



BUSINESS CASE | WASHING FOR PVD TREATMENT

# The sustainable solution for PVD treatment

Washing for PVD treatment

**C&G Evaporator**

*a brand of C&G  
Depurazione Industriale*

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[WWW.CGEVAPORATOR.COM](http://WWW.CGEVAPORATOR.COM)



## BUSINESS CASE

### Washing for PVD treatment

## CUSTOMER

The client is a company from Veneto, a leader in the accessories sector, specialized in surface finishing treatments.

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## OBJECTIVES

- Prepare the parts before vacuum treatment (PVD).
- Use a water recovery system while ensuring optimum quality in the washing tanks.
- Obtain a balance of harder water in the post-treatment dynamic washes and a balance of demineralized and ultra-demineralized water where the parts are washed before continuing the vacuum deposition process.

## RESULTS



SAVING



CIRCULARITY



SUSTAINABILITY



## Table of contents

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Washing for PVD treatment  
**The sustainable solution for PVD treatment**

01. **Challenge** >

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02. **Project** >

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03. **Solution** >

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04. **Analysis of the results** >

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# 01. Challenge

## Washing for PVD treatment The sustainable solution for PVD treatment

### **Demineralized water is not suitable for the PVD treatment preparation process. The customer in fact requires:**

- “hard” water with an electrical conductivity around 250  $\mu\text{S}$  for post-treatment preparation washes.
- demineralized water with an electrical conductivity around 7  $\mu\text{S}$  in a dynamic wash where the parts are washed after having passed them through hard water.
- an ultra-demineralized water with an electrical conductivity of less than 1  $\mu\text{S}$  in dynamic cascade washing where the parts are further washed before the actual PVD process.



## 02. **Project**

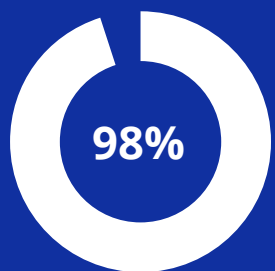
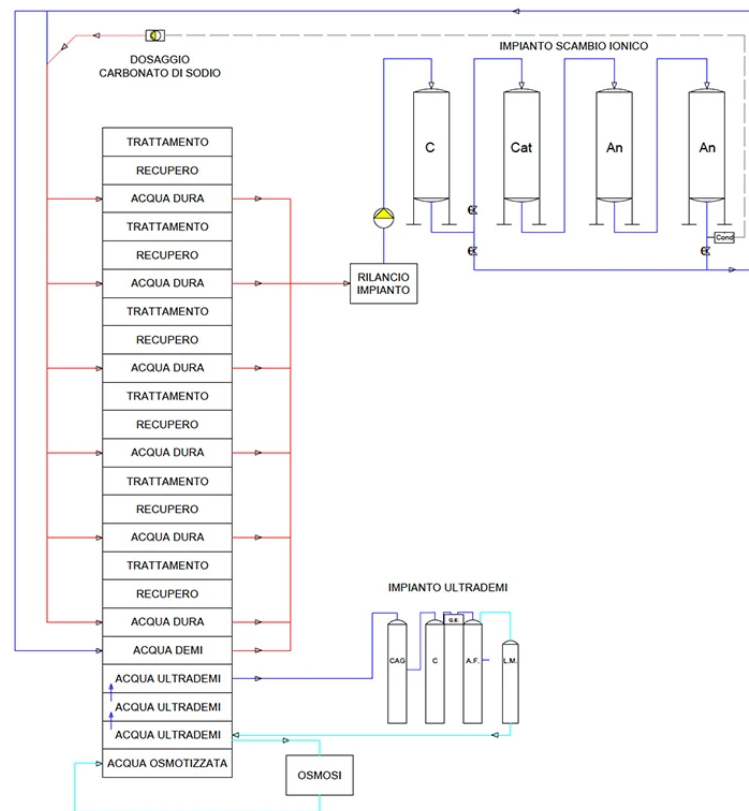
In the accessories and surface finishing sector, the quality of water in washing processes is essential to guarantee optimal treatments. A leading company in Veneto, specialized in PVD (Physical Vapor Deposition) treatments, has implemented an entire treatment plant, including a vacuum evaporation system, to optimize water recovery and guarantee the necessary quality in the washing tanks.



## 03. **Solution**

The entire system, including the vacuum evaporator, has allowed the recovery of 98% of the wastewater, ensuring recirculation and stabilization of conductivity. The water is treated with ion exchange and reverse osmosis to obtain the level of purity required in the various phases. The system has eliminated sewer discharges, reduced water consumption and optimized washing management.

The implementation of the system, including the vacuum evaporator, has led to tangible results in terms of efficiency and sustainability.



RECOVERY OF  
REGENERATION WATER



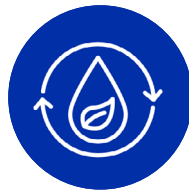
**Guarantee of ZERO emission into the sewer system**

**Recirculation of 720m<sup>3</sup> of water on washings compared to 6m<sup>3</sup> of final regeneration water, every 15 days.**

## 04. Analysis of the results



SAVING



CIRCULARITY



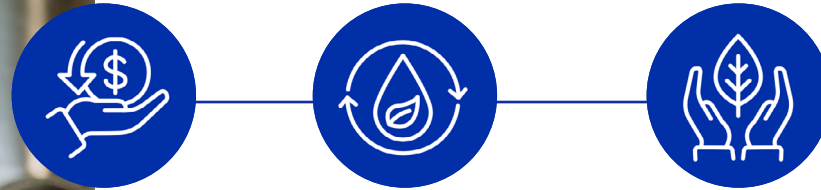
SUSTAINABILITY

**98% of the waste water was recovered and reused in the washing processes**, drastically reducing the consumption of mains water.

The total recirculation of the washings reached **6000 L/h**, with an optimal balance between hard water (5000 L/h) and demineralized water (1000 L/h).

The company also achieved a **zero discharge system**, eliminating any emissions to the sewer system. The use of **ion exchangers and reverse osmosis** has allowed the water conductivity to be stabilized at 250  $\mu\text{S}$  for post-treatment washes, 7  $\mu\text{S}$  in intermediate washes and  $<1$   $\mu\text{S}$  for final washes, **improving process quality and reducing waste**.

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The company has been able to see tangible results in terms of **efficiency and sustainability**, both from an economic and environmental impact point of view.



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more sustainable  
future.**

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