

S P E C I F I C A T I O N

Class 3 EP rubber insulated chloroprene rubber sheathed flexible cable
3 P N C T

M I T S U B O S H I C O . , L T D .

No.

RN-110000B

S P E C I F I C A T I O N

MITSUBOSHI CO., LTD.

Name of Manufacture

Class 3 EP rubber insulated chloroprene rubber sheathed flexible cable

Applicable Standards

JIS C 3005, JIS C 3152, JIS C 3327

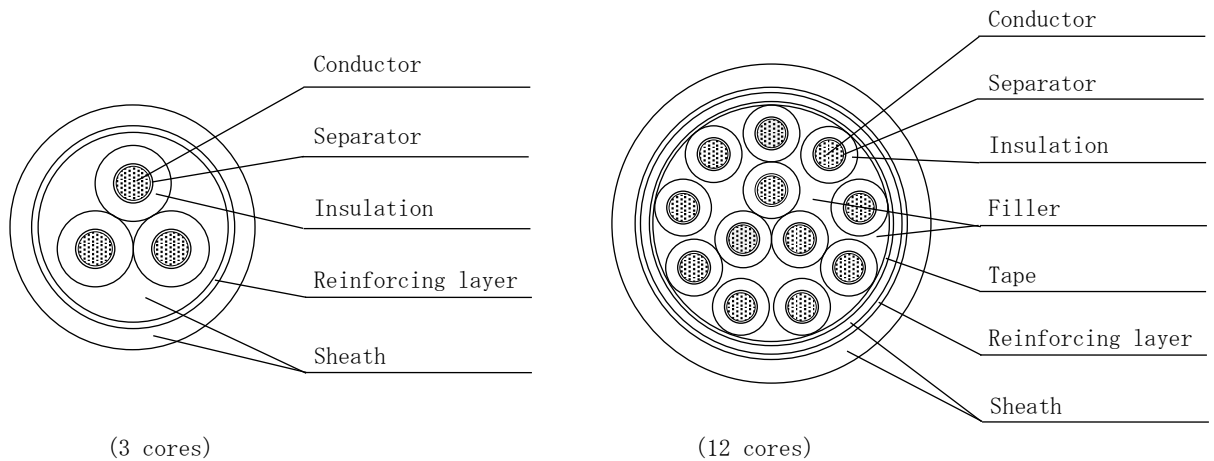
Electrical appliance and material safety law, Technical standards for electrical installations

1. Scope

This Specification covers quality level of 3 PNCT
used in power supply circuit of portable electrical machinery and apparatus not higher than 600V.

2. Construction and materials

(Construction)



- | | | |
|-----|-------------------------|---|
| 2.1 | Conductor | A stranded wire is composed of the tinned annealed copper wire specified in JIS C 3152. |
| 2.2 | Separator | A suitable separator is applied on the conductor. |
| 2.3 | Insulation | Ethylene propylene rubber compound
The average thickness of the insulation is not less than 90% of the value in Attached Table 1. The minimum thickness of the insulation is not less than 80% of the value in Attached Table 1. |
| 2.4 | Identification of cores | Identification of cores are made by the color of insulation. (Attached Table 2) |
| 2.5 | Stranding of cores | As the need arises, cores are stranded with a suitable filler. |
| 2.6 | Reinforcing layer | A Reinforcing layer of butt-lapped cotton canvas tape is applied on inserted in the middle of the sheath. |
| 2.7 | Sheath | Chloroprene rubber compound
The average thickness of sheath is not less than 90% of the value in Attached Tables. The minimum thickness of sheath is not less than 85% of the value in Attached Tables. |

3. Characteristics

Item	Characteristics	Test method
Appearance	The surface be smooth and there is not a flaw in case of use.	JIS C 3005 4.1
Construction	It depends on the Attached Table 1 with structure and size.	JIS C 3005 4.3
Conductor resistance	Not more than the value in Attached Table 1.	JIS C 3005 4.4
Dielectric withstand voltage (in water)	Capable of withstanding 3000V for 1min.	JIS C 3005 4.6 a)
Insulation resistance	Not less than the value in Attached Table 1.	JIS C 3005 4.7.1 a)

4. Marking on cable

The following information is continuously marked on cable.

