Designation: F 1683 – 05

Standard Practice for Creasing or Bending a Membrane Switch, Membrane Switch Flex Tail Assembly or Membrane Switch Component[1]

This standard is issued under the fixed designation F 1683; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice establishes a method for the creasing or bending of any part of a membrane switch.

1.2 This practice can be used with other test methods to achieve specific test results.

1.3 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Terminology

2.1 *Definitions:*

2.1.1 *bend*—to force from a straight form into a different and especially a curved one.

2.1.1.1 *Discussion*—In this case no ″hard” or angled crease or fold is to occur. The substrate will only be formed into a radius.

2.1.2 *bend cycle*—a fold of a sample around a specified mandrel which is ″rolled” in one direction, followed by rolling in the opposite direction, returning the sample to its original position (see Fig. 1).

2.1.3 *crease*—a ridge or groove made by folding and pressing.

2.1.3.1 *Discussion*—In this case a fold mark in the substrate will be caused by a weight rolled over a fold that will likely remain in the substrate after testing.

2.1.4 *crease cycle*—a 180° crease followed by a flattening of the crease (see Fig. 2).

2.1.5 *mandrel*—a cylindrically shaped metal rod, such as brazing or drill rod.

2.1.6 *membrane switch*—a momentary switching device in which at least one contact is on, or made of, a flexible substrate.

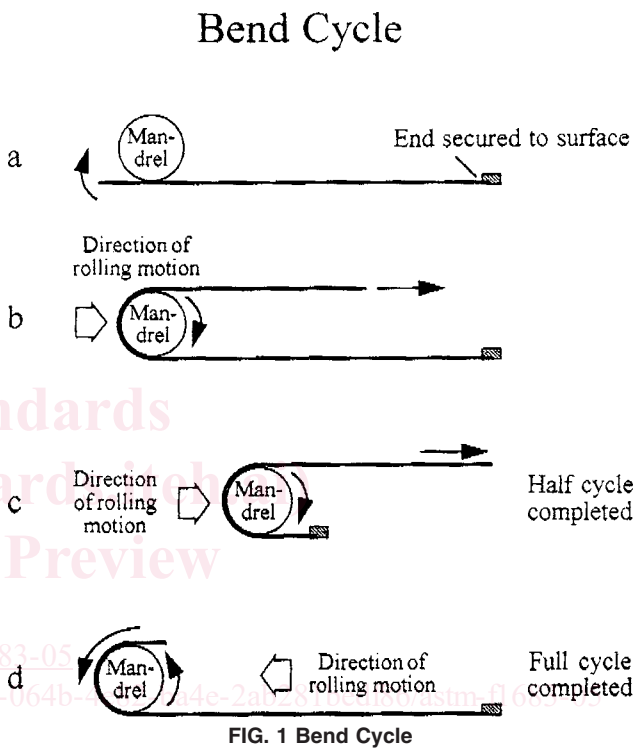

FIG. 1 Bend Cycle

2.1.7 *membrane switch tail*—a flexible portion of a membrane switch used for input/output connection.

3. Significance and Use

3.1 Bending or creasing of membrane switches or their components can affect their visual appearance, mechanical integrity or electrical functionality. This practice simulates conditions that may be seen during manufacture, installation or use.

3.2 Bend or crease testing may be destructive, therefore any samples tested should be considered unfit for future use.

3.3 Specific areas of testing include, but are not limited to:

3.3.1 Membrane switch flex tails, and

3.3.2 Any component of a membrane switch that may be subjected to bending or creasing.

[1] This practice is under the jurisdiction of ASTM Committee F01 on Electronics and is the direct responsibility of Subcommittee F01.18 on Membrane Switches.

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