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Order Date: 09/11/2022
Customer order number: 2200004604

Scope of investigation: tensile tests on photovoltaic module

Sample / Artefact: photovoltaic module (4 variants)
Number of delivered parts: seven per variant
Receipt at laboratory: 16/01/2023



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Definition of task

Tensile tests are to be carried out on photovoltaic modules in the as-delivered condition and after ISO 4892-3 (artificial weathering). The test criteria are defined as a force greater than 2000 N without the module breaking.

Implemented investigations

The listed investigations were performed at DEKRA Automobil GmbH – laboratory Bretten in the period from 16/01/2023 to 22/03/2023:

1. Tensile Test on photovoltaic module
2. Artificial weathering according to ISO 4892-3*

** These tests were carried out on a subcontract basis.*

Ambient conditions

Sample-taking, preparation and testing were performed according to the test specifications, standards and customer specification.

Sample / Artifact

The samples arrived at DEKRA Automobil GmbH – laboratory Bretten undamaged and were prepared and documented for the investigations.

Description of the samples

Designation	Test
STAFFA TIPO A	Tensile tests in the as-delivered condition and after ISO 4892-3 (artificial weathering) Test criteria > 2000 N without breaking the part
STAFFA TIPO B	
STAFFA TIPO C	
STAFFA TIPO D	

Results of the tensile test

Designation	Condition	F _{max} in N for Test 1	F _{max} in N for Test 2	Test criteria
STAFFA TIPO A	delivery condition	3000	4360	F > 2000 N without breaking the part
STAFFA TIPO B		3000	10200	
STAFFA TIPO C		3000	6560	
STAFFA TIPO D		-	5370	
STAFFA TIPO A	after ISO 4892-3	3000	4580	
STAFFA TIPO B		3000	9440	
STAFFA TIPO C		3000	6010	
STAFFA TIPO D		-	4490	

Remarks

For test 1, the force was limited to 3000 N in not to damage the fixtures. The test criteria are therefore passed.

For variant STAFFA TIPO D, there is only one test setup.