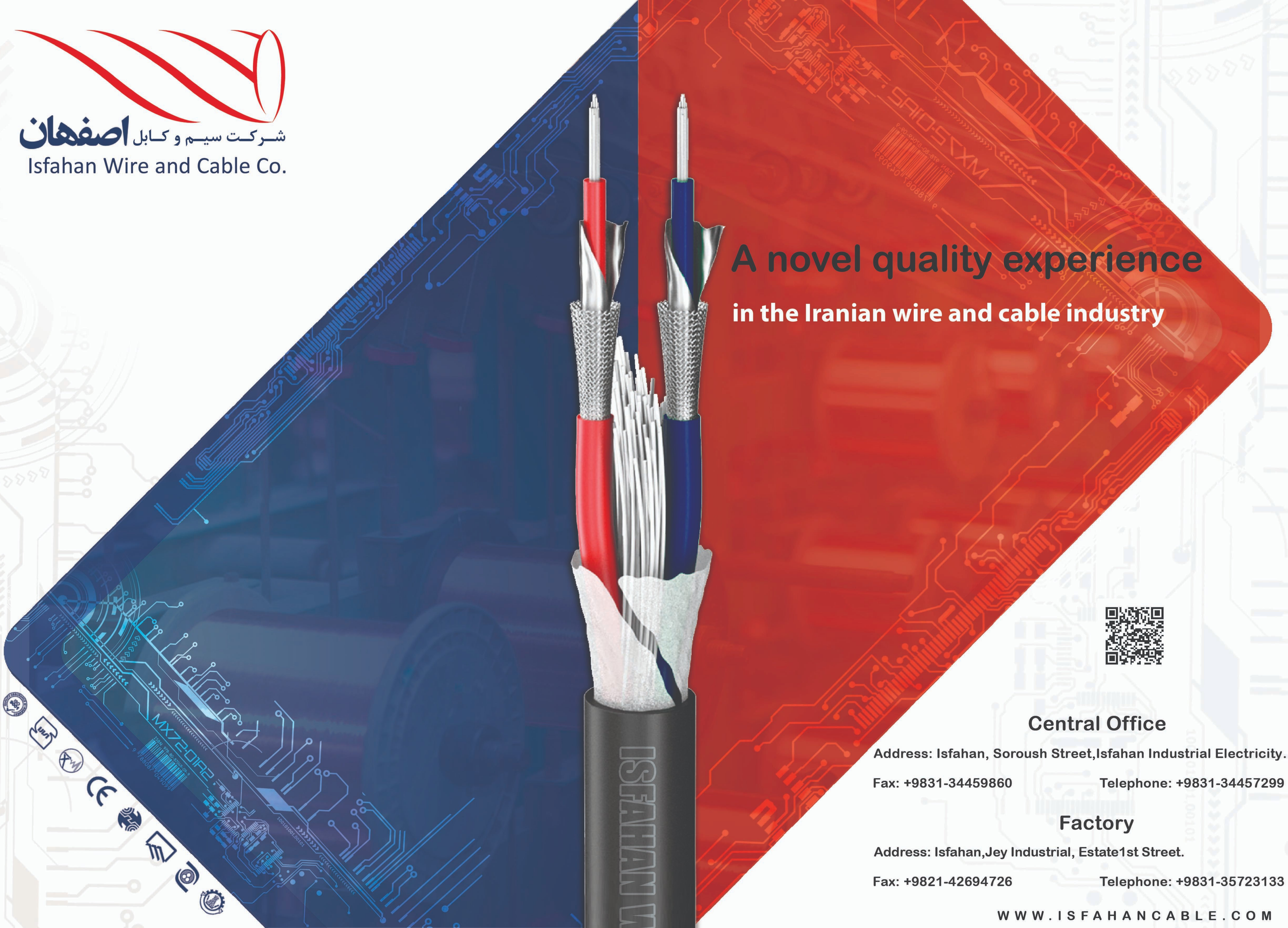
شرکت سیم و کابل اصفهان

Isfahan Wire and Cable Co.



A novel quality experience

in the Iranian wire and cable industry

Central Office

Address: Isfahan, Soroush Street,Isfahan Industrial Electricity.

