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# ПвЭВнг-60 1х300 ТУ У 31.3-00214534-060:2011

Power cables with copper conductor, flame-retardant, with XLPE and PVC compound outer sheath

For the cable of this mark correspond the foreign-made analogues:

 $\Pi$ вВнг(B) (RU) •  $\Pi$ вВнг(A) (RU)

Technical cable requirements correspond to IEC 60840

Cables are used for laying:

- in premises, tunnels, ducts, mines, dry soil and outdoor under shelter
- · in bunches

It is possible to manufacture cables with an integrated fiber-optic module.

Order entry example:

ПвЭВнг-60 1х300/95 (ОМ) ТУ У 31.3-00214534-060:2011

In conjunction with the DTS system, the integrated fiber-optic module can act as a distributed cable line temperature sensor.

It is possible to manufacture cable with sealed conductor.

Order entry example:

ПвЭВнг-60 1х300/95 (г) ТУ У 31.3-00214534-060:2011

Fire safety code in accordance with ДСТУ 4809:2007: ПБ130000000

Products of this mark meet the requirements:

- · single wire cable flame retardance
- · bunched cable flame retardance category B









### ПвЭВнг-60 1х300 ТУ У 31.3-00214534-060:2011

Power cables with copper conductor, flame-retardant, with XLPE and PVC compound outer sheath

