

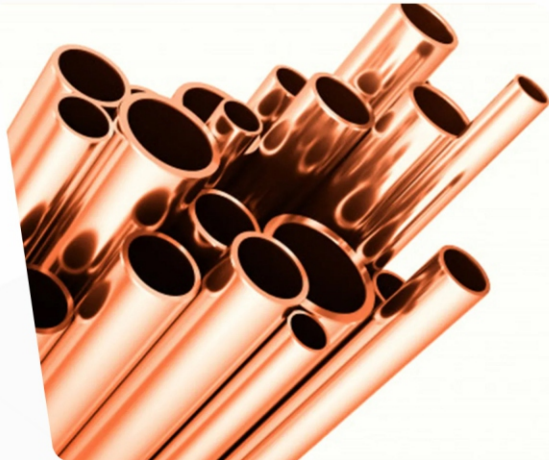


**BUVA<sup>®</sup>**  
**METALS**

Supplying products and  
distribution to European  
companies and maintaining  
warehouse stocks



# COPPER TUBES





## ABOUT US

BUVA METALS IS MORE THAN A SUPPLIER OF CUPPER TUBES & FITTINGS AND CABLES. TOGETHER WITH OUR PARTNERS, WE LOOK FOR WAYS IN WHICH WE CAN CONTRIBUTE TO THEIR ENTIRE BUSINESS PROCESS BY PROVIDING CUSTOMIZED SERVICES (INCLUDING STOCK MANAGEMENT, DISTRIBUTION, ADVICE, DESIGN, ASSEMBLY AND FINISHING).

**MISSION:**

TO SUPPLY HIGH QUALITY PRODUCTS TO EUROPEAN COMPANIES, ENSURING RELIABILITY AND QUALITY IN EVERY TRANSACTION, WHILE CONTRIBUTING TO THE GROWTH AND SUSTAINABILITY OF THE INDUSTRY."

**VISION:**

TO BECOME A LEADING SUPPLIER IN EUROPE, RECOGNIZED FOR OUR COMMITMENT TO QUALITY, INNOVATION AND CUSTOMER SATISFACTION."

**GOALS AND OBJECTIVES:**

1. ESTABLISHING STRONG RELATIONSHIPS WITH SUPPLIERS: DEVELOPING LONG-TERM PARTNERSHIPS. "
2. SUPPLY CHAIN OPTIMIZATION. IMPLEMENT EFFICIENT LOGISTICS AND SUPPLY CHAIN MANAGEMENT TO ENSURE TIMELY AND COST-EFFECTIVE DELIVERY.
3. ENSURE PRODUCT QUALITY. IMPLEMENT STRICT QUALITY CONTROL MEASURES TO ENSURE THE QUALITY OF COPPER PIPES.
4. EXPAND YOUR PRODUCT PORTFOLIO. EXPLORE OPPORTUNITIES TO DIVERSIFY YOUR PRODUCT PORTFOLIO TO MEET CHANGING MARKET NEEDS.





**BUVA<sup>®</sup>  
METALS**

# STRAIGHT COPPER TUBES

Briscool copper tubes are easy to install with cost-effectiveness and provide safe and secure operation. The straight copper tubes are used for air conditioning & refrigeration industries, electrical industries and sanitary purposes. Cu-Dhp 99,9% copper pipe (EN 12735-1) sealed ends and dehumidified, R290 nonannealed and R220 annealed in straight form, high resistance to pitting corrosion. Briscool copper tubes are resistant to high operation pressures and temperatures. They are stable and self-supporting.



## TECHNICAL SPECS OF COPPER TUBES :

### Chemical Composition:

%99,9 Cu-Dhp

### Conformity:

EN-12735-1 , ASTM B280

### Specific Heat (at 20°C):

0,0921cal/g°C

### Stretch Modulus(at 20°C annealed)

12000kg/mm<sup>2</sup>

### Thermal Conductivity(at 20°C)

0.70-0,87 cal/cm<sup>2</sup>

### Elongation A%

A% min=45%

### Internal Surface

Glossy, perfectly clean conforming

ASTM B-280 and EN12735-1 legislation

## STRAIGHT COPPER TUBES :

Ease of cold bending

Reduction of necessary fittings

Easier construction of networks

Faster installation and higher workmanship

Overall lower installation costs

Durable pipes, their resistance to gas pressure is high.

Doesn't pollute the water, they have a self-cleaning feature of bacteria.

Saves on shipping cost as it is lightweight and easy portable

Human and environment friendly.

Fire resistant.

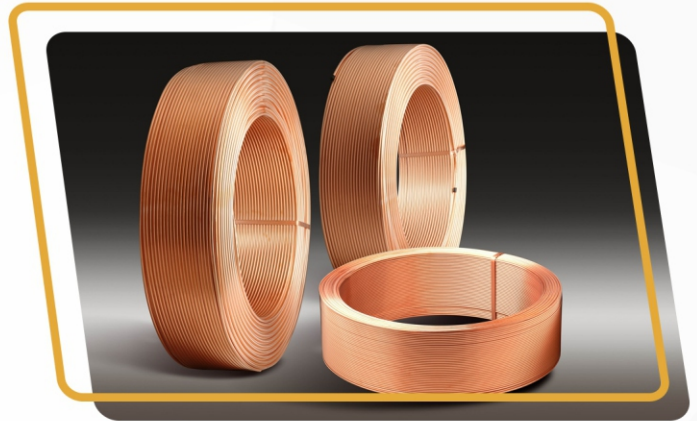
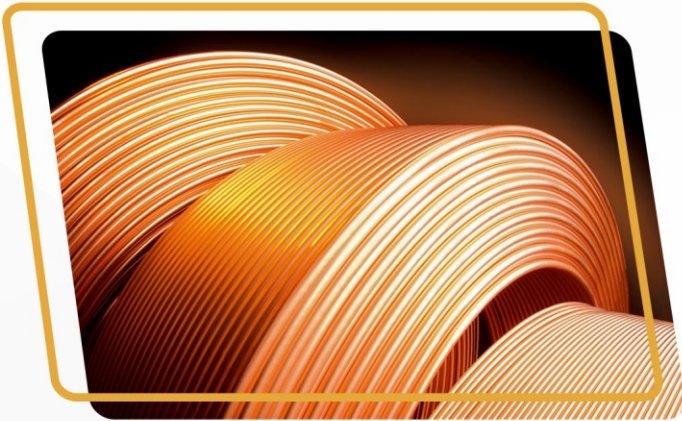
STANDART DIMENSIONS ACCORDING TO EN 12735-1  
**HARD STRAIGHT COPPER TUBES**

