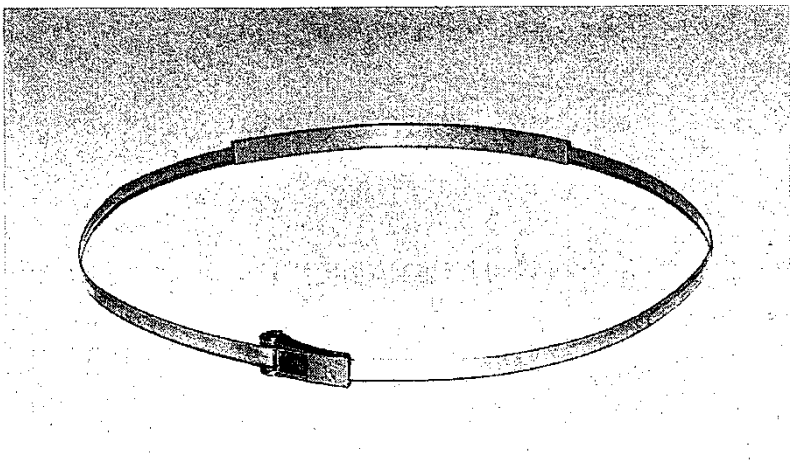
(Reference Translation)

6E-45 STAINLESS STEEL FLEXIBLE BANDS

(C RANK)



July 1966 Enforcement
December 2013 (Revision 04)

Distribution Department

TEPCO Power Grid, Incorporated

1. Scope

This product is used for attaching SV cables (low-voltage pull-up line), grounding wires, molding, etc. to utility poles.

(SV cable: Service entrance vinyl sheathed cable)

2. Related standards

2.1 Japanese Industrial Standards

(1) JIS G 4305 (2012) Cold-rolled stainless steel plate, sheet and strip

2.2 TEPCO standard specifications

(1) 6A-030 SV cables

(2) 6D-008 Reinforced concrete poles

(3) 6L-010 Plastic molding for grounding

3. Types

Shall be the following 1 type:

Table 1: Type

Designation	Width of metal band	Remarks
Stainless steel flexible band	10 mm	- Shall be constructed from the following 3 parts: metal band, fastening hardware, and protective cover. - The metal band shall have an edge folded structure.

4. Structure and materials

4.1 General matters

The product shall be made of specified materials, be free from scratches or any other flaw that is inadequate from a practical perspective, and meet the requirements described in the sections below.

4.2 Shape and dimensions

The shape and dimensions of the product shall be in accordance with the attached figures as a standard. The allowable tolerance other than specified in the attached figures shall be within the range causing no practical harm.

4.3 Provisions on principal structural part

(1) Structure

The product shall be constructed from the metal band, fastening hardware, and protective cover, as shown in the attached figure. When the product is tightened using the fastening hardware, the tightening shall be able to be done by hand, without using any tool. Also, a ratchet mechanism to keep the tightening direction constant shall be provided. When tightening of the band is completed, the handle of the fastening hardware shall be able to be fixed using a protrusion, etc. This fixing work shall be able to be done by hand, with tools that are normally used by workers, such as flathead drivers and pliers. The fastening hardware's surface that comes in contact with the reinforced concrete pole shall be curved so that the surface fits along the circumference of the pole when the product is attached to the supporting member of the reinforced concrete

pole.

The product shall be structured so that tightening of the hardware causes no harmful damage that affects strength.

The product shall be structured so that dimension A in the attached figure is always larger than the width of stainless-steel belt (10 mm), including during work.

(2) Materials

(a) Metal band

For the material, use stainless steel bands specified in JIS that satisfy the functional characteristics of the product and at the same time have no magnetic properties.

[Note]

The "stainless steel bands specified in JIS that satisfy the functional characteristics of the product and at the same time have no magnetic properties" include SUS304, based on the conventional knowledge.

(b) Fastening hardware

For the material, use stainless steel plates specified in JIS that satisfy the functional characteristics of the product and at the same time have no magnetic properties.

[Note]

The "stainless steel plates specified in JIS that satisfy the functional characteristics of the product and at the same time have no magnetic properties" include SUS304, based on the conventional knowledge.