### **TECHNICAL SPECIFICATIONS**

Maximum voltage RV 72.5 Conductor rated area mm² 300 Minimum screen cross-section mm² 35 Partial discharge factor for rated voltage, not more than pC 6 Permissible short circuit current across the screen of minimum cross-section minimum cross-section ka 5.1 Maximum permissible short-circuit current in core kA 42.9 Permissible continious current rating by aerial laying * - in trefoil formation with double-side screen earthing A 659 - in trefoil formation with single-side screen earthing or cross screen earthing A 695 - in trefoil formation with single-side screen earthing A 678 - plane with double-side screen earthing or cross screen at 823 - plane with single-side screen earthing or cross screen earthing A 541 - in trefoil formation with double-side screen earthing A 576 - cross screen earthing Permissible continious current rating by burial * - in trefoil formation with single-side screen earthing A 576 - cross screen earthing - plane with double-side screen earthing or A 576 - cross screen earthing - plane with double-side screen earthing A 603 - plane with single-side screen earthing or cross screen - arthing Maximum permissible conductor temperature - Continious - C +90 - in emergency operation - C +250 - Operating temperature range (in climate version NF) - C -50 +50 - Operating temperature range (in climate version NF) - C -25 +65 - Minimum bending radius by laying - Rated ductor diameter of the cable (for reference) ** - mm 55 - Cable weight (approximate) - Rated factory cable length and gross weight of the delivery on the drums *** - # 25VJA-60: 499 - 4.1 - # 25VJA-100: **** 1282 - 10.	Rated voltage	kV	60
Conductor rated area       mm²       300         Minimum screen cross-section       mm²       35         Partial discharge factor for rated voltage, not more than       pC       6         Permissible short circuit current across the screen of minimum cross-section       kA       5.1         Maximum permissible short-circuit current in core       kA       42.9         Permissible continious current rating by aerial laying *       *         • in trefoil formation with double-side screen earthing       A       659         • in trefoil formation with single-side screen earthing or cross screen earthing       A       695         • plane with double-side screen earthing or cross screen       A       823         earthing       A       541         Permissible continious current rating by burial *       *         • in trefoil formation with double-side screen earthing or cross screen earthing or cross screen earthing       A       541         • in trefoil formation with single-side screen earthing or cross screen earthing       A       576         cross screen earthing       A       504         • plane with single-side screen earthing or cross screen       A       603         earthing       A       504         • plane with single-side screen earthing or cross screen       A       603		kV	72.5
Minimum screen cross-section       mm²       35         Partial discharge factor for rated voltage, not more than       pC       6         Permissible short circuit current across the screen of minimum cross-section       kA       5.1         Maximum permissible short-circuit current in core       kA       42.9         Permissible continious current rating by aerial laying *       -       -         • in trefoil formation with double-side screen earthing       A       659         • in trefoil formation with single-side screen earthing or cross screen earthing       A       695         cross screen earthing       A       678         • plane with double-side screen earthing or cross screen       A       823         earthing       A       541         Permissible continious current rating by burial *       •       in trefoil formation with double-side screen earthing or cross screen earthing or cross screen earthing       A       541         • in trefoil formation with single-side screen earthing or cross screen earthing       A       504         • plane with double-side screen earthing or cross screen       A       603         earthing       A       504         • plane with single-side screen earthing or cross screen       A       603         • plane with double-side screen earthing or cross screen       A <td></td> <td>mm²</td> <td>300</td>		mm²	300
Permissible short circuit current across the screen of minimum cross-section  Maximum permissible short-circuit current in core  kA 42.9  Permissible continious current rating by aerial laying *  · in trefoil formation with double-side screen earthing A 659  · in trefoil formation with single-side screen earthing or cross screen earthing  · plane with double-side screen earthing or cross screen A 823  earthing  Permissible continious current rating by burial *  · in trefoil formation with single-side screen earthing or cross screen A 823  earthing  Permissible continious current rating by burial *  · in trefoil formation with double-side screen earthing or A 576  cross screen earthing  · plane with single-side screen earthing or A 576  cross screen earthing  A 504  · plane with double-side screen earthing or cross screen A 603  earthing  Maximum permissible conductor temperature  · Continious  · C +90  · in emergency operation  · C +130  · at short circuit  · C +250  Operating temperature range (in climate version NF)  · C -50 +50  Operating temperature range (in climate version T)  · C -25 +65  Minimum bending radius by laying  mm 880  Rated outer diameter of the cable (for reference) **  mn 55  Cable weight (approximate)  Rated factory cable length and gross weight of the delivery on the drums ***  # 25 УД-90: 1028 · 8.1  # 25 УД-90: 1028 · 8.1  # 26 УД-100: **** 1282 · 10.	Minimum screen cross-section		35