DIAMETER X THICKNESS (MM)	INTERNAL DIAMETER MM	NOMING COPPER WEIGHT (KG/M)	EXTERNAL SURFACE AREA (M <sup>2</sup> /M)	TUBE LENGHTS	MAXIMUM ALLOWABLE PERSUERE (BAR)
15 x 0,80	13,4	0,318	0,047	5m	67
15 x 1,00	13,04	0,391	0,047	5m	82
16 x 1,00	14,0	0,419	0,050	5m	77
18x 0,80	16,4	0,385	0,057	5m	56
18 x 1,00	16,0	0,475	0,057	5m	66
22 x 1,00	20,0	0,587	0,69	5m	54
22 x 1,20	19,06	0,709	0,69	5m	59
28 x 1,00	26,0	0,755	0,088	5m	42
28 x 1,20	25,6	0,913	0,088	5m	51
28 x 1,50	25,0	1,111	0,088	5m	64
35 x 1,00	33,0	0,950	0,110	5m	33
35 x 1,20	32,6	1,152	0,110	5m	41
35 x 1,50	32,0	1,405	0,110	5m	50
42 x 1,00	40,0	1,146	0,132	5m	28
42 x 1,20	39,6	1,368	0,132	5m	33
42 x 1,50	39,00	1,700	0,132	5m	42
54 x 1,20	51,6	1,771	0,170	5m	26
54 x 1,50	51,0	2,202	0,170	5m	32



# LWC LEVEL WOUND COILS

The LWC Copper Tube (Cu-Dhp 99,9%) is mostly applied to air conditioning, refrigeration and general engineering applications. LWC Copper Tube is produced according to the EN 12735-1 standard and it also complies with the ASTM B280 specifications Level Wound Coils are specially suited to long production runs for industrial applications and it is widely applied to the Air Conditioning & Refrigeration as well as the Heat Exchanger field. Due to the large coil shape of the LWC, it allows the user to obtain pipes of different lengths, For proper delivery of coil rolls are stacked on a wooden pallet and enclosed in stretch wrap. In this way, dust and damage to the pipes are prevented.



## TECHNICAL SPECS OF COPPER TUBES :

**Chemical Composition:**

%99,9 Cu-Dhp

**Conformity:**

EN-12735-1 , ASTM B280

**Specific Heat (at 20°C):**

0,0921cal/g°C

**Stretch Modulus(at 20°C annealed)**

12000kg/mm?

**Thermal Conductivity(at 20°C)**

0.70-0,87 cal/cm2

**Elongation A%**

A% min=45%

**Internal Surface**

Glossy, perfectly clean conforming

ASTM B-280 and EN12735-1 legislation

## TECHNICAL PROPERTIES OF LWC :

**Material**

99.9% Cu and P = 0.015 - 0.040%

**Temper**

Light Annealed (050)

Soft Annealed (060)

also can be produced as hard drawn temper

**Standards**

ASTM B280

EN 12735-1



STANDART DIMENSIONS ACCORDING TO EN 12735-1

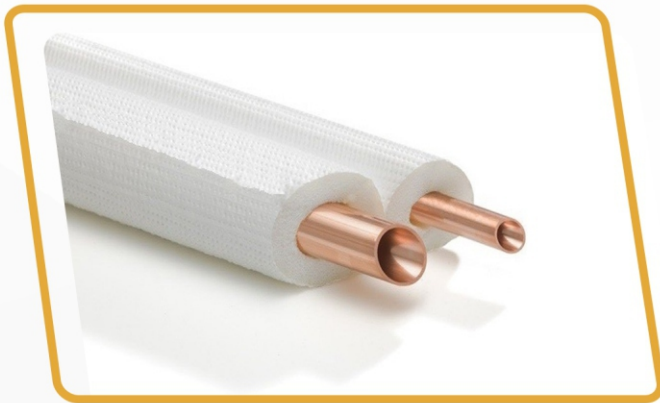
## LWC COPPER TUBES

OUTER DIAMETER (MM)		WALL THICKNESS (MM)		NOMINAL COPPER WEIGHT (KG/M)		COIL WEIGHT (KG)	
inch	mm	Min.	Max.	Min.	Max.	Min.	Max.
3/16	4.76	0.35	0.76	0.045	0.086	90	300
1/4	6.35	0.35	1.00	0.060	0.152	90	300
5/16	7.94	0.35	1.00	0.075	0.031	90	300
3/8	9.35	0.35	1.00	0.090	0.237	90	300
-	10	0.35	1.00	0.096	0.256	90	300
-	12	0.35	1.00	0.116	0.313	90	300
1/2	12.70	0.35	1.00	0.123	0.333	90	300
-	15	0.40	1.00	0.166	0.398	90	300
5/8	15.88	0.40	1.00	0.176	0.423	90	300
-	16	0.50	1.00	0.220	0.450	90	300
-	18	0.60	1.00	0.297	0.483	90	300
3/4	19.05	0.60	1.00	0.315	0.513	90	300



# PRE-INSULATED COPPER TUBES

Pre-Insulated Copper Tubes are advanced technological products of high added value and significantly superior in effectiveness compared to conventional insulation methods Suitable for air conditioning VRF systems, Split units, refrigeration and industrial systems. Cu-Dhp 99,9% copper pipe insulated with an expanded polyethylene tube, closed cell and an external LDPE foil Maximum Fire Safety with self-extinguishing DIN 4102-B1, SBI BL S1D0. Nontoxic gases and resistant to external chemical agents and ultra-violet rays. The unique advantages offered by the Briscool Pre-Insulated Copper Tubes, such as copper resistance and durability, coupled with high performance pre-insulation, result in significant energy savings. Pre-insulated copper tubes are ideal choice for every modern application with a competitive market price and low installation cost.



## TECHNICAL SPECS OF COPPER TUBES :

### Chemical Composition:

%99,9 Cu-Dhp

### Conformity:

EN-12735-1 , ASTM B280

### Specific Heat (at 20°C):

0,0921cal/g°C

### Stretch Modulus(at 20°C annealed)

12000kg/mm<sup>2</sup>

### Thermal Conductivity(at 20°C)

0.70-0,87 cal/cm<sup>2</sup>

### Elongation A%

A% min=45%

### Internal Surface

Glossy, perfectly clean conforming

ASTM B-280 and EN12735-1 legislation

## TECHNICAL SPECS OF PE INSULATION :

### Material

PE (Polyethylene) Foam

### Sustainability

Fully recyclable

### Specificities

Unique aesthetical appearance

Excellent mechanical strength

### Density According to DIN 53420 ASTM D 1667

30-33 KG/m<sup>3</sup>

### Reaction to Fire

EN 13501-1 Class B or Class E

### Service Temperatures

Minimum - 80°C Maximum 95°C

### Thickness Range of Insulation

6- 9-13-19



STANDART DIMENSIONS ACCORDING TO EN 12735-1

## HARD STRAIGHT COPPER TUBES

<b>COPPER TUBE EXTERNAL DIAMETER</b>	inch	1/4	3/8	1/2	5/8	3/4	7/8
	mm	6.35	9.52	12.70	15.87	19.05	22.22
<b>COPPER TUBE WALL THICKNESS</b>	mm	0.80	0.80	0.80	1.00	1.00	1.10
<b>INSULATION THICKNESS</b>	mm	6- 9-13-19	6- 9-13-19	6- 9-13-19	6- 9-13-19	6- 9-13-19	6- 9-13-19
<b>OPERATION ALLOWABLE PRESSURE</b>	mm	158	98	72	67	59	45
<b>COIL LENGHTS</b>	meter	15/50	15/50	15/50	15/50	15/50	15/50