(c) Protective cover

Shall be equivalent or better than vinyl chloride. The color shall be gray.

5. Performance

The performance of the product shall be in accordance with Table 2 when the tests described in Section 7 are conducted.

Table 2: Performance

Item	Performance	Test method Applicable section
Appearance structure test	- No practical problems. - Shall be in accordance with the major dimensions (tolerances) specified in the attached figures.	7.1
Winding test	When conducting a test using a weight of 196N, no abnormalities shall be detected.These abnormalities include the following: - Deformation that causes breakage of the fastening hardware or impairs its function *1 - Flaw, crack, scratch	7.2
Tensile test	When applying the standard load of 392N, there shall be no abnormalities. Also, the gap between the round bar and the utility pole, or an equivalent object of the same shape, shall be less than 3 mm.These abnormalities include the following: - Deformation that causes breakage of the fastening hardware or impairs its function *2 - Flaw, crack, scratch - Other matters that are deemed to be inadequate from a practical perspective	7.3

*1) The phrase "impairing the function of fastening hardware" refers to losing the ratchet function of the hardware's lever.

*2) The deformation impairing the function of hastening hardware includes opening of the hardware's lever.

6. Indication method

6.1 Product indication

Make a clear marking at an appropriate place of the fastening hardware of the stainless steel flexible band to indicate the following:

(1) Name or abbreviation of manufacturer

(2) Manufacturing year (last 2 digits) Example: 13

6.2 Packing indication

Print the following information clearly on the package box.

(1) Product name Example: Stainless steel flexible band

(2) Quantity Example: 100 pieces (10 bundles of 10 pcs)

(3) Name of manufacturer

(4) Month and year of production Example: Dec 2013

7. Test method

7.1 Appearance structure test

(1) When checking the appearance of test pieces, there shall be no scratch or any other inadequacy that may cause practical problems.

(2) The structure, materials and dimensions of the test pieces shall conform to this specification document or submitted drawings.

7.2 Winding test

While keeping the utility pole or an equivalent object of the same shape 30 mm away from a φ30-mm round bar, as shown in Figure 1, lightly tighten the fastening hardware of the test piece with the fastening hardware positioned opposite from the round bar. Suspend a weight of 196N (20 kgf) from the round bar. Tighten the fastening hardware by hand to lift the round bar until it is completely secured to the utility pole or an equivalent object of the same shape. After the winding is complete, tools that are normally used by workers, such as flathead drivers and pliers, may be used to fix the fastening hardware.

[Note] The phrase "it (round bar) is completely secured" refers to a state in which the round bar does not move even when shaken by hand.