Permissible short circuit current across the screen of minimum cross-section  Maximum permissible short-circuit current in core  Maximum permissible continious current rating by aerial laying *  - in trefoil formation with double-side screen earthing  - in trefoil formation with single-side screen earthing or cross screen earthing  - plane with double-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - permissible continious current rating by burial *  - in trefoil formation with double-side screen earthing or  - in trefoil formation with single-side screen earthing or  - in trefoil formation with single-side screen earthing or  - plane with double-side screen earthing or  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - cross screen earthing  - plane with double-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with single-side screen earthing or cross screen  - plane with scr	Partial discharge factor for rated voltage, not more than	рС	6
Maximum permissible short-circuit current in core  Permissible continious current rating by aerial laying *  · in trefoil formation with double-side screen earthing or cross screen earthing  · plane with double-side screen earthing or cross screen earthing  · plane with double-side screen earthing or cross screen  · plane with single-side screen earthing or cross screen  · plane with single-side screen earthing or cross screen  · in trefoil formation with double-side screen earthing or cross screen  earthing  Permissible continious current rating by burial *  · in trefoil formation with double-side screen earthing or  ross screen earthing  · plane with double-side screen earthing or  ross screen earthing  · plane with single-side screen earthing or cross screen  earthing  Maximum permissible conductor temperature  · Continious  * C +90  · in emergency operation  · at short circuit  C +250  Operating temperature range (in climate version NF)  C -50+50  Operating temperature range (in climate version T)  C -25+65  Minimum bending radius by laying  mm 880  Rated outer diameter of the cable (for reference) **  mm 55  Cable weight (approximate)  kg/km 6380  Rated factory cable length and gross weight of the delivery  on the drums ***  # 22YД-60: 499 • 4.1  # 25YД-90: 1028 • 8.1  # 26YД-100: **** 1282 • 10.		kA	5.1
Permissible continious current rating by aerial laying * • in trefoil formation with double-side screen earthing or cross screen earthing or cross screen earthing • plane with double-side screen earthing or plane with double-side screen earthing or cross screen earthing • plane with single-side screen earthing or cross screen or A 823  earthing  Permissible continious current rating by burial * • in trefoil formation with double-side screen earthing or cross screen earthing or cross screen earthing or a 576  cross screen earthing • plane with double-side screen earthing or cross screen earthing • plane with double-side screen earthing or cross screen earthing • plane with single-side screen earthing or cross screen earthing  Maximum permissible conductor temperature • Continious • C +90 • in emergency operation • C +130 • at short circuit • C +250  Operating temperature range (in climate version NF) • C -50 +50  Operating temperature range (in climate version T) • C -25 +65  Minimum bending radius by laying  Rated outer diameter of the cable (for reference) **  Cable weight (approximate)  Rated factory cable length and gross weight of the delivery on the drums ***  # 22YД-60: 499 • 4.1  # 25YД-90: 1028 • 8.1  # 26YД-100: **** 1282 • 10.	minimum cross-section		
• in trefoil formation with double-side screen earthing       A       659         • in trefoil formation with single-side screen earthing or cross screen earthing       A       695         • plane with double-side screen earthing       A       678         • plane with single-side screen earthing or cross screen       A       823         earthing       Bermissible continious current rating by burial *       •         • in trefoil formation with double-side screen earthing       A       541         • in trefoil formation with single-side screen earthing or cross screen earthing       A       576         • cross screen earthing       A       504         • plane with double-side screen earthing or cross screen       A       603         earthing       A       504         • plane with single-side screen earthing or cross screen       A       603         earthing       A       504         • plane with single-side screen earthing or cross screen       A       603         earthing       A       504         • plane with single-side screen earthing or cross screen       A       603         earthing       A       504         • plane with single-side screen earthing or cross screen       A       603         earthing       C       +90	Maximum permissible short-circuit current in core	kA	42.9
• in trefoil formation with single-side screen earthing or cross screen earthingA695• plane with double-side screen earthing or cross screen earthingA678• plane with single-side screen earthing or cross screen earthingA823Permissible continious current rating by burial * • in trefoil formation with double-side screen earthing or cross screen earthingA541• in trefoil formation with single-side screen earthing or cross screen earthingA504• plane with double-side screen earthing or cross screen earthingA603Maximum permissible conductor temperature° C+90• in emergency operation° C+90• in emergency operation° C+250• Operating temperature range (in climate version NF)° C-50 +50Operating temperature range (in climate version T)° C-25 +65Minimum bending radius by layingmm880Rated outer diameter of the cable (for reference) **mm55Cable weight (approximate)kg/km6380Rated factory cable length and gross weight of the delivery on the drums ***m, t# 259Д-60: 499 · 4.1• 269Д-100: **** 1282 · 10.	Permissible continious current rating by aerial laying *		
