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ECONOMIC COMMISSION FOR EUROPE

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World Forum for Harmonization of Vehicle Regulations

Working Party on General Safety Provisions

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Item 17 of the provisional agenda

REGULATION No. 43
(Safety glazing)

Proposal for Supplement 11 to Regulation No 43

Transmitted by the expert from the European Association of Automotive Suppliers (CLEPA) ^{*/}

The text reproduced below was prepared by the expert from CLEPA, in order to propose a reduction from 75 per cent o 70 per cent of the lower limit of the regular light transmittance of a windscreen, specified in Regulation No. 43. The modifications to the current text of the Regulation are marked in **bold** or ~~striketrough~~ characters.

^{*/} In accordance with the programme of work of the Inland Transport Committee for 2006-2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance performance of vehicles. The present document is submitted in conformity with that mandate.

A. PROPOSAL

Annex 3

Paragraph 6.3.1.1.2., amend to read:

"6.3.1.1.2. below ~~75~~ 70 per cent in the case of a windscreen in the zone where the regular light transmittance is measured as defined in paragraph 9.1.2.2. below."

Paragraph 6.4.1.5., amend to read:

"6.4.1.5. Expression of results

Report visual evaluations of exposed test specimens, comparing the appearance of each with that of the unexposed control.

The luminous transmittance measured must not differ from the original tests on unexposed samples by more than 5 per cent and shall not fall below:

~~75% in case of a windscreen~~

70 per cent in the case of a windscreen and other glazing that is located in a position requisite for driving visibility."

Paragraph 9.1.4., amend to read:

"9.1.4. Interpretation of results

The regular light transmittance shall be measured according to Paragraph 9.1.2. of this annex and the result shall be recorded. In the case of a windscreen, it shall not be less than ~~75%~~ 70 per cent. In the case of glazing other than a windscreen, the requirements are specified in Annex 21."

Annex 20, paragraph 3.6.1., amend to read:

"3.6.1. Tests

Representatives...

The check...

~~Glazing panes having a regular light transmission measured during type approval of not less than 80 per cent in case of windscreens and~~ Windscreens and other glazing panes having a regular light transmittance measured during type approval of not less than 75 per cent ~~in case of glass panes other than windscreens,~~ and

glass panes whose symbol is V (see paragraph 5.5.2. of this Regulation), shall be exempted from this test."

Annex 21, paragraph 4.1.1., amend to read:

"4.1.1 The regular light transmittance shall not be less than ~~75~~ 70 per cent."

B. JUSTIFICATION

On a global basis there are currently two prescribed lower limits covering the windscreen regular light transmittance. These are broadly applied on a continental basis:

Asia, North America, South America and Africa	- > 70 per cent
Europe and Australia	- > 75 per cent

This is confusing for vehicle and glazing manufacturers and inhibits international trade.

In order to resolve this problem, the draft gtr for vehicle safety glazing (ECE/TRANS/WP.29/2008/47), agreed by GRSG and to be considered at the next WP.29/AC.3 session in March 2008, specifies a limit of 70 per cent.

Body tinted heat absorbing and heat reflecting darker glazing is used to reduce the amount of heat from solar radiation entering the vehicle. Table 1. and Figure 1. show values for the reduction in the solar transmission as a function of the regular light transmittance for a typical green body tinted glass. Since the solar control performance of the glazing improves with a lowering of light transmittance it is preferable that the visible light transmittance of glass panes on motor vehicles be kept as low as possible within safety constraints. The limitation of the heat entering the cabin of the vehicle is beneficial in terms of in-car comfort, and the reduction of the load on air-conditioner units. The consequent reduction in engine load, results in lower fuel consumption, with reduced CO₂ emission. This type of glazing also has the benefit of reducing the transmission in the ultra violet part of the spectrum, which helps to reduce the degradation of internal plastic and cloth trim.

A reduction in light transmission in the visible part of the spectrum can lead to a reduction in the amount of visual information reaching the driver. The relationship between the light transmission and the driver's visual needs is complex. Factors involved include visual acuity, prevailing contrast levels, vehicle speed and the location of the glazing in the vehicle. Many studies have been carried out to assess the effect of windscreen light transmission on driving performance but few have attempted to define a safe limit. There is no evidence to show that the accident rate attributable to windscreen light transmission is more severe in countries where the lower limit of 70 per cent is applied.

