What's the weather like on the samples tested at Catas? The weather data station is now active

Alessia Matellon e Carlo Cozzi

After a non-operation period due to the displacement of the exposure racks on which it is mounted, the weather data controller has already been reactivated in October this year.
It was purchased in 2014 to meet the requirements of the research project called Servowood completed in 2016, involving 13 partners among laboratories and paint manufacturers. One of the aims of the project was to determine the correlation between natural (EN 927-3) and artificial weathering (EN 927-6) as well as considering the "doses" of radiation and water to which samples are exposed during aging.

To do this, the participating laboratories were equipped with weather data recorders of the same type and model by acquiring them from the same manufacturer.
The peculiarity of the instrument lies in the quantity and type of measurements. The weather station allows recording of the following data:

- Air temperature (° C);
- Relative air humidity (%);
- Surface temperature (° C) of samples or reference specimens such as:
    * White Panel. It allows to monitor the temperature near the surface of a panel made according to EN 927-3 and painted in white color.
    * Dark panel. The probe is inserted close to the surface of a painted panel with dark-colored products;
    * Clear coated panel. The probe detects the temperature near the surface of a coated panel with clear products;
- Surface humidity (0-1). Where 0 indicates that the surface is dry, 1 the surface is wet. It can be considered as a dew detector. Interestingly, the effect of surface moisture in some ways is more aggressive than rainwater;
- UVA radiation (W/m^2). It is interesting for comparison with artificial aging (e.g. EN 927-6, where - UVA 340 lamps are used);
- UVB radiation (W/m^2);
- Global radiation (W/m^2).

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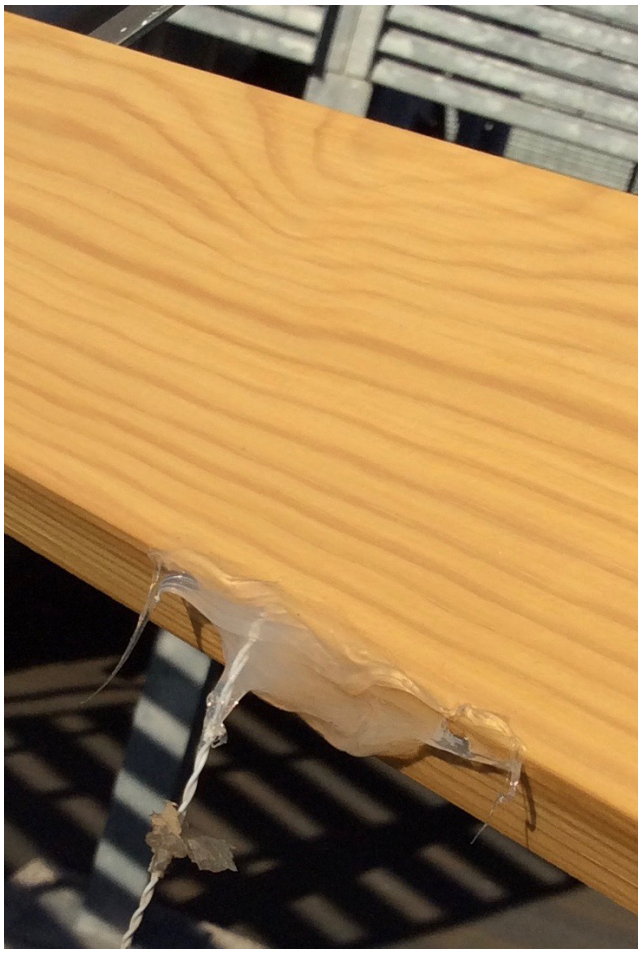
Being able to monitor the climatic conditions on the same tested products (by verifying the surface temperature of coated specimens) is definitely a significant opportunity.
Due to the amount of data available, it would be possible to approach correlation studies between natural and artificial aging on a particular product in greater detail.
Analyzing the data collected together with evaluating the effects on the tested product it would be possible for companies to study thoroughly and try to evaluate the durability of their products.
For some time, Catas reports the weather data provided by the Regional Meteorological Observatory and attaches them to natural aging test reports. Such data can help to explain possible differences in the case of repeated tests over the years, knowing that the repeatability of a test like this, where the determining factors are not under direct control, is a problem.
The now available unit provides a software program to record data every 10 minutes, so the amount of data allows a much more effective and accurate study and analysis.



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