UL 1696 Mechanical Protection Tubing (MPT) and Fittings â€“ Tension Test Equipment

Description

6.5 Tension

6.5.1 Three samples of MPT shall withstand a tension of 156 N (35 lbf) for one minute applied in accordance with 6.5.5 â€“ 6.5.6 Each sample shall be approximately 457 mm (18 inches) in length Following the test, there shall be no splits, cracks, tears, separation of convolutions, or other openings when it is examined under normal or corrected-to-normal vision Damage to the MPT shall be determined without excessive bending, stretching, or pulling of the MPT.

6.5.2 For the purpose of this test, the range of sizes of MPT constructed of the same material is permitted to be represented by the smallest size (inside diameter) and by a specimen having the thinnest wall thickness. For the purpose of this test. any one color is permitted to represent the range of colors.

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6.5.3 The apparatus shall consist of a pair of clamps or grips and a weight or a tensile testing machine for exerting the force specified in 6.5.1. If a weight is used, a block and tackle or a differential pulley shall be provided to lift the specimen. clamps. and weight (See Figure 7).

6.5.4 For a test using a weight and either a block and tackle or a differential pulley, the clamps shall be made of hard wood, or similar materials. The two pieces comprising each clamp shall be fastened together by two bolts, enabling the MPT to be clamped tightly between the jaws without being crushed (See Figure 8).

6.5.5 For a test using a weight and either a block and tackle or a differential pulley. Each a 1.1-m (44-inch) specimen of the tubing MPT shall be fastened in the clamps so that its ends project about 50 mm (2 inches) beyond the edges of each clamp. The result is a specimen that is 0.9 m (36 inches) long between the clamps, which are then to be tightened to keep the specimen from slipping. The specimen shall be suspended by the upper clamp with a loop of rope passing over the hook of the block and tackle or differential pulley assembly. and a weight exerting the force as specified in 6.5.1 shall be attached to the lower damp The specimen shall hang vertically for Its full length and at right angles to the faces of the damps The specimen, clamps, and weight shall then be raised gently so that tension is applied to the specimen as evenly as possible The total weight shall be applied within 30 seconds so that the weight clears the floor and hangs freely in the air The weight shall be kept from rotating The weight shall be supported by the specimen for 60 seconds, and shall then be lowered to the floor, and the weight and damps shall be removed.

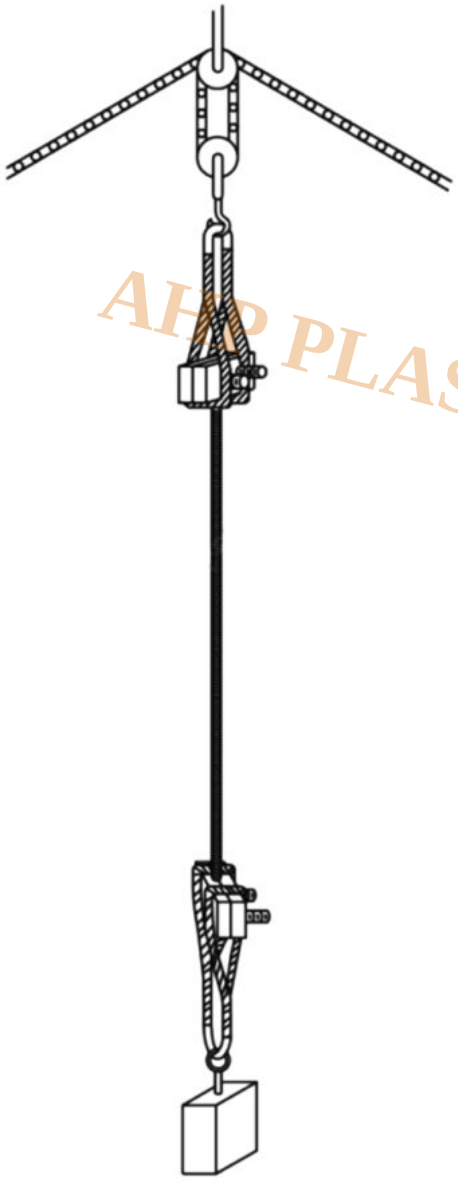
6.5.6 For a test using a testing machine. the specimen shall be gripped in the jaws of the machine. To prevent the jaws from crushing the specimen. round metal plugs shall be inserted into the ends of the specimen. The jaws shall then be separated at a rate of 50 Â±5 mm/min (21.0 Â±0.2 in/min) until the specimen is under tension by the force specified in 6.5.1. This level of tension shall be maintained for

60 seconds and shall then be released at the same rate at which it was applied. For any adjustment necessary for maintaining the tension during the 60 seconds, the jaws shall be separated at the rate of 12.5 Â±3.0 mm/min (0.5 Â± 0.12 in/min).

Figure 7

Tension Test Using Block and Tackle

(See 6.5.3)



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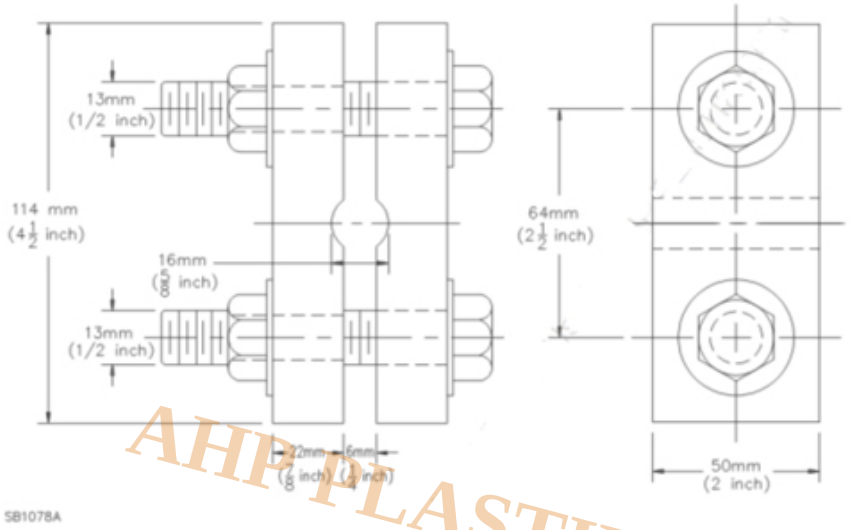
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Figure 8

Clamp for Tension Test – Dimensions are Shown in mm (inch)

(See 6.5.4)



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Test Setup for Tension Test According to UL 1696

- Tripod
- Rope included
- Fixture according to UL1696 is included
- Differential pulley equipped for easy apply of force
- Sample length 1.1 m
- Weigh for applying 156N force

Category

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