# DOUBLE WHITE PRE-INSULATED COPPER TUBES

Briscool Pre-Insulated Copper Tubes are advanced technological products of high added value and significantly superior in effectiveness compared to conventional insulation methods. Suitable for air conditioning VRF systems, Split units, refrigeration and industrial systems. Cu-Dhp 99,9% copper pipe insulated with an expanded polyethylene tube, closed cell and an external LDPE foil. Maximum Fire Safety with self-extinguishing DIN 4102-B1, SBI BL S1D0. Nontoxic gases and resistant to external chemical agents and ultra-violet rays. The unique advantages offered by the Briscool Pre-Insulated Copper Tubes, such as copper resistance and durability, coupled with high performance pre-insulation, result in significant energy savings. Briscool Pre-Insulated copper tubes are ideal choice for every modern application with a competitive market price and low installation cost.



## TECHNICAL SPECS OF COPPER TUBES :

### Chemical Composition:

%99,9 Cu-Dhp

### Conformity:

EN-12735-1 , ASTM B280

### Specific Heat (at 20°C):

0,0921cal/g°C

### Stretch Modulus(at 20°C annealed)

12000kg/mm<sup>2</sup>

### Thermal Conductivity(at 20°C)

0.70-0,87 cal/cm<sup>2</sup>

### Elongation A%

A% min=45%

### Internal Surface

Glossy, perfectly clean conforming  
ASTM B-280 and EN12735-1 legislation

## TECHNICAL SPECS OF PE INSULATION :

### Material PE

(Polyethylene) Foam

### Sustainability

Fully recyclable

### Specificities

Unique aesthetical appearance

Excellent mechanical strength

### Density According to DIN 53420 ASTM D 1667

30-33 KG/m<sup>3</sup>

### Reaction to Fire

EN 13501-1 Class B or Class E

### Service Temperatures

Minimum - 80°C Maximum 95°C

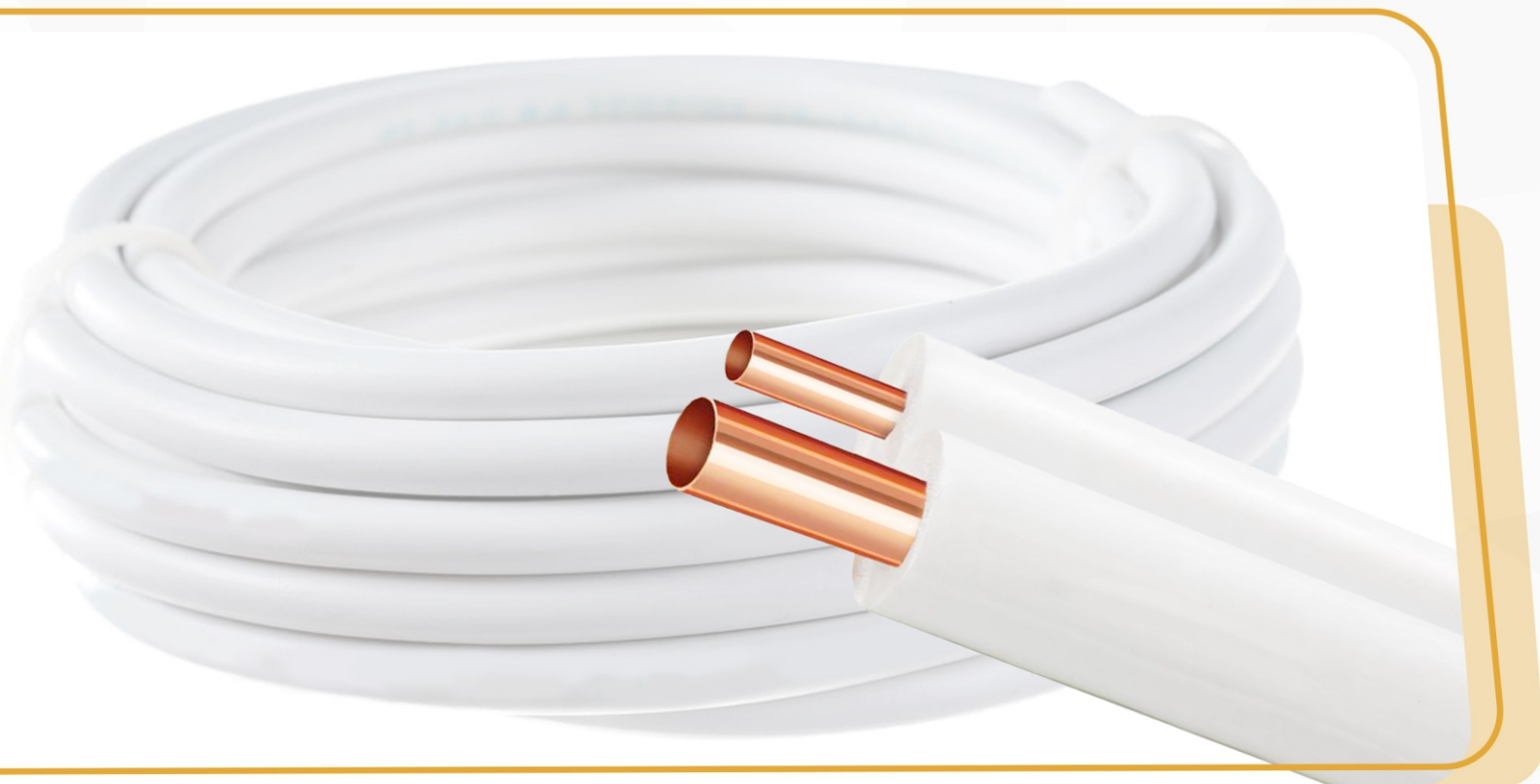
### Thickness Range of Insulation

6- 9-13-19

STANDART DIMENSIONS ACCORDING TO EN 12735-1

## HARD STRAIGHT COPPER TUBES

<b>COPPER TUBE EXTERNAL DIAMETER</b>	inch	1/4-3/8	1/4-1/2	1/4-5/8	3/8-5/8	3/8-3/4	1/2-3/4
	mm	6,35-9,52	6,35-12,70	6,35-15,87	9,52-15,87	9,52-19,05	12,70-19,05
<b>COPPER TUBE WALL THICKNESS</b>	mm	0,80-0,80	0,80-0,80	0,80-1,00	0,80-1,00	0,80-1,00	0,80-1,00
<b>INSULATION THICKNESS</b>	mm	6-9-13-19	6-9-13-19	6-9-13-19	6-9-13-19	6-9-13-19	6-9-13-19
<b>OPERATION ALLOWABLE PRESSURE</b>	mm	158-98	158-72	158-67	98-67	98-59	72-59
<b>COIL LENGHTS</b>	meter	15/50	15/50	15/50	15/50	15/50	15/50



