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Test Method for Cold Bend

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1. 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. Compliance Notation

<i>shall</i>	This word or the adjective “ <i>required</i> ” means that the item is an absolute requirement of this specification.
<i>shall not</i>	This phrase means that the item is an absolute prohibition of this specification.
<i>forbidden</i>	This word means the value specified shall never be used.
<i>should</i>	This word or the adjective “ <i>recommended</i> ” means that there may exist valid reasons in particular circumstances to ignore this item, but the full implications should be understood and the case carefully weighted before choosing a different course.
<i>should not</i>	This phrase means that there may exist valid reasons in particular circumstances when the listed behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.
<i>may</i>	This word or the adjective “ <i>optional</i> ” means that this item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because it enhances the product, for example; another vendor may omit the same item.
<i>deprecated</i>	Use is permissible for legacy purposes only. Deprecated features may be removed from future versions of the standard. Implementations should avoid use of deprecated features.

3. Abbreviations and Definitions

3.1. Abbreviations

3.2. Definitions

4. Equipment

4.1. Environmental chamber

An environmental chamber shall have size, dimension and temperatures capable of performing the test described herein. The environmental chamber must be capable of maintaining PVC conditioning temperatures from $-40^{\circ}\text{C} \pm 1^{\circ}\text{C}$ ($-40^{\circ}\text{F} \pm 1.8^{\circ}\text{F}$) for 24 hours or for PE $-55^{\circ}\text{C} \pm 1^{\circ}\text{C}$, ($-67^{\circ}\text{F} \pm 1.8^{\circ}\text{F}$) for 24 hours.

4.2. Test mandrels

Test mandrels shall have a diameter that is ten times the Cable Diameter ($10 \times \text{Nominal Cable Diameter}$) rounded to the nearest $\frac{1}{2}$ inch $\pm 5\%$. For example, for 6 Series Quadshield cable with an outside diameter of 0.297 inches, requires a mandrel overall diameter of 3.0 inches $\pm 5\%$.

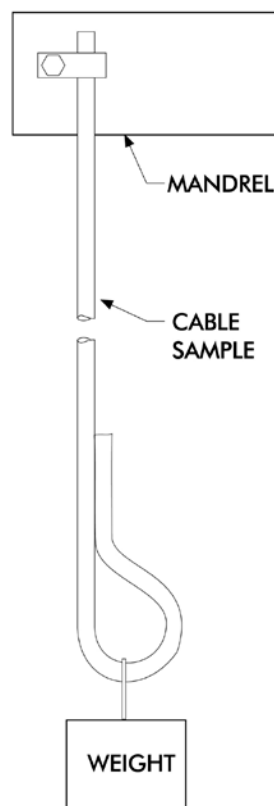


Figure 1 – Test mandrel

5. Test Samples

The cable sample *should* be long enough to make 4 complete wraps around the mandrel as defined in paragraph 3.1.

6. Measurements of Test Method

One end of cable sample *shall* be clamped onto the mandrel which has a diameter in accordance with paragraph 4.2. Wrap the cable sample around the mandrel for one full turn and place in an environmental chamber in accordance with paragraph 4.1 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 2011). 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).

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.

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 of cable sample *should* be at room temperature for 1 hour minimum.

7. Inspection

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.

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.

8. Record Samples

Table 1 – Sample Table

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