REFLECTIVE MARKER FOR TRAFFIC-CONTROL DEVICES & APPLICATIONS THEREOF

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ABSTRACT

Embodiments of the invention are directed to reflective markers for traffic-control devices and applications thereof. In one embodiment, a reflective marker comprises a layer of pressure sensitive adhesive adjacent an adhesive-backed sheet. The layer of pressure sensitive adhesive may comply with national, state or local government ordinances related to traffic control buttons, pedestrian crossing features, site accessibility and exterior routes of travel. In one embodiment, the layer of pressure sensitive adhesive may include a first border extending along an upper edge of the layer of pressure sensitive adhesive, a second border extending along a lower edge of the layer of pressure sensitive adhesive, and a center portion located between the inner edges of the first and second borders.
REFLECTIVE MARKER FOR TRAFFIC-CONTROL DEVICES & APPLICATIONS THEREOF

CLAIM OF PRIORITY UNDER 35 U.S.C. §119


FIELD OF INVENTION

[0002] At least one feature pertains to a reflective marker for traffic-control devices and applications thereof.

BACKGROUND OF INVENTION

[0003] The use of traffic signals throughout the United States and the technology available for traffic signal equipment has continued to change and provide more tools for traffic engineers to better meet the needs of the traveling public. Since the first uses of traffic signals, one significant improvement has been incorporating traffic control buttons at pedestrian crosswalks with pedestrian head displays. Traffic control buttons are electrically or wirelessly connected to a traffic signal and a corresponding “Walk/Don’t Walk” signal head such that, when pushed, the corresponding Walk/Don’t Walk signal head activates to show a green/white figure in a walking stance corresponding with a green traffic light (Walk) progressing to a red flashing hand corresponding to a green or yellow traffic light about to turn red (Don’t Walk). Traffic control buttons are typically located at a corner at a prescribed distance and height on an intersection on a pole, i.e., a stanchion. In some instances, a sign reading “Push Button For” in combination with a pictorial representation of the green/white figure in a walking stance is posted above the traffic control button. In cases in which the Walk/Don’t Walk signal head is not installed or located on the same pole or stanchion, but rather the traffic control button is located in/at or on a median, an island, a divided highway or other similar location, identification and location of the traffic control button often cannot be determined visually at any great distance.

[0013] Consequently, a device to alleviate the problems outlined previously is needed.

SUMMARY

[0005] In one aspect, a reflective marker applied to stanchions located at a controlled pedestrian crossing is provided. The reflective marker comprises an adhesive-backed sheet defining a total length and a total surface area; and a layer of pressure sensitive adhesive adjacent the adhesive-backed sheet. The layer of pressure sensitive adhesive comprises a first border, having reflective properties, extending along an upper edge of the layer of pressure sensitive adhesive; and a second border, extending along a lower edge of the layer of pressure sensitive adhesive and spaced apart longitudinally from the first border defining a center portion, the center portion located between inner edges of the first and second borders.

[0006] In another aspect, the center portion may comprise one or more segments. One of the segments may have (i) a total surface area less than fifty percent of the total surface area of the center portion; (ii) a total surface area less than fifty percent of the total surface area of the adhesive-backed sheet; (iii) a length less than fifty percent of the total length of the adhesive-backed sheet; (iv) a total surface area greater than thirty percent and less than fifty percent of a total surface area of the center portion; and (v) a length greater than thirty percent and less than fifty percent of the total length of the center portion.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The features, nature, and advantages of the present aspects may become more apparent from the detailed description set forth below when taken in conjunction with the drawings in which like reference characters identify correspondingly throughout.

[0008] FIG. 1 illustrates a reflective marker for a traffic control device, according to an embodiment of the invention.

[0009] FIG. 2 illustrates a reflective marker for a traffic control device, according to an embodiment of the invention.

[0010] FIG. 3 illustrates a reflective marker for a traffic control device, according to an embodiment of the invention.

[0011] FIG. 4 illustrates a reflective marker applied to a stanchion, according to an embodiment of the invention.

[0012] FIG. 5 illustrates a reflective marker applied to a stanchion, according an embodiment of the invention.

DETAILED DESCRIPTION

[0013] The following detailed description is of the best currently contemplated modes of carrying out the invention. The description is not to be taken in a limiting sense, but is made merely for the purpose of illustrating the general principles of the invention.

[0014] Embodiments of the invention are directed to reflective markers for traffic-control devices and applications thereof. In one embodiment, a reflective marker comprises a layer of pressure sensitive adhesive adjacent an adhesive-backed sheet. The layer of pressure sensitive adhesive may comply with national, state or local government ordinances related to traffic control buttons, pedestrian crossing features, site accessibility and exterior routes of travel. In one embodiment, the layer of pressure sensitive adhesive may include a first border extending along an upper edge of the layer of pressure sensitive adhesive, a second border extending along a bottom edge of the layer of pressure sensitive adhesive, and a center portion located between the inner edges of the first and second borders.

