Fraunhofer
IBP

Fraunhofer-Institut für Bauphysik IBP

Forschung, Entwicklung,
Demonstration und Beratung auf
den Gebieten der Bauphysik

Zulassung neuer Baustoffe,
Bauteile und Bauarten

Bauaufsichtlich anerkannte Stelle für
Prüfung, Überwachung und Zertifizierung

Institutsleitung
Univ.-Prof. Dr.-Ing. Gerd Hauser
Univ.-Prof. Dr.-Ing. Klaus Sedlbauer

Test Report P15-093e/2014

Artificial Weathering of a Coating on Polycarbonate-Sheets

Product "4EVERblue"

Client:

Liquisol
Kasteeldreef 112 b 2
2970 Schilde
Belgium

Stuttgart, April 8, 2014

Fraunhofer-Institut für Bauphysik IBP
Nobelstraße 12 | 70569 Stuttgart
Telefon +49 711 970-00
Telefax +49 711 970-3395
www.ibp.fraunhofer.de

Standort Holzkirchen
Fraunhoferstr. 10 | 83626 Valley
Telefon +49 8024 643-0
Telefax +49 8024 643-366

Standort Kassel
Gottschalkstr. 28a | 34127 Kassel
Telefon +49 561 804-1870
Telefax +49 561 804-3187

1 Task and Procedure

The Fraunhofer Institute for Building Physics IBP, Stuttgart, was ordered by the manufacturer to perform artificial weathering under xenon arc-lamps based on [1] of a coating on transparent polycarbonate (PC) samples. Further investigations of optical or mechanical parameters were not basis of the contract.

2 Description of Test Specimens

Sampling:	Delivery by the manufacturer on February 18, 2014,
Designation of test specimens:	translucent coating, product name"4EVERblue", according to the manufacturer in 2 layers, applied to PC multi-wall sheets of 10 mm thickness, coating and cutting by the manufacturer.
Number, dimensions:	14 samples 50 mm x 90 mm, total thickness 10 mm.
Sample name:	no labelling by the manufacturer

3 Method

10 of the 14 samples were exposed to a filtered xenon arc-lamp under the following conditions:

Test period and place:	February 20, 2014 – April 3, 2014,
Weathering device:	Atlas Suntest CPS +,
Xenon bulb age:	New,
Irradiation:	765 W/m2,
Spectral Range:	270 nm - 800 nm,
Black Standard Temperature:	60°C,
Load Duration:	1000 h,
Wetting:	Without, test in dry condition,
Samples:	Coating facing outside towards artificial sunlight.

4 Results

4 of the 14 samples were used as reserve samples to assess possible changes through artificial weathering. As exemplarily shown in Figures 1-3, no changes of colour, gloss and adhesion of the layer on the sample can be detected with the naked eye. In the pictures, the 4 exemplaries are shown. The remaining 6 samples also showed no discernible changes after weathering under artificial sunlight over 1000 hours.

5 References

[1] DIN EN ISO 4892-2:2006: Plastics –Methods of exposure to laboratory light sources – Part 2: Xenon arc-lamps, Beuth Verlag, Berlin.

Special note:
The results exclusively refer to the test specimens under the previously described boundary conditions.

This test report comprises 3 pages of text and 3 figures.

