

No. SP24-31-0914

Date April 22, 2024

# SPECIFICATION

FOR

600V ETHYLENE PROPYLENE RUBBER INSULATED  
POLYCHLOROPRENE SHEATHED FLEXIBLE CABLE

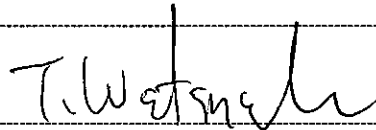
Code : 600V F-RE-2PNCTB-SX 4×35mm<sup>2</sup> + 15×4mm<sup>2</sup>

*Quantity*

*Your Ref. No.*

*Our Ref. No.*

*Signed by*



TAKANOBU WATANABE

Manager

*Engineering Dept. I*  
*Electric Wire & Cable Business Unit*

# Proterial, Ltd.



## 1. Scope

This specification covers 600V Ethylene Propylene Rubber Insulated Polychloroprene Sheathed Flexible Cable, which is reference to Japanese Electrical Facility Regulation and Manufacturer's Standard.

## 2. Construction and Materials

### 2.1 Conductor

(4×35mm<sup>2</sup>)

Conductor shall be stranded flexible conductor consisting of tinned annealed copper wires. Suitable separator tape shall be applied over the conductor.

(15×4mm<sup>2</sup>)

Conductor shall be stranded flexible conductor consisting of tinned annealed copper wires and tinned steel wires.

Suitable separator tape shall be applied over the conductor.

### 2.2 Insulation

Insulation shall consist of ethylene propylene rubber compound.

Nominal thickness shall be shown in the attached table 1.

Ave. thick. : not less than 90% of the nominal thickness

Min. thick. : not less than 80% of the nominal thickness

### 2.3 Proofed tape

Rubber filled textile tape may be applied over the insulation

### 2.4 Shield braid

Shield braid consisting of tinned annealed copper wires and staple fiber shall be applied over the proofed tape.

A suitable tape shall be applied over the shield braid.

### 2.5 Core identification

The core identification shall be made by the color of the tape over the insulation.(Fig.2)

### 2.6 Cabling of cores

Each insulated conductors shall be cabled.

Suitable fillers ,tension member and binder may be applied at manufacturer's discretion, if necessary.

### 2.7 Sheath

Sheath shall consist of black polychloroprene rubber compound.

Nominal thickness shall be shown in the attached table 1.

Ave. thick. : not less than 90% of the nominal thickness

Min. thick. : not less than 85% of the nominal thickness

### 2.8 Tape

Glass tape shall be applied over the sheath.

### 2.9 Armour

Armour braid consisting of stainless steel wires shall be applied over the glass tape.

2.10 Dimension

The dimension of the cable shall be in accordance with the attached table 1.

3. Marking

Manufacturer's name and year of manufacture shall be marked by suitable method.

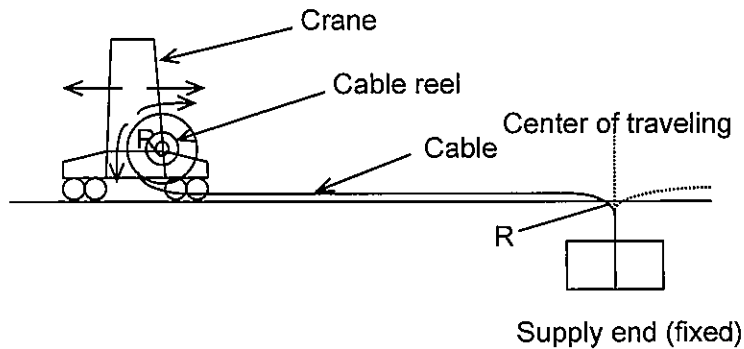
4. Inspection

Inspection shall be made on the following items prior to shipment.

Properties	Standard to comply with	Requirements	Test interval
Construction and dimensions	JIS C 3005 4.3	To comply with clause 2 and the attached Table 1	Every shipment
Withstand voltage test	JIS C 3005 4.6	To withstand AC 3000V for 5 min.	First shipment
Conductor resistance	JIS C 3005 4.4	Not more than the value in the attached Table 2	
Insulation resistance	JIS C 3005 4.7	Not less than the value in the attached Table 2	

5. Guide to use

This cable is designed for crane installation of reel system (traveling) as shown below.



R : Permissible minimum bending radius

Table 1 : Dimensions

(Code : 600V F-RE-2PNCTB-SX 4×35mm<sup>2</sup>+15×4mm<sup>2</sup>)

Item		Unit	Specified value	
Conductor	No. of conductor	-	4	15
	Size	mm <sup>2</sup>	35	4
	Construction	No./mm	19/39/0.4TA	3/0.32TST+ 56/0.3TA
	Approx. diameter	mm	8.7	2.7
Nominal thickness of insulation		mm	1.2	1.0
Approx. thickness of shield braid		mm	0.36	0.36
Approx. diameter of tension member		mm	3.0	
Nominal thickness of sheath		mm	4.4	
Approx. thickness of glass tape		mm	0.2	
Approx. thickness of armour		mm	0.8	
Approx. diameter of completed cable		mm	57	
Maximum diameter of completed cable		mm	59.9	
Approx. weight of completed cable		kg/km	4920	

TST : Tinned steel wire

TA : Tinned annealed copper wire

Table 2 : Characteristic

Item	Unit	Specified value	
Size	mm <sup>2</sup>	35	4
Max. conductor resistance(20°C)	Ω/km	0.565	5.09
Min. insulation resistance(20°C)	MΩ · km	200	400
Permissible minimum bending radius	mm	570	
Permissible maximum pulling tension *	kN	2.1	
Permissible maximum compression force **	kN/m	2.9	

\* In any case, pulling tension and compression force must not exceed these value.  
For safety, regular pulling tension should be 1/3 of the permissible maximum value.  
It is necessary to determine the pulling tension considering the compression force.