cross screen earthingA678• plane with double-side screen earthing or cross screenA823earthing823Permissible continious current rating by burial *541• in trefoil formation with double-side screen earthing or cross screen earthingA541• in trefoil formation with single-side screen earthing or cross screen earthingA576• plane with double-side screen earthing or cross screenA603• plane with single-side screen earthing or cross screenA603earthingMaximum permissible conductor temperature• Continious°C+90• in emergency operation°C+130• at short circuit°C+250Operating temperature range (in climate version NF)°C-50 +50Operating temperature range (in climate version T)°C-25 +65Minimum bending radius by layingmm880Rated outer diameter of the cable (for reference) **mm55Cable weight (approximate)kg/km6380Rated factory cable length and gross weight of the deliverym, t# 22УД-60: 499 · 4.1on the drums ***# 25УД-90: 1028 · 8.1# 26УД-100: **** 1282 · 10.	in trefoil formation with double-side screen earthing	Α	659
• plane with double-side screen earthingA678• plane with single-side screen earthing or cross screen earthingA823Permissible continious current rating by burial *• in trefoil formation with double-side screen earthingA541• in trefoil formation with single-side screen earthing or cross screen earthingA576• plane with double-side screen earthing or cross screen earthingA603Maximum permissible conductor temperature• C+90• in emergency operation° C+90• in emergency operation° C+250• Operating temperature range (in climate version NF)° C-50 +50Operating temperature range (in climate version T)° C-25 +65Minimum bending radius by layingmm880Rated outer diameter of the cable (for reference) **mm55Cable weight (approximate)kg/km6380Rated factory cable length and gross weight of the delivery on the drums ***# 25УД-90: 1028 * 8.1 # 26УД-100: ***** 1282 * 10.	in trefoil formation with single-side screen earthing or	Α	695
· plane with single-side screen earthing or cross screen earthing  Permissible continious current rating by burial * · in trefoil formation with double-side screen earthing · in trefoil formation with single-side screen earthing or cross screen earthing · plane with double-side screen earthing or cross screen earthing · plane with single-side screen earthing or cross screen earthing  Maximum permissible conductor temperature · Continious · C +90 · in emergency operation · C +130 · at short circuit · C +250 Operating temperature range (in climate version NF) · C -50 +50 Operating temperature range (in climate version T) C -25 +65 Minimum bending radius by laying mm 880 Rated outer diameter of the cable (for reference) ** Cable weight (approximate) Rated factory cable length and gross weight of the delivery on the drums ***  # 25 □ 1028 · 8.1 # 26 □ 4.1 # 26 □	cross screen earthing		
earthing  Permissible continious current rating by burial *  in trefoil formation with double-side screen earthing	plane with double-side screen earthing	Α	678
Permissible continious current rating by burial *     · in trefoil formation with double-side screen earthing	plane with single-side screen earthing or cross screen	Α	823
• in trefoil formation with double-side screen earthingA541• in trefoil formation with single-side screen earthing or cross screen earthingA576• plane with double-side screen earthingA504• plane with single-side screen earthing or cross screen earthingA603Maximum permissible conductor temperature° C+90• continious° C+130• in emergency operation° C+250• at short circuit° C+250Operating temperature range (in climate version NF)° C-50 +50Operating temperature range (in climate version T)° C-25 +65Minimum bending radius by layingmm880Rated outer diameter of the cable (for reference) **mm55Cable weight (approximate)kg/km6380Rated factory cable length and gross weight of the delivery on the drums ***# 22УД-60: 499 • 4.1# 25УД-90: 1028 • 8.1# 26УД-100: **** 1282 • 10.	earthing		
• in trefoil formation with single-side screen earthing or cross screen earthingA576• plane with double-side screen earthingA504• plane with single-side screen earthing or cross screen earthingA603Maximum permissible conductor temperature• Continious° C+90• in emergency operation° C+130• at short circuit° C+250Operating temperature range (in climate version NF)° C-50 +50Operating temperature range (in climate version T)° C-25 +65Minimum bending radius by layingmm880Rated outer diameter of the cable (for reference) **mm55Cable weight (approximate)kg/km6380Rated factory cable length and gross weight of the delivery on the drums ***m, t# 22УД-60: 499 • 4.1# 25УД-90: 1028 • 8.1 # 26УД-100: ***** 1282 • 10.	Permissible continious current rating by burial *		
cross screen earthing  • plane with double-side screen earthing or cross screen  • plane with single-side screen earthing or cross screen  earthing  Maximum permissible conductor temperature  • Continious  • in emergency operation  • at short circuit  Operating temperature range (in climate version NF)  Operating temperature range (in climate version T)  Operating temperature range (in climate version T)  Minimum bending radius by laying  Rated outer diameter of the cable (for reference) **  Cable weight (approximate)  Rated factory cable length and gross weight of the delivery  on the drums ***  # 25 УД-60: 499 • 4.1  # 26 УД-100: ***** 1282 • 10.	in trefoil formation with double-side screen earthing	Α	541
• plane with double-side screen earthingA504• plane with single-side screen earthing or cross screenA603earthingMaximum permissible conductor temperature• Continious° C+90• in emergency operation° C+130• at short circuit° C+250Operating temperature range (in climate version NF)° C-50 +50Operating temperature range (in climate version T)° C-25 +65Minimum bending radius by layingmm880Rated outer diameter of the cable (for reference) **mm55Cable weight (approximate)kg/km6380Rated factory cable length and gross weight of the deliverym, t# 22УД-60: 499 • 4.1on the drums ***# 25УД-90: 1028 • 8.1# 26УД-100: ***** 1282 • 10.	in trefoil formation with single-side screen earthing or	А	576