Stuttgart, April 8, 2014 / JHA

Deputy Head of Department

Dipl.-Ing. (FH) Andreas Zegowitz

Responsible Engineer

Dipl.-Ing. Michael Würth

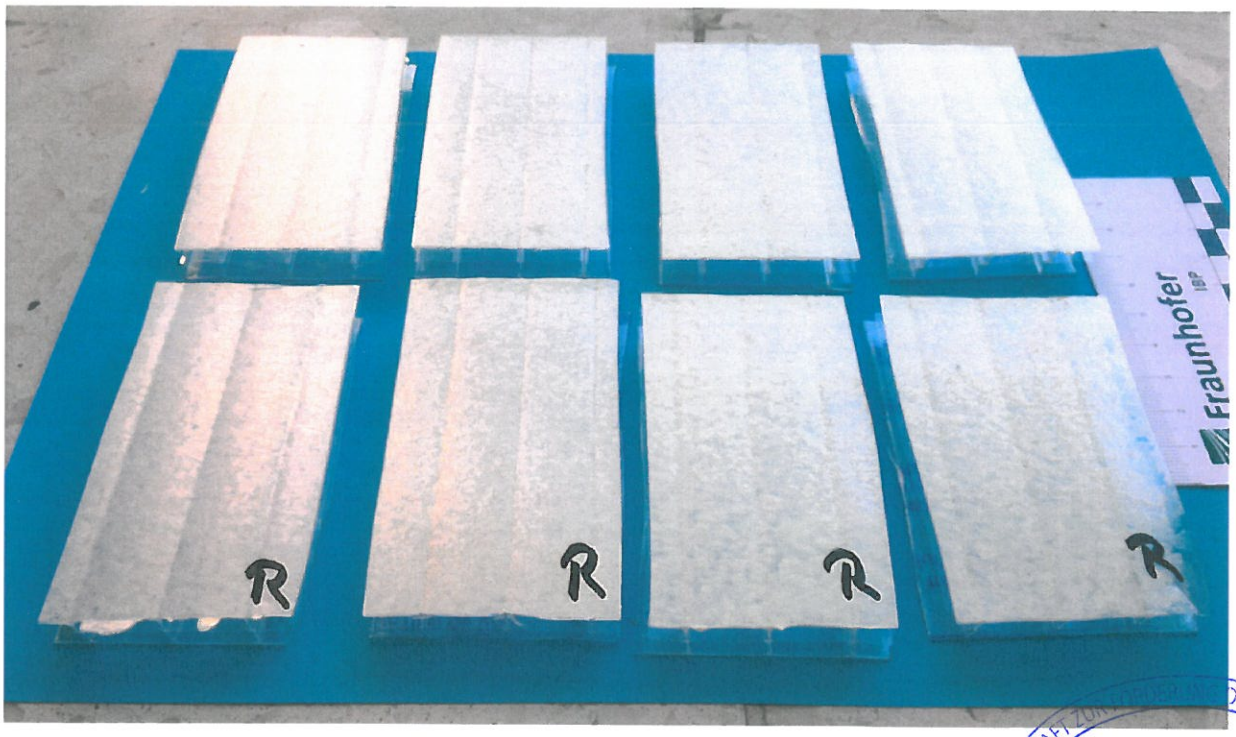

Figure 1: Selection of samples in new condition (marked with "R"), and after weathering

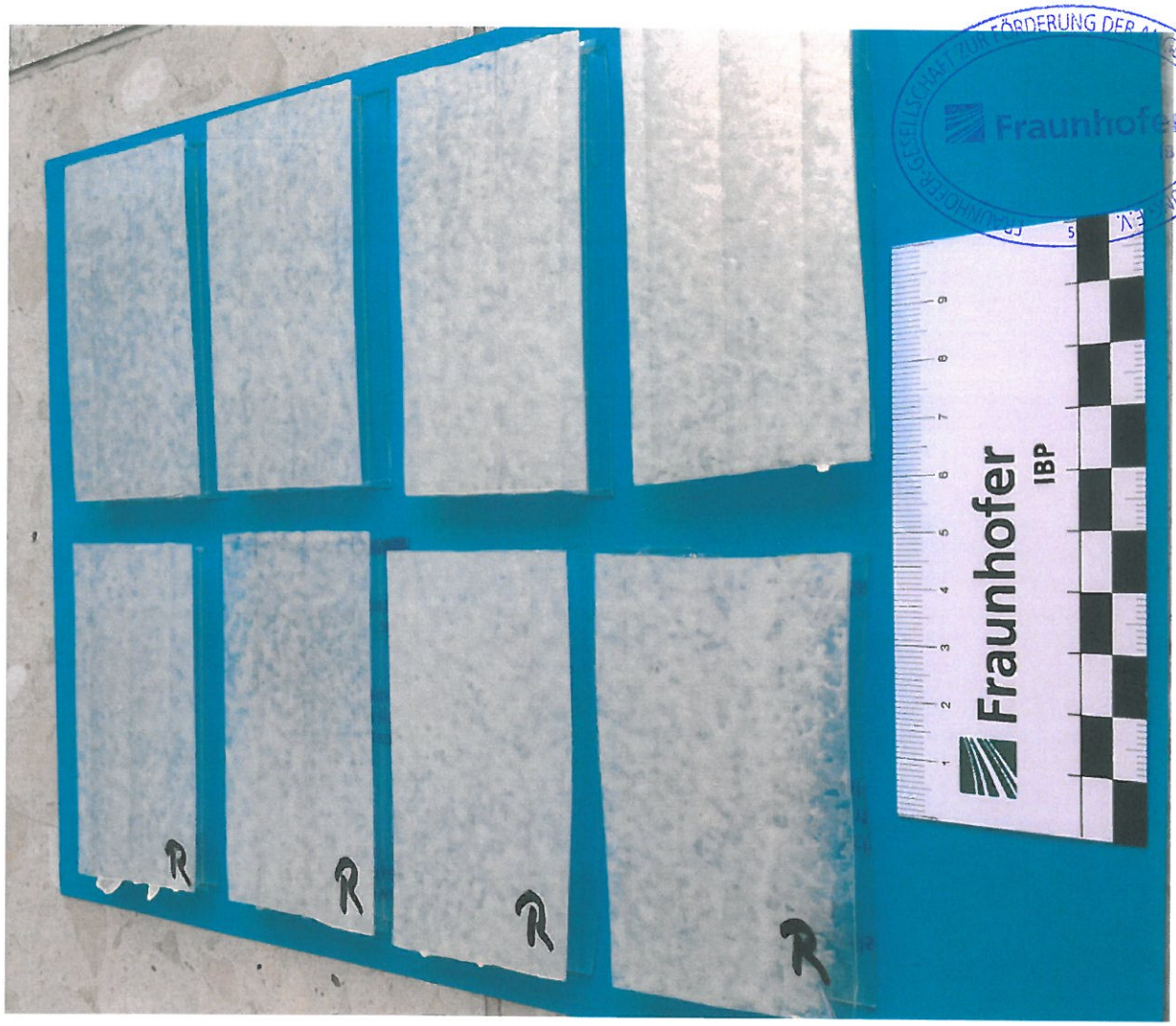

Figure 2: Selection of samples in new condition (marked with "R"), and after weathering, as seen from a different viewing angle.

Figure 3: Close-up of two samples. Left side after weathering, right side in new condition (marked with "R").