\*\* Compression force = Pulling tension / Bending radius

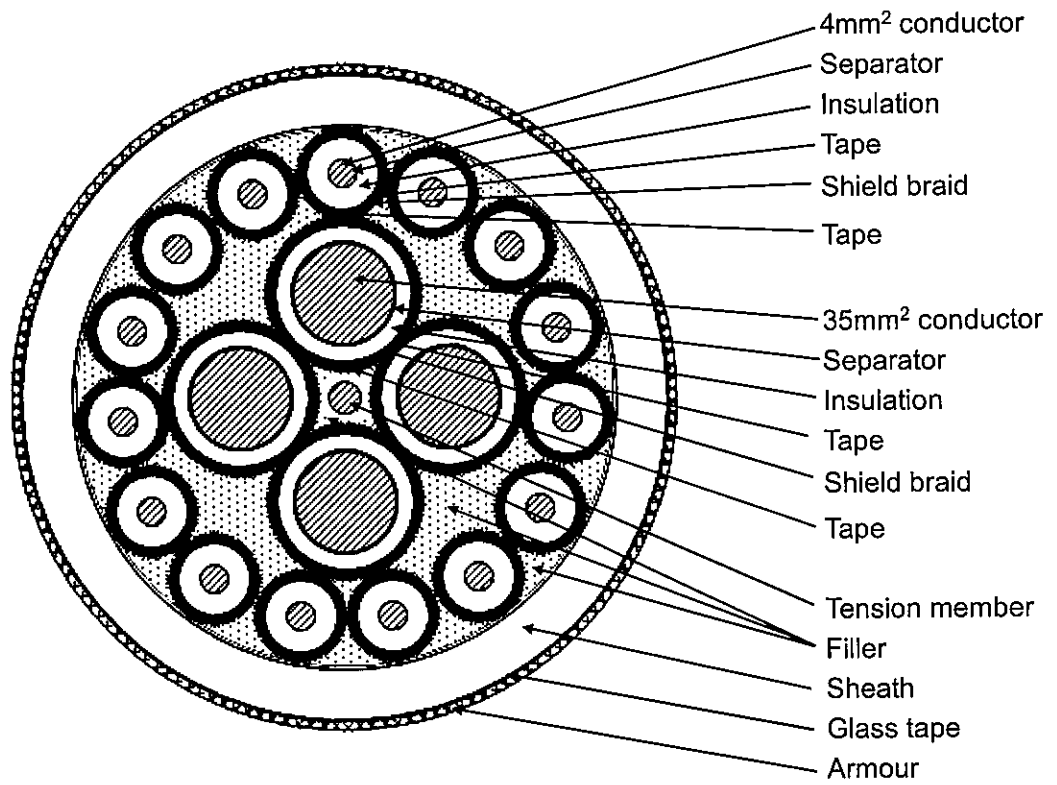


Fig.1. Cable cross section

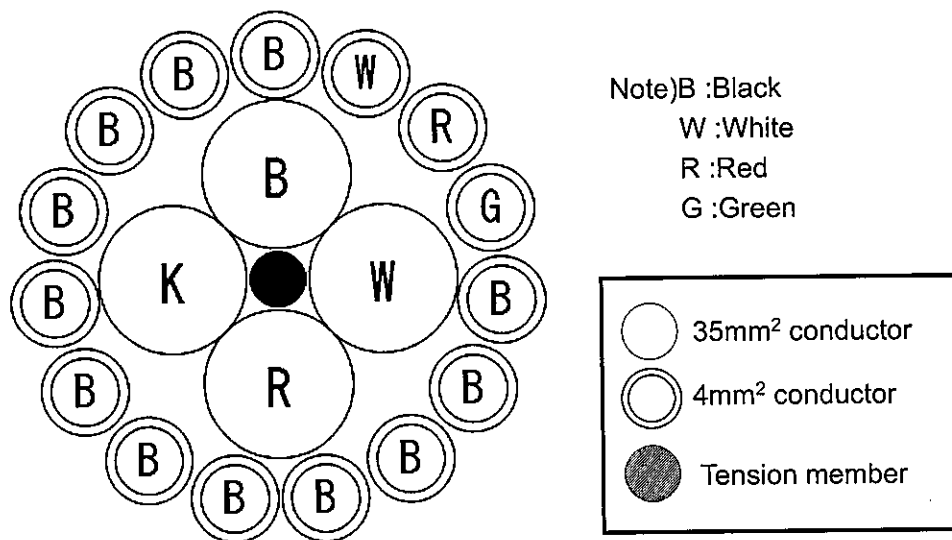


Fig.2. Core identification