[0015] FIG. 1 illustrates a reflective marker for a traffic control device according to an embodiment of the invention. In one embodiment, the reflective marker 100 may be rectangular in shape; however, other geometric shapes conducive with the intended applications of the reflective marker 100 are within the scope of the invention. The reflective marker may be made out of a stable plastic film, elastomeric film, polyethylene, vinyl or an equivalent material. In some embodiments, the reflective marker is between about three (3) inches in length and about two (2) inches in width, preferably about nine (9) inches in length and about four (4) inches in width. The length of a particular reflective marker may directly correlate to a stanchion on which it is applied, i.e., the diameter of the pole. The reflective marker 100 may comprise an
adhesive surface 108 (for securing to the pole). The adhesive surface 108 may include a top portion having a first border 110a extending along an upper edge 112 of the adhesive surface 108, a bottom portion having a second border 110b extending along a lower edge 114 of the adhesive surface 108, and a center portion 104 located between the inner edges 116, 118 of the first and second borders 110a, 110b. In one embodiment, the first border 110a may have a total surface area half the size of the total surface area of the center portion 104. Alternatively, a combined total surface area of the first and second borders 110a, 110b may be equal to or greater than the total surface area of the center portion 104.

In one embodiment, the adhesive surface 108 of the reflective marker 100 may be an indicia surface and may include text, such as a trademark or company logo, at least somewhere on the adhesive surface 108, preferably the center portion 104. In another embodiment, the reflective marker 100 may include characters, text or numbers, at prescribed increments on borders 110a, 110b. (See FIG. 5) In another embodiment the reflective marker 100 may include Braille characters on surfaces 104 and or 110. (See FIG. 5)

The adhesive surface 108 may include a pressure-sensitive resilient adhesive material. Pressure-sensitive resilient adhesives are adhesives which form a bond when pressure is applied to bond the adhesive with the adherend. Generally, solvent, water or heat is not required to activate the adhesive, but can be used if more aggressive adhesion is required. The term “pressure-sensitive” indicates the degree of bond influenced by the amount of pressure which is used to apply the adhesive to the surface. Surface factors such as smoothness, surface porosity, and removal of contaminants are also important to proper bonding. Examples of pressure-sensitive materials which may be used include, but are not limited to, rubber and/or acrylic adhesives. In one embodiment, the reflective marker 100 may include a protective liner or adhesive-backed sheet 107 removably attached to the adhesive surface 108.

The adhesive surface 108 may include indicia designed to comply with national, state or local government ordinances related to traffic control buttons, pedestrian crossing features, site accessibility and exterior routes of travel. For example, 2007 California Building Code 1117B.5.9 reads:

Traffic-control devices. Pole-supported pedestrian traffic-control buttons shall be identified with color coding consisting of a textured horizontal yellow band 2 inches (51 mm) in width encircling the pole, and a 1-inch-wide (25 mm) dark border band above and below this yellow band. Color coding should be placed immediately above the control button. Control buttons shall be located no higher than 48 inches (1219 mm) above the surface adjacent to the pole.

Thus, in one embodiment, the center portion 104 may comprise a textured horizontal yellow band approximately two (2) inches in width with darker borders 110a, 110b above and below thereof, each border approximately one (1) inch in width. In one embodiment, the yellow band 104 may be colored by, but not limited to, FDA Yellow No. 35359. The texturing may be achieved by, but not limited to, embossment, etching, and/or silicone carbide grit. Also, the darker borders 110 may be colored by, but not limited to, FDA Blue No. 15090 which is reflective. Advantageously, the embodiment described, the reflective marker 100 complies with California Building Code 1117B.5.9 in addition to including the added benefit of including color retroreflective elements embedded or suspended beneath the film so as to form a non-exposed retroreflective optical system in the borders 110a, 110b and/or in the center portion 104 band which may assist a pedestrian in locating a traffic control button at nighttime and/or in particularly poorly lit areas or inclement weather conditions. Another advantage is that the reflective marker 100 can be applied in a one step application as compared to a two step application such as painting which requires two different paint colors and a possible third application of texture to conform and exhibit code compliance.

In one manufacturing method according to an embodiment of the invention, a machine bonds the two types of “tapes” needed to produce a roll of the reflective marker 100, i.e., the textured horizontal yellow band 104 and the darker borders 110a, 110b above and below thereof. Since these are different materials, i.e., one textured material (textured horizontal yellow band 104) and one reflective (borders 110a, 110b), two types of “tapes” are needed to manufacture a roll of the reflective marker 100. Any given roll may be subject to cutting and sizing according to a circumference of a given stanchion on which the reflective marker 100 will be applied.

As shown in FIGS. 2-3, the center portion 104 of the reflective marker 100 may include one or more segments. As shown in FIG. 2, the one or more segments 120 may have the same length and width. Alternatively, as shown in FIG. 3, the one or more segments 122a, 122b, 122c, 122 may have different lengths and widths.

