

No. SP23-31-0863

Date May 31, 2023

SPECIFICATION

FOR

600V ETHYLENE PROPYLENE RUBBER INSULATED

POLYCHLOROPRENE SHEATHED FLEXIBLE CABLE

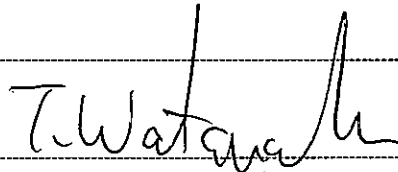
600V F-RE-2PNCT-RF 3X300mm²+3X50mm²

Quantity

Your Ref. No.

Our Ref. No.

Signed by



Takanobu Watanabe

Manager

Engineering Dept. I
Electric Wire & Cable Division

Proterial, Ltd.

Issue and revision record

Rev. No	Issue date	Item	Prepared by	Reviewed by	Approved by
-	May 31, 2023	First issue	<i>K. Yamane</i> K.Yamane	<i>N. Ono</i> N.Ono	<i>T. Watanabe</i> T.Watanabe

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 Power conductor

2.1.1 Conductor

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

A suitable separator tape shall be applied over the conductor.

2.1.2 Insulation

Insulation shall consist of ethylene propylene rubber compound.

Nominal thickness shall be shown in the attached table.

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

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

2.1.3 Core identification

The core identification shall be made the color of insulation or the color of insulation surface as shown in the figures.(Fig.2)

2.2 Earth conductor

2.2.1 Conductor

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

A suitable separator tapes shall be applied over the conductor.

2.2.2 Insulation

Insulation shall consist of ethylene propylene rubber compound.

Nominal thickness shall be shown in the attached table.

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

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

2.2.3 Core identification

The core identification shall be made the color of insulation or the color of insulation surface as shown in the figures.(Fig.2)

2.3 Cabling of cores

Power conductors and earth conductors shall be cabled with suitable rubber filler.

2.4 Sheath

Sheath shall consist of black polychloroprene rubber compound.

Nominal thickness shall be shown in the attached table.

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

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

A straight line shall be marked on the surface of the sheath.

2.5 Reinforcement

Reinforcement consisting of suitable yarn braid shall be applied in middle of the sheath.

2.6 Dimension

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

3. Marking

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

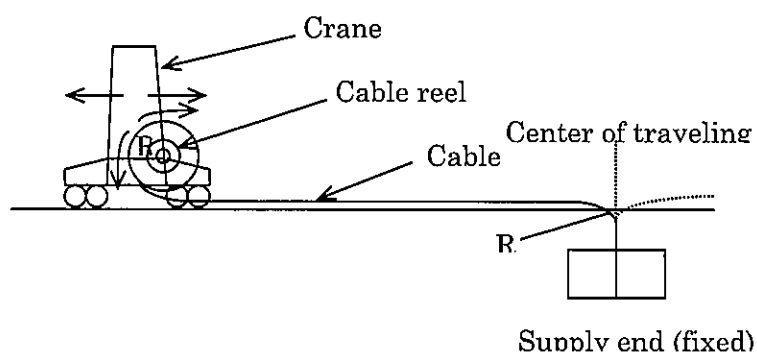
4. Inspection

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 1 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 and Electrical properties
(Code : 600V F-RE-2PNCT-RF 3×300mm²+3×50mm²)

Item		Unit	Specified value	
Type of conductor		—	Power	Earth
No. of conductor		—	3	3
Conductor	Nominal cross-section area	mm ²	300	50
	Construction	No./mm	61/25/0.50	19/16/0.45
	Approx. diameter	mm	26.0	10.4
Nominal thickness of insulation		mm	2.5	1.5
Nominal thickness of sheath		mm	6.7	
Approx. diameter of completed cable		mm	83	
Maximum diameter of completed cable		mm	87.2	
Approx. weight of completed cable		kg/km	14500	

Table 2 : Characteristic

Item	Unit	Specified value	
Type of conductor	—	Power	Earth
Nominal cross-section area	mm ²	300	50
Maximum conductor resistance at 20°C	Ω/km	0.0654	0.423
Minimum insulation resistance at 20°C	MΩ·km	200	200
Permissible minimum bending radius	mm	830	
Permissible maximum pulling tension *	kN	35.1	
Permissible maximum compression force **	kN/m	4.9	

* : In any case, pulling tension and compression force must not exceed this 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