# BLACK PRE-INSULATED COPPER TUBES

Pre-Insulated Copper Tubes are advanced technological products of high added value and significantly superior in effectiveness compared to conventional insulation methods. Suitable for air conditioning, VRF systems, Split units, refrigeration and industrial systems. Cu-Dhp 99,9% copper pipe insulated with an expanded polyethylene tube, closed cell and an external LDPE foil, Maximum Fire Safety with self-extinguishing DIN 4102-B1, SBI BL S1D0. Nontoxic gases and resistant to external chemical agents and ultra-violet rays. The unique advantages offered by the Pre-Insulated Copper Tubes, such as copper resistance and durability, coupled with high performance pre-insulation, result in significant energy savings, Pre-Insulated copper tubes are ideal choice for every modern application with a competitive market price and low installation cost.



## TECHNICAL SPECS OF COPPER TUBES :

### Chemical Composition:

%99,9 Cu-Dhp

### Conformity:

EN-12735-1 , ASTM B280

### Specific Heat (at 20°C):

0,0921cal/g°C

### Stretch Modulus(at 20°C annealed)

12000kg/mm<sup>2</sup>

### Thermal Conductivity(at 20°C)

0.70-0,87 cal/cm<sup>2</sup>

### Elongation A%

A% min=45%

### Internal Surface

Glossy, perfectly clean conforming  
ASTM B-280 and EN12735-1 legislation

## TECHNICAL SPECS OF PE INSULATION :

### Material

PE (Polyethylene) Foam

### Sustainability

Fully recyclable

### Specificities

Unique aesthetical appearance

Excellent mechanical strength

### Density According to DIN 53420 ASTM D 1667

30-33 KG/m<sup>3</sup>

### Reaction to Fire

EN 13501-1 Class B or Class E

### Service Temperatures

Minimum - 80°C Maximum 95°C

### Thickness Range of Insulation

6- 9-13-19

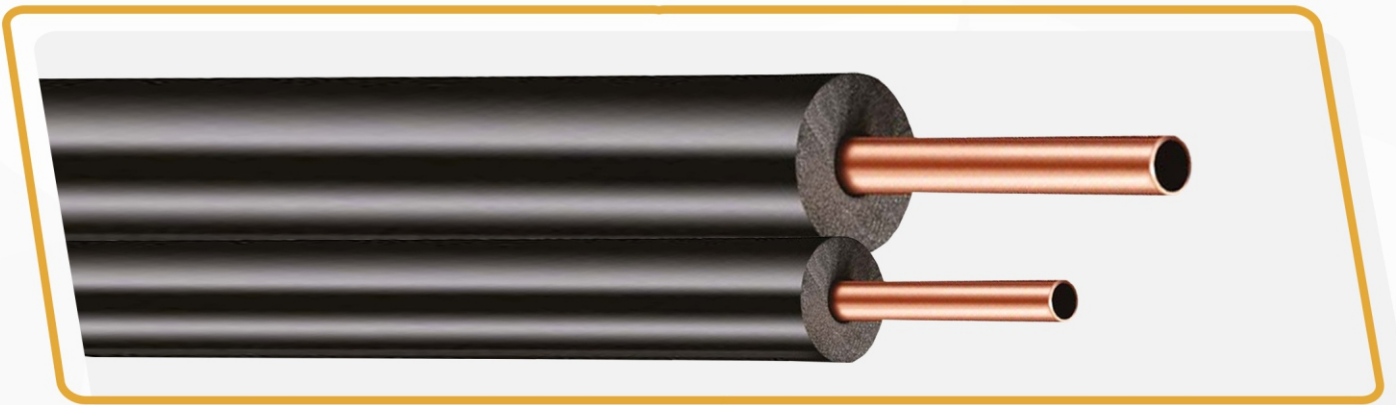
**STANDART DIMENSIONS ACCORDING TO EN 12735-1**

<b>COPPER TUBE EXTERNAL DIAMETER</b>	inch	1/4	3/8	1/2	5/8	3/4	7/8
	mm	6,35	9,52	12,70	15,87	19,05	22,22
<b>COPPER TUBE WALL THICKNESS</b>	mm	0,80	0,80	0,80	1,00	1,00	1,10
<b>INSULATION THICKNESS</b>	mm	6-9-13-19	6-9-13-19	6-9-13-19	6-9-13-19	6-9-13-19	6-9-13-19
<b>OPERATION ALLOWABLE PRESSURE</b>	mm	158	98	72	67	59	45
<b>COIL LENGHTS</b>	meter	15/50	15/50	15/50	15/50	15/50	15/50



# DOUBLE BLACK PRE-INSULATED COPPER TUBES

Pre-Insulated Copper Tubes are advanced technological products of high added value and significantly superior in effectiveness compared to conventional insulation methods. Suitable for air conditioning, VRF systems, Split units, refrigeration and industrial systems. Cu-Dhp 99,9% copper pipe insulated with an expanded polyethylene tube, closed cell and an external LDPE foil, Maximum Fire Safety with self-extinguishing DIN 4102-B1, SBI BL S1D0. Nontoxic gases and resistant to external chemical agents and ultra-violet rays. The unique advantages offered by the Pre-Insulated Copper Tubes, such as copper resistance and durability, coupled with high performance pre-insulation, result in significant energy savings, Pre-Insulated copper tubes are ideal choice for every modern application with a competitive market price and low installation cost.