- ① The symbol of the cable
- ② Nominal sectional area
- ③ Manufacture's name or abbreviation

Example: 3 P N C T 4 × 2 mm²


★ ★ <PS>E MITSUBOSHI 3PNCT 2mm²

5. Length and packaging

According to the Attached Table 1.

6. Marking on package

The following information is marked on package.

- ① The symbol of the cable and nominal sectional area
- ② Length
- ③ Year of manufacture or lot No.
- ④ Manufacture's name
- ⑤  J E T (only apply to Electrical Appliance and Material Safety Law)

Attached Table 1 : Construction, Size, Weight, and electric characteristic

2 mm²

Number of core	Conductors		Insulation		Sheath	Overall diameter (approx.) (mm)	Approx. mass (kg/km)	Conductor resistance 20°C (Ω/km)	Insulation resistance 20°C (MQ·km)	Standard Unit length And packaging
	Composition	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)					
2	(TA) 37/0.26	1.8	1.2	4.3	2.8	15.2	285	10.2	500	200 m Drum
3					2.8	15.9	320			
4					2.9	17.2	385			
5					3.0	18.6	455			
6					3.1	20.1	535			
7					3.1	21.4	610			
8					3.3	23.4	665			
9					3.3	24.8	725			
10					3.4	26.3	830			
12					3.4	26.0	850			
14					3.5	27.3	960			
15					3.5	27.9	1,010			
16					3.6	28.7	1,080			
18					3.7	30.2	1,170			
20					3.7	31.5	1,300			
24					3.9	34.6	1,560			
30	4.1	37.1	1,820							

3. 5 mm²

Number of core	Conductors		Insulation		Sheath	Overall diameter (approx.) (mm)	Approx. mass (kg/km)	Conductor resistance 20°C (Ω/km)	Insulation resistance 20°C (MQ·km)	Standard Unit length And packaging
	Composition	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)					
2	(TA) 45/0.32	2.5	1.2	5.0	2.9	16.8	365	5.54	500	200 m Drum
3					2.9	17.6	420			
4					3.0	19.1	510			
5					3.1	20.7	605			
6					3.2	22.4	715			
7					3.3	24.1	835			
8					3.4	26.2	890			
9					3.5	27.9	990			
10					3.6	29.7	1,130			
12					3.6	29.3	1,180			
14					3.7	30.8	1,330			
15					3.7	31.5	1,410			
16					3.8	32.4	1,500			
18					3.9	34.1	1,640			
20					4.0	35.8	1,830			
24					4.2	39.3	2,190			
30	4.4	42.2	2,580							

5. 5 mm²

Number of core	Conductors		Insulation		Sheath	Overall diameter (approx.) (mm)	Approx. mass (kg/km)	Conductor resistance 20°C (Ω/km)	Insulation resistance 20°C (MΩ·km)	Standard Unit length And packaging
	Composition	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)					
2	(TA) 70/0.32	3.1	1.2	5.6	2.9	18.0	440	3.56	500	200m Drum
3					3.0	19.1	525			
4					3.1	20.7	640			
5					3.2	22.5	770			
6					3.3	24.4	910			
7					3.4	26.3	1,060			
8					3.6	28.7	1,150			
9					3.7	30.7	1,290			
10					3.8	32.6	1,460			
12					3.8	32.2	1,540			
14					3.9	33.8	1,740			
15					3.9	34.6	1,840			
16					4.0	35.6	1,950			
18					4.1	37.5	2,180			
20					4.2	39.4	2,410			

8 mm²

Number of core	Conductors		Insulation		Sheath	Overall diameter (approx.) (mm)	Approx. mass (kg/km)	Conductor resistance 20°C (Ω/km)	Insulation resistance 20°C (MΩ·km)	Standard Unit length And packaging
	Composition	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)					
2	(TA) 50/0.45	3.7	1.2	6.2	3.0	19.4	530	2.52	400	200m Drum
3					3.1	20.6	640			
4					3.2	22.4	790			
5					3.3	24.3	945			
6					3.4	26.4	1,130			
7					3.6	28.7	1,330			
8					3.7	31.1	1,410			
9					3.8	33.2	1,590			
10					4.0	35.6	1,820			
12					3.9	34.9	1,910			

