Society of Cable Telecommunications Engineers

ENGINEERING COMMITTEE
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Test Method for Cold Bend

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1.0 SCOPE

The purpose of this procedure is to provide instructions on testing the cold bend properties of flexible outdoor polyvinyl chloride (PVC) or polyethylene (PE) cable.

2.0 EQUIPMENT

2.1. An environmental chamber having size, dimension and temperatures capable of performing the test described herein. The environmental chamber must be capable of maintaining PVC conditioning temperatures from -40° C ± 1 C° (-40° F± 1.8 F°) for 24 hours or for PE -55° C ± 1 C°, (-67° F ± 1.8 F°) for 24 hours.

2.2. Test mandrels having a diameter that is ten times the Cable Diameter (10 x Nominal Cable Diameter) rounded to the nearest ½ inch ± 5%. For example, for 6 Series Quadshield cable with an outside diameter of 0.297 inches, requires a mandrel overall diameter of 3.0 inches ± 5%.

3.0 DIAGRAM

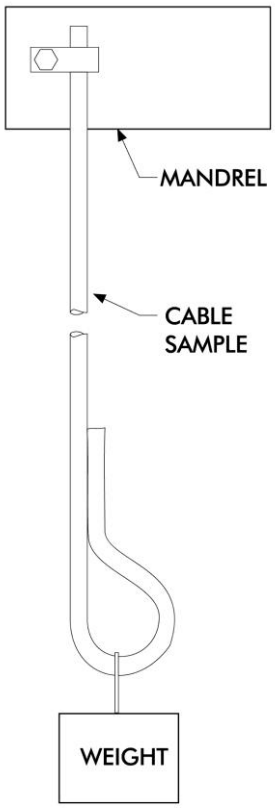

Figure 1 – Test Fixture

4.0 TEST SAMPLES

The cable sample should be long enough to make 4 complete wraps around the mandrel as defined in paragraph 2.2.

5.0 MEASUREMENTS OR TEST METHOD

5.1. One end of cable sample shall be clamped onto the mandrel which has a diameter in accordance with paragraph 2.2. Wrap the cable sample around the mandrel for one full turn and place in an environmental chamber in accordance with paragraph 2.1 and conditioned for 2 hours minimum at the desired test temperature. (Note: Refer to the cable specification or test protocol for test temperature; i.e. ANSI/SCTE 74 2003). During the conditioning period, the unwrapped portion of the cable sample shall be kept reasonably straight. This can be achieved by attaching a small weight (2 to 5 pounds) to the end of the cable sample (see Figure 1).

5.2. After the conditioning period and while the cable sample is still at the test temperature, the cable sample shall be wrapped around the mandrel for three (3) full and close turns. The mandrel shall be turned at a uniform rate of 15 ± 3 revolutions per minute during this operation.

5.3. After the cable sample has been wrapped around the mandrel, open environmental chamber door and remove the mandrel and cable sample from the environmental chamber without disturbing the cable sample. Condition cable sample at room temperature for 1 hour minimum.

6.0 INSPECTION

6.1. Unwind the cable sample from the mandrel and examine for cracks, flaws or other damage in the jacket material excluding the area of the cable sample that was clamped to the mandrel and or weight. Any cracks, flaws or other damage are cause for failure.

6.2. Record the sample identification, jacket type, diameter over jacket (DOJ), mandrel diameter, and visual inspection recording if the sample passed or failed as outlined in table 1.

7.0 RECORD

Test Sample	Jacket Type	DOJ	Mandrel Diameter	Failure Mode	Pass	Fail	Date

Table 1.