Fax: +9831-34459860 Telephone: +9831-34457299

Factory

Address: Isfahan,Jey Industrial, Estate1st Street.

Fax: +9821-42694726 Telephone: +9831-35723133

WWW.ISFAHANCABLE.COM

Collaboration experiences

سازمان نظام مهندسی ساختمان اصفهان

سازمان نظام مهندسی کشاورزی ومنابع طبیعی استان اصفهان

شرکت صنایع الکترواپتیک صاایران

بنیاد تعاون ارتش جمهوری اسلامی ایران

شرکت تعاونی مسکن هوانیروز اصفهان

تعاونی مسکن فرهنگیان اصفهان

T.E تسلابرق نقش جهان

شرکت مهندسی فولاد تکنیک بین المللی (سهامی خاص) FIE Co.

گلنور روشنایی زندگی شما

شرکت تعاونی مسکن شهربهارستان

شرکت عمران آبشار اسپادانا مدیریت طرح و مجری مجتمع بزرگ آبشار پروژه شهید کشوری اصفهان

شرکت کشت وصنعت مزرعه خورشید نیک نو

OGHAB PUMP شرکت پمپ عقاب

شرکت دژدیس

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ساتیا شرکت تجهیزات برق و سیالات فولاد Fouled Fluids & Electrical Equipments SATHA

نمادنیروی اسپادان

هتل آسمان کیش

شرکت آبیار

ساطع تابان شیراز

شرکت نصیر عمران آرا

In Iran, Isfahan Wire and Cable Company, a pioneer in wire and cable manufacturing, ,has innovated since 2000, producing multicore, single-core, telecommunication coaxial, and shielded cables. Through indigenous knowledge and technology, they've meticulously honed the quality of wire and cable products. The company, by applying 'the managers
expertise in the industry and recognizing the staff's relentless efforts, has been dedicated to producing various types of wires and cables. In a short period, it has successfully obtained reputable certifications and carved out a special
position in the Iranian wire and cable market.

Further, given the pivotal role of product quality, we've purchased state-of-the-art production line machinery, utilizing the latest technology and providing our laboratory with advanced equipment. We've implemented a control and inspection system and trained our personnel continuously according to reputable national and international
standards to ensure the fulfillment of this crucial aspect.

,In this regard, to create added value for our customers, we prioritize quality and price adhering to quality and technical principles as a distinctive characteristic. It is worth mentioning that since the inception of Isfahan Wire and Cable Company, what was determined as a goal and has been steadfastly committed to in all economic conditions, is the production of wires and cables with the highest possible quality and in accordance with standards.

Thus, we strive to meet customer needs and ensure their satisfaction, by possessing certifications such as 607-3, 607-5, 607-6, 3569-1, and ISO 9001:2015.

National Standard Number 607-6

National Standard Number 3569-1

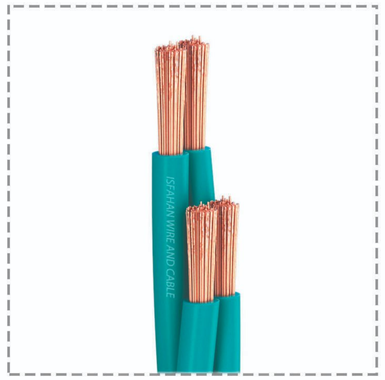
Certificate of Standard Quality Management ISO 9001:2015

National Standard Number 607-5

National Standard Number 607-3

Nominal Cross-Sectional Area of Conductors (mm²)	Nominal Insulation Thickness (mm)	Final Diameter Average (mm)		Maximum conductor resistance at 20 C° (Ω/Km)	Approximate weight (Kg/Km)
		Minimom	Maximom		
0.5	0.6	2.1	2.5	39	10
0.75	0.6	2.2	2.7	26	12.00
1	0.6	2.4	2.8	19.5	14.5
1.5	0.7	2.8	3.4	13.3	21
2.5	0.8	3.4	4.1	7.98	31
4	0.8	3.9	4.8	4.95	46
6	0.8	4.4	5.3	3.3	65
10	1	5.7	6.8	1.91	110
16	1	6.7	8.1	1.21	170
25	1.2	8.4	10.2	0.78	260

Flexible Stranded Wires



Utilization:

Flexible stranded wires find application within electrical appliances and are also used for safeguarding lighting systems in dry environments within conduits, as well as under and over gypsum. It's important to note that employing stranded wires (flexible wires) for direct installation on cable trays, cable ducts, and reservoirs is not permissible.

