

The effect of a waterproof product for cement materials on waterborne coatings for wooden windows

Alessia Matellon

February 2021

A little time ago, one bin containing some waterproof siloxane impregnating product, have been delivered to Catas. This product is suitable to protect cement products used to cover building facades, such as: cement blocks, natural or artificial stones, non-glazed ceramic tiles to water.

Reading the data sheets enclosed to the product, our interest was immediately captured by one warning phrase suggesting to avoid the contact of the waterproof product to coated windows.

So, why don't take advantage on the opportunity to study what happens if...

Might it be necessary to apply this waterproof product on the façade of in use buildings? What happens in case of upkeping, for example, when the windows and window frames are already in place? And what if no enough care was given to protect the windows during the application of the water proof product?

In order to give an answer to these questions, we applied some of the waterproof product by brush on some wooden specimens coated with two one-component waterborne coatings for windows at our disposal, which behavior was already known by us.

One set of samples was coated with a light shade semi clear product and another part of specimens was coated with a dark shade semi clear product. It is known that a light shade varnished product is commonly less resistant than a dark shade one to weathering.

During a short conditioning period, some initial assessments have been carried out to evaluate the effect of the product in contact to the coated surfaces. Successively an artificial weathering according to EN 927-6 with UVA 340 lamps, test have been started.

A change in the appearance of the surface was immediately clearly perceivable on the treated specimens with mattifying and softening effects.

Some assessments have been done at the end of each weekly step and some others only at the end of the usual 2016 hours of the artificial weathering test.

Some of the substantial results obtained by this short study are here presented.

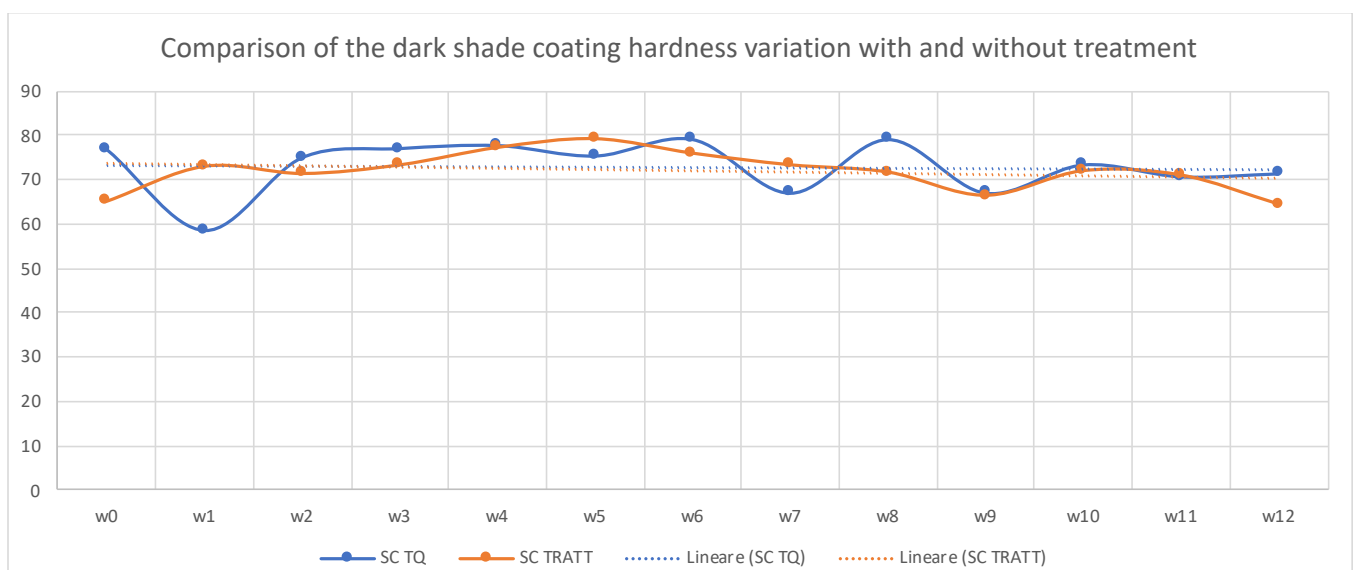


Diagram 1

The effect of a waterproof product for cement materials on waterborne coatings for wooden windows

