

PRÜFSTELLE TEXTIL



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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: 20151931.6

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



Material to analyse:

5 samples sun protective material

signed by orderer	Color
SHADE Medium 300cm	401
SHADE Medium 300cm	403
SHADE Medium 300cm	447
SHADE Medium 300cm	448
SHADE Medium 300cm	463

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 F_c 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}
401	0,3927	0,5960	0,0113	0,1917
403	0,2350	0,4567	0,3083	0,1287
447	0,1227	0,2567	0,6206	0,0877
448	0,0393	0,0633	0,8974	0,0443
463	0,2123	0,4417	0,3460	0,0473

(2) Global radiation range

Color	solar transmission degree	solar remission degree	solar absorption coefficient
	$\tau_{e,n-h}$	$\rho_{e,n-h}$	α_e
401	0,3950	0,5683	0,0367
403	0,3073	0,5120	0,1807
447	0,2663	0,4217	0,3120
448	0,2267	0,3067	0,4666
463	0,2843	0,4917	0,2240

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

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
401	0,41	0,63	0,42	0,60
403	0,42	0,65	0,44	0,63
447	0,46	0,70	0,48	0,68
448	0,50	0,76	0,52	0,75
463	0,43	0,66	0,45	0,64

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

Color	light transmission degree normal / diffuse	light transmission degree normal / normal
	$\tau_{v,n-dif}$	$\tau_{v,n-n}$
401	0,3493	0,0037
403	0,1767	0,0013
447	0,0730	0,0023
448	0,0080	0,0020
463	0,1607	0,0003

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