## TECHNICAL SPECS OF COPPER TUBES :

### Chemical Composition:

%99,9 Cu-Dhp

### Conformity:

EN-12735-1 , ASTM B280

### Specific Heat (at 20°C):

0,0921cal/g°C

### Stretch Modulus(at 20°C annealed)

12000kg/mm<sup>2</sup>

### Thermal Conductivity(at 20°C)

0.70-0,87 cal/cm<sup>2</sup>

### Elongation A%

A% min=45%

### Internal Surface

Glossy, perfectly clean conforming

ASTM B-280 and EN12735-1 legislation

## TECHNICAL SPECS OF PE INSULATION :

### Material

PE (Polyethylene) Foam

### Sustainability

Fully recyclable

### Specificities

Unique aesthetical appearance

Excellent mechanical strength

### Density According to DIN 53420 ASTM D 1667

30-33 KG/m<sup>3</sup>

### Reaction to Fire

EN 13501-1 Class B or Class E

### Service Temperatures

Minimum - 80°C Maximum 95°C

### Thickness Range of Insulation

6- 9-13-19

STANDART DIMENSIONS ACCORDING TO EN 12735-1

<b>COPPER TUBE EXTERNAL DIAMETER</b>	inch	1/4-3/8	1/4-1/2	1/4-5/8	3/8-5/8	3/8-3/4	1/2-3/4
	mm	6,35-9,52	6,35-12,70	6,35-15,87	9,52-15,87	9,52-15,87	12,70-19,05
<b>COPPER TUBE WALL THICKNESS</b>	mm	0,80-0,80	0,80-0,80	0,80-1,00	0,80-1,00	0,80-1,00	0,80-1,00
<b>INSULATION THICKNESS</b>	mm	6-9-13-19	6-9-13-19	6-9-13-19	6-9-13-19	6-9-13-19	6-9-13-19
<b>OPERATION ALLOWABLE PRESSURE</b>	mm	158-98	158-72	158-67	98-67	98-59	72-59
<b>COIL LENGHTS</b>	meter	15/50	15/50	15/50	15/50	15/50	15/50



# ANTI-UV FIREPROOF PE INSULATION

Pre-Insulated Copper Tubes are advanced technological products of high added value and significantly superior in effectiveness compared to conventional insulation methods. Suitable for air conditioning, VRF systems, Split units, refrigeration and industrial systems. Cu-Dhp 99,9% copper pipe insulated with an expanded polyethylene tube, closed cell and an external LDPE foil. Closed cell structure for thermal insulation. Maximum Fire Safety with self-extinguishing DIN 4102-B1, SBI BL S1D0. Nontoxic gases and resistant to external chemical agents and ultra-violet rays. Doesn't contain harmful materials to human health. Free of harmful chemicals and HCFC. Not affected by chemicals and environmental conditions. Water and moisture proof. With its flexible structure, it doesn't crush or collapse after impact. The unique advantages offered by the Pre-Insulated Copper Tubes, such as copper resistance and durability, coupled with high performance pre-insulation, result in significant energy savings. Pre-insulated copper tubes are ideal choice for every modern application with a competitive market price and low installation cost.



## TECHNICAL SPECS OF COPPER TUBES :

### Chemical Composition:

%99,9 Cu-Dhp

### Conformity:

EN-12735-1 , ASTM B280

### Specific Heat (at 20°C):

0,0921cal/g°C

### Stretch Modulus(at 20°C annealed)

12000kg/mm<sup>2</sup>

### Thermal Conductivity(at 20°C)

0.70-0,87 cal/cm<sup>2</sup>

### Elongation A%

A% min=45%

### Internal Surface

Glossy, perfectly clean conforming  
ASTM B-280 and EN12735-1 legislation

## TECHNICAL SPECS OF PE INSULATION :

**Dimensional Stabilities According to ISO 2796 for Temperatures up to 100°C**  
< 5%

**Thermal Conductivity Coefficient According to EN ISO 8497**  
0.0357 W/mK (0°C) - 0.0389 W/mK (40°C)

**Working Temperature According to Laboratory Tests**  
-80°C to +110°C

**The Reaction of the Insulation to Fire**  
EN 13501-1 Class B DIN 4102

**Density According to DIN 53420**  
30 - 33 kg/m<sup>3</sup>

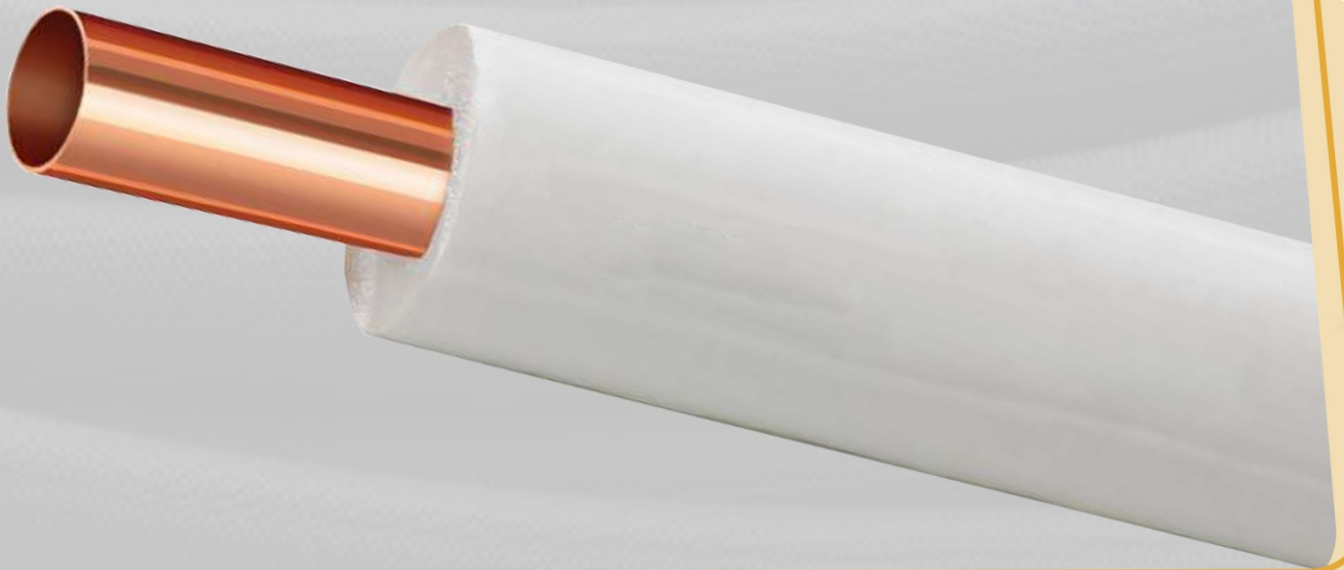
**Resistance to Chemical Agents According to ASTM 543-56 T**  
Very Good

**Vapour water diffusion resistance coefficient according to EN 13469**  
12,500



**STANDART DIMENSIONS ACCORDING TO EN 12735-1**

<b>COPPER TUBE EXTERNAL DIAMETER</b>	inch	1/4	3/8	1/2	5/8	3/4	7/8
	mm	6,35	9,52	12,70	15,87	19,05	22,22
<b>COPPER TUBE WALL THICKNESS</b>	mm	0,80	0,80	0,80	1,00	1,00	1,10
<b>INSULATION THICKNESS</b>	mm	6-9-13-19	6-9-13-19	6-9-13-19	6-9-13-19	6-9-13-19	6-9-13-19
<b>OPERATION ALLOWABLE PRESSURE</b>	mm	158	98	72	67	59	45
<b>COIL LENGHTS</b>	meter	15/50	15/50	15/50	15/50	15/50	15/50