Light Transmission Per cent	Direct Solar Heat Transmission Per cent	Total Solar Heat Transmission at 50 Km/h Per cent	UV Transmission (230 – 380 nm) Per cent
89	83	84	58
71	45	51	18
50	35	42	14
35	24	33	7
26	18	27	4
10	8	19	1

Table 1. Solar Control Properties of Heat Absorbing Automotive Glass

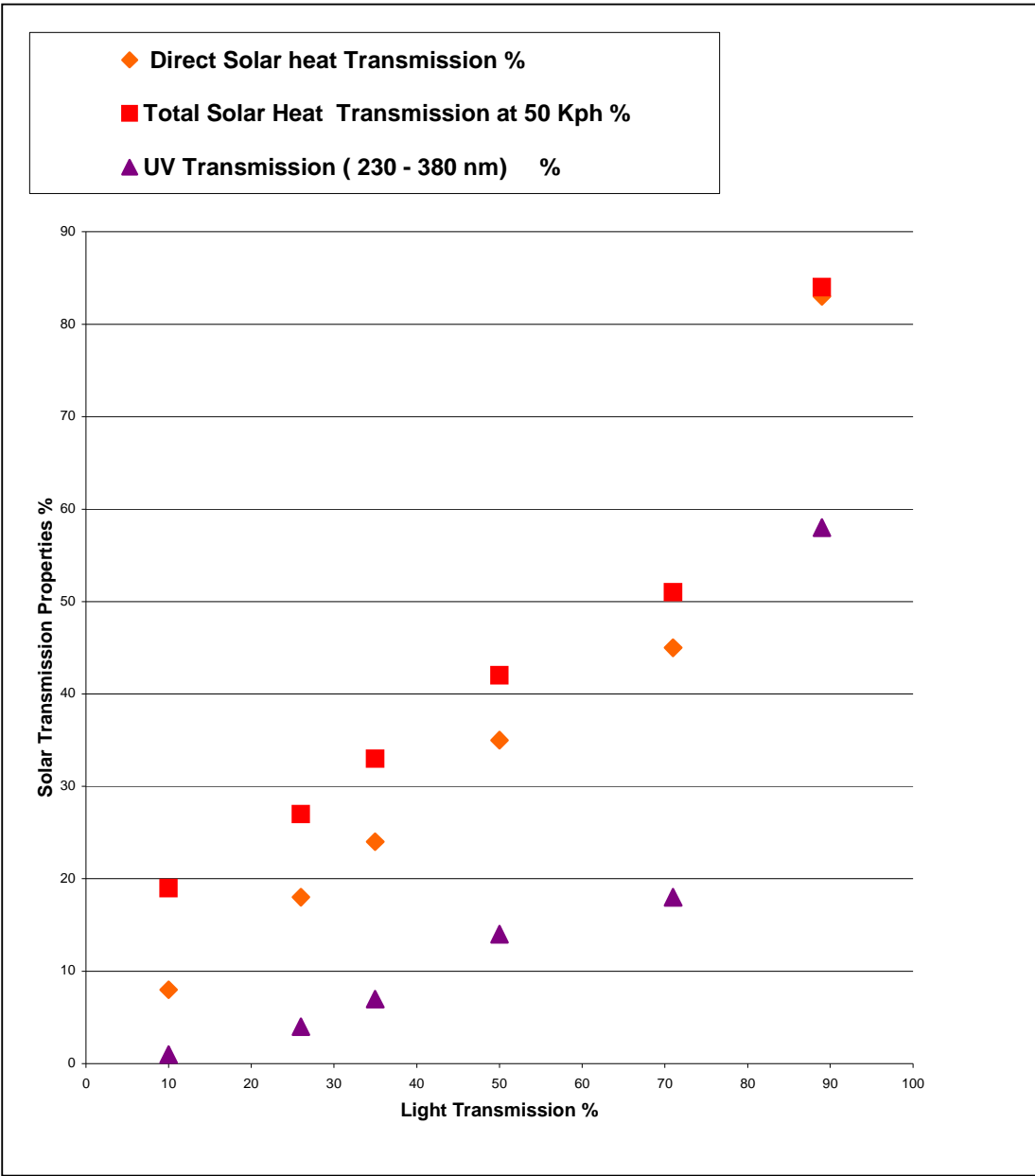


Figure 1. Showing the dependence of the solar transmission properties on the regular light transmittance for a typical green heat absorbing glass.