Construction:

Conductor material and class:

Annealed copper, class 5(flexible stranded), according to the national standard (ISIRI 3084(IEC 60228).

Insulation material: PVC compound, type C.

IInsulation Color: In accordance with customers' requests.

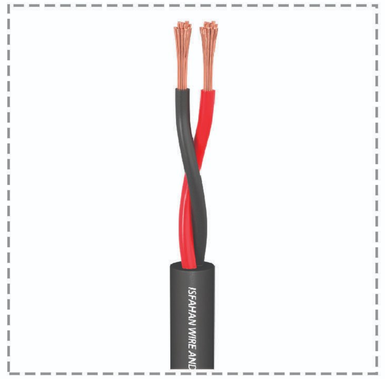
Standards:

For conductors up to 1 square millimeter cross-sectional area: ISIRI (607) 06.

For conductors with a cross-sectional area greater than 1 square millimeter: ISIRI (607) 02.

The Number and Nominal Cross- Sectional Area of Conductors (mm^2)	Nominal Insulation Thickness (mm)	Nominal Jacket Thickness (mm)	Final Diameter Average (mm)		Maximum Conductor Resistance at 20 C° (Ω/Km)	Approximate Weight (Kg/Km)
			Minimom	Maximom		
2×0.75	0.6	0.8	5.7	7.2	26	54
2×1	0.6	0.8	5.9	7.5	19.5	71
2×1.5	0.7	0.8	6.8	8.6	13.3	93
2×2.5	0.8	1	8.4	10.6	7.98	130
2×4	0.8	1.1	9.3	12.6	4.95	182
3×0.75	0.6	0.8	6	7.6	26	72
3×1	0.6	0.8	6.3	8	19.5	79
3×1.5	0.7	0.9	7.4	9.4	13.3	112
3×2.5	0.8	1.1	9.2	11.4	7.98	160
3×4	0.8	1.1	10.1	13.6	4.95	225
4×0.75	0.6	0.8	6.6	8.3	26	89
4×1	0.6	0.9	7.1	9	19.5	106
4×1.5	0.7	1	8.4	10.5	13.3	139
4×2.5	0.8	1.1	10.1	12.5	7.98	203
4×4	0.8	1.2	11.2	15.4	4.95	289
5×1.5	0.7	1.1	9.3	11.6	13.3	189
5×2.5	0.8	1.2	11.2	13.9	7.98	254
5×4	0.8	1.3	12.4	16.4	4.95	380

Multicore Cable



Utilization:

The cables can be employed as connection cables in electrical appliances, household items, and machinery. Immediate contact of the cable with the hot pieces of cooking appliances and heaters is not authorized. The cable should not be exposed to heat.

Structure:

Conductor Material and Class:

:Annealed copper, class 5(flexible stranded), according to national standard ISIRI3084 (IEC60228)

Insulation Material: PVC compound, type D

Insulation Color: According to national standard ISIRI607-1(IEC60227)

Jacket Material: PVC compound, type ST5

Jacket Color: Black, white, or in accordance with customers' requests

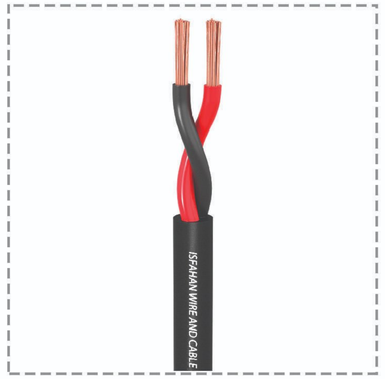
Standard:

Rated voltage: 300/500 volts

ISIRI (607) 71C or 60227 IEC 71C

The Number and Nominal Cross- Sectional Area of Conductors (mm^2)	Nominal Insulation Thickness (mm)	Nominal Jacket Thickness (mm)	Final Diameter Average (mm)	Maximum Conductor Resistance at 20 C ° (Ω/Km)	Approximate Weight (Kg/Km)
2×6	0.8	1.3	11.24	3.3	223.5
3×6	0.8	1.3	12.80	3.3	303
4×6	0.8	1.3	13.75	3.3	380
5×6	0.8	1.3	15.07	3.3	480
2×10	1	1.3	14.00	1.91	400
3×10	1	1.3	15	1.91	498
4×10	1	1.3	17.5	1.91	610

Round Lift and Removable Cables



Utilization:

These types of cables are suitable for being used in elevators and also in removable connections.