1 4 mm²

Number of Core	Conductors		Insulation		Sheath	Overall diameter (approx.) (mm)	Approx. mass (kg/km)	Conductor resistance 20°C (Ω/km)	Insulation resistance 20°C (MQ·km)	Standard Unit length And packaging
	Composition	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)					
2	(TA) 88/0.45	4.9	1.2	7.4	3.2	23.2	775	1.43	400	200 m Drum
3					3.3	24.5	940			
4					3.4	26.7	1,170			
5					3.5	29.0	1,430			
6					3.7	31.6	1,710			

2 2 mm²

Number of core	Conductors		Insulation		Sheath	Overall diameter (approx.) (mm)	Approx. mass (kg/km)	Conductor resistance 20°C (Ω/km)	Insulation resistance 20°C (MQ·km)	Standard Unit length And packaging
	Composition	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)					
2	(TA) 7/20/0.45	6.8	1.6	10.2	3.6	29.6	1,300	0.919	300	200 m Drum
3					3.7	31.4	1,590			
4					3.8	34.2	1,980			

3 0 mm²

Number of Core	Conductors		Insulation		Sheath	Overall diameter (approx.) (mm)	Approx. mass (kg/km)	Conductor resistance 20°C (Ω/km)	Insulation resistance 20°C (MQ·km)	Standard Unit length And packaging
	Composition	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)					
2	(TA) 7/27/0.45	7.9	1.6	11.3	3.7	32.0	1,580	0.681	300	200 m Drum
3					3.8	34.0	1,960			
4					4.0	37.3	2,460			

3 8 mm²

Number of core	Conductors		Insulation		Sheath	Overall diameter (approx.) (mm)	Approx. mass (kg/km)	Conductor resistance 20°C (Ω/km)	Insulation resistance 20°C (MQ·km)	Standard Unit length And packaging
	Composition	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)					
2	(TA) 7/34/0.45	8.8	1.6	12.2	3.8	34.0	1,870	0.541	300	200 m Drum
3					4.0	36.3	2,320			
4					4.2	39.9	2,910			

5 0 mm²

Number of core	Conductors		Insulation		Sheath	Overall diameter (approx.) (mm)	Approx. mass (kg/km)	Conductor resistance 20°C (Ω/km)	Insulation resistance 20°C (MQ·km)	Standard Unit length And packaging
	Composition	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)					
2	(TA) 19/16/0.45	10.1	2.1	14.5	4.1	39.2	2,440	0.423	300	200 m Drum
3					4.3	41.8	3,010			
4					4.5	46.0	3,790			

6 0 mm²

Number of core	Conductors		Insulation		Sheath	Overall diameter (approx.) (mm)	Approx. mass (kg/km)	Conductor resistance 20°C (Ω/km)	Insulation resistance 20°C (MΩ·km)	Standard Unit length And packaging
	Composition	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)					
2	(TA) 19/20/0.45	11.3	2.1	15.7	4.3	42.0	2,850	0.339	300	200 m Drum
3					4.5	44.8	3,560			
4					4.7	49.3	4,490			

8 0 mm²

Number of core	Conductors		Insulation		Sheath	Overall diameter (approx.) (mm)	Approx. mass (kg/km)	Conductor resistance 20°C (Ω/km)	Insulation resistance 20°C (MΩ·km)	Standard Unit length And packaging
	Composition	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)					
2	(TA) 19/27/0.45	13.1	2.1	17.5	4.5	46.0	3,580	0.250	300	200 m Drum
3					4.7	49.1	4,510			
4					5.0	54.2	5,700			

1 0 0 mm²

Number of core	Conductors		Insulation		Sheath	Overall diameter (approx.) (mm)	Approx. mass (kg/km)	Conductor resistance 20°C (Ω/km)	Insulation resistance 20°C (MΩ·km)	Standard Unit length And packaging
	Composition	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)					
2	(TA) 19/34/0.45	14.7	2.1	19.1	4.7	49.6	4,300	0.199	200	200 m Drum
3					4.9	53.0	5,420			
4					5.3	58.7	6,910			

