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Working Party on General Safety Provisions (GRSG)
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agenda item 6.)

PROPOSAL FOR DRAFT AMENDMENTS TO REGULATION No. 43

(Safety glazing)

Transmitted by the Experts from the Liaison Committee
for the Manufacture of Automobile Equipment and Spare Parts (CLEPA)

Note: The text reproduced below was prepared by the experts from CLEPA in order to modify the value of the total ultraviolet radiant exposure.

Note: This document is distributed to the Experts on General Safety Provisions only.

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A. PROPOSAL

Annex 14, paragraph 6.2.1., Annex 15, paragraph 5.1.1., Annex 16, paragraph 6.2.1., amend the text to read:

"..... Indices of difficulty and test method

The requirements of annex 3, paragraph 6.4. shall apply. The total ultraviolet radiant exposure with the long arc Xenon lamp shall be **500 MJ/m²**. During irradiation "

* * *

B. JUSTIFICATION

The test procedure specified in Regulation No. 43 is taken from ISO/DIS 15082, but instead of time, the total ultraviolet radiant exposure is specified in order to allow the use of different UV radiation sources, e.g. Xenon and Carbon arc lamps.

Typical values for a one-year integrated radiance, measured at normal incidence (90°), for different parts of the world are:

Mid Europe	200 MJ/m ²
Tokyo	220 MJ/m ²
Chicago	290 MJ/m ²
Arizona	320 MJ/m ²

For Supplement 4 to Regulation No. 43, 1600 MJ/m² was chosen as an accelerated life test since it corresponds to a 5-year exposure in Arizona. During the preparation of the draft global standard, various comments indicating that 1600 MJ/m² is too severe a value were received. In practice, exposure angles are not 90° for glazing mounted on a vehicle. Data from Atlas Lamps presented at a meeting of ISO TC22/SC11 showed that for a 37° tilted surface, the values are 0.69 times the normal incidence amount:

Mid Europe	138 MJ/m ²
Arizona	221 MJ/m ²

Furthermore, the orientation of the vehicle will have a significant effect.

Another factor is the duration time required for the test. A typical Xenon arc lamp has an output of 60 W/m²; as such, it takes 44 weeks to achieve a total exposure of 1600 MJ/m², which is a very long 'lead-time' for testing. On the other hand, 13.6 weeks are needed for the 500 MJ/m² exposure, which is still acceptable.

Taking into consideration these arguments, CLEPA is of the opinion that the value of the total ultraviolet radiant exposure should be reduced from 1600 MJ/m² to 500 MJ/m². This is much more realistic for an accelerated life test in a temperate climate. The same value is proposed in the CLEPA draft global standard on safety glazing.