# RUBBER PRE-INSULATED COPPER TUBES

Rubber Insulated Copper Pipes are advanced technological products with high added value and significantly superior in effectiveness compared to traditional insulation methods. It is suitable for air conditioners, VRF systems, Split units. It provides maximum savings with its low thermal conductivity coefficient (0.034W/mK). Maximum Fire Safety with EN 13501-1 B-s2 d0. Does not release toxic gases and fumes during fire. Rubber Insulated Copper Pipe is also suitable for food industry, subway and submarines. It is environmentally friendly, does not contain HCFC-GFC. The unique advantages of Rubber Insulated Copper Tubes, such as copper resistance and durability, combined with high performance pre-insulation provide significant energy savings. Rubber Insulated Copper Tubing is the ideal choice for any modern application with a competitive market price and low installation cost.



## TECHNICAL SPECS OF COPPER TUBES :

### Chemical Composition:

%99,9 Cu-Dhp

### Conformity:

EN-12735-1 , ASTM B280

### Specific Heat (at 20°C):

0,0921cal/g°C

### Stretch Modulus(at 20°C annealed)

12000kg/mm<sup>2</sup>

### Thermal Conductivity(at 20°C)

0.70-0,87 cal/cm<sup>2</sup>

### Elongation A%

A% min=45%

### Internal Surface

Glossy, perfectly clean conforming

ASTM B-280 and EN12735-1 legislation

## TECHNICAL SPECS OF PE INSULATION :

### Material

Elastomeric rubber foam

### Types of Facing

Without Facing

### μ (Water Vapor Diffusion Resistance Factor)

7000

### A (Thermal Conductivity) W/ (m.K)

0.0034(0°C)

0.0039(25°C)<sup>3</sup>

0.0041(75°C)

### Fire Response Classification (EN 13501-1)

BL-s2,d0

### Service Temperature °C (EN14707)

-50/116°C

**STANDART DIMENSIONS ACCORDING TO EN 12735-1**

<b>COPPER TUBE EXTERNAL DIAMETER</b>	inch	1/4	3/8	1/2	5/8	3/4	7/8
	mm	6,35	9,52	12,70	15,87	19,05	22,22
<b>COPPER TUBE WALL THICKNESS</b>	mm	0,80	0,80	0,80	1,00	1,00	1,10
<b>INSULATION THICKNESS</b>	mm	6-9-13-19	6-9-13-19	6-9-13-19	6-9-13-19	6-9-13-19	6-9-13-19
<b>OPERATION ALLOWABLE PRESSURE</b>	mm	158	98	72	67	59	45
<b>COIL LENGHTS</b>	meter	15/50	15/50	15/50	15/50	15/50	15/50



# PRE-INSULATED COPPER TUBES PRODUCT CATEGORIES

Pre-Insulated Copper Tubes are advanced technological products of high added value and significantly superior in effectiveness compared to conventional insulation methods Suitable for air conditioning VRF systems, Spit units, refrigeration and industrial systems. Cu-Dhp 99,9% copper pipe insulated with an expanded polyethylene tube, closed cell and an external LDPE foil. Maximum Fire Safety with self-extinguishing DIN 4102-B1, SBI BL S1D0. Nontoxic gases and resistant to external chemical agents and ultra-violet rays. The unique advantages offered by the Pre-Insulated Copper Tubes, such as copper resistance and durability, coupled with high performance pre-insulation, result in significant energy savings. Pre-Insulated copper tubes are ideal choice for every modern application with a competitive market price and low installation cost,



## TECHNICAL SPECS OF COPPER TUBES :

### Chemical Composition:

%99,9 Cu-Dhp

### Conformity:

EN-12735-1 , ASTM B280

### Specific Heat (at 20°C):

0,0921cal/g°C

### Stretch Modulus(at 20°C annealed)

12000kg/mm<sup>2</sup>

### Thermal Conductivity(at 20°C)

0.70-0,87 cal/cm<sup>2</sup>

### Elongation A%

A% min=45%

### Internal Surface

Glossy, perfectly clean conforming  
ASTM B-280 and EN12735-1 legislation

## TECHNICAL SPECS OF PE INSULATION :

### Material

PE (Polyethylene) Foam

### Sustainability

Fully recyclable

### Specificities

Unique aesthetical appearance

Excellent mechanical strength

### Density According to

DIN 53420 ASTM D 1667

30-33 KG/m<sup>3</sup>

### Reaction to Fire

EN 13501-1 Class B or Class E

### Service Temperatures

Minimum - 80°C Maximum 95°C

### Thickness Range of Insulation

6- 9-13-19

**STANDART DIMENSIONS ACCORDING TO EN 12735-1**

THE DIMENSIONS LISTED IN THE TABLE ARE SUBJECT TO VARIATION DUE TO THE TOLERANCE FEATURES OF THE PIPES.

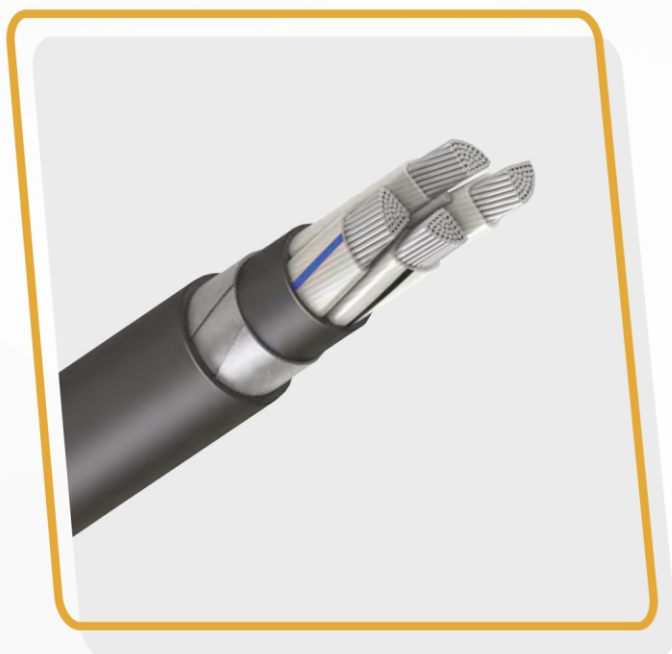
<b>COPPER TUBE EXTERNAL DIAMETER</b>	<b>inch</b>	<b>1/4</b>	<b>3/8</b>	<b>1/2</b>	<b>5/8</b>	<b>3/4</b>	<b>7/8</b>
	<b>mm</b>	<b>6,35</b>	<b>9,52</b>	<b>12,70</b>	<b>15,87</b>	<b>19,05</b>	<b>22,22</b>
<b>SMART</b>	<b>mm</b>	<b>1,00</b>	<b>1,00</b>	<b>1,00</b>	<b>1,00</b>	<b>1,00</b>	<b>1,12</b>
<b>MAXI</b>	<b>mm</b>	<b>0,80</b>	<b>0,80</b>	<b>0,80</b>	<b>1,00</b>	<b>1,00</b>	<b>1,12</b>
<b>B-FORM VRV</b>	<b>mm</b>	<b>0,75</b>	<b>0,75</b>	<b>0,75</b>	<b>0,90</b>	<b>0,90</b>	
<b>B-FORM SPLIT</b>	<b>meter</b>	<b>0,75</b>	<b>0,75</b>	<b>0,75</b>	<b>0,80</b>	<b>0,80</b>	



