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Item 4 (c) of the provisional agenda
Tyres: UN Regulation No. 117 (Tyre rolling resistance, rolling noise and wet grip)

Proposal for a Supplement to the 02 series of amendments to UN Regulation No. 117

Submitted by the experts from the European Tyre and Rim Technical Organisation*

The text reproduced below was prepared by the experts from the European Tyre and Rim Technical Organisation (ETRTO). The modifications to the existing text are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2022 as outlined in proposed programme budget for 2022 (A/76/6 (Sect.20), para 20.76), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

I. Proposal

Table of contents, Annexes, amend to read:

"7 Procedures for snow performance testing relative to ~~snow-~~tyre**s** for use in severe snow conditions…

…

8 Procedures for ice performance testing relative to ice grip tyre**s** of class C1…"

Paragraph 2.1., item (e), amend to read:

" (e) Whether ~~snow-~~tyre for use in severe snow conditions or not;"

Paragraph 2.13.1., amend to read:

"2.13.1. "~~*Snow tyre*~~***Tyre*** *for use in severe snow conditions*" means a snow tyre **or a special use tyre** whose tread pattern, tread compound or structure is specifically designed to be used in severe snow conditions and that fulfils the requirements of paragraphs 6.4. and 6.4.1. of this Regulation.

2.13.1.1. "*Ice grip tyre*" means a class C1 snow tyre **that is classified as tyre** for use in severe snow conditions ~~that is~~ **and** additionally designed to be used on road surfaces covered with ice and that fulfils the requirements of paragraph 6.4.2. of this Regulation."

Paragraph 3.1.1., amend to read:

"3.1.1. The performance characteristics to be assessed for the type of tyre; "rolling sound emissions level" and/or "adhesion performance level on wet surfaces" and/or "rolling resistance level"; "snow performance level" in case of ~~"snow~~ tyre for use in severe snow conditions~~"~~ and additionally "ice performance level" in case of ice grip tyre;"

Paragraph 3.1.5.1., amend to read:

"3.1.5.1. Whether ~~snow-~~tyre for use in severe snow conditions or not;"

Paragraph 4.2.6., amend to read:

"4.2.6. The "Alpine Symbol" ("3-peak-mountain with snowflake" conforming to the pictogram described in Annex 7, Appendix 1) if the snow tyre **or the special use tyre** is classified as ~~"snow-~~tyre for use in severe snow conditions~~"~~;

4.2.6.1. The "Ice Grip Symbol" (conforming to the pictogram described in Annex 8, Appendix 1) if the ~~snow-~~tyre for use in severe snow conditions is additionally classified as ice grip tyre;

4.2.6.2. The inscription "M+S" or "M.S" or "M&S" if the special use tyre is classified as tyre for use in severe snow conditions in addition to the "Alpine Symbol";"

Paragraph 6.1.1., footnote below the table of limits for Stage 2, amend to read:

"The above limits shall be increased by 1 dB(A) for **snow tyres that are classified as** ~~"snow~~ tyre for use in severe snow conditions~~"~~, extra load tyres or reinforced tyres, or any combination of these classifications."

Paragraph 6.1.2., table of limits for Stage 2, amend to read:

"

Stage 2		
Category of use	*Limit dB(A)*	
	Other	*Traction tyres*
Normal tyre	72	73

Stage 2			
Snow tyre		72	73
	Snow tyre **that is classified as tyre** for use in severe snow conditions	73	75
Special use tyre		74	75
	Special use tyre that is classified as tyre for use in severe snow conditions	**74**	**75**

"

Paragraph 6.1.3., table of limits for Stage 2, amend to read:

"

Stage 2			
Category of use		*Limit dB(A)*	
		Other	*Traction tyres*
Normal tyre		73	75
Snow tyre		73	75
	Snow tyre **that is classified as tyre** for use in severe snow conditions	74	76
Special use tyre		75	77
	Special use tyre that is classified as tyre for use in severe snow conditions	**75**	**77**

"

Paragraph 6.2.1., table of limits, amend to read:

"

Category of use		*Wet grip index (G)*
Normal tyre		≥ 1.1
Snow tyre		≥ 1.1
	~~"Snow~~**Snow** tyre **that is classified as tyre** for use in severe snow conditions~~"~~ and with a speed symbol ("R" and above, including "H") indicating a maximum permissible speed greater than 160 km/h	≥ 1.0
	~~"Snow~~**Snow** tyre **that is classified as tyre** for use in severe snow conditions~~"~~ and with a speed symbol ("Q" or below excluding "H") indicating a maximum permissible speed not greater than 160 km/h	≥ 0.9
Special use tyre		Not defined
	Special use tyre that is classified as tyre for use in severe snow conditions	**Not defined**

"

Paragraph 6.2.2., table of limits, amend to read:

"

Category of use		*Wet grip index (G)*	
		Other	*Traction tyres*
Normal tyre		≥ 0.95	≥ 0.85
Snow tyre		≥ 0.95	≥ 0.85
	Snow tyre **that is classified as tyre** for use in severe snow conditions	≥ 0.85	≥ 0.85
Special use tyre		≥ 0.85	≥ 0.85
	Special use tyre that is classified as tyre for use in severe snow conditions	**≥ 0.85**	**≥ 0.85**

"

Paragraph 6.2.3., table of limits, amend to read:

"

Category of use		*Wet grip index (G)*	
		Other	Traction tyres
Normal tyre		≥ 0.80	≥ 0.65
Snow tyre		≥ 0.65	≥ 0.65
	Snow tyre **that is classified as tyre** for use in severe snow conditions	≥ 0.65	≥ 0.65
Special use tyre		≥ 0.65	≥ 0.65
	Special use tyre that is classified as tyre for use in severe snow conditions	**≥ 0.65**	**≥ 0.65**

"

Paragraph 6.3.1, last sentence, amend to read:

"For **snow tyres that are classified as** "~~snow~~ tyre for use in severe snow conditions~~"~~, the limits shall be increased by 1 N/kN."

