

WATER CYCLE

Italy's CIE has developed a water recycling system for can washers that enables the machines to run with no liquid discharge, thereby improving environmental performance and cutting running costs.

The company has installed a number of zero liquid discharge (ZLD) systems over the last five years, resulting in 100 per cent of the water used in the washer being treated and purified, leaving it fully reusable in the same washer, with salinity lower than fresh mains water.

CIE's latest innovation in the area, called Pur-All, is a system that recycles and processes the water without using high-tech processes such as ultra-filtration, reverse osmosis or an evaporator: this results in lower management and maintenance costs, as well as water savings, says Franco Falcone, chief executive at CIE.

Based on a two-step chemical treatment process using simple reactors equipped with stirrers, probes and dosing pumps, the Pur-All system is installed on the waste water outlet of the can washer. The first step is dedicated to chemical treatment and removal of fluorides, sulphates and aluminium; the second step then focuses on neutralisation of the water.

The water can then be fed back into the washer, or drained away as a more environmentally-friendly waste



Elval is using the Zero Liquid Discharge system on its aluminium coil coating lines in Greece

CIE's latest treatment system for can washers offers the recycling of process water, and a low-maintenance set-up. Daniel Searle reports

water compared to that produced by conventional washers, says Falcone: "Modern washers have a standard water consumption: around 30,000 litres per million cans, compared to the old plants, which used 60,000 litres per million cans.

"This effort, though positive, has created another problem: the water reduction corresponds to an increase in pollution, because now the amount of chemical oxygen demand (COD) and sulphates (SO₄), for example, is closer to the maximum allowed than in the past, even if it is still under acceptable limits."

The application and use of the Pur-All system is therefore even more beneficial as it allows water to be reused or discharged, minimising management costs, says Falcone.

Pur-All was developed in 2018 and launched in 2019, but due to the Covid pandemic in 2020, expansion was limited. Nevertheless, the technology has been installed at aluminium treatment plants including Talex in the United Arab Emirates, on extrusion painting and anodising lines; Elval's aluminium coil coating lines in Greece; and Aluminco's aluminium extrusions paint line in Greece.

JORSON

ONE-STOP SERVICE FOR METAL PACKAGING

SQUARE CAN TOP POWDER COATING SYSTEM

SPE35



WWW.JORSON.COM.CN E-MAIL: INFO@JORSON.COM.CN