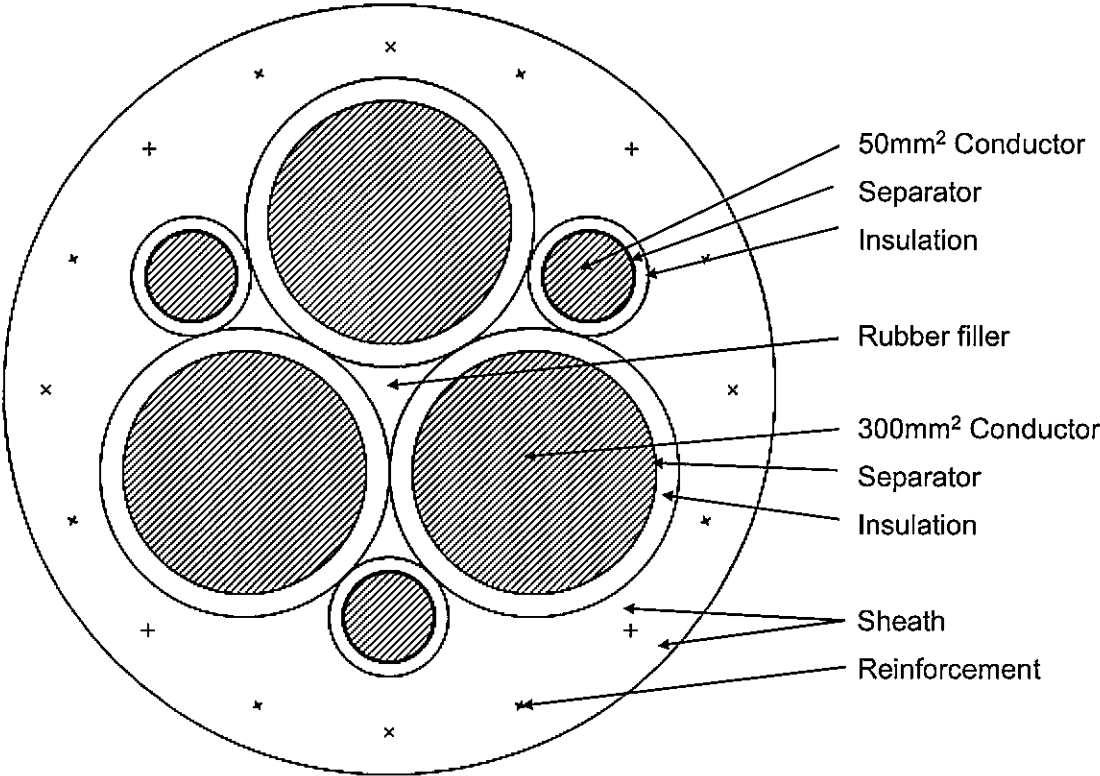


Fig.1 Cable cross section

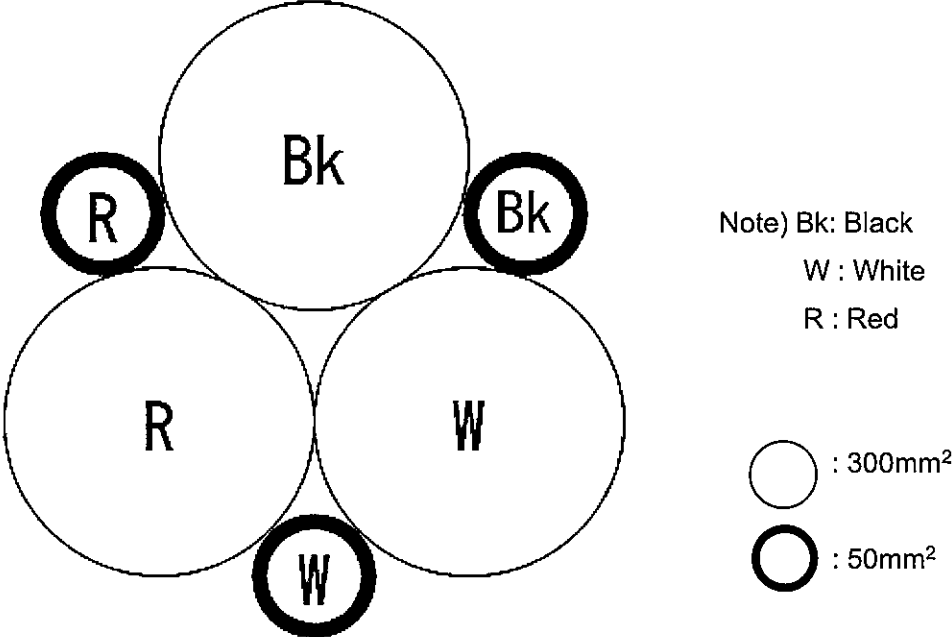


Fig.2 Core identification