Paragraph 6.3.2, last sentence, amend to read:

"For **snow tyres that are classified as** "~~snow~~ tyre for use in severe snow conditions~~"~~, the limits shall be increased by 1 N/kN."

Paragraph 6.4., amend to read:

"6.4. In order to be classified as a "~~snow~~ tyre for use in severe snow conditions~~"~~ the tyre shall meet the performance requirements of paragraph 6.4.1. below. The tyre shall meet these requirements based on a test method of Annex 7 by which:

(a) The mean fully developed deceleration ("mfdd") in a braking test,

(b) Or alternatively an average traction force in a traction test,

(c) Or alternatively the average acceleration in an acceleration test

of the candidate tyre is compared to that of a Standard Reference Test Tyre (SRTT).

The relative performance shall be indicated by a snow grip index."

Paragraph 6.5.2., amend to read:

"6.4.2. Ice performance requirements for class C1 tyres classified as ice grip tyre

In order to be classified as ice grip tyre, a ~~snow-~~tyre for use in severe snow conditions shall meet the minimum ice grip index value, as calculated in the procedure described in Annex 8 and compared with the respective Standard Reference Test Tyre (SRTT) shall be as follows:

Class of tyre	*Ice grip index*
	Ref. = SRTT16
C1	1.18

"

Annex 1, item 4.1, amend to read:

"4.1. ~~Snow tyre~~**Tyre** for use in severe snow conditions (Yes/No)[2]"

Annex 1, Footnote 6, amend to read:

"[6] In the case of ~~"snow-~~tyre for use in severe snow conditions~~"~~ a test report according to Appendix 2 or Appendix 3, as applicable, to Annex 7 shall be submitted. **Additionally in the case of ice grip tyre a test report according to Appendix 2 to Annex 8 shall be submitted.**"

Annex 3, Appendix 1, item 6.1, amend to read:

"6.1. ~~Snow tyre~~**Tyre** for use in severe snow conditions (Yes/No)[1]"

Annex 5, paragraph 3.3., table of temperatures, amend to read:

"

Category of use		*Wetted surface temperature*	*Ambient temperature*
Normal ~~tyres~~**tyre**		12 °C – 35 °C	12 °C – 40 °C
Snow ~~tyres~~**tyre**		5 °C – 35 °C	5 °C – 40 °C
	Snow ~~tyres~~**tyre that is classified as tyre** for use in severe snow conditions	5 °C – 20 °C	5 °C – 20 °C
Special use ~~tyres~~**tyre**		not applicable	not applicable
	Special use tyre that is classified as tyre for use in severe snow conditions	**not applicable**	**not applicable**

"

Annex 5, paragraph 4.1.6.4., table 2, amend to read:

" Table 2

Category of use	ϑ_0 *(°C)*	*a*	*b* $(°C^{-1})$	*c* $(°C^{-2})$	*d* (mm^{-1})
Normal tyre	20	+0.99382	+0.00269	−0.00028	−0.02472
Snow tyre	15	+0.92654	−0.00121	−0.00007	−0.04279

Category of use		ϑ_0 *(°C)*	*a*	*b* *($°C^{-1}$)*	*c* *($°C^{-2}$)*	*d* *(mm^{-1})*
	Snow tyre **that is classified as tyre** for use in severe snow conditions	10	+0.72029	−0.00539	+0.00022	−0.03037
~~Special use tyre~~**Special use tyre**		not defined				
	Special use tyre that is classified as tyre for use in severe snow conditions	**not defined**				

"

Annex 5, paragraph 4.2.8.4., table 4, amend to read:

" Table 4

Category of use		ϑ_0 *(°C)*	*a*	*b* *($°C^{-1}$)*	*c* *($°C^{-2}$)*	*d* *(mm^{-1})*
Normal tyre		20	+0.99757	+0.00251	−0.00028	+0.07759
Snow tyre		15	+0.87084	−0.00025	+0.00004	−0.01635
	Snow tyre **that is classified as tyre** for use in severe snow conditions	10	+0.67929	+0.00115	−0.00005	+0.03963
~~Special use tyre~~**Special use tyre**		not defined				
	Special use tyre that is classified as tyre for use in severe snow conditions	**not defined**				

"

Annex 6, Appendix 3, item 6.1, amend to read:

"6.1. ~~Snow tyre~~**Tyre** for use in severe snow conditions (Yes/No)[2]"

Annex 7, title, amend to read:

"Procedures for snow performance testing relative to ~~snow~~ tyre**s** for use in severe snow conditions"

Annex 8, title, amend to read:

"Procedures for ice performance testing relative to ice grip tyre**s** of class C1"

II. Justification

1. This proposal is aimed to introduce provisions to allow the type approval of special use tyres that fulfil the requirements for snow performance as laid out in Annex 7. The respective marking related to the “Alpine” symbol has been considered for those tyres complying with these requirements.

2. Based on preliminary technical assessment submitted through informal document GRBP-71-26 allowances for rolling sound emission and rolling resistance could be needed for special use tyres that are classified as tyres for use in severe snow condition. However,

special use tyres that are classified as tyres for use in severe snow condition currently do not exist. Therefore, in this document allowances for rolling sound emission and rolling resistance are not proposed considering that the performance of such tyres cannot be assessed until are they developed.