Measurement Report

Conducted by the

National and Kapodistrian University of Athens
Physics Department

Abolin Co submitted an application to the Laboratory of the Group Building Environmental Studies, of the Physics Department, of the National and Kapodistrian University of Athens (NKUA), for the assessment of the solar reflectance at the UV-VIS-NIR spectrum (300 to 2500nm) and of the value of infrared emittance at the wide IR spectrum. The following specimens have been submitted:

Specimen 1: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 001.
Specimen 2: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 002.
Specimen 3: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 003.
Specimen 4: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 004.
Specimen 5: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 005.
Specimen 6: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 006.
Specimen 7: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 007.
Specimen 8: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 008.
Specimen 9: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 009.
Specimen 10: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 010.
Specimen 11: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 011.
Specimen 12: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 012.
Specimen 13: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 013.
Specimen 14: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 014.
Specimen 15: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 015.
Specimen 16: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 016.
Specimen 17: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 017.

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Specimen 18: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 018.
Specimen 19: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 019.
Specimen 20: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 020.
Specimen 21: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 021.
Specimen 22: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 022.
Specimen 23: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 023.
Specimen 24: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 024.
Specimen 25: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 200μm thickness.
Product Code: Cool Barrier 025.
Specimen 26: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 500μm thickness.
Product Code: Cool Barrier Roof White.
Specimen 27: Coating sample of dimensions: 8cm (w) x 8cm (l) and of 500μm thickness.
Product Code: Cool Barrier Façade White.

The Physics Laboratory of NKUA hereby certifies that on 18/01/2008 the above mentioned tested samples have been successfully measured to have the values of solar reflectance and infrared emittance that are shown in Table 1.

Product code	Solar Reflectance	Infrared emittance	Product code	Solar Reflectance	Infrared emittance
Cool Barrier 001	0.73	0.87	**Cool Barrier 015**	0.84	0.87
Cool Barrier 002	0.84	0.86	**Cool Barrier 016**	0.79	0.87
Cool Barrier 003	0.87	0.88	**Cool Barrier 017**	0.66	0.86
Cool Barrier 004	0.45	0.90	**Cool Barrier 018**	0.39	0.89
Cool Barrier 005	0.75	0.87	**Cool Barrier 019**	0.86	0.88
Cool Barrier 006	0.76	0.86	**Cool Barrier 020**	0.80	0.89
Cool Barrier 007	0.42	0.89	**Cool Barrier 021**	0.77	0.89
Cool Barrier 008	0.62	0.89	**Cool Barrier 022**	0.74	0.89
Cool Barrier 009	0.74	0.87	**Cool Barrier 023**	0.60	0.89
Cool Barrier 010	0.43	0.89	**Cool Barrier 024**	0.29	0.91
Cool Barrier 011	0.64	0.88	**Cool Barrier 025**	0.70	0.90
Cool Barrier 012	0.70	0.88	**Cool Barrier Roof White**	0.89	0.89
Cool Barrier 013	0.82	0.86	**Cool Barrier Façade White**	0.89	0.90
Cool Barrier 014	0.83	0.86			

Table 1. The measured values of solar reflectance and infrared emittance of the 27 samples submitted by ABOLIN Co.

The measurements for the solar reflectance were conducted according to the ASTM Standard E903-96 (ASTM E 903 -Standard Test Method for Solar Absorptance, Reflectance, and Transmission of Materials Using Integrating Spheres) by using a UV/VIS/NIR (Varian, Carry 5000) fitted with a 150mm diameter, integrating sphere (Labsphere, DRA 2500). The reference standard reflectance material used for the measurement was a PTFE plate (Labsphere).
The measurements for the infrared emittance were conducted according to the ASTM Standard E408-71 (ASTM E408-71(1996) - Standard Test Method for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques) by using the Emissometer Model AE (Devices & Services).

Scientific supervisor:

ΜΑΤΘΑΙΟΣ ΣΑΝΤΑΜΟΥΡΗΣ
Αναπλ. Καθηγητής

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Signed on: 18th January 2008

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