Ministry of Science, Research and Technology Institute for Color Science & Technology	**Form Code: F-LI-56**	**Institute for Color Science and Technology**	NACI National Accreditation Center of Iran NACI/Lab/۸۵۲
	Report Code: SC/1401/287/1		
	Report Date: 10/04/2023	**Test Report**	

Lab. Name: Coatings Quality Control

Sample: Silver Silicone Acrylic 600 degrees Celsius for Modular Structures

Standard Test Method: ASTM

Costumer Name: BOUBARS

Lab. Environmental Conditions: Temp. 23±1 °C , R.H. 50±5%

Herein we certify that the test has been carried out on the samples according to the mentioned standard test methods .

Test Results:

Row	Test	Test Method	Test Result	Re peat
1	Heat resistance	ASTM D2485	No dulling, No blistering, No cracking, and No loss of adhesion were detected. Loss of adhesion after the bending test was observed.	3
2	TGA	ASTM E1131	Weight loss up to 600 °C: 14.3%	1

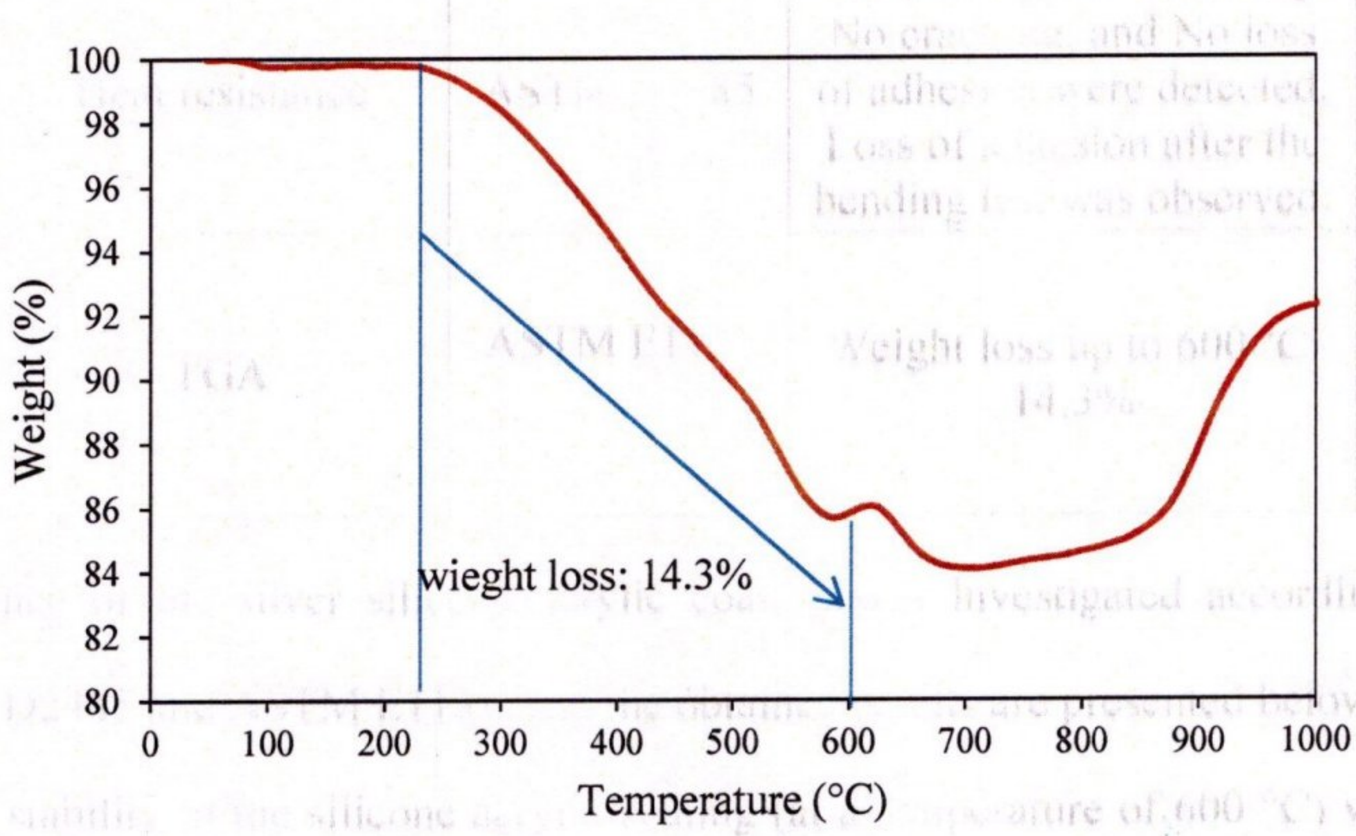
The thermal resistance of the silver silicone acrylic coating was investigated according to two different standards of ASTM D2485 and ASTM E1131, and the obtained results are presented below :

1. The thermal stability of the silicone acrylic coating (at a temperature of 600 °C) was investigated via the test method of ASTM D2485. purpose, at first the coated plates (after curing at 23 °C for 30 min and then 60 min at 200 °C) were placed in an oven at the temperature of 600 °C for 24 hours. Then, one of the plates was placed in cold water and cooled. After taking the sample out of cold water, no color

Ministry of Science, Research & Technology
Institute for Color Science and Technology

change, blisters, cracks and loss of adhesion were observed. The other plate was cooled for 1 hour at ambient temperature and then subjected to a bending test. After the bending test, the separation of the coating from the surface of the plate was observed.

2. The TGA test was performed according to ASTM E1131 standard (using the device Universal V4.5A TA Instrument within the temperature range of 25 to 1000 °C and the heating rate 10 °C/min under the atmosphere of air) with the aim of checking the thermal stability of the silicone acrylic coating. It was observed that there was no weight loss due to the thermal destruction of the coating until the temperature of 230 °C. But at a higher temperature up to 600 °C, a weight loss of about 14.3% is observed which is due to the thermal degradation of the coating. These results show that the analyzed coating is stable at low temperatures (below 300 °C) and relatively stable at higher temperatures.



Ministry of Science, Research & Technology
Institute for Color Science and Technology

Ministry of Science, Research and Technology Institute for Color Science & Technology	Form Code: F-LI-56	Institute for Color Science and Technology	NACI National Accreditation Center of Iran NACI/Lab/۸۵۲
	Report Code: SC/1401/287/1		
	Report Date: 10/04/2023	Test Report	

Bahram Ramezanzadeh **Laleh Kaghazchi**

Ministry of Science, Research & Technology
Institute for Color Science and Technology