# POWER CABLES

## Area of application

The cables are intended for transmission and distribution of electric energy in stationary equipment for nominal voltage of 0.66 or 1 kV 50 Hz.



## Power cables with plastic insulation in accordance with GOST 31996-2012

**AVVG** – Power cable with aluminum wire, PVC insulation and sheath.

**VVG** – Power cable with copper wire, PVC insulation and sheath.

**AVBbSHv** – Power cable with aluminum wire, insulation and protective PVC hose, with armor of two steel tapes.

**VBbSHv** – Power cable with copper wire, insulation and protective PVC hose, with armor of two steel tapes.

## CONSTRUCTION (DESIGN)

### MARKINGS OF WIRES

### DESCRIPTION

**AVVG**

Conductor - aluminum wire.  
Insulation - PVC compound, fireproof.  
Sheath - PVC compound, fireproof.

**VVG**

Conductor - copper wire.  
Insulation - PVC compound, fireproof.  
Sheath - PVC compound, fireproof.

**AVBBSHV**

Conductor - aluminum wire.  
Insulation - PVC compound, fireproof.  
Armor - two galvanized steel tapes.  
Hose - PVC compound, fireproof.

**VBBSHV**

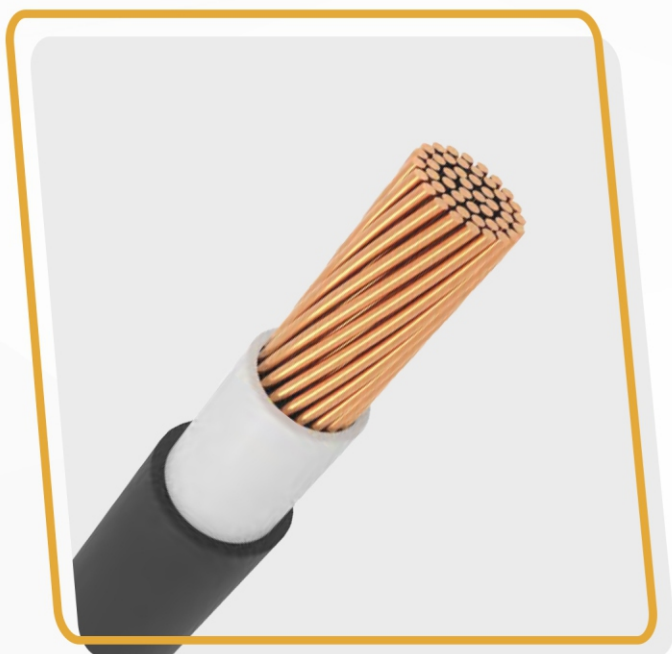
Conductor - copper wire.  
Insulation - PVC compound, fireproof.  
Armor - two galvanized steel tapes.  
Hose - PVC compound, fireproof.



# INSTALLATION WIRES FOR WATER-SUBMERSIBLE MOTORS

## Area of application

Installation wires are designed for connection to the grid at the rated voltage of 380/660 VAC, 50 Hz water-submersible motors, for extended operation in the water of artesian wells under pressure.



**VPP** – installation wire for water-sumersible motors, with polyethylene insulation in polyethylene sheath.

**VPV** – installation wire for electric water-submersible motors, with polyethylene insulation sheathed in PVC.

## CHEMICAL COMPOSITION

### MARKINGS

**VPP**

**VPV**

### DESCRIPTION

CONDUCTOR - SOFT COPPER WIRE.  
INSULATION – POLYETHYLENE.  
SHELL – POLYETHYLENE.

CONDUCTOR - SOFT COPPER WIRE.  
INSULATION – POLYETHYLENE.  
SHEATH - PVC COMPOUND.



## SPECIFICATIONS

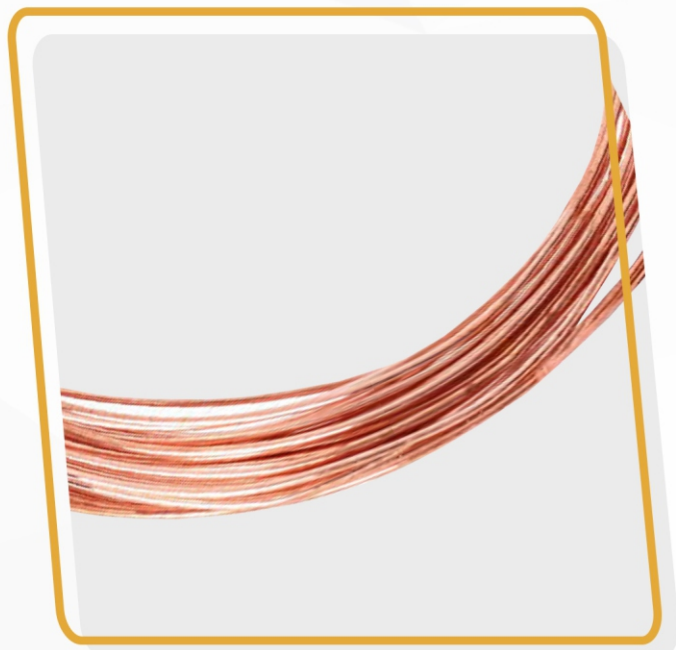
### FEATURES

AMBIENT TEMPERATURE, UPPER LIMIT, ° C  
AMBIENT TEMPERATURE LOWER LIMIT, ° C  
INSULATION RESISTANCE, MOHM, NOT LESS

### VALUES

+80  
-40  
100

# COPPER WIRE



**Copper wire, round, electrical**  
**MM (A)** – annealed copper wire.  
**MT (R)** – unannealed copper wire..

### Application

Copper wire is a wire that has been widely used because of its properties. With its ductor properties, copper wire is used in industries such as mechanical engineering, telecommunications, electricity, etc. Advantages of copper wire are in its ductility, high thermal conductivity, corrosion resistance, strength. Copper is one of the best options for the manufacture of electrical wiring. As a conductor of electricity copper wire with a diameter of 8 mm is used. It may be tinned and it may or may not have a protective coating. The electrical copper wire consists of 99.99% copper. Copper wire is used to manufacture wires, cords, cables, windings for motors, etc. There are several types of copper wire by its use: for rivets, for electric-vacuum industry, electrical, welding.