1 2 5 mm²

Number of Core	Conductors		Insulation		Sheath	Overall diameter (approx.) (mm)	Approx. mass (kg/km)	Conductor resistance 20°C (Ω/km)	Insulation resistance 20°C (MΩ·km)	Standard Unit length And packaging
	Composition	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)					
2	(TA) 19/42/0.45	16.3	2.7	21.9	5.1	55.0	5,420	0.161	200	100 m Drum
3					5.3	58.8	6,830			

1 5 0 mm²

Number of Core	Conductors		Insulation		Sheath	Overall diameter (approx.) (mm)	Approx. mass (kg/km)	Conductor resistance 20°C (Ω/km)	Insulation resistance 20°C (MΩ·km)	Standard Unit length And packaging
	Composition	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)					
2	(TA) 27/34/0.45	17.6	2.7	23.2	5.3	58.0	6,200	0.140	200	100 m Drum
3					5.5	62.0	7,830			

Cable of single core

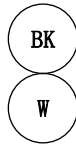
Size [mm ²]	Conductors		Insulation		Sheath	Overall diameter (approx.) (mm)	Approx. mass (kg/ km)	Conductor resistance 20°C (Ω/km)	Insulation resistance 20°C (MQ·km)	Standard Unit length And packaging
	Composition	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)	Outside diameter (approx.) (mm)	Thickness (approx.) (mm)					
3.5	(TA) 45/0.32	2.5	1.2	5.0	2.5	11.0	155	5.38	500	200m Bundle
5.5	(TA) 70/0.32	3.1	1.2	5.6	2.6	11.8	190	3.46	500	
8	(TA) 50/0.45	3.7	1.2	6.2	2.6	12.4	220	2.45	400	
14	(TA) 88/0.45	4.9	1.2	7.4	2.7	13.8	305	1.39	400	
22	(TA) 7/20/0.45	6.8	1.6	10.2	2.9	17.0	485	0.892	300	200m Drum
30	(TA) 7/27/0.45	7.9	1.6	11.3	3.0	18.3	590	0.661	300	
38	(TA) 7/34/0.45	8.8	1.6	12.2	3.0	19.2	685	0.525	300	
50	(TA) 19/16/0.45	10.1	2.1	14.5	3.2	21.9	875	0.411	300	
60	(TA) 19/20/0.45	11.3	2.1	15.7	3.2	23.1	1,030	0.329	300	
80	(TA) 19/27/0.45	13.1	2.1	17.5	3.4	25.3	1,290	0.243	300	
100	(TA) 19/34/0.45	14.7	2.1	19.1	3.5	27.1	1,550	0.193	200	
125	(TA) 19/42/0.45	16.3	2.7	21.9	3.7	30.3	1,960	0.156	200	
150	(TA) 27/34/0.45	17.6	2.7	23.2	3.7	31.6	2,210	0.136	200	
200	(TA) 37/34/0.45	20.6	3.3	27.4	4.0	36.4	2,970	0.0993	200	
250	(TA) 37/42/0.45	22.9	3.3	29.7	4.2	39.1	3,520	0.0803	200	
325	(TA) 37/55/0.45	26.2	3.3	33.0	4.4	42.8	4,430	0.0614	200	

Attached Table 2 : Identification of cores (1)

