

METHOD FOR DECELERATING A VEHICLE, HIGHWAY CRASH
CUSHION, AND ENERGY ABSORBING ELEMENT THEREFOR

ABSTRACT OF THE DISCLOSURE

A highway crash cushion (10) provides a novel system response profile that reduces the stopping distance of an impact event. This crash cushion (10) includes a frame (12) that forms at least two bays (38, 40) arranged one behind another in an anticipated impact direction. The frame (12) includes at least three transverse frames (20, 22, 24) and side frames (26, 27, 28, 30) extending between adjacent transverse frames (20, 22, 24). Each of the side frames (26, 27, 28, 30) includes first and second side frame elements (32) coupled to the respective transverse frames (20, 22, 24), and a hinge (34) coupled between the first and second side frame elements (32). At least one energy absorbing element (16) is disposed in one of the bays (38, 40), and at least first and second restraints (46) are coupled to the side frames (26, 27, 28, 30) to resist movement of the hinges (34, 36) at an early stage in an impact event. The crash cushion (10) is partially collapsed automatically as the crash cushion (10) is raised from a horizontal to a vertical position, and then extended automatically to its operational position as the crash cushion is lowered from the vertical to the horizontal position. The energy absorbing elements (16) can include tapered frusto-conical sheet metal elements (94) that are stacked with the smaller ends (98) facing first and second opposed sides of the energy absorbing element.

Figure 1

