CLAIMS

1. A beverage can end comprising:

a peripheral curl capable of being joined to a can body by seaming;

a wall structure radially inward from the curl;

a center panel;

a main score defining a main hinge and a main tear panel that is capable of opening upon rupture of the score to form a pour opening;

a tab coupled to the center panel by a rivet, the tab having a nose capable of contacting a portion of the main tear panel for rupturing the main score, a body, and a heel formed opposite the nose, the heel being configured for grasping by a user;

a raised main bead having a first end located on the heel side of the tab and extending around the main tear panel to a second end, said first and second ends being spaced apart;

a vent including:

a vent score defining a vent tear panel and a vent hinge located approximately between opposing ends of the vent score; and

an upwardly protruding button located on the vent tear panel; and

a raised or recessed vent bead located about the vent score;

wherein the main bead is spaced apart from the vent bead, and the main bead is asymmetric about a main centerline (CL) defined through the rivet and coincident with an axis of symmetry of the tab when the tab is in a position ready to actuate to open the main tear panel;

whereby actuation of the tab by lifting the heel is capable of rupturing the main score and actuation of the tab by pressing down on the tab is capable of rupturing the vent score.

2. The beverage can end of claim 1 wherein the vent bead is a raised bead.

3. The beverage can end of claim 1 wherein the vent bead is a recessed bead, the raised main bead and the recessed vent bead joining at a transition at which the raised bead yields to the recessed bead.

4. The beverage can end of claim 3 wherein the transition is located approximately opposite from the main bead first end.

5. The beverage can end of claim 1 wherein the vent bead encircles the vent score and is spaced apart from the main bead.

6. The beverage can end of claim 1 wherein a periphery of the vent bead is tangential to a periphery of the center panel.

7. The beverage can end of claim 1 the main bead has a longitudinal axis and the main bead is asymmetrical about the main bead longitudinal axis.

8. The beverage can end of claim 1 wherein the vent button is located outboard of the tab while the tab is positioned to actuate the main score and the vent bead is located proximate a peripheral edge of the center panel distal from the rivet.

9. The beverage can end of claim 1 wherein the vent score is located on the button or having a distance D3 or D13 from the button sidewall, measured at a point at which the vent score is closest to the button sidewall, of no more than 0.508 mm such that downward force transmitted from the tab heel to the button ruptures the vent score, whereby actuation of the tab by lifting the heel is capable of rupturing the main score and actuation of the tab by pressing down on the tab is capable of rupturing the vent score, optionally wherein the distance D3 or D13 is no less than -0.254 mm, preferably between -0.1524 mm and 0.381 mm, more preferably between 0 mm and 0.1524 mm, and optionally wherein in response to downward pressure applied on the tab the vent score ruptures initially at a point at which the vent score is closest to the button sidewall.

10. The beverage can end of claim 9 wherein the vent score rupture propagates about the vent tear panel in two directions to the vent hinge.

11. The beverage can end of claim 9 wherein the vent score is located between approximately 1.524 mm and approximately 2.667 mm from the centerline of the button, optionally wherein a radius of a curved transition between the button and the center panel is between approximately 0.127 mm and approximately 0.508 mm, preferably between approximately 0.1905 mm and approximately 0.2921 mm, more preferably approximately 0.2413 mm, and optionally wherein the button has a diameter of between approximately 2.54 mm and approximately 4.572 mm, preferably of between approximately 2.921 mm and approximately 3.81 mm, more preferably of approximately 3.302 mm.

12. The beverage can end of claim 9 wherein the closest location of the vent score to the button sidewall is one of: opposite the vent hinge, not opposite the vent hinge, and optionally wherein the vent hinge is one of: opposite the rivet, on a side of the button proximate the rivet.

13. The beverage can end of claim 9 wherein the tab has a contact element that is configured to contact the button, wherein the tab contact element is optionally a downwardly protruding bead, wherein the tab bead is optionally elongate and sized to enable the tab bead to enter into a vent aperture formed upon rupture of the vent score and wherein the tab bead is optionally curved at a radius that is approximately equal to the distance between a center of the rivet and the vent button.

14. The beverage can end of claim 1 wherein the tab is configured such that initial contact by a tab bead against the button is at a location on the button that is proximate where the vent score is closest to the button sidewall.

15. The beverage can end of claim 1 wherein, after initial contact, subsequent contact by a tab bead against the button moves from the initial contact point rearward on the button towards the vent hinge as the vent tear panel pivots about the vent hinge.

16. The beverage can end of claim 1 wherein the vent defines:

a dimension X from a button center to lateral ends of the vent score along a vent centerline CL,

a dimension Y from the button center to the vent hinge, and

a dimension Z from the button center to a proximal point of the vent score that is the point on the vent score that is closest to the button,

dimension X is greater than Z and less than 5Z and dimension Y is greater than 0.5Z and less than 3Z preferably wherein dimension X is greater than 1.2Z and less than 3Z and dimension Y is greater than 0.75Z and less than 2Z, more preferably wherein dimension Y is greater than 0.9Z and less than 1.5Z, and optionally wherein the Z dimension is between 1.5875 mm and 2.286 mm, preferably between 1.651 mm and 2.159 mm, more preferably between 1.7272 mm and 1.9812 mm.

17. The beverage can end of claim 1 wherein the vent defines:

a dimension X from a button center to lateral ends of the vent score along a vent centerline CL,

a dimension Y from the button center to the vent hinge, and

a dimension Z from the button center to a proximal point of the vent score that is the point on the vent score that is closest to the button,

wherein dimension Z is between 0.2X and 1X and dimension Z is between 0.5Y and 1.33Y, preferably wherein dimension Z is between 0.33X and 0.83X and dimension Z is between 0.67Y and 1.1Y, or wherein dimension Z is between 0.5 and 0.81 of button diameter D1, preferably between 0.55 and 0.7 of button diameter D1, more preferably approximately 0.6 of button diameter D1.