Alessia Matellon

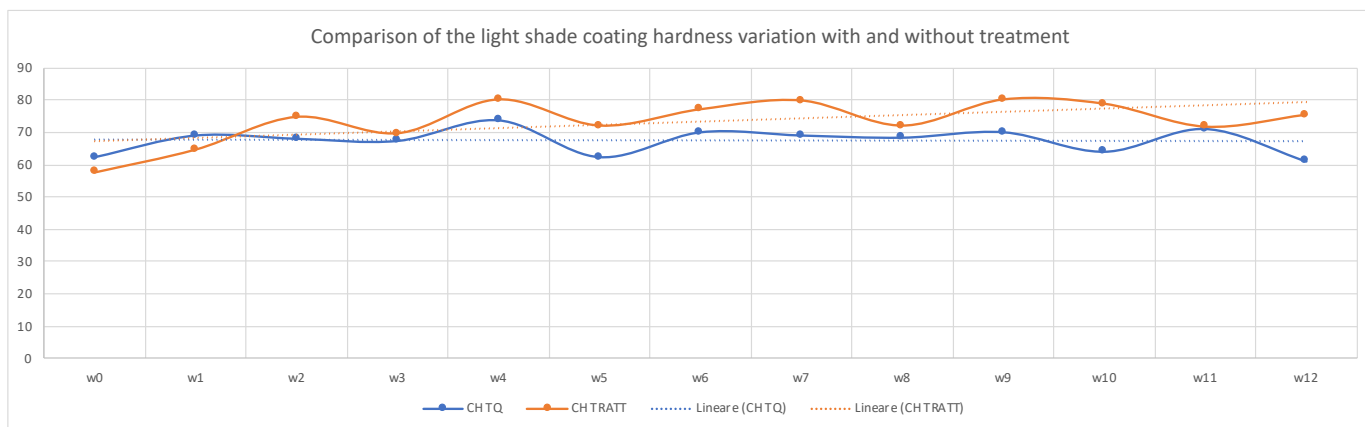
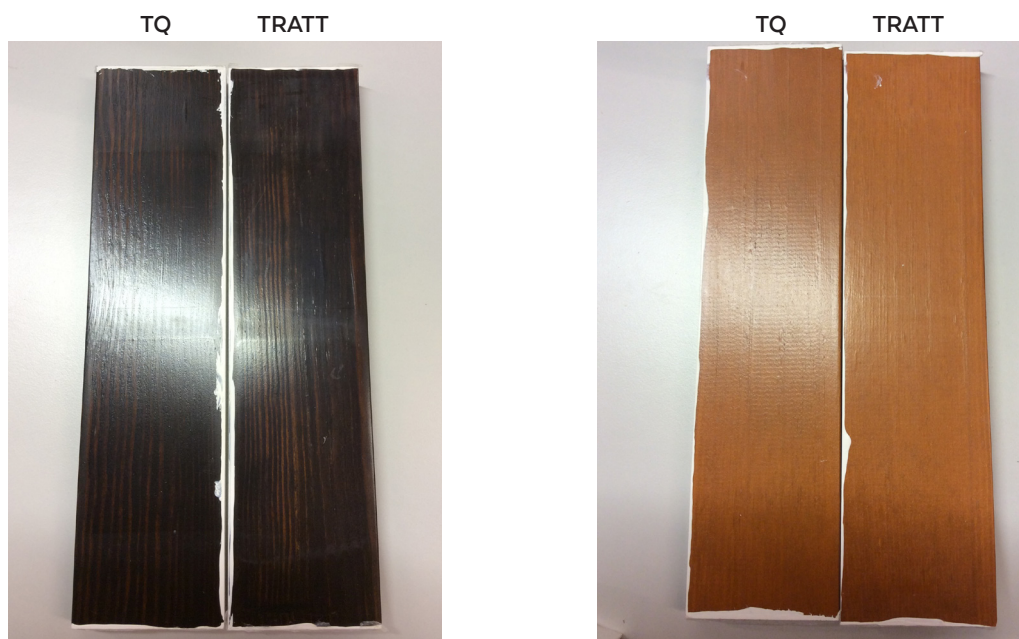


Diagram 2

Diagrams 1 and 2 show the comparison of the variation of the hardness of the light shade coating (CH) and the dark one (SC), treated (TRATT) and untreated (TQ). The hardness is measured by a Persoz pendulum dumping test according to ISO 1522. The hardness of both coating films is reduced due to the effect of the treatment (w0=initial measurement, before weathering).

The light treated coating seems to tend toward a surface hardening by the effect of the weathering.



Picture 1. Appearance of the specimens after 2016 hours of artificial weathering according to EN 927-6

The effect of a waterproof product for cement materials on waterborne coatings for wooden windows

Alessia Matellon

As told before, the appearance of the samples is changed in the brightness of the surface just by the effect of the treatment. But, at the end of the ageing test the surfaces of the samples are very similar.

Gloss (average value)	initial	final
CH TQ	16,8	19,0
CH TRATT	11,0	13,6
SC TQ	20,0	44,0
SC TRATT	16,7	46,3

Table 1. Brightness values (measured in Gloss Units) of the samples before and after ageing

The colour of the samples seems to be influenced by the treatment, too. After the artificial weathering test both treated paints show a difference in the colour of more than one unit when compared to the same paint not treated with the waterproof product..

	DE*
CH TQ	3,07
CH TRATT	4,155
SC TQ	1,005
SC TRATT	2,76

Table 2. DE* measurement; variation of the color after weathering

Some other evaluations have been carried out, such as the assessment of the adhesion of the coating to the substrate; there haven't been found any compromising data of the efficacy of the basic function of the coating film to protect the object to weathering. Moreover no cracking, flaking nor other detachments have been found. In conclusion, we may say that, except for a slight initial change in the appearance of coated surfaces potentially "attacked" by a waterproof product for the protection of cement artifacts, the functionality of the paint of the windows seems to be not compromised.

Catas is always open to evaluate and analyze products, their functions, effects, compatibility, characteristics and behavior.

For info:

Alessia Matellon
+39 0432 747232
matellon@catas.com

All rights reserved

Reproduction or duplication of the contents of this article is authorized under condition that the source - © CATAS - San Giovanni al Natisone - Udine - Italy is being cited