

Get your hands off those panels!

Franco Bulian

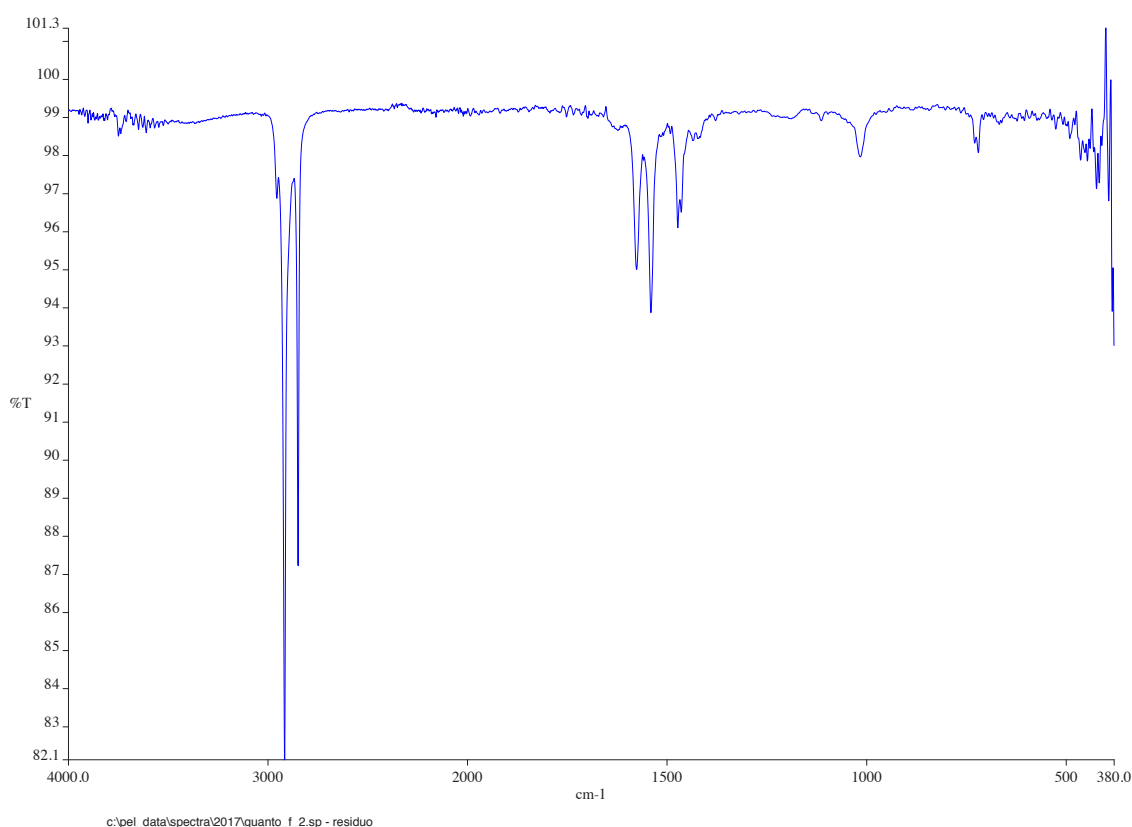
We have recently investigated a coating defect regarding the evidence of small superficial irregularities such as cissing on the surface of some panels.

The case was not simple as the defect was almost imperceptible, being visible only under certain lighting conditions of the surfaces.

As in many other similar cases, also in this one there was no evidence of regularity in its appearance, being apparently not associated with raw materials, working conditions or other macroscopic factors.

We have thus started laboratory investigations using all the available techniques with microscopic observations and chemical analyzes of various types (IR, GC-MS) directly on defective samples.

However, none of these techniques has been successful and the case remained unresolved without any evidence of an objective parameter associated with the defect.



Such cases are unfortunately quite common in the coating world and the identification of their origin by analytical techniques almost never has a certain answer.

Cissing defects are often the result of very slight contamination of surfaces by substances such as paraffin and especially silicones whose origin can be actually the most variable.

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Sometimes these contaminations were even associated with air currents that transported silicones from the outside, perhaps from a nearby shed where silicone-based sealants were used. In other cases, the problem of silicones depended on hydraulic work performed on the inside of the company even in relatively distant areas from the painting department. Unfortunately, these cases are difficult to study, too, because the amount of contaminants is too low for a chemical analysis, albeit sophisticated, also because of the interference of all the other substances present in the formulation of a coating material.

A “field” survey may still be helpful, and in the past Catas was able to resolve some of these cases, for example, finding that some operators used a hand silicone-based cream and then handled the panels inside the coating department. An analogous experience was that related to a hair gel also containing silicones used in the past by an employee within a furniture company.



Therefore, even in this latter case we have requested to visit the company where the defects had occurred and during the inspection we had the opportunity to sample some “suspicious” materials. In particular, our attention has focused on the gloves used by the paint department employees and on which we conducted specific analyzes.

As clearly evident from the infrared spectrum shown in Figure 1, we have verified that the gloves taken are able to release discrete amounts of paraffin on the surfaces they come into contact, thus posing a potential risk for the following application of coating system.

We cannot say for sure whether this is the real cause of the complained problem, but we still believe that the risk is real and we immediately informed the company of this result.

In conclusion, recalling the title of this article, we wanted to tell this experience to point out the right attention that must be given to handling the panels in the coating process, accidental contamination and consequent defects are unfortunately always around the corner.

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