



HUAYUAN YONGTONG

BEIJING HUAYUAN GAOKE CABLE CO.,LTD.

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Fire-Proof Wire & Cable Serial Products

■ Product standard

The electric property of the product is the same as those common wire and cable, and its properties of fire-resisting conform to the GB/T18380-2001(IEC60332:1993) and GB/T19216.21-2003 the State Standard or the GA306-2007 the Public Safety Industrial Standard regulated by the State.

■ Usage

This product is suitable for use in all places using rated AC voltage 1-10kV plastic insulated power cable, 450/750V plastic insulated control cable, 450/750V and below electrical equipment wire and cable, particularly high temperature, inflammable and fire-proof for transmitting and distributing power, control, alarm fire-control system and other circuits.

■ Property for Use

1. According to different product kinds, rated voltage can be divided into the following:
 - a、0.6/1-8.7/10kV
 - b、450/750V
 - c、300/500V
 - d、300/300V
2. Allowed work temperature of cable for a long period is divided into the following according to different kinds of products: 70°C, 90°C, 105°C.
3. For short circuit (5s), the allowed max. work temperature of conductor does not exceed 160°C and 250°C (for 1-a).
4. Environmental temperature for laying cable should not be less than 0°C.
5. Allowed min. bend radius of cable should be according to different kinds of the following products: 6 times, 10 times, 12 times and 15 times of cable overall diameter.
6. Cable combustion nature
 - a. Under flame temperature 750-800°C combustion conditions, cable can normally operate not less than 90 min.
 - b. Measured cable current-carrying capacity under “a” environment is not less than the current-carrying capacity value under work conditions of less than the current-carrying capacity value under work conditions of corresponding type and specifications of common cable.
7. Other electric nature and physical-mechanic nature of cable are all higher than corresponding cable.

■ Type of Cable

| Type | Rated Voltage | Designation | Scope of Application |
|--------------------------------|--------------------|---|---|
| NH-VV NH-VV ₂₂ | 0.6/1KV | PVC fiber, mica & PVC compound insulated fireproof power cable | Petroleum,chemical,industry, metallurgy,power plant, transmission substation, high rises, underground railway, telecommunications station, nuclear project, military, aviation, |
| NH-YJY NH-YJV ₂₂ | 8.7/10KV and below | XLPE or silane XLPE fiber & mica compound insulated fireproof power cable | |
| NH-KVV NH-KVV ₂₂ | 450/750V | PVC fiber & mica compound insulated fire-proof control cable | |

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| | | | |
|------------------------------------|----------|---|---|
| NH-KVVR | | PVC fiber & mica compound insulated fire-proof control soft cable | tunnels, high scientific research, fire control, etc. |
| NH-KVVP ₂₂ NH-KVVVRP | | PVC fiber & mica compound insulated, metal screened fire-proof control soft cable | |
| NH-BV | 450/750V | PVC fiber & mica compound insulated fire-proof wire | Petroleum, chemical industry, metallurgy, high rises, scientific research and other power and illuminating installation, electric instrument and meters requiring fire-proof. |
| NH-BVR | 450/750V | PVC fiber & mica compound insulated fire-proof soft wire | |
| NH-BVV | 300/500V | PVC fiber & mica compound fire-proof cable | |
| NH-PVV NH-PVV ₂₂ | 250V | PVC fiber & mica compound insulated fire-proof signal cable | Railway automatic installations, signal transmission & monitoring fire-proof places. |
| NH-PUYV NH-PUYVR | | PE fiber & mica compound insulated fire-proof mine signal(soft) cable | Mine pit signal transmission & monitoring fire-proof places |