Construction:

Conductor Material and Class: Annealed copper, class 5 (flexible stranded), according to the national standards ISIRI3084 and IEC60228.

Insulation Material: PVC compound, type D.

Insulation Color: According to the national standards ISIRI607-1 and IEC60227-1.

Jacket Material: PVC compound, type ST5.

Jacket Color: Black, white, or based on customers' requests.

Standards:

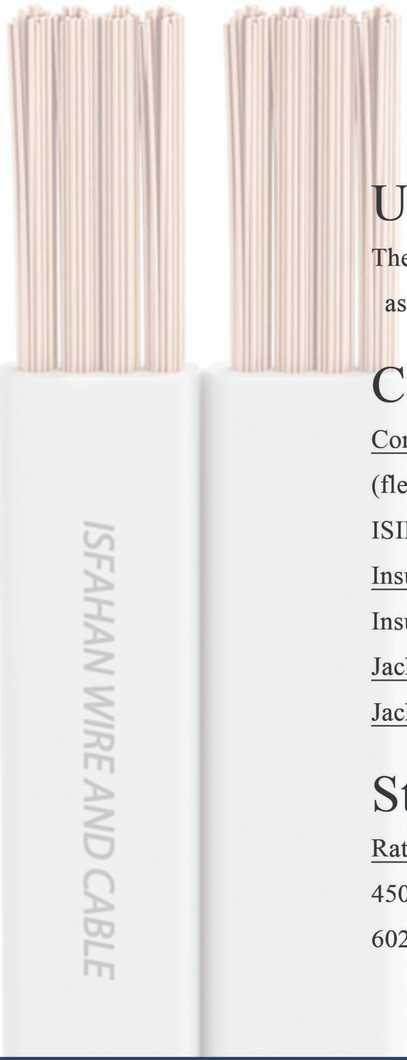
Rated Voltage:

450/750 volts.

60227 IEC 71C or ISIRI (607) 71C.

The Number and Nominal Cross- Sectional Area of Conductors (mm²)	thickness Nominal for insulation (mm)	Nominal Jacket Thickness (mm)			Final Diameter Average (mm)		Maximum Conductor Resistance at 20 C ° (Ω/Km)	Approximate Weight (Kg/Km)
		e1	e2	e3	width	Height		
3×1.5	0.7	1	1	1.5	10.7	5	13.3	97
3×2.5	0.8	1.5	1	1.8	13.5	5.6	7.98	154
3×4	0.8	1.5	1.2	1.8	15.6	6.4	4.95	220
3×6	0.8	1.5	1.2	1.8	18	7.2	3.3	300
3×10	1	1.5	1.4	1.8	22	9	1.91	495
3×16	1	1.5	1.5	2	27	10.7	1.21	773

Flat Lift and Removable Cables



Utilization:

The cables are ideal for being used in agricultural electric pumps, as well as for elevators and removable connections.

Construction:

Conductor Material and Class: Annealed copper, class 5 (flexible stranded), according to national standards ISIRI3084 and IEC60228.

Insulation Material: PVC compound, type D.

Insulation Color: According to the national standards ISIRI607-1 and IEC60227-1.

Jacket Material: PVC compound, type ST5.

Jacket Color: Black, white, or in agreement with customers' requests.

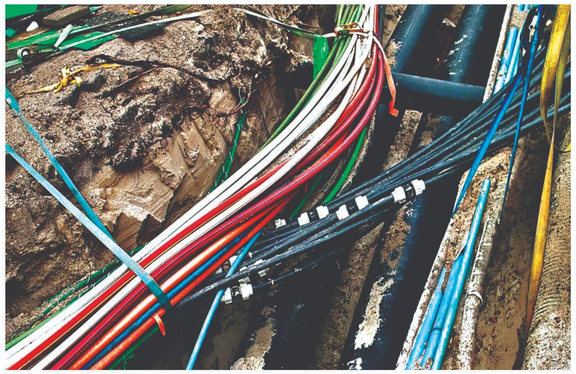
Standards:

Rated Voltage:

450/750 volts.

