



# Weathering Stress Test

KAIFLEX PROTECT Jacketing

Test ordered by	KAIMANN GmbH Hansastraße 2-5 · D-33161 Hövelhof Tel.: +49 (0) 52 57- 98 50- 0 · Fax: +49 (0) 52 57- 98 50- 590
Testing period	25 months
Type of test	Weathering stress test
Tested material	Sample 1: standard foil Sample 2: KAIFLEX PROTECT ALU TEC foil
Testing equipment	Weathering apparatus QUV/spray Brand: Q-panel
Test procedure	<p>Step 1: 4 hours radiation with UVA-rays at 0,89 W/m<sup>2</sup>/nm and 340 nm. Black panel temperature: + 60 °C This is simulating the maximal solar spectrum of the sun.</p> <p>Step 2: Spray 5 minutes with deionised water at simultaneously UVA-radiation.</p> <p>Step 3: 4 hours condensation at + 50 °C. Back to step 1.</p>
Test result	<p>In defined temporal distances the samples were taken and the colour-values L*, a* and b* were measured. From these values the colour change Delta E is determined in accordance with the following formula:</p> $\Delta E = ((\Delta L^*)^2 + (\Delta a^*)^2 + (\Delta b^*)^2)^{0,5}$ <p>L*, a and b are the coordinates from the CIE 1976 L*a*b* color model defined by the CIE commission. L* represents the lightness of the color (L*, L* = 0 yields black and L* = 100 means white), a* defines the position between red (more precisely magenta) and green (negative values = green / positive values more red), b* defines the position between blue and yellow (negative values = blue / positive values yellow).</p> <p><b>Weathering of KAIFLEX PROTECT ALU-TEC with and without high performance cover coating</b></p> <p>Delta E</p> <p>Weathering time [h], Internal method: UV irradiation with fluorescence lamp and water spray, end point brittle failure</p>
Conclusion	The UV-light resistance of the tested KAIFLEX PROTECT ALU TEC foil under these extremely tough testing conditions is an excellent result. According to the state of the art technology in UV-protection of plastic laminates this result is near to the maximum which can be achieved with UV-protected cover films in similar thickness.
Remark	The producer of the different foils informs: In this test the ALU-TEC foil is used as the test basic material. Most important for the test result is the last layer - weather protection foil - which is also a substance of KAIFLEX PROTECT F-Black and KAIFLEX PROTECT F-ALU.
Note on the technical data:	In the event of a discrepancy between the information of non-German document and the German document, the German version shall prevail.