

Japan proposal for GRBP 2022-12

5-7 September 2022



JAPAN AUTOMOBILE STANDARDS INTERNATIONALIZATION CENTER

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1. Background

Document : ECE-TRANS-WP.29-GRBP-2022-12

EC submitted the proposal on tighter limits of rolling resistance and wet grip for tyres in new state for Classes C1/C2/C3 tyres.

Proposal □ Rolling resistance

Stage 3			
Tyre class			Max value of C_r (N/kN)
C1	load capacity index < 87		10.0
	load capacity index ≥ 87	Tyres other than Run Flat Tyres or Extended Mobility Tyres	9.0
		Tyres with a nominal aspect ratio ≤ 40 and suitable for speeds ≥ 300 km/h	10.0
		Run Flat Tyres or Extended Mobility Tyres	10.0
Special use tyres			10.0
C2	Tyres other than Traction tyres		8.5
	Traction tyres		9.0
C3	Tyres other than tyres marked with "C", "CP" or "LT"		6.0
	Tyres marked with "C" or "CP" as suffix to the tyre-size designation or with "LT" either as prefix or suffix to the tyre-size designation or with "LT" placed after the service description		6.5

For "snow tyre for use in severe snow conditions", the limits shall be increased by 1 N/kN.

1. Background

Proposal □ Wet grip in new state

Class C1 tyre

<i>Stage 2</i>			
<i>Category of use</i>		<i>Wet grip index (G)</i>	
Normal tyre		≥ 1.2	
Snow tyre		≥ 1.2	
	Snow tyre for use in severe snow conditions	Speed symbol ("R" and above, including "H") indicating a maximum permissible speed greater than 160 km/h	≥ 1.1
		Speed symbol ("Q" or below excluding "H") indicating a maximum permissible speed not greater than 160 km/h	≥ 1.0
	Ice grip tyres	≥ 1.0	
Special use tyre		≥ 1.1	

Class C2 tyre

<i>Stage 2</i>			
<i>Category of use</i>		<i>Wet grip index (G)</i>	
		<i>Other</i>	<i>Traction tyres</i>
Normal tyre		≥ 1.10	≥ 1.00
Snow tyre		≥ 1.10	≥ 1.00
	Snow tyre for use in severe snow conditions	≥ 1.00	≥ 1.00
Special use tyre		≥ 1.00	≥ 1.00




Class C3 tyre

<i>Stage 2</i>			
<i>Category of use</i>		<i>Wet grip index (G)</i>	
		<i>Other</i>	<i>Traction tyres</i>
Normal tyre		≥ 0.95	≥ 0.80
Snow tyre		≥ 0.80	≥ 0.80
	Snow tyre for use in severe snow conditions	≥ 0.80	≥ 0.80
Special use tyre		≥ 0.80	≥ 0.80

2. Introduction of unique products in Japanese market

Japan respects EC proposal for tighter limit of Rolling resistance and wet grip in new state.

However there are some products that are unique to Japan and we are investigating the feasibility of accepting EC proposals.

Tyre Class	C1		C2	C3
Classification	TAXI tyre	Studless tyre		
Example				

2. Introduction of unique products in Japanese market

(1) Class C1 “TAXI tyre”

We have “TAXI tyre” which is primarily designed and intended to be fitted for a vehicle used for taxi service (i.e. taxi cab) only.

Tyre Performance :

- Long service life
- High wear resistance

Marking : 

Reference : <https://toyota.jp/jpntaxi/>





(1) Class C1 “TAXI tyre”

Since taxis need to drive long distances and mainly drive in urban areas with frequent acceleration and deceleration in both longitudinal and lateral directions, low wear resistance performance increases the frequency of tyre replacement, resulting in increase of resource consumption.

Therefore, taxi tyres are required to have high wear resistance and long service life.







To achieve long service life, taxi tyres tend to have deep tread depths, which results in trade-off with rolling resistance performance.

Also, wear resistance performance and wet grip performance are trade-off performances.

2. Introduction of unique products in Japanese market

(2) “Studless tyre”

Background:

Market	Europe		Japan
Area	Central Europe	Nordic	Japan
Surface condition	<input type="checkbox"/> Snow removal work is well controlled in central EU <input type="checkbox"/> Studded tyre is available in Nordic countries		<input type="checkbox"/> Special ice surface (mirror bahn) <input type="checkbox"/> Studded tyre is forbidden
	 Snow  Wet	 Snow  Ice bahn	 Snow  Ice (mirror bahn)
Available tyre	Sever snow tyre	Studded tyre	“Studless tyre”
Required tyre performance	Snow, Wet	Ice, Snow	Ice, Snow

(2-1) Class C1 “Studless tyre”

C1 : Ice tyre with a speed symbol of Q and below

Since the sales and use of studded tyres are restricted in Japan, “Studless tyres”, which specializes in ice grip and snow grip performances, provide road traffic safety on slippery ice-covered roads during the winter season that is unique road condition Japan.

Those tyres are classified as “Ice tyre with a speed symbol of Q and below” in UN R117 already.



Speed Symbol : Q and below

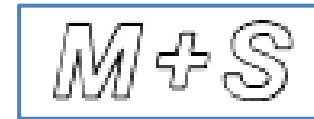
(2-2) Class C2/C3 “Studless tyre”

C2 : Snow tyre for use in severe snow conditions suitable for speed symbol N

C3 : Snow tyre for use in severe snow conditions suitable for speed symbol J and below
except Free Rolling tyre

Since the sales and use of studded tyres are restricted in Japan, “Studless tyres”, which specializes in ice grip and snow grip performances, provide road traffic safety on slippery ice-covered roads during the winter season that is unique road condition Japan.