60227 IEC 71f or ISIRI (607) 71f

The Number and Nominal Cross- Sectional Area of Conductors (mm^2)	Nominal Insulation Thickness (mm)	Nominal Jacket Thickness (mm)	Final Diameter Average (mm)	Maximum Conductor Resistance at 20 C ° (Ω/Km)	Approximate Weight (Kg/Km)
2×1.5	0.8	1.8	11.5	12.1	180
2×2.5	0.8	1.8	12.5	7.41	215
2×4	1	1.8	14	4.61	290
2×6	1	1.8	15	3.08	352
2×10	1	1.8	16.5	1.83	470
2×16	1	1.8	19.5	1.15	675
3×1.5	0.8	1.8	12	12.1	200
3×2.5	0.8	1.8	13	7.41	245
3×4	1	1.8	14.5	4.61	335
3×6	1	1.8	16	3.08	415
3×10	1	1.8	17.5	1.83	570
3×16	1	1.8	20.5	1.15	830
4×1.5	0.8	1.8	13	12.1	235
4×2.5	0.8	1.8	14	7.41	290
4×4	1	1.8	16	4.61	400
4×6	1	1.8	17	3.08	500
4×10	1	1.8	20	1.83	755
4×16	1	1.8	22.5	1.15	1010
5×1.5	0.8	1.8	13.5	12.1	273
5×2.5	0.8	1.8	15	7.41	336
5×4	1	1.8	17	4.61	480
5×6	1	1.8	18.5	3.08	595
5×10	1	1.8	20.5	1.83	860
5×16	1	1.8	24.5	1.15	1195



ISFAHAN WIRE & CABLE CO.

Solid Power Cables

Utilization:

The cables are used under or over gypsum, on brick and concrete walls, and in dry or moist environments. However, they are not suitable for use in reinforced or compacted concrete. Using the cables in outdoor installations is only permitted if they are not exposed to direct sunlight.

Construction:

Conductor Material and Class: Annealed copper, class 1 (solid) for conductors up to a cross-sectional area of 16 mm and class 2 (flexible stranded) for all conductor sizes, according to national standard ISIRI3084 IEC 60228.

Insulation Material: PVC compound, type C

Insulation Color: According to national standard 1-3569

Filler Material: PVC

Jacket Material: PVC compound, type ST4

Jacket Color: Black

Standards:

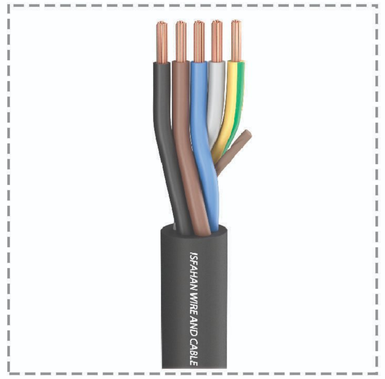
IEC 60228 or 3569-1

Voltage: 0.6-1kv Cable Code: NYY CLASS1-CLASS2

ISFAHAN WIRE & CABLE CO.

The Number and Nominal Cross- Sectional Area of Conductors (mm^2)	Nominal Insulation Thickness (mm)	Nominal Jacket Thickness (mm)	Final Diameter Average (mm)	Maximum Conductor Resistance at 20 C ° (Ω/Km)	Approximate Weight (Kg/Km)
2×6	1	1.8	13.5	3.3	290
2×10	1	1.8	16.5	1.91	411
2×16	1	1.8	18	1.21	611
3×6	1	1.8	14.2	3.3	354
3×10	1	1.8	17.5	1.91	513
3×16	1	1.8	19.5	1.21	774
3×25	1.2	1.8	23.5	0.78	1095
3×25+16	1.2/1	1.8	24.5	0.78/1.21	1320
4×6	1	1.8	15	3.3	378
4×10	1	1.8	17.5	1.91	480
4×16	1	1.8	20.2	1.21	890
5×6	1	1.8	16.5	3.3	455
5×10	1	1.8	19.5	1.91	750
5×16	1	1.8	22.2	1.21	1080

Flexible Power Cables



Utilization:

The cables can be employed as connection cables in electrical appliances, household items, and machinery. Immediate contact of the cable with the hot pieces of cooking appliances and heaters is not authorized. The cable should not be exposed to heat.