<ul> <li>plane with single-side screen earthing or cross screen</li> <li>earthing</li> <li>Maximum permissible conductor temperature</li> <li>Continious</li> <li>in emergency operation</li> <li>at short circuit</li> <li>C +250</li> <li>Operating temperature range (in climate version NF)</li> <li>C -50 +50</li> <li>Operating temperature range (in climate version T)</li> <li>C -25 +65</li> <li>Minimum bending radius by laying</li> <li>mm 880</li> <li>Rated outer diameter of the cable (for reference) **</li> <li>mm 55</li> <li>Cable weight (approximate)</li> <li>kg/km 6380</li> <li>Rated factory cable length and gross weight of the delivery on the drums ***</li> <li># 25УД-60: 499 · 4.1</li> <li># 25УД-90: 1028 · 8.1</li> <li># 26УД-100: **** 1282 · 10.</li> </ul>	cross screen earthing		
earthingMaximum permissible conductor temperature• Continious° C+90• in emergency operation° C+130• at short circuit° C+250Operating temperature range (in climate version NF)° C-50 +50Operating temperature range (in climate version T)° C-25 +65Minimum bending radius by layingmm880Rated outer diameter of the cable (for reference) **mm55Cable weight (approximate)kg/km6380Rated factory cable length and gross weight of the deliverym, t# 22УД-60: 499 • 4.1on the drums ***# 25УД-90: 1028 • 8.1# 26УД-100: **** 1282 • 10.	plane with double-side screen earthing	Α	504
Maximum permissible conductor temperature°C+90• In emergency operation°C+130• at short circuit°C+250Operating temperature range (in climate version NF)°C-50 +50Operating temperature range (in climate version T)°C-25 +65Minimum bending radius by layingmm880Rated outer diameter of the cable (for reference) **mm55Cable weight (approximate)kg/km6380Rated factory cable length and gross weight of the delivery on the drums ***m, t# 22УД-60: 499 • 4.1*** 25УД-90: 1028 • 8.1# 26УД-100: ***** 1282 • 10.	plane with single-side screen earthing or cross screen	Α	603
· Continious° C+90· in emergency operation° C+130· at short circuit° C+250Operating temperature range (in climate version NF)° C-50 +50Operating temperature range (in climate version T)° C-25 +65Minimum bending radius by layingmm880Rated outer diameter of the cable (for reference) **mm55Cable weight (approximate)kg/km6380Rated factory cable length and gross weight of the delivery on the drums ***m, t# 22УД-60: 499 · 4.1on the drums ***# 25УД-90: 1028 · 8.1# 26УД-100: ***** 1282 · 10.	earthing		
• in emergency operation°C+130• at short circuit°C+250Operating temperature range (in climate version NF)°C-50 +50Operating temperature range (in climate version T)°C-25 +65Minimum bending radius by layingmm880Rated outer diameter of the cable (for reference) **mm55Cable weight (approximate)kg/km6380Rated factory cable length and gross weight of the deliverym, t# 22УД-60: 499 • 4.1on the drums ***# 25УД-90: 1028 • 8.1# 26УД-100: ***** 1282 • 10.	Maximum permissible conductor temperature		
• at short circuit° C+250Operating temperature range (in climate version NF)° C-50 +50Operating temperature range (in climate version T)° C-25 +65Minimum bending radius by layingmm880Rated outer diameter of the cable (for reference) **mm55Cable weight (approximate)kg/km6380Rated factory cable length and gross weight of the deliverym, t# 22УД-60: 499 • 4.1on the drums ***# 25УД-90: 1028 • 8.1# 26УД-100: **** 1282 • 10.	Continious	° C	+90
Operating temperature range (in climate version NF)  Operating temperature range (in climate version T)  C -25 +65  Minimum bending radius by laying  Rated outer diameter of the cable (for reference) **  Cable weight (approximate)  Rated factory cable length and gross weight of the delivery on the drums ***  # 25УД-90: 1028 • 8.1 # 26УД-100: **** 1282 • 10.	in emergency operation	° C	+130
Operating temperature range (in climate version T)  Minimum bending radius by laying  Rated outer diameter of the cable (for reference) **  Cable weight (approximate)  Rated factory cable length and gross weight of the delivery on the drums ***  Minimum bending radius by laying  mm  S5  Cable weight (approximate)  kg/km  6380  m, t  # 22УД-60: 499 • 4.1  # 25УД-90: 1028 • 8.1  # 26УД-100: **** 1282 • 10.	at short circuit	° C	+250
Minimum bending radius by laying mm 880 Rated outer diameter of the cable (for reference) ** mm 55 Cable weight (approximate) kg/km 6380 Rated factory cable length and gross weight of the delivery on the drums *** # 22УД-60: 499 • 4.1 # 25УД-90: 1028 • 8.1 # 26УД-100: **** 1282 • 10.	Operating temperature range (in climate version NF)	° C	-50 +50
Rated outer diameter of the cable (for reference) ** mm 55 Cable weight (approximate) kg/km 6380 Rated factory cable length and gross weight of the delivery m, t # 22УД-60: 499 • 4.1 on the drums *** # 25УД-90: 1028 • 8.1 # 26УД-100: **** 1282 • 10.	Operating temperature range (in climate version T)	° C	-25 +65
Cable weight (approximate)kg/km6380Rated factory cable length and gross weight of the delivery on the drums ***m, t# 22УД-60: 499 • 4.1# 25УД-90: 1028 • 8.1 # 26УД-100: **** 1282 • 10.	Minimum bending radius by laying	mm	880
Rated factory cable length and gross weight of the delivery m, t # 22УД-60: 499 • 4.1 on the drums *** # 25УД-90: 1028 • 8.1 # 26УД-100: **** 1282 • 10.	Rated outer diameter of the cable (for reference) **	mm	55
on the drums *** # 25УД-90: 1028 • 8.1 # 26УД-100: **** 1282 • 10.	Cable weight (approximate)	kg/km	6380
# 26УД-100: **** 1282 • 10.	Rated factory cable length and gross weight of the delivery	m, t	
• •	on the drums ***		# 25УД-90: 1028 • 8.1
			# 26УД-100: **** 1282 • 10.
			0