■ For specifications

| Type | Voltage | Class | Area mm ² |
|--|----------|--------------------|----------------------|
| NH-VV NH-YJV NH-VV ₂₂ NH-YJV ₂₂ | 0.6/1kV | 1 | 1.5-800 |
| NH-VV NH-YJV NH-VV ₂₂ NH-YJV ₂₂ | | 2 | 1.5-185 4-185 |
| NH-VV NH-YJV NH-VV ₂₂ NH-YJV ₂₂ | | 3 | 1.5-400 4-400 |
| NH-VV NH-YJV NH-VV ₂₂ NH-YJV ₂₂ | | 3+1 3+2 4+1 | 4-300 |
| NH-VV NH-YJV NH-VV ₂₂ NH-YJV ₂₂ | | 4 | 1.5-300 |
| NH-VV NH-YJV NH-VV ₂₂ NH-YJV ₂₂ | | 5 | 4-300 |
| NH-YJV NH-YJV | | 8.7/10kV and below | 1 |
| NH-YJV NH-YJV | 3 | | 25-400 |
| NH-KVV | 450/750V | 2-14 | 4,6,10 |
| NH-KVV ₂₂ NH-KVVP ₂₂ | | 2-61 | 0.75,1.0,1.5,2.5 |
| NH-KVV ₂₂ NH-KVVP ₂₂ | | 4-14 | 4,6,10 |
| NH-KVV ₂₂ NH-KVVP ₂₂ | | 6-61 | 0.75,1.0,1.5,2.5 |
| NH-KVVR NH-KVVVRP | | 4-61 | 0.75,1.0,1.5,2.5 |
| NH-BV | 450/750V | 1 | 1.5-400 |
| NH-BVR | 450/750V | 1 | 1.5-70 |

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| | | | |
|--------------------------------|----------|--------------|--------------------|
| NH-BVV | 300/500V | 1 2,3,4,5 | 0.75-10 1.5-30 |
| NH-PVV NH-PVV ₂₂ | 250V | 2-48 7-48 | Φ 1.0mm Φ 1.0mm |
| NH-PUYV NH-PUYVR | 250V | 2,3,4 | 0.5,0.75,1.5 |

Name Type and Use Scope of Products

| Name | Type | Class | Use Scope |
|-----------------------|------|-------|--|
| Fire-resisting series | NH | I A | A.D. rated voltage 8.7/15kV or less plastic insulating and fire-resisting power cable; A.D. rated voltage 450/750V or less plastic insulating and fire-resisting control cable and A.D. rated voltage 450/750V or less plastic insulating and fire-resisting cable |
| | | I B | |
| | | II A | |
| | | II B | |
| | | III A | |
| | | III B | |
| | | IV A | |
| | | IV B | |

■ **Diagram of structure**

1. Conductor
2. Common fire-proof layer or highly fire-proof layer
3. Insulation layer
4. Filler
5. Tape
6. Inner lining
7. Armor layer
8. Oversheath

■ **Technical Properties or Conditions**

1. Cable may undergo fire-proof test, reaching the requirement of GB/T18380.3; it may, under the flame temperature below 750-800°C, put 1000V voltage, and burn for 90 min, and the connecting fuse 3A will not break.
2. Except for conductor, armor layer and certain material under special conditions, all material of cable are combustion-retardant, highly combustion-retardant, and fire-proof material.
3. Finished cable conductor-resistance, insulation resistance, voltage test, current-carrying capacity, DC voltage test after laying and installing and partial discharge, etc., are all similar to various corresponding kinds of common cable kinds.
4. Cable structure and size:
 - a) Approx. overall diameter of fire-proof cable is about 1.5-3mm more than corresponding common cable according to different kinds.
 - b) Reference weight of fire-proof cable is about 10-7% more than corresponding common cable according to different kinds.
 - c) Conductor structure and others are equal to corresponding common cable.

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■ Fire resisting Property, Class & Technical Requirements

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| Item Fire resisting Class | | Fire resisting features | | | Technical Requirement | Toxic Property of Smoke (Thickness) mg/L | Density of Smoke (the smallest Light Penetrating Rate) % | |
|----------------------------------|------|---|----------------------|---------------------|--------------------------|--|--|-----|
| | | Test Conditions | | | | | | |
| | | Voltage Exerted for Sampling (U ₀ /U) /V | Fired Temperature °C | Time for Firing min | | | | |
| Fire-resisting Class- I | I A | Rated Voltage Value Regulated by Products | 950~1000 | 90 | 3A Fuse Being not Broken | ≥12.4 | ≥80 | |
| | I B | | 750~800 | | | | ≥60 | |
| Fire-resisting Class- II | II A | | 950~1000 | | | | ≥6.15 | ≥20 |
| | II B | | 750~800 | | | | | |
| Fire-resisting Class-III | IIIA | | 950~1000 | | | — | — | |
| | IIIB | | 750~800 | | | | | |
| Fire-resisting Class-IV | IV A | | 950~1000 | | | — | — | |
| | IVB | | 750~800 | | | | | |

Note: "IV A and IVB" shows respectively the "A and B".

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