



Universidad  
Carlos III de Madrid

## OO/UC3M/18 - USE OF PAINTS IN CONSTRUCTION APPLICATIONS

The Research Group of Materials Performance works in collaboration with some paint manufacturer and paint applier companies. It is sought to open the scope of this activity through tests that include and link activities of both sectors. This improvement will widen the application areas to construction companies.

### Description of the technology

Paint industry makes a wide range of products, paints (water based or solvent), varnishes, lacquers and enamels. These products show a classification as a function of their use, industrial (mining, heavy industry, naval construction, industry in general) or decorative (architectural, domestic use). Paints' development of better applications and better properties, strength and hardness, promotes a continuous development in this sector.

There is a great development in paint area. The employment of more than 100 raw materials (solvents, pigments, resins and additives) in paints, with many chemical substances that are harmful, causes a great deal of health problems, especially produced during the application and drying processes. There are new formulations of paints that show results comparable to solvents and which are able to remove health and environmental risks due to volatile organic compounds emission, paint mud and residual solvents. The current development entails improvements in the used industrial products. The tendency is the employment of powder coatings that avoids the use of solvents and harmful components to the environment and people.

Furthermore, changes in painting systems can optimize paint transference, such as electrocoating or electrostatic systems improving the final results.

In all cases, the Research Group of Materials Performance can collaborate with paints producer or paints applier companies. The relation between our Research Group and the companies is essential to ensure the quality of the final product, studying the applications and carrying out tests to ensure the accurate paint application, durability and service performance.

### Innovative aspects

The fast development of new paints requires the suitable characterization of their properties after being applied on different materials used in construction. These tests will make possible a better paint application, as well as ensure an accurate paint performance and durability.

### Competitive advantages

The accurate employment of different paints will allow to decrease the costs, as well as to know the possible failures in service and, therefore the possibility of avoiding them.

Current state of intellectual property:  Secret know how

### Keywords

Powder coating; Liquid paint; Performance of painted surfaces.

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