TÜRCERT Certification Body

INSPECTION REPORT

TÜRCERT TEKNİK KONTROL VE BELGELENDİRME A.Ş.

UNITED ACCREDITATION FOUNDATION UAF

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Sample ID:	**Green PVC Rulo Bant**

TEST	METHOD	RESULT
Plastics - Methods Of Exposure To Laboratory Light Sources - Part 2: Xenon-Arc Lamps	**ISO 4892-2:2013**	PASS

EUROLAB LABORATORY SERVICES APPROVED

Seal

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Environment

The requirements and standards apply to equipment intended for use in :

X	**Residential (domestic) environment**
X	**Commercial and light-industrial environment**
X	**Industrial environment**
X	**Medical environment**

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ISO 4892-2 : Plastics - Methods Of Exposure To Laboratory Light Sources - Part 2: Xenon-Arc Lamps

Scope

This part of ISO 4892 specifies methods to expose samples to xenon arc light in the presence of moisture to produce weathering effects (temperature, humidity and / or wetness) that occur when materials are exposed to sunlight or light in actual end use environments.

Procedure

Samples are attached to sample holders on the equipment so that they are not subjected to any pressure. Each test specimen is identified by appropriate indelible marking, avoiding areas to be used in subsequent testing. As a control, a plan of test specimen locations is made. In samples used to detect change in color and appearance, if desired, a portion of each test sample is protected by an opaque cover throughout exposure. This gives a non-exposed area adjacent to the exposed area for comparison.

The device is programmed with the selected conditions to operate continuously for the required number of cycles under the selected exposure conditions. These conditions are maintained during exposure.

Exposure Conditions

Radiation:

Exposures Using Daylight Filters (Artificial Weather Conditions)						
Loop No.	Exposure Time	Brightness		Black Panel Temperature (°C)	Room Temperature (°C)	Relative Humidity (%)
		Broadband (300 nm to 400 nm) W / m^2	Narrow Band (340 nm) W / (m^2nm)			
1	102 min dry 18 min water spray	60 ± 2 60 ± 2	0,51 ± 0,02 0,51 ± 0,02	65 ± 3 —	38 ± 3 —	50 ± 10b —

Radiant Exposure Measurement

If used, mount and calibrate the radiometer to measure the radiation on the exposed surface of the test sample. When using radiant poses, express the exposure range in radiant energy per unit area of the exposure plane, joule per square meter (J / m^2), in the wavelength band, in 300 nm to 400 nm. Square meter [J / (m^2·nm)] per nanometer at selected wavelength (eg 340 nm).

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Determination of Color Changes Or Other Appearance Properties

General Changes

When a polymeric material is exposed to UV radiation and other moderate environmental stresses, the change in most physical properties can be attributed to chemical aging, and the extent of chemical changes may be related to the duration of natural outdoor or artificial weather exposure.

Color Changes

Gray scale method is used to determine the color changes in the sample. At this scale, Class 1 corresponds to the strongest contrast and grade 5 zero contrast (two samples of the same color). The dark gray scale is well suited to assess the degree of fading of relatively strong colors or deep hues. The use of the near white gray scale is preferred for evaluating the color change, such as yellowing of white or near white samples.
The contrast degrees of the exposed sample and file samples are compared using the gray scale. The degree of color change is the degree on the gray scale that shows the same contrast between the exposed test sample and an unexposed file sample of the same material.

For Color Changes	For Saturation Changes	For Lightness Changes
More blue or less blue More green or less green More red or less red	Less intense Busier	Light Black

Green PVC Rulo Bant			
Test		Color Values Before Test	Post-Test Color Values
UV	L:	49,29	49,72
	a:	-15,93	-15,79
	b:	19,16	19,04
	Brightness	0011,8 gu	0010,6 gu

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Test Results

Test Sample	UV Exposure Time	Gray Scale	Customer Requirement	Result
Green PVC Rulo Bant	672 Hours	5-4	-	PASS
According to ISO 105-A02: 1993 / Cor.2: 2005, under the gray scale D65 standard light, the best scale was determined as 5 and the worst scale as 1. The results were performed within 1 hour after the specified times at the end of the exposure, as well as the interim examination.				

Aging

The structure of the samples was examined with FTIR before and after this test.

Conclusion: Radical formation in the raw material structure with UV effect, carbonyl formation was not formed with the contribution of chain fracture air oxygen.

There is also no fragility and crack formation.

During the test, daily normal conditions targeted for 672 hours were simulated and no structural deterioration was observed in the sample.

Measurement Device	Rates	Date of Calibration
EUROLAB EL / UV IR VL Xenon	UVA-UVB (290 to 315 nm)	01.06.2022

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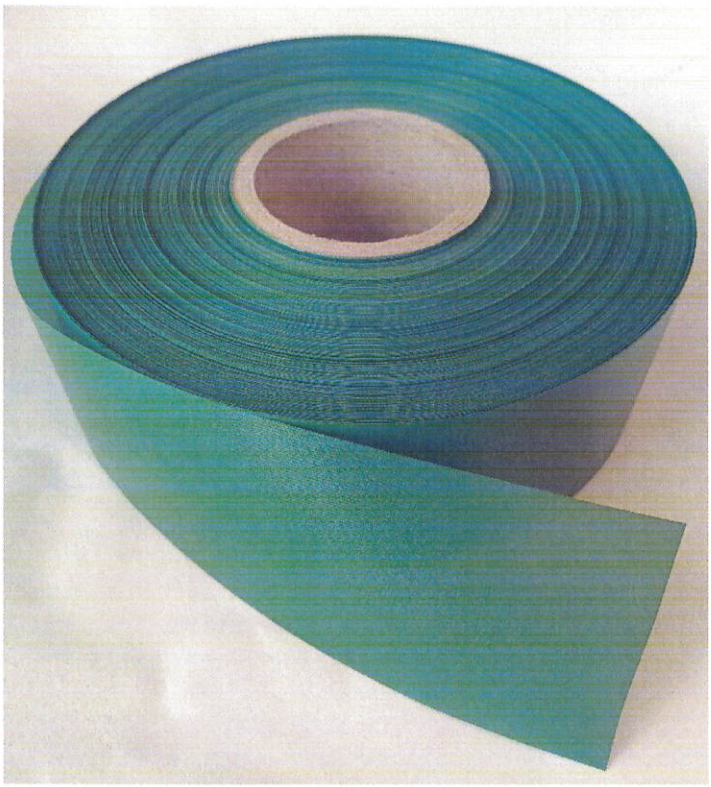
Sample Images



End Of Report

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