

# Technologies for reducing solvent emissions: the Porada case

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## Introduction

The constant search for new solutions to reduce the environmental impact of coating operations, today more urgent than ever now that we are just a few months away from the implementation of the solvent directive for all machinery (October 31, 2007), highlights the importance of optimisation measures for

the coating process, especially where it is held to be too complicated to replace solvent-based products with waterborne ones, as is often the case in the furniture sector.

One example of how an analysis of the process and optimisation operations can be positive is the experience of Porada (fig. 1), an important furniture manufacturer

in Brianza that stands out in its field because of the elegance, simplicity and freshness of its lines, because of its timeless designs, the attention to detail, the precise working that is connected to the handmade tradition. Founded in 1968 by Luigi Allievi and his sons, the company values the tradition of the two previous generations and has expanded its

1 – View of the Porada production plant.





production of chairs (fig. 2), started in 1948, to other sectors. Because of the type of furnishings produced and because of the considered decisions based on the requirements of its customers, Porada today does not use water borne products, even if it does have some of these products for evaluating the feasibility of a mixed cycle. In the meantime, in order to guarantee healthy working conditions for its employees and to reduce emissions, it has introduced the Simple Paint system from Ate (fig. 3) to optimise the application of coatings and to reduce VOC emissions.

“The solution for reducing pollution that we are proposing - explained Simone Barbieri (Ate)

- eliminates the reasons for the excessive dispersion of coating in the application phase: the generation of uncontrolled electrostatic charges, for example, cause the rubbing of the coating at the moth of the nozzle and it distributes une-

venly on the surface of the item; in general, all those phenomena that create multiple interferences of static electricity even when electrostatic application systems are not used, for example when mixed air systems are used, and which can



**2 – A chair produced by the furniture manufacturer in Cabiato (Co).**

**3 – The Simple Paint system from Ate (installed by Stiver).**

**4 - Tiziano Gariboldi, production manager for Porada, with Simone Barbieri from Ate..**

5 – The application of the undercoat on some table bases.



6 and 7 – The sanding operations can be done automatically or manually in the case of complex shapes.



compromise the final quality of the finishing phase by compromising the correct spreading of the film, its uniformity, its adhesion, as well as creating added amounts of overspray, with an uneconomical use of coating.

The Simple Paint system that we have developed works on nebulisation air, neutralising it electrically (deionising it) and produces less overspray, better penetration of the coating, a better spreading of the film, reducing maintenance costs for the booth and achieving a substantial reduction in the amount of solvents released into the air - in the case of traditional coating products - and creating a considerable saving of the coating that is used, which is around 20%".



8 – The application of the finish on table tops.

## The coating cycle

Porada carries out all the production phases of its furniture in-house.

“Once we have the designs from our designers – explains Tiziano Gariboldi (fig. 4) Porada’s production manager – we work the raw material in-house and it then passes on to the finishing section.

The coating process has the following two stages:

- manual application of

the undercoat in the water curtain booth (fig. 5)

- flash period

- sanding of the undercoat, automated (fig. 6)

- or manual (fig. 7) depending on the shape of the piece

- manual application of the matt or gloss finish in the water curtain booth (fig. 8)

- final drying (fig. 9).

With the installation of the Simple Paint system – which operates in both cabins (supplied by Stiv-

er in Cinisello Balsamo, after a period of testing)

- we achieved an immediate return economically – continued Tiziano

Gariboldi – the savings in coating, in fact, ranges

between 30 and 40% and, beyond the sizeable economic benefit, the environmental benefit is

considerable, both inside and outside: conditions for the coating operators

have clearly improved, because less fumes are

created in the cabin and the cleaning of the cabin and equipment is much

quicker. There have also been benefits for the quality: the quality has

decidedly improved and this can be seen particularly on table surfaces, which

are smoother, softer to the touch thanks to the better uniformity and

spreading of the film”

9 – The zone for drying the finished goods before being assembled.



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