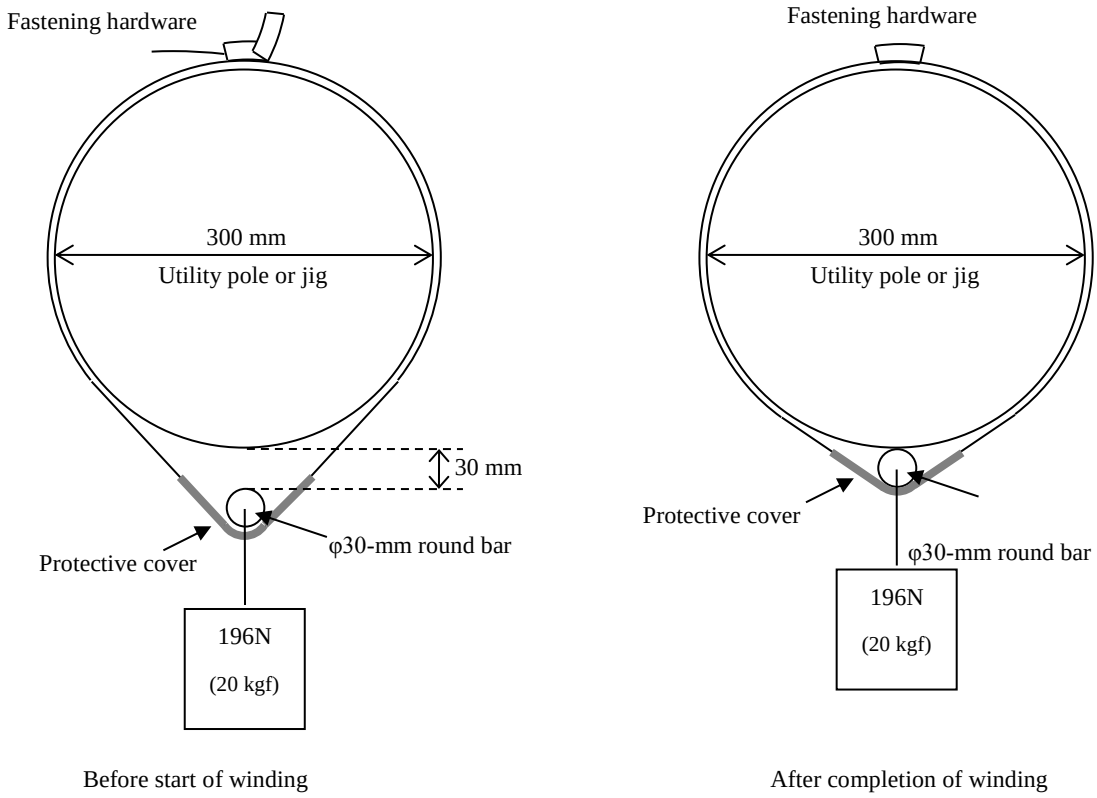


Figure 1: Winding test method

7.3 Tensile test

After the winding test is completed, pull the round bar at 392N (40 kgf) for 1 minute toward the opposite direction from the utility pole or an equivalent object of the same shape, as shown in Figure 2.

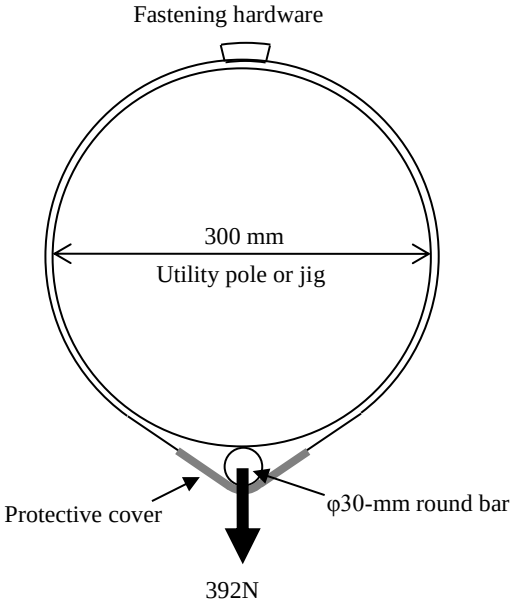


Figure 2: Tensile test method

8. Test

8.1 General matters

The product shall undergo 8.2 "Type test," 8.3 "Acceptance inspection" and 8.4 "Manufacturing process inspection" according to the test methods described in Section 7, and satisfy all the requirements described in Sections 4 through 6.

8.2 Type test

The type test shall be conducted for products or test pieces created under the same conditions as the product, to measure the test items below. In principle, the type test shall be conducted for 5 specimens of the same type.

(1) Appearance structure test

(2) Winding test

(3) Tensile test

8.3 Acceptance inspection

An acceptance inspection shall be conducted, when requested by TEPCO, according to the procedure specified in 8.2 "Type test" in the presence of TEPCO. Specific test items and the sampling rate shall be determined by consultation with TEPCO. When the witnessed acceptance inspection is not conducted, the manufacturer shall conduct an in-house test determined by consultation with TEPCO in advance and submit the test result report to TEPCO.

8.4 Manufacturing process inspection

To check that the system is established to produce during mass production completely the same items as the samples, conduct inspections on the materials used, quality control items of each manufacturing process and quality control method.

9. Other

9.1 General matters

(1) Issues required to satisfy the performance and functions of the product, other than those specified in this specification document, shall be determined by consultation with TEPCO.

(2) When a substantial advantage for use or manufacturing is available by changing some part of this specification document, it may be changed after approval by TEPCO.

(3) TEPCO shall be entitled to conduct a witnessed process inspection and material inspection when TEPCO find it necessary.

