

MATERIAL PERFORMANCE TESTS
PA66+GF30 Resistance To UV Radiation

Elements Tested: PA66+GF30
Test Items: 1000h UV Weathering Performance Test
Product Example Tested: Swing Handle Lock


Report No#: YK-QP-46-27-A0
Test No#: 202309140009
Test Date: 2023/09/13

Weathering Performance Test Report

Report No. : YK-QP-46-27-A0

Test No. : 202309140009

Sample Name	Swing Handle Lock		Part Number	N/A					
Material	PA66+GF30		Sample Status	Finished product (in good condition)					
Sample Supplied By	Selectlok Australia		Entrusting Department	QA					
Test Item	Weather resistance		Test Date	2023.6.14 09:30 ~2023.7.26 09:40 Total duration: 1008h					
Purpose	1000h UV Aging Test								
Test Method/Standard	GB/T 14522-2008 Artificial weathering test method for plastics,coating and rubber materials used for machinery industrial products - Fluorescent UV lamps UL 746C STANDARD FOR SAFETY Polymeric Materials – Use in Electrical Equipment Evaluations								
Test Condition	Exposure Period	Lamp Type	Irradiance (W/m ² *nm)	Blackboard Temperature (°C)	Test Period				
	8h Drying 0.25h Water spraying 3.75h Condensation	UVA-340	0.76±0.02 0 0	50±3 Uncontrollable	2023.6.14 09:30 ~2023.7.26 09:40 Total duration: 1008h				
Device Name	Ultraviolet Aging Tester	Part Number	ZH-QUV-115	Serial Number	ZH2304156				
Test Requirement	After 1000h: No abnormal phenomena such as cracking, powdering, whitening, spots, deformation, etc. on the surface, color difference $E \leq 3.0$; No obvious changes in product surface and performance (handle tension > 300N, torque > 33N.m, and retention rate $\geq 70\%$)								
Sample Information And Test Results									
Sample Information	Qty	Test Results- After 1000H					Conclusion		
		No cracking/ powdering/ whitening/ spotting/ deformation etc.	tension > 300N	Tensile force retention rate \geq 70%	torque > 33N.m	Torque retention rate \geq 70%		Color difference $\Delta E \leq 3.0$	
Lab after test	Color difference value								
Lock (PA66+GF30)	4	No obvious changes on the surface	307N	86.2%	46N.m	95.8%	L:29.47 a : 0.10 b : 0.66	$\Delta E=1.89$	No significant changes in appearance and performance
		√	√	√	√	√			OK
Remark	For the comparison before and after the tensile test, please refer to the <i>Loading Test Report 202309130008</i> For the comparison before and after the torque test, please refer to the <i>Torque Test Report 202309130009</i>								

Sample Information	
Sample Information	Status After 1000 Hours Of UV Aging
Lock (PA66+GF30)	

Test Date: : 2023/09/14

Approved By : 胡利平 2023/09/14

MATERIAL PERFORMANCE TESTS

PA66+GF30 Loading Test



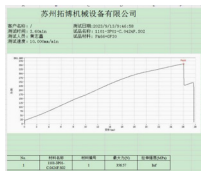



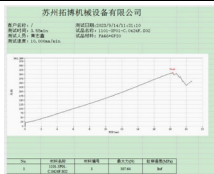

Elements Tested: PA66+GF30
Test Items: 1000h Tensile Strength Test (w - w/o UV Aging)
Product Example Tested: Swing Handle Lock

Report No#: YK-QP-46-08-A0
Test No#: 202309130008
Test Date: 2023/09/13

Loading Test Report

Report No. : YK-QP-46-08-A0

Test No. : 202309130008

Sample Name	Swing Handle Lock	Part Number	N/A	Material	PA66+GF30
Entrusting Department	QA	Test Date	2023/6/9	Quantity	2PCS
Test Method/Standard	GB/T 25293-2010 Mechanical door lock for cabinets of electrotechnical and electronic equipment GB/T 1040.1-2018 Polyamid materials—Tensile testing				
Test Item	Comparison of handle ultimate tensile strength after 1000h UV aging and without UV aging				
Test Requirement	Ultimate tensile of handle after test > 300N; the mechanical properties after 1000h test shall not be lower than the original 70%				
Device Name	Servo Computer Universal Material Testing Machine	Part Number	TH-8201S		
Test Method	The sample lock (handle) is fixed on the testing machine, using the universal tensile testing machine axial gradually apply tension until the lock broke.				
Test Result	/	Not UV Aged	After 1000h UV Aging	Retention Rate ≥ 70%	
	Ultimate tensile	356N	307N	86.2%	
Conclusion	OK				
Test Record Pictures					
Pictures of the test process of samples before UV aging test					
Before UV aging	Test Status	Tension Diagram	Status After Test		
					
Pictures of the test process of samples after UV aging test					
After UV aging	Test Status	Tension Diagram	Status After Test		
					

Test Date : 2023/09/13

Approved By : 胡利平 2023/09/13

MATERIAL PERFORMANCE TESTS









PA66+GF30 Torsional Stress Test

Elements Tested:	PA66+GF30
Test Items:	1000h Torsional Stress Test (w - w/o UV Aging)
Product Example Tested:	Swing Handle Lock
Report No#:	YK-QP-46-09-A0
Test No#:	202309130009
Test Date:	2023/09/13

Torsional Stress Test Report

Report No. : YK-QP-46-09-A0

Test No. : 202309130009

Sample Name	Swing Handle Lock	Part Number	N/A	Material	PA66+GF30
Entrusting Department	Process Department	Test Date	2023/6/9	Quantity	1PC
Test Method/Standard	GB/T 25293-2010 Mechanical door lock for cabinets of electrotechnical and electronic equipment 11.2 GB/T 16823.3-1997 Test Method for Tightening of Threaded Fasteners				
Test Item	Comparison of handle ultimate torque after 1000h UV aging and without UV aging				
Test Requirement	Ultimate torque of handle after test > 33N.m; the mechanical properties after 1000h test shall not be lower than the original 70%				
Device Name	Dial Torque Wrench	Part Number	SDB-200		
Test Method	The measured locks are fixed on the mounting door plate, the mounting door plate is fixed with a bench vise, the handle is clamped with a tooling, and then a torque wrench is used to twist the handle until the handle breaks, and the test is completed.				
Test Result	/	Not UV Aged	After 1000h UV Aging	Retention Rate ≥ 70%	
	Maximum torque	48N.m	46N.m	95.8%	
Conclusion	OK				
Test Description					
Fix the lock under test on the fixture and test the maximum torque value of the handle with a torque wrench.					
Pictures of the test process of samples before UV aging test					
Before UV aging	Installed State	Torque Value After Test	Status After Test		
					
Pictures of the test process of samples after UV aging test					
After UV aging	Installed State	Torque Value After Test	Status After Test		
					

Test Date : 2023/09/13

Approved By : 胡利平 2023/09/13