PRÜFSTELLE TEXTIL

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SÄCHSISCHES TEXTIL FORSCHUNGS INSTITUT e.V.

Von der Federation Internationale de L'Automobile (FIA) Paris zugelassene Stelle zur Prüfung von hitze- und flammresistenter Schutzkleidung für Auto-Rennfahrer gemäß Standard FIA 8856-2000

UNTERSUCHUNGSBERICHT / TESTREPORT

Order number STFI:	**20151931.9**
Report date:	2015-11-16
Person responsible:	Mehlhorn
Orderer:	Création Baumann AG Kristi Joga Bern-Zürich-Str.23 4901 LANGENTHAL SCHWEIZ
Test order:	
Date:	2015-09-03
Order received:	2015-09-07
Material received:	2015-10-07

Vorstandsvorsitzender Prof. Dr.-Ing. Hilmar Fuchs
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Material to analyse:

7 samples sun protective material

signed by orderer	Color
Shine Medium 300cm	351
Shine Medium 300cm	352
Shine Medium 300cm	353
Shine Medium 300cm	354
Shine Medium 300cm	355
Shine Medium 300cm	356
Shine Medium 300cm	357

The sampling was supplied by the issuer. The test department is not informed about the sampling procedure

Analysis content:

(1) Remission and transmission in the visible light range in accordance with DIN EN 410:April 2011

(2) Remission and transmission in the global radiation range in accordance with DIN EN 410:April 2011

(3) Calculation of the total energy permeability degree g_t of window system with sun protective materials, following DIN EN 13363-1 September 2007 and approximated calculation of reduce factor Fc following DIN EN 14501 February 2006

(4) Normally und diffuse transmission measurement in the visible light range in accordance with DIN EN 410 April 2011

Conditions for optical tests:

test parameter	symbol	range of radiation
light transmission degree	$\tau_{v,n-h}$	380...780 nm (standard light D65)
light remission degree	$\rho_{v,n-h}$	380...780 nm (standard light D65)
light absorption degree	α_v	380...780 nm
UV- transmission degree	τ_{uv}	280...380 nm (UV-radiation)
solar transmission degree	$\tau_{e,n-h}$	280...2500 nm (global radiation)
solar remission degree	$\rho_{e,n-h}$	280...2500 nm (global radiation)
Solarabsorptionsgrad	α_e	280...2500 nm
normally / normally transmission degree	$\tau_{v,\,n-n}$	380...780 nm (standard light D65)
normally / diffuse light transmission degree	$\tau_{v,\,n-dif}$	380...780 nm (standard light D65)

Equipment: spectral photometer Lambda 900, PERKIN - ELMER Corp., USA
150 mm sphere; 8° slope of the sample area to the light incidence axis.

Test results:

(1) Light range **UV-range**

Color	light transmission degree	light remission degree	light absorption coefficient	UV-transmission degree
	$\tau_{v,n-h}$	$\rho_{v,n-h}$	α_v	τ_{UV}
351	0,4767	0,5100	0,0133	0,2617
352	0,1137	0,4003	0,4860	0,0843
353	0,1087	0,4080	0,4833	0,0873
354	0,0900	0,4113	0,4987	0,0647
355	0,0803	0,4063	0,5134	0,0690
356	0,0753	0,4003	0,5244	0,0673
357	0,0630	0,3923	0,5447	0,0613

(2) Global radiation range

Color	solar transmission degree	solar remission degree	solar absorption coefficient
	$\tau_{e,n-h}$	$\rho_{e,n-h}$	α_e
351	0,4787	0,4880	0,0333
352	0,1153	0,4123	0,4724
353	0,1130	0,4203	0,4667
354	0,0943	0,4220	0,4837
355	0,0930	0,4213	0,4857
356	0,0920	0,4153	0,4927
357	0,0847	0,4110	0,5043

(3) Total energy permeability degree g_t and reduce factor Fc

Color	thermal regulated treble glazing U=2,0 g=0,65		double glass with thermal protective covering U=1,6 g=0,70	
	g_{tot}	F_c	g_{tot}	F_c
351	0,44	0,68	0,46	0,66
352	0,45	0,70	0,47	0,67
353	0,45	0,69	0,47	0,67
354	0,45	0,69	0,47	0,67
355	0,45	0,69	0,47	0,67
356	0,45	0,69	0,47	0,67
357	0,45	0,69	0,47	0,67

(4) Diffuse and normally transmission degree (visible range)

Color	light transmission degree normal / diffuse	light transmission degree normal / normal
	$\tau_{v,n\text{-}dif}$	$\tau_{v,n\text{-}n}$
351	0,4133	0,0633
352	0,0800	0,0337
353	0,0690	0,0397
354	0,0687	0,0213
355	0,0520	0,0283
356	0,0470	0,0283
357	0,0377	0,0253

The test results are referring to the submitted samples.

The materials received within this order will be kept for a maximum time of 6 month.

The testing period is defined as timeframe between receipt of samples and issue date of test report.

These test report is not allowed to copy in parts.

Dr. Matthias Mägel
head of test department

Dipl.-Phys. Heidrun Mehlhorn
field responsible collaborator