#### Notes:

When ordering it is neccesary to agree the factory length of the product with the manufacturer

<sup>\*</sup> Long permissible current loads are calculated for the following conditions: conductor temperature 90 °C, air temperature 30 °C, soil temperature 20 °C, load factor 1.0, thermal resistivity of soil 1.0 °K • m/W, laying depth in the ground 1.5 m, while laying in flat formation the distance between cables in clear is equal to the cable diameter, while laying in trefoil formation cables are laid side by side

<sup>\*\*</sup> The external diameter may differ from the rated up to  $\pm$  10 %

<sup>\*\*\*</sup> Отклонение фактической массы брутто от указанного значения может составлять ± 7 %

<sup>\*\*\*\*</sup> Option delivery on not full drum



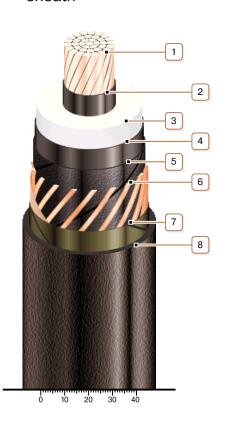




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## ПвЭВнг-60 1х300 ТУ У 31.3-00214534-060:2011

Power cables with copper conductor, flame-retardant, with XLPE and PVC compound outer sheath



#### **CONSTRUCTION**

1. Copper multiwire compact conductor

Note: It is possible to manufacture cable with sealed conductor.

- 2. Inner extruded semiconducting layer
- 3. XLPE insulation
- 4. Outer extruded semiconducting layer
- 5. Lapping layer of semiconductive swellable tape
- 6. Copper screen

Note: It is possible to manufacture a cable with a fiber optic module built into the screen, including as a DTS system sensor

- 7. Lapping layer of glass tape
- 8. Low flammable PVC compound outer sheath