Construction:

Conductor Material and Class: Annealed copper, class 5(flexible stranded), according to national standard ISIRI3084 (IEC60228)

Insulation Material: PVC compound, type D

Insulation Color: According to national standard ISIRI607-1(IEC60227)

Jacket Material: PVC compound, type ST5

Jacket Color: Black

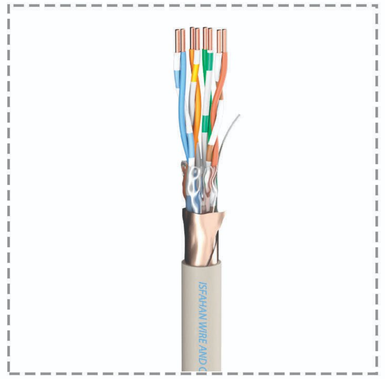
Standard:

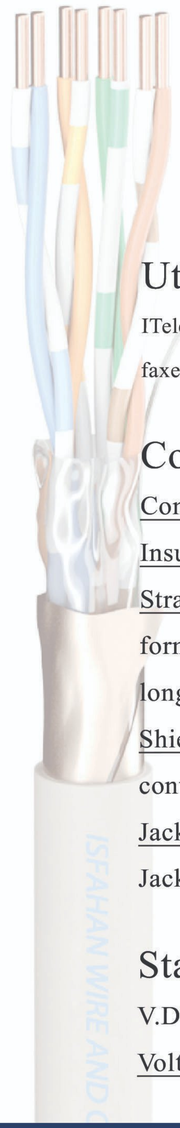
Rated voltage: 0.6-1kv

ISIRI 3569-1 or IEC 60228

NYY CLASS 5

Telecommunication Cables





Utilization:

ITelephone cables are employed to transmit analog or digital signals. They are utilized for phones, faxes, and telexes, as well as burglary, fire alarms, telecommunication, and time card systems.

Construction:

Conductor Material and Class: Annealed solid copper

Insulation Material: PVC Compound, type YI1

Strand Identification: Two strands are twisted according to standard color coding and form a pair. Then, pairs are twisted, and a layer of polyester tape is applied to them longitudinally or transversely to increase insulation resistance (IR).

Shield: A layer of aluminum foil is applied longitudinally or transversely as a shield in contact with a solid (bare or tinned) copper.

Jacket Material: PVC Compound, type YM1

Jacket Color: Gray

Standards:

V.D.E 0815 & TCI

Voltage: 200 v Cable Code: JY (ST)Y

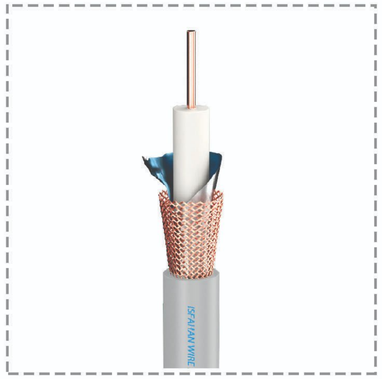
ISFAHAN WIRE & CABLE CO.

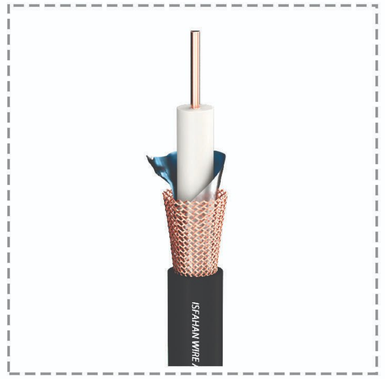
The Number and Nominal Cross- Sectional Area of Conductors (mm^2)	Nominal Insulation Thickness (mm)	Nominal Jacket Thickness (mm)	Final Diameter Average (mm)	Approximate Weight (Kg/Km)
2×2×0.6	0.2	0.6	4.6	27
4×2×0.6	0.2	0.6	5.8	42
6×2×0.6	0.2	0.6	6.4	58
10×2×0.6	0.2	0.6	7.7	88

ISFAHAN WIRE & CABLE CO.

