



## Case Study – Bottle Line Filling CSD

## Reduced Reject Rate

**Location :** Europe Beverage Bottle Line  
**Target :** Reduced reject and yield improvement

*Total Annualised Benefit*  
**€ 163,653**

**Situation :** The beverage company was filling 350ml PET bottles at 48,000 bottles per hour on a Sidel volumetric filler with approx. 50% of product filled CSD cola (Regular and diet), 30% CSD fruit flavour beverages, 20% energy drinks, tonic water, ginger beer, root beer. Operational performance of the line showed beverage syrup losses from over foaming and due to variability in the fill volume bottle reject rate of 0.38% due to under-fills.

**Solution :** Cavitus fitted a Gen2 de-foaming unit to the line, rated to 75,000 bottles per hour. As this line had high foam levels and a speed of 48,000bphr the larger powered unit was recommended. The Cavitus unit was fitted 150cm prior to capper. The installation of the transducer/sonotrode on the star wheel was completed in 30 minutes (minimal 30minute down time of the line and impact on production) and the cabinet control panel was fitted outside of the filler.

**Result :** By applying the Cavitus de-foaming system to the PET bottle line, the following benefits were reported by the beverage company;

1. Reducing the foam loss around the star wheel and capper section of the line
2. 0.62% reduced beverage syrup loss by 2.2ml per

3. Reduced bottle reject rate from 0.38% to 0.18% due to less underfill

**Payback period** for the client was less than 5 months.



Business Case returns based on an average 48,000 bph facility, operating for 6000 hours per annum, OEE 70%, 350ml PET bottle

| Improvement  | Est Volume per annum   | Value            |
|--|--|------------------|
| Fill Volume increased by 0.62% (2.2ml reduced syrup losses per bottle) | 443,100 litres syrup cost saving   | € 46,746         |
| Waste Treatment Saving at 5c per litre                                 | 443,100 litres from overfill on star wheel   | € 22,155         |
| Reduced reject reduction from under-fills (0.38% to 0.18% achieved)    | 403,200 units less rejected.<br>(based on value of PET, cap and product at 23.5c per unit) | € 94,752         |
| <b>Total Savings</b>   |  | <b>€ 163,653</b> |

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