● Luna Optical Analysis

Customer:

Oy Scantarp Ab
Kirsi Grahn / Timo Merinen
P.O. Box 1766
FI-70421 Kuopio

Research Contract:

ScantarpGrahnta061107HS.pdf

Target:

Coated fabric: Code No. 6779 099, 10*10 cm²
Coated fabric: Code No. 6776 099 820, 10*10 cm²

The target samples were taken by the customer from the production line.

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Testing time:

Measurement time: 13th of November, 2007

The Purpose of the Test:

To know the transmittances of the ultraviolet (UVA and UVB) and visual radiation through the coated fabrics. The fabrics are made for outdoor use.

Test Method:

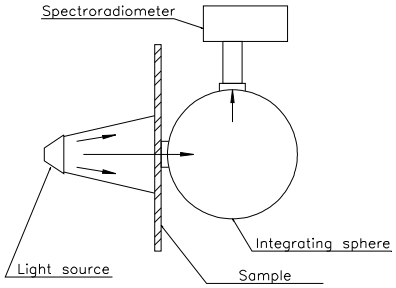
The transmittances (295 nm – 800 nm) were measured with a spectroradiometer and an integrating sphere.

Validation of test method:

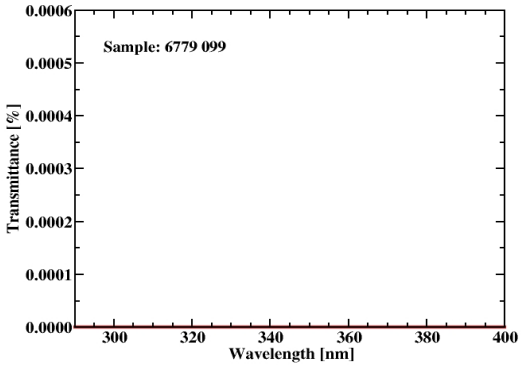
The measurement with an integrating sphere gives a hemispherical value for the transmittance. The hemispherical transmittance includes the directly and diffusely transmitted radiations.

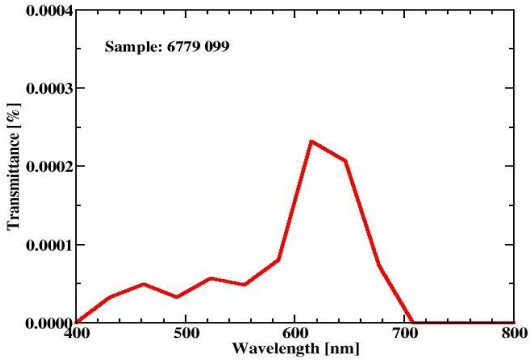
Performed actions:

The transmittances and reflectances of the fabrics were measured in the wavelength range of 290 – 800 nm using a spectroradiometer and an integrating sphere. In the transmittance measurements the radiation was perpendicularly incident to the 'solar side' of the samples. The scheme of the measurement system is figured.

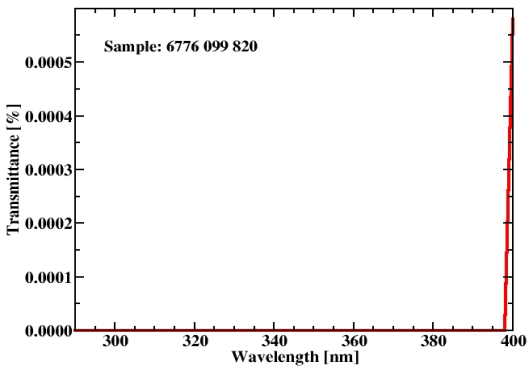


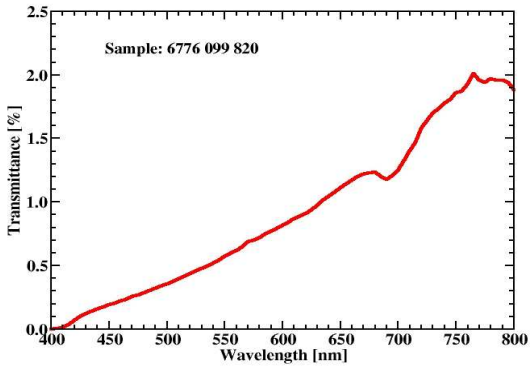
UVB range of the solar radiation is defined from 295 nm to 320 nm and UVA range is defined from 320 nm to 400 nm. The visual range is defined from 400 nm to 760 nm. In this test the visual transmittance measurements were done to the wavelength of 800 nm.





The UV transmittance of the fabric 6779 099 was 0%. Also at the visual wavelengths the mean transmittance of the fabric 6779 099 was only 0.0001% which can be approximated to be 0%.





The UV transmittance of the fabric 6776 099 820 started at the wavelength of 398 nm. However, the UV transmittance of the fabric was still at 400 nm only 0.0005 %. The mean visual

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transmittance of the fabric 6776 099 820 was 0.9 %.

Yearly in Southern Finland a radiation energy of 1000 kWh/m² is received onto a horizontal surface. Visual radiation energy is about half of this so through a 6776 099 820 fabric it is transmitted yearly 9 kWh/m² of visual radiation energy from the sun.

Conclusions:

Sample	*Mean UVB transmittance [%]*	*Mean UVA transmittance [%]*	*Mean visual transmittance [%]*
Fabric 6776 099 820	0.0	0.0	0.9
Fabric 6779 099	0.0	0.0	0.0

Remarks:

The fabrics through which the transmittances were measured were taken straight from the production line. Ageing of the samples might influence also to the transmittance values of the samples.

Used measuring instruments:
Spectroradiometer: IL 700/780/760
Integrating sphere: Labsphere, Diam. 15 cm

Actions, operations and reporting are in accordance with IEC/ISO 17025 'General requirements for the competence of testing laboratories'.

Signatures:

Littoinen,

Timo Oksa
14th of November, 2007

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