Cable Type	The Number and Nominal Cross-sectional area of Conductors (mm)	Nominal Diameter of Insulation (mm)	Conductor Material	Impedance (Ω)	Attenuation at 100 MHZ (dB)	Outside Diameter (mm)	Approximate Weight (Kg/Km)
4.5C – 2V	1×1	4.5	Copper	75	22	6.5	52
RG – 59	1×0.690	3.7	Copper	75	11.5	6.2	57

Coaxial Cables





Utilization:

The coaxial cables are suitable for high-frequency audio transmissions, especially for receivers and transmitters, computers, and radio and television communications.

Construction:

Conductor: Annealed solid copper, bare or tinned

Insulation: Solid or foam polyethylene compound

Screen: Bare or tinned copper wire braid

Jacket: Special PVC compound

Standards:

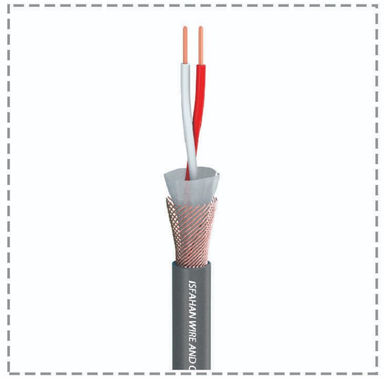
IEC 96

JIS3501-C

ISFAHAN WIRE & CABLE CO.

The Number and Nominal Cross- Sectional Area of Conductors (mm^2)	Nominal Insulation Thickness (mm)	Nominal Sheath Thickness (mm)	Nominal Diameter of Shield (mm)	Nominal Jacket Thickness (mm)	Nominal Jacket Thickness (mm)		Maximum Conductor Resistance at 20 C ° (Ω/Km)	Approximate Weight (Kg/Km)
					Minimom	Maximom		
2×0.5	0.6	0.7	0.15	0.9	7.7	9.6	39	70
2×0.75	0.6	0.7	0.15	0.9	8	10	26	80
2×1	0.6	0.7	0.15	0.9	8.2	10.3	19.5	82
2×1.5	0.7	0.7	0.15	1	9.3	11.6	13.3	104
2×2.5	0.8	0.7	0.15	1.1	10.7	13.3	7.98	141
3×0.5	0.6	0.7	0.15	0.9	8	10	39	75
3×0.75	0.6	0.7	0.15	0.9	8.3	10.4	26	89
3×1	0.6	0.7	0.15	1	8.8	11	19.5	97
3×1.5	0.7	0.7	0.15	1	9.7	12.1	13.3	127
3×2.5	0.8	0.7	0.15	1.1	11.3	14	7.98	177
4×0.5	0.6	0.7	0.15	0.9	8.5	10.7	39	91
4×0.75	0.6	0.7	0.15	1	9.1	11.3	26	106
4×1	0.6	0.7	0.15	1	9.4	11.7	19.5	116
4×1.5	0.7	0.7	0.15	1.1	10.7	13.2	13.3	157
4×2.5	0.8	0.8	0.15	1.2	12.6	15.5	7.98	221

Shielded Cables



Utilization:

The shielded cables are suitable for use in control panels in places where a magnetic field exists.

Utilizing cables is not recommended in open spaces and conveyor systems.

Construction:

Conductor Material and Class: Annealed copper, class 5 (flexible stranded) according to national standard ISIRI3084 (IEC60228)

Insulation Material: PVC compound, type D.

Insulation Color: Up to five wire strands, with colors or numbered strands, and more than five wire strands, with numbered strands. Given three or more wire strands, the earth wire is green, and the last strand is yellow in the outer layer.

Sheath Material: A layer of polyester tape is used for the sheath.

Conductor Material: Bare or tinned copper.

Jacket Material: PVC compound, type ST5.

Jacket Color: Gray.