9.2 Cost of test piece

The test pieces shall be borne by the supplier.

9.3 Documents to be submitted

For the type test, submit the documents below.

9.3.1 Manufacturing specification document

Specifically list in the manufacturing specification document the information required for TEPCO to check the compliance with this specification document and attach the drawings with details of dimensional tolerances, materials, etc. Also attach technical documents related to the manufacturing specification document as necessary.

9.3.2 Test result record

Conduct 8.2 "Type test" and record the results and test conditions.

9.3.3 Quality management report

Specifically record the materials used, quality management items at each manufacturing process, quality management method, non-conformance corrective actions, quality management system, and other related issues in the "quality management process chart" and "subcontractor supplier management." When outsourcing the major manufacturing process, submit outsourcing process management documents (in which the process management conditions at the subcontractor are recorded in the same form as in the quality management process chart). The specific range of recording shall be determined by consultation with TEPCO.

9.3.4 Technical documents

For type test, a submission of technical documents may be requested to fully and properly identify the function and quality of the product.

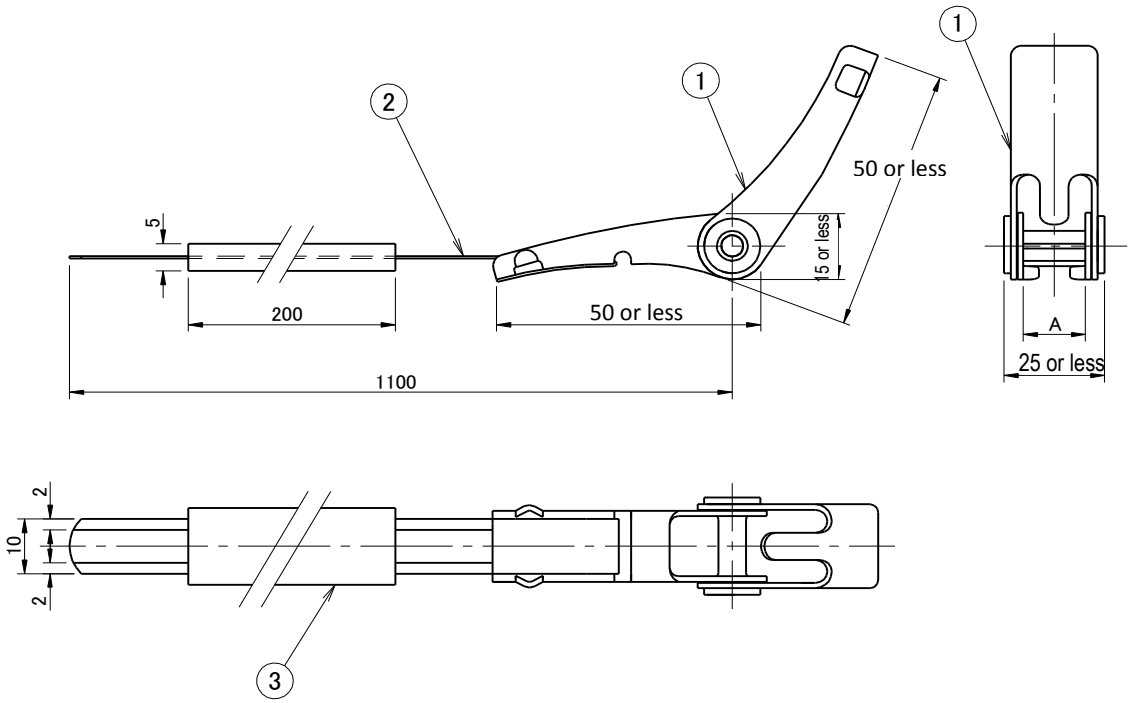
9.4 Packing

When delivering the products, they are packed as a set of 10 bundles of 10 pieces plus the protective cover, in appropriate paperboard boxes.

When products are packed with their stainless steel belts wound up, wind the belts so that the warping of the belts occurs in the same direction as in the usage state.

Attached figure (standard drawing)

Stainless steel flexible band assembly drawing



No.	Product name	Remarks
1	Fastening hardware	
2	Stainless steel belt	t = 0.2
3	Protective cover	