There is a trade-off between rolling resistance/wet grip performance and ice grip performance.



Speed Symbol : C2 : N
C3 : J and below
(except FRT)

3. Japan proposal to amend GRBP 2022-12

Document : GRBP-76-17

Proposal : Summary

Tyre Class	Cluster		Japan Proposal	
			Rolling resistance	Wet Grip in new state
C1	Taxi tyre	87 □ Load Index	9.0 → 10.0	1.2 → 1.1
	Ice tyre Speed symbol Q and below	Load Index < 87	No change	1.0 → 0.9
		87 □ Load Index	10.0 → 11.0	1.0 → 0.9
C2	Snow tyre used in severe condition with Speed symbol N		No change	1.00 → 0.90
C3	Snow tyre used in severe condition with Speed symbol J and below except Free Rolling tyre		7.0 → 7.5	No change

3. Japan proposal to amend GRBP 2022-12

Document : GRBP-76-17

Proposal : Additional definition / Inscription

Insert a new paragraph 2.16. and 2.17., to read:

- "2.16. "Taxi tyre" means a tyre whose tread pattern, tread compound or structure is primarily designed and intended to be fitted for a vehicle used for taxi service (i.e. taxi cab) only.**
- 2.17. "Free Rolling tyre" means a tyre is primarily designed for the equipment of trailer axles and axles of motor vehicles other than front steering and drive axles. "**

Paragraphs 2.16. to 2.20.9., renumber as 2.18. to 2.22.9.

Insert a new paragraph 4.2.8. and 4.2.9., to read:

- "4.2.8. The Inscription "FOR TAXI", "For TAXI" or "for TAXI" if the tyre is classified as "taxi tyre".**
- 4.2.9. The inscription "FRT" if tyre is classified as Free Rolling tyres. "**

3. Japan proposal to amend GRBP 2022-12

Document : GRBP-76-17

Proposal □ Rolling resistance

<i>Stage 3</i>			
<i>Tyre class</i>			<i>Max value of C_r (N/kN)</i>
C1	load capacity index < 87		10.0
	load capacity index ≥ 87	Tyres other than Run Flat Tyres or Extended Mobility Tyres	9.0
			Taxi tyre
		Tyres with a nominal aspect ratio ≤ 40 and suitable for speeds ≥ 300 km/h	10.0
	Run Flat Tyres or Extended Mobility Tyres		10.0
Special use tyres			10.0
C2	Tyres other than Traction tyres		8.5
	Traction tyres		9.0
C3	Tyres other than tyres marked with “C”, “CP” or “LT”		6.0
	Tyres marked with “C” or “CP” as suffix to the tyre-size designation or with “LT” either as prefix or suffix to the tyre-size designation or with “LT” placed after the service description		6.5

For "snow tyre for use in severe snow conditions", the limits shall be increased by 1 N/kN **except below.**

For Class C1 "Ice grip tyre suitable for speed not greater than 160 km/h and load capacity index ≥ 87 , tyres other than Run Flat Tyres or Extended Mobility Tyres except Taxi tyres and Tyres with a nominal aspect ratio ≤ 40 and suitable for speeds ≥ 300 km/h", the limits shall be increased by 2 N/kN.

For Class C3 "snow tyre for use in severe snow conditions suitable for speed not greater than 100 km/h except Free Rolling tyres", the limits shall be increased by 1.5 N/kN.

3. Japan proposal to amend GRBP 2022-12

Proposal □ Wet Grip in new state

Class C1 tyre

Stage 2			
Category of use		Wet grip index (G)	
Normal tyre		≥ 1.2	
	Taxi tyre	≥ 1.1	
Snow tyre		≥ 1.2	
	Snow tyre for use in severe snow conditions	≥ 1.1	
	Snow tyre for use in severe snow conditions	Ice grip tyre Speed-symbol ("R" and above, including "H") indicating a maximum permissible suitable for speed greater than 160 km/h	≥ 1.1 ≥ 1.0
		Ice grip tyre Speed-symbol ("Q" or below excluding "H") indicating a maximum permissible suitable for speed not greater than 160 km/h	≥ 1.0 ≥ 0.9
	Ice grip tyres	≥ 1.0 ≥ 1.0	
Special use tyre		≥ 1.1	

Class C2 tyre

Stage 2			
Category of use		Wet grip index (G)	
		Other	Traction tyres
Normal tyre		≥ 1.10	≥ 1.00
Snow tyre		≥ 1.10	≥ 1.00
	Snow tyre for use in severe snow conditions suitable for speed greater than 140 km/h	≥ 1.00	≥ 1.00
	Snow tyre for use in severe snow conditions suitable for speed equal to 140 km/h	≥ 0.90	≥ 0.90
Special use tyre		≥ 1.00	≥ 1.00

Class C3 tyre

(no change)

(1) Class C1 “TAXI tyre”

Over-regulating these performances will bring a negative impact on wear resistance and long service life. In addition, the current wet grip performance threshold has not caused any problems on road safety including driving on the highway in Japan.

(2) Class C1 “Studless tyre” (Ice tyre)

There is a trade-off between rolling resistance/wet grip performance and ice grip performance. The safety on icy and snowy roads should not be deteriorated than present by over-regulating rolling resistance and wet grip performances.

In addition, “Ice tyres with a speed symbol of Q or below” have not caused any safety problems in Japan under the current wet grip performance threshold.

(3) Class C2/C3 “Studless tyre” (severe snow tyre)

The safety on icy and snowy roads should not be deteriorated than present by over-regulating rolling resistance and wet grip performances. In addition, severe snow tyres have not caused any safety problems in Japan under the current wet grip performance threshold.