Standards:

ISIRI 607-6

IEC60227-6

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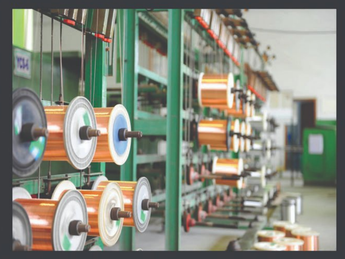
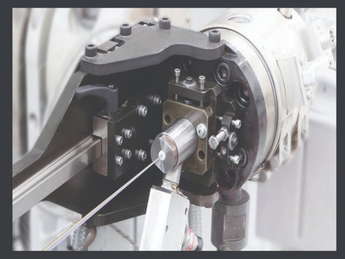
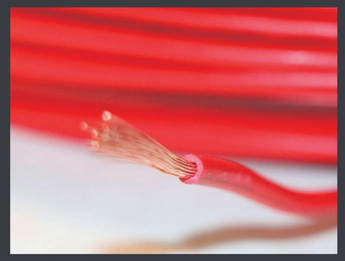
GALLERY







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The text of the table for the calculation of the cross-sectional area of copper and aluminum cables in relation to the distance and the intensity of the allowed current in a three-phase system with a voltage of 380 volts.

500	450	400	350	300	250	200	150	100	50	10	Aluminum m / mm²	Cop m / mm²
-	-	-	-	-	-	-	5	7	15	27	2.5	1.5
-	-	-	-	-	-	6	8	12	25	36	4	2.5
-	-	-	-	6	8	10	13	20	40	46	6	4
6	6.5	7	8	10	12	15	20	30	58	58	10	6
10	11	12	14	16	20	25	33	50	77	77	16	10
16	17	20	22	26	32	40	63	80	100	100	25	16
25	27	31	35	41	50	62	83	125	130	130	50	25
34	38	43	49	57	69	86	115	155	155	155	70	35
46	52	58	66	78	93	117	156	185	185	185	95	50
66	74	83	95	111	133	166	222	230	230	230	120	70
90	100	112	129	150	180	225	275	275	275	275	150	95
111	123	139	159	185	222	278	315	315	315	315	185	120
132	147	165	189	220	264	330	355	355	355	355	240	150
157	174	196	224	267	314	393	400	400	400	400	300	185
174	194	218	249	291	349	437	465	465	465	465	400	240
198	220	248	283	331	397	496	550	550	550	550	500	300
224	248	279	319	373	447	559	745	745	745	745	600	400

For example: copper cables with a cross-sectional area of 95 mm^2 and aluminum cables with a cross-sectional .area of 150 mm^2 in a length of 250 meters can withstand 180 amps

What are the features of standard wires?

Iranian National Standard No. 3084 determines maximum resistance for all wire types. It is worth noting that this resistance level is attainable through a decrease or increase in both the number of copper strands (n) and the diameter of each strand (d).This serves to achieve the desired configuration.

It's crucial to understand that weight alone isn't .a reliable gauge for determining standard wire

The weight of each wire is determined by three factors: the amount of a copper strand, insulation thickness, and jacket thickness. Thus, it's evident that the considerable weight of the wire cannot be the criterion for its quality. This is because increasing insulation thickness beyond the standard or even reducing the amount of a copper strand while increasing insulation thickness can increase the weight.

Standard Wire Criteria:

1-Maximum Resistance.

2-Consumed Insulation .

(Average thickness of insulation and jacket).

3-Insulation Tensile Strength

Dependent on raw material type and its)

manufacturing process).

What is Resistance?

Resistance is a factor for determining electrical conductivity in a wire. Essentially, the lower the resistance of a wire, the higher its electrical conductivity and the better the quality of electric current flow.

The calculation method for resistance, as the primary criterion for a standard wire, is as follows:

Cross-Sectional Area Calculation	Resistance Calculation
$A = \frac{n\pi d^2}{4}$	$R = \frac{\rho L}{A}$
Wire Cross-Sectional Area : A	Wire Standard Resistance :R
The Number of Copper Strands :n	Copper Special Resistance =17/2 :ρ
Pi Number =3.14 :π	Wire Length =1m :L
The diameter of the copper strand :d²	Wire Cross-Sectional Area :A

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