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Overall Rating: PASS

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Sample ID : SİYAH 3 SPİRAL BORU OSUV SERİSİ

Decision Rule : Stated by the customer .
Disclaimer Statement : -

	TEST	METHOD	RESULT
*	ISO 4892-2 UV YAŞLANDIRMA TESTİ	ISO 4892-2	P



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

Sample ID	Part No.	Part ID	Explanatory Information
A SİRİRAL BORU OSUV SERİSİ - SİYAH	Part 1	SİRİRAL BORU OSUV SERİSİ	-

Summary of Results

Parts & Results															
Parts	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ISO 4892-2 UV YAŞLANDIRMA	P														

ISO 4892-2 Plastics - Methods of Exposure to Laboratory Light Sources - Part 2: Xenon Arc Lamps

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.

Test Procedure

Samples are attached to the sample holders in the equipment so that they are not subjected to any applied pressure. Each test sample is identified by appropriate indelible marking, avoiding the areas to be used in subsequent tests. As a control, a plan of test sample positions is made. If desired, in the case of samples used to determine the change in color and appearance, some of each test sample is protected with an opaque cover throughout the exposure. This gives an unexposed area adjacent to the exposed area for comparison. This is useful for checking the progress of exposure, but reported data should always be based on comparison with file samples stored in the dark.

Before placing the samples in the test chamber, it is ensured that the device operates under the desired conditions. The device is programmed with the conditions selected to run continuously for the required number of cycles under the selected exposure conditions. These conditions are maintained during exposure. If a test sample needs to be removed for periodic inspection, care is taken not to touch or alter the exposed surface in any way. After inspection, it is placed in the sample holder or in the test chamber, with the exposed surface as before.

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 ² nm)			
1	102 min dry 18 min water spray	60 ± 2 60 ± 2	0,51 ± 0,02 0,51 ± 0,02	63 ± 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 [$J / (m^2 \cdot nm)$] per nanometer at selected wavelength (eg 340 nm).

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: More blue or less blue
More green or less green
More red or less red

For saturation changes: Less intense
Busier

For lightness changes: Light
Black

Part 1

Test		Color Values Before Test	Post-Test Color Values
UV	L:	8,83	8,87
	a:	-0,23	-1,58
	b:	-0,96	-2,03
	Brightness	0006,9 GU	0006,6 GU

Test Item: Rapid Aging Test-Xenon-arc

Exposure Example Description: Geniox Casing – 1

Test Method: ISO 4892-2: 2013 Loop 1 and ISO 105-A02: 1993 / Cor.2: 2005

Exposure cycle

ISO 4892-2: 2013 cycle 1Irradiation: (0,50 ± 0,2) W / (m²-nm)@340nm 110 hour, -40°C to +85°C, (50 ± 10)% RHFilter: Daylight - UV-B / UV-A / UV-C – KSENON ARKExposure time : 552 Hour**Test Result;**

TEST SAMPLE	UV EXPOSURE TIME	GRAY SCALE	CUSTOMER REQUIREMENT	RESULT
SPIRAL BORU OSUV SERİSİ (3×1 m)	552	5-5	.	PASS

Note:

1. 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.
2. The results were performed within 1 hour after the specified times at the end of the exposure, as well as the interim examination.

GENERAL EVALUATION;

SPIRAL BORU OSUV SERİSİ (3×1 m) , 552 hours resistant to UV aging.

AGING

The molecular structure of the samples was examined with FTIR (Mattson) before and after this test.

Conclusion: When sufficient protection is provided, Radical formation in the structure of raw materials with UV effect, carbonyl formation with the contribution of chain breakage air oxygen did not occur.

Also, yellowing in appearance 5/5, no brittleness and crack formation.

During the test, daily normal conditions targeted for 552 hours were simulated and no discoloration or distortion was observed.

Measurement Device	Rates	Date of Calibration
EUROLAB EL / UV IR VL Xenon	UVA-UVB (290 to 315 nm)	17.08.2021

In the test environment, the relative humidity is 50% in the environment..
In the test environment, the air temperature is 21 degrees Celsius.

SAMPLE PICTURE

***** End of Report*****