## CHEMICAL COMPOSITION

Copper content,  
% at least

Impurity content, %, no more than

	Fe	N	S	P	As	Pb	Zn	Ag	O	Sb	Bi	Sn
99.99%	0.001	0.001	0.002	0.0005	0.001	0.00	0.001	0.002	0.03	0.001	0.0005	0.001

## Specifications

### Characteristics

Nominal diameter, mm  
 Maximum deviation from the nominal diameter, %  
 Roundness, %  
 Volume resistivity,  $\Omega$  m 10<sup>-6</sup>, wire grades:  
 MM (A)  
 MT<sup>®</sup>  
 Packaging

### Values

from 1,30 to 2,70  
 $\pm 1$   
 No more than 2  
 No more than 0,01724  
 No more than 0,01776  
 in cardboard boxes with net weight of 1250 kg

## Casting and processing characteristics of the material

### Characteristics name

Melting temperature, °C  
 Temperature of casting, °C  
 Linear shrinkage, %

### Values

1083  
 from 1150 to 1250  
 2,1

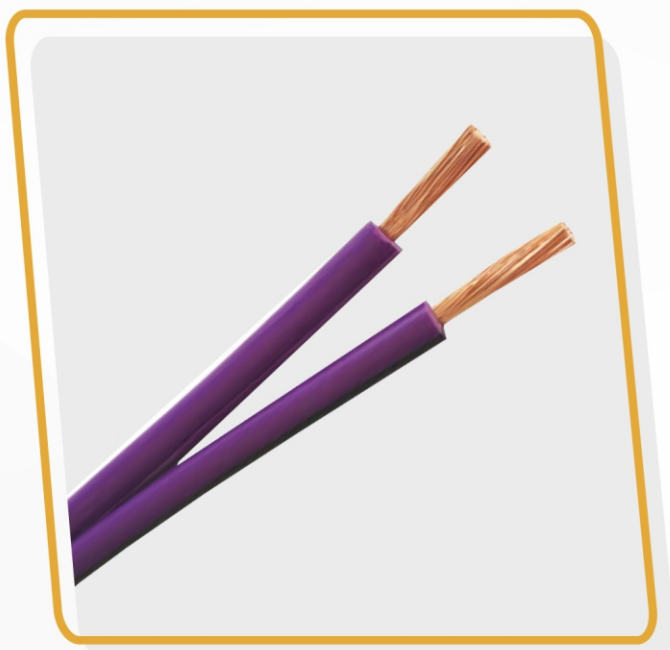




# WINDING CONDUCTORS

## Area of application

Conductors are designed for winding of stators of submersible water-filled motors that work for extended periods of time in the water of artesian wells at voltage of 660 VAC to 660 VAC, 50 Hz.



**PVOP** – winding conductor with copper wire in single-layer insulation made of polyethylene.

**PVDP** – winding conductor with copper wire in two-layer insulation made of polyethylene.

## CHEMICAL COMPOSITION

### MARKINGS

**PVOP**

### DESCRIPTION

CONDUCTOR - SOFT COPPER WIRE.  
INSULATION – POLYETHYLENE.

**PVDP**

CONDUCTOR - SOFT COPPER WIRE.  
INTERNAL INSULATION – POLYETHYLENE.  
EXTERNAL INSULATION - PVC COMPOUND.



## SPECIFICATIONS

### FEATURES

AMBIENT TEMPERATURE, UPPER LIMIT, ° C  
AMBIENT TEMPERATURE LOWER LIMIT, ° C  
INSULATION RESISTANCE, MOHM, NOT LESS

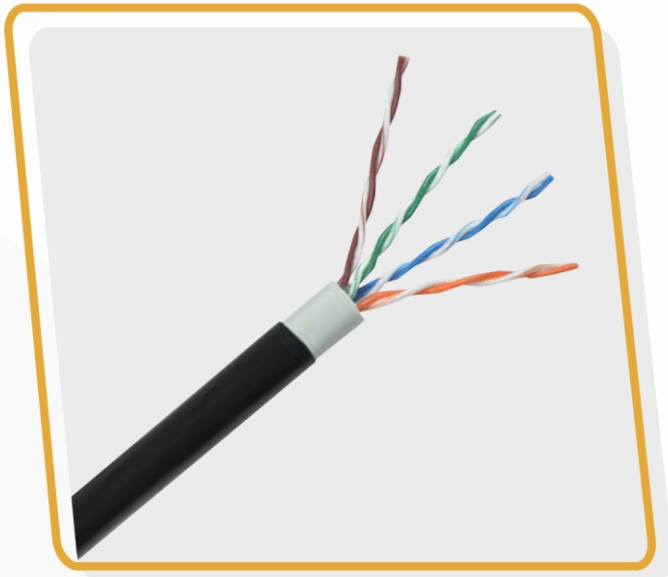
### VALUES

+80  
-50  
500

# STRUCTURED HIGH FREQUENCY CABLE

## Area of application

Cables are intended for stationary laying inside buildings and structures with a PVC sheath, as well as for external laying with a polyethylene sheath, for operation in the frequency range up to 100 MHz (category 5 and 5e according to ISO / IEC 11801). Operating and installation conditions: For cables of the KSVPPe-5, KSVPVP-5e brands, the cable is installed at temperatures from -15 to +45 ° C. The minimum permissible bending radius during laying and installation must be at least 10 times the minimum outer dimensions (diameters) of the cable.



## KSVPPe-5

### Decoding of marking:

**K** - cable.

**C** - structured.

**B** - high frequency.

**P** - in polyethylene insulation.

**P** - polyethylene sheath.

**E** - screen.

five; 5th - category.

**Number of pairs:** 4x2x0.52; 2x2x0.52; 16x2x0.52; 25x2x0.52.

## MARKING

RESISTANCE OF CONDUCTORS, RECALCULATED PER 100 M OF CABLE LENGTH AND TEMPERATURE 20 ° C, OHMIC ASYMMETRY OF CORES IN A WORKING PAIR OVER A LENGTH OF 100 M

## DESCRIPTION

NO MORE THAN 9.6 OHMS;

NO MORE THAN 3%

## CONTROL CABLES

**KVVG, AKVVG** – CONTROL CABLES IN PVC INSULATION AND PVC SHEATH FOR CONNECTING THE CONTROL BOARDS EQUIPMENT AND MACHINERY.





**BUVA<sup>®</sup>**  
**METALS**



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