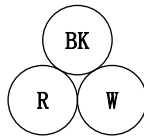
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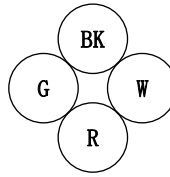
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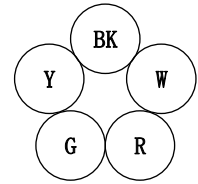
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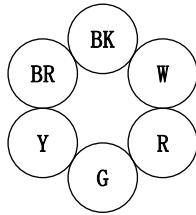
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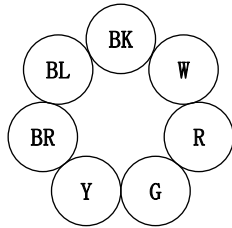
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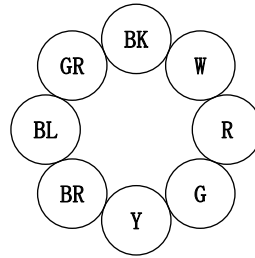
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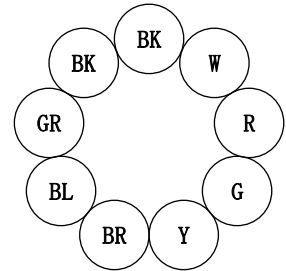
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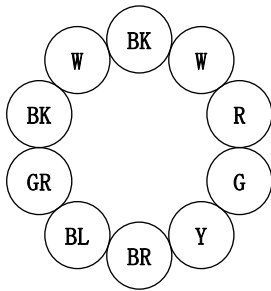
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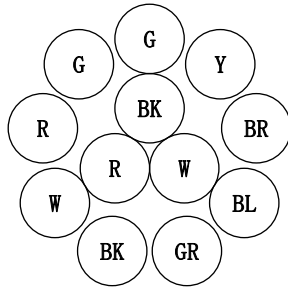
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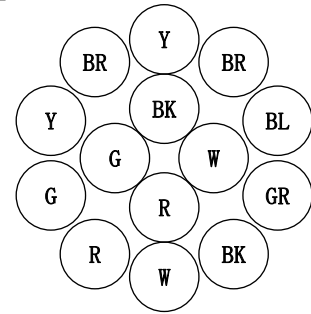
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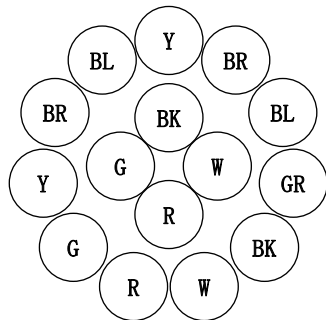
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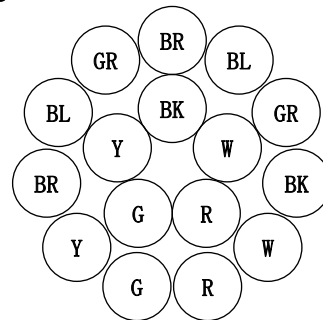
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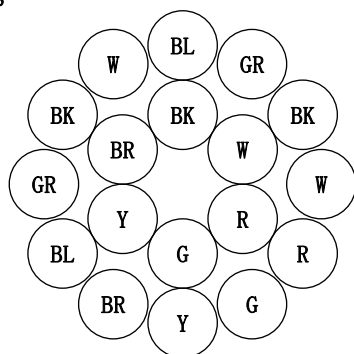
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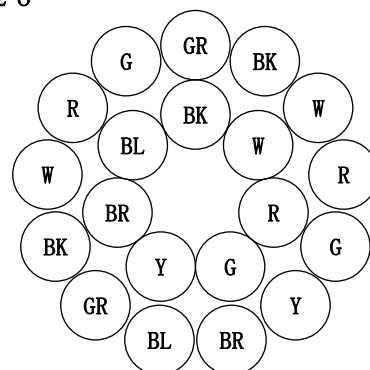
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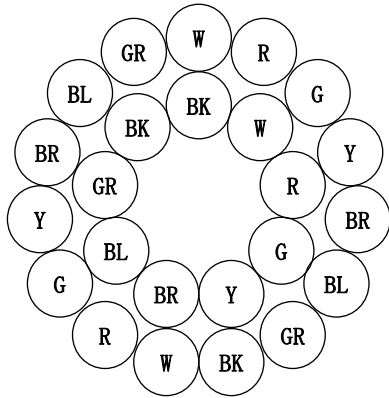


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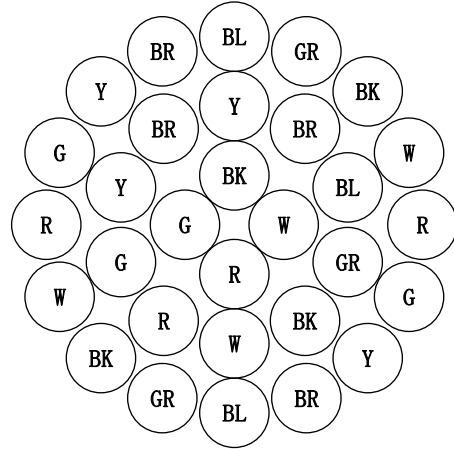


Attached Table 2 : Identification of cores (2)

24



30



~Symbol of COLOR~

- BK : Black
- W : White
- R : Red
- G : Green
- Y : Yellow
- BR : Brown
- BL : Blue
- GR : Gray