

PCO 1881 OpenEase- simplifying the opening experience for all consumers

Executive Summary:

The current PCO 1881 single or two-piece closures have a removal torque ranging from 14 lbs.-in to 18 lbs.-in, making it challenging for children, the elderly, or individuals with dexterity issues to open them. Carbonated beverages require a certain torque for carbon retention, but the closures need to be redesigned to reduce the removal torque and bridge-breaking torque (the force needed to separate the shell from the tamper-evident band). To address this issue, we have redesigned the PCO 1881 closure, which can be easily integrated without changing capping chucks or any capping parameters.

The redesigned closure is engineered to withstand 4.2 GV of carbonation for 12 weeks and meet the Coca-Cola package approval process. The new design aims to be user-friendly for all consumer categories, ensuring brand parity and minimizing downtime on production lines when switching from the standard PCO 1881 to the new PCO 1881 OpenEase.

Design and Manufacturing:

- The new design maintains the same internal dimensions as the PCO 1881, eliminating the need to change the existing neck finish of preforms, capping chucks, or operational parameters.
- It allows consumers, including children, the elderly, and individuals with dexterity issues, to open the closures using a "flip loop" with thumb and finger force.
- With the closure panel thickness as 0.60 mm and the plugs designed to tightly grip the inner wall of the preforms we aim to achieve the 12 week of Carbonation retention.
- The new closure is designed in a way that it can be resealed for future consumption without any leakage and pass the SST (Secure Seal Test)
- The design is a single piece made from HDPE material, which promotes recyclability.
- The closure is suitable for manufacturing via injection molding or compression molding methods, utilizing a slitting machine with a 0.65-0.75 mm blade to achieve a lower bridge-breaking torque, aiding in the opening process.

The new OpenEase closure matches the dimensions of the PCO 1881 closure and can be seamlessly incorporated into Coca-Cola's existing production lines, reducing investment costs. We believe this new design will be beneficial for consumers with dexterity challenges, making it easier to open the closure.