

CARSONITE PRODUCT SPECIFICATION

SURVIVOR® DELINEATOR

1 SCOPE

This specification covers the minimum material and performance requirements for the Carsonite Survivor Delineator. The Survivor is a two-piece system consisting of a driveable ground anchor and an impact-resistant flexible post. This product may be used to delineate highways and roads where impact resistance is a main consideration.

2 GENERAL REQUIREMENTS

2.1 **MATERIALS**

The Survivor shall be comprised of the following materials.

2.1.1 Post

The Survivor post shall be comprised of flexible polymer materials, which are resistant to impact, ultraviolet light, ozone, or hydrocarbon damage.

2.1.2 Anchor

The Survivor anchor shall be comprised of a rigid U-channel that does not collapse or buckle when driven into dense soil. The U-channel shall be coated for corrosion resistance.

2.2 **DESIGN**

The Survivor shall incorporate a two-piece design allowing easy installation of the delineator. The post and anchor shall be driveable with manual or powered installation tools and the post shall be easily removed from the anchor with common hand tools.

2.3 **WORKMANSHIP**

The Survivor shall exhibit good workmanship and shall be free of burns, discoloration, and other objectionable marks or defects, which affect appearance or serviceability.

3 PHYSICAL AND MECHANICAL PROPERTIES

3.1 **DIMENSIONS**

The Survivor shall conform to the dimensions shown in Figure 1.

3.1.1 Width

The Survivor post shall have a minimum width of 3

inches facing traffic.

3.1.2 Length

The Survivor post shall extend at least six inches into the ground, and shall extend 48 inches above the ground when installed, unless otherwise specified. The Survivor anchor shall be 18 inches long, attached in at least two points to the bottom six inches of the post.

3.2 **COLOR**

The color of the Survivor post shall be white, gray, or yellow, as dictated by appropriate MUTCD guidelines for the particular application. The color shall be incorporated in the post material throughout the entire cross section of the post.

3.3 **MECHANICAL STRENGTH**

The post shall have a minimum tensile strength of 2500 pounds per square inch, as measured by ASTM Standard Test Method Number D638 (with specimen type I and jaw separation rate of two inches per minute.)

3.4 **TEMPERATURE RESISTANCE**

3.4.1 Elevated Temperature: The Survivor shall be conditioned for a minimum of two hours at $120^{\circ}\text{F} \pm 3^{\circ}\text{F}$. The post shall then be held in a vertical position at a point six inches from its bottom such that it retains its original curved shape and the top of the post bent 90° such that it lies parallel to the floor. The post shall be bent towards its concave side. The post member shall return to the upright position within 30 seconds. The bend test shall be repeated four times in quick succession, completing the test within five minutes of post removal from conditioning temperature.

3.4.2 Reduced Temperature: The Survivor post shall be conditioned for a minimum of two hours at $-20^{\circ}\text{F} \pm 3^{\circ}\text{F}$. The post shall be removed from the conditioning chamber or bath and within two minutes, struck manually against a flat, solid surface. For this test, the post shall be gripped at its bottom and swung sharply through a 90° arc, such that the face of the post slaps flush against the solid surface. The post shall not fracture or shatter upon impact. Within five minutes of removal from the -20°F conditioning chamber or bath, the post shall pass the bend test described in Section 4.2.1.

3.5 **IMPACT RESISTANCE**

The Survivor shall be installed in accordance with manufacturer's instructions. The post shall be capable of withstanding a minimum of 10 impacts at 65 mph into the traffic face of the post without fracturing or losing more than 60% of its reflective sheeting.

4 REFLECTORS

4.1 DESCRIPTION

The reflector shall be of impact resistant, pressure sensitive retroreflective sheeting, which shall be subject to approval by the ordering agency.

4.2 MOUNTING

The reflective sheeting shall consist of a minimum of a three-inch wide strip placed no more than two inches from the top of the post. The sheeting shall be of appropriate color to meet MUTCD requirements.