In one embodiment, the total surface area of one of the segments may be less than fifty percent of the total surface area of the entire center portion 104. In yet another embodiment, the total surface area of a segment may be less than fifty percent of the total surface area of the adhesive-backed sheet 107. Alternatively, the total surface area of a segment may be less than a third of the total surface area of the adhesive-backed sheet 107 or less than a third of the total surface area of the entire center portion 104.

In yet another embodiment, the total surface area of a segment may be greater than thirty percent and less than fifty percent of the total surface area of the center portion 104. Alternatively, a total surface area of a segment may be greater than thirty percent and less than fifty percent of the total surface area of the adhesive-backed sheet 107.

Furthermore, in one embodiment, the length of a segment may be less than fifty percent of the total length of the adhesive-backed sheet 107. Alternatively, the length of a segment may be greater than thirty percent and less than fifty percent of the adhesive-backed sheet 107.

FIGS. 4-5 illustrate applications of the reflective marker 100 to a stanchion at a street corner bordering a pedestrian crosswalk.

While certain exemplary embodiments have been described and shown in the accompanying drawings, it is to be understood that such embodiments are merely illustrative of and not restrictive on the broad invention, and that this invention is not be limited to the specific constructions and arrangements shown and described, since various other modifications may occur to those ordinarily skilled in the art.

What is claimed is:

1. A reflective marker applied to stanchions located at a controlled pedestrian crossing, the marker comprising: an adhesive-backed sheet defining a total length and a total surface area; and a layer of pressure sensitive adhesive adjacent the adhesive-backed sheet, the layer of pressure sensitive adhesive comprising:
a first border, having reflective properties, extending along an upper edge of the layer of pressure sensitive adhesive; and
a second border, extending along a lower edge of the layer of pressure sensitive adhesive and spaced apart longitudinally from the first border defining a center portion, the center portion located between inner edges of the first and second borders.

2. The reflective marker of claim 1, wherein color retro-reflective elements are embedded in the first and second borders forming a non-exposed retroreflective optical system in the first and second borders.

3. The reflective marker of claim 1, wherein the center portion has a tactile pattern.

4. The reflective marker of claim 1, wherein the center portion comprises at least one segment.

5. The reflective marker of claim 4, wherein the at least one segment comprises text defining a trademark, a company name and/or Braille information.

6. The reflective marker of claim 1, wherein the first and second borders are made from a material different than the center portion.

7. The reflective marker of claim 4, wherein a total surface area of the at least one segment is less than fifty percent of the total surface area of the center portion.

8. The reflective marker of claim 4, wherein a total surface area of the at least one segment is less than fifty percent of the total surface area of the adhesive-backed sheet.

9. The reflective marker of claim 4, wherein a length of the at least one segment is less than fifty percent of the total length of the adhesive-backed sheet.

10. The reflective marks of claim 4, wherein a total surface area of the at least one segment is greater than thirty percent and less than fifty percent of a total surface area of the center portion.

11. The reflective marks of claim 4, wherein a total surface area of the at least one segment is greater than thirty percent and less than fifty percent of the total surface area of the adhesive-backed sheet.

12. The reflexive mark of claim 4, wherein a length of the at least one segment is greater than thirty percent and less than fifty percent of the total length of the center portion.

13. The reflective mark of claim 1, wherein the first border has a surface area half the size of the surface area of the center portion.

14. The reflective mark of claim 1, wherein a combined surface area of the first and second borders is equal to or greater than the total surface area of the center portion.

15. The reflective marker of claim 1, wherein the center portion is a horizontal yellow textured band 2 inches in height and wherein each of the first and second borders are a horizontal reflective blue band 1 inch in height.

16. The reflective marker of claim 1, wherein the reflective marker is made of stable plastic film, elastomeric film, polyethylene, vinyl or an equivalent material.

17. A reflective marker applied to stanchions located at a controlled pedestrian crossing, the marker comprising:
an adhesive-backed sheet defining a total length and a total surface area; and
a layer of pressure sensitive adhesive adjacent the adhesive-backed sheet, the layer of pressure sensitive adhesive comprising:
a first border, having reflective properties, extending along an upper edge of the layer of pressure sensitive adhesive; and
a second border, extending along a lower edge of the layer of pressure sensitive adhesive and spaced apart longitudinally from the first border defining a center portion, the center portion located between inner edges of the first and second borders, the center portion comprising:
at least one segment, wherein a combined surface area of the first and second borders is equal to or greater than the total surface area of the center portion, and
wherein a length of the at least one segment is greater than thirty percent and less than fifty percent of the total length of the center portion.

18. The reflective marker of claim 17, wherein color retro-reflective elements are embedded in the first and second borders forming a non-exposed retroreflective optical system in the first and second borders.

19. The reflective marker of claim 17, wherein the center portion is a horizontal yellow textured band 2 inches in height and wherein each of the first and second borders are a horizontal reflective blue band 1 inch in height.

20. The reflective marker of claim 17, wherein the reflective marker is made of stable plastic film, elastomeric film, polyethylene, vinyl or an equivalent material.

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