Practical test of the movement for cable

Evaluation of the moving performance of the moving cable leads to presumption of the service life, the development of ultra-high performance products, and an improvement in reliability.

1.Test entry

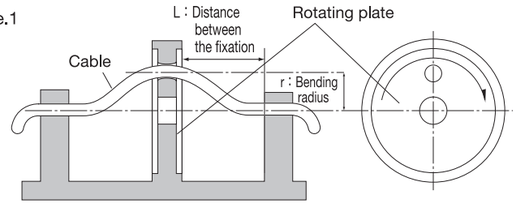
(1) Bending test
(2) Bend test
(3) U-shaped turn-back test
(4) 90 ° bending test
(5) Twist test
(6) Move bending test

2. Test method

(1) Bending test

Bending test was carried out along the bending of JIS C3005 [Test methods for rubber or plastic insulated wires and cables] Section 4.27.1 of the method as follows.
Mount a sample about 1.5m taked from finished product to the test apparatus of FIG. 1, a fixed distance L = 300 mm, and in the dimensions of the bending radius r = 150mm.At a rate of per minute about 50 times the rotor is rotated a predetermined number of times.
At that time not rise to a short circuit between the lines, no crack about surface of the insulation and the exterior, and other abnormalities that there is no.

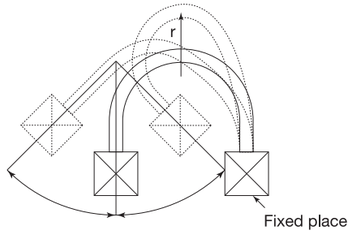
Figure.1



(2) Bend test

Bending test, seismic test of appendix of Electrical Appliance and Material Safety Law (the first Supplementary Table twenty-fourth) which was changed in part to our specifications, performed in the following ways.
Mount a sample of about 0.5m taked from the finished product, bending it to the bending test apparatus of FIG. 2, at bending radius r = 6D.
At a rate of per minute about 200 times at the device is bended a predetermined number of times.
At that time not rise to a short circuit between the lines, no crack about surface of the insulation and the exterior, and other abnormalities that there is no.

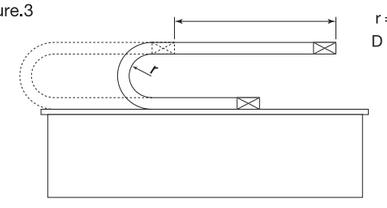
Figure.2



(3) U-shaped turn-back test

U-shaped turn-back test is carried out in the following manner that is the same stress and the cable carrier in the test method cable is subject in its own way of our criteria,
Mount a sample of about 1.5m taked from the finished product, bending it to the bending test apparatus of FIG. 2, and in the dimensions of the bending radius r = 6D. At a rate of per minute about 88m at the device is conducted test a predetermined number of times.
At that time not rise to a short circuit between the lines, no crack about surface of the insulation and the exterior, and other abnormalities that there is no.

Figure.3



(4) 90 ° bending test

90 ° bending test is carried out in the process is as follows in which to test (Bending of JIS C 3005 4.27.4 Section).This test is able to determine about large cable diameter of cable outer also.
Mount a sample of about 1m taked from the finished product, which is fixed one end to 90 ° bending test apparatus of FIG. 4. At the other end hang the weight weights shown in Table 1. When I bent a predetermined number of times at a rate of per minute about 40 times the device is not rise to a short circuit between the lines, no crack about surface of the insulation and the exterior, and other abnormalities that there is no.

Figure.4

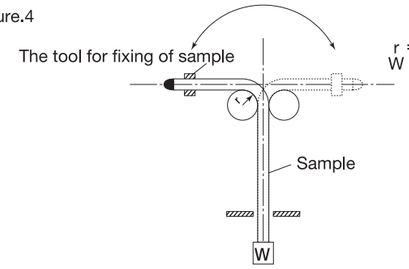


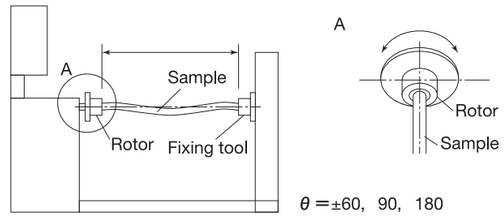
Table.1

Sample	Bending radius	Mass of sinker
Power cable	60㎜	1.0kg
Signal cable	40㎜	0.5kg

(5) Twist test

Twisting test is carried out by two types define their own way of our criteria.
(A) Straight twist test
Mount a sample of about 1m taked from the finished product, attach it to the straight twist test apparatus of FIG. 5- (a). Given to the number of times twisting around at a rate of per minute about 60 times so that the rotor to the appropriate angle (θ). At this time, not occur a short circuit between the lines, no crack about surface of the insulation and the exterior, and other abnormalities that there is no.

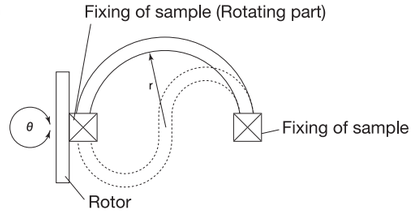
Figure.5-(a)



(B) Bending twisting test

Mount a sample of about 1m taked from the finished product, attach this to be a semicircle of r = 6D to bending twisting test apparatus of FIG. 5- (b). So that the rotor to the appropriate angle (θ), given to the number of times twisting around at a rate of per minute about 60 times. At this time, not occur a short circuit between the lines, no crack about surface of the insulation and the exterior, and other abnormalities that there is no.

Figure.5-(b)



(6) Move bending test

Moved bending test is carried out along the Electrical Appliance and Material Safety Law (Appendix first Supplementary Table twenty-sixth). Method will be as follows. Mount a sample of about 3m taked from the finished product.This according to the type of the cable Table 2, (with the moving carriage fitted with a diameter pulleys) in Table 2 attached in FIG.6. At that time, the portion between the pulleys to move the bending test apparatus is set to be horizontal. Then, hang a weight of mass shown in <Table 2> at both ends thereof. At a rate of per second about 0.33m to move the truck, reciprocating a distance of more than 0.5m to the left or right. At that time, not rise to a short circuit between the lines, no crack about surface of the insulation and the exterior, and other abnormalities that there is no.

Figure.6

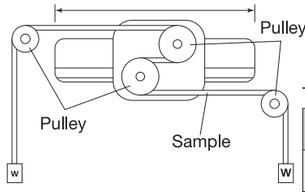


Table.2

Sample	Mass of sinker	Diameter of pulley
Power cable	1.5kg	120mm
Signal cable	1.0kg	80mm