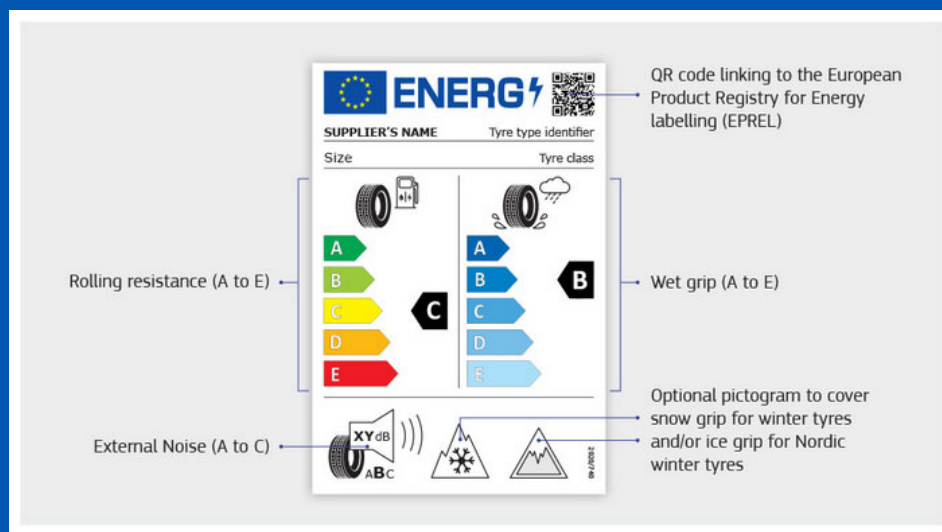




Evolution of tyre limits Rolling Resistance in new condition Wet Grip in new & worn condition UN Regulation No 117



Informal document GRBP-75-30

GRBP 75th session 8 – 11 February 2022, agenda item 4 (d)

*Directorate-General for Internal Market, Industry,
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AMBITION TO DELIVER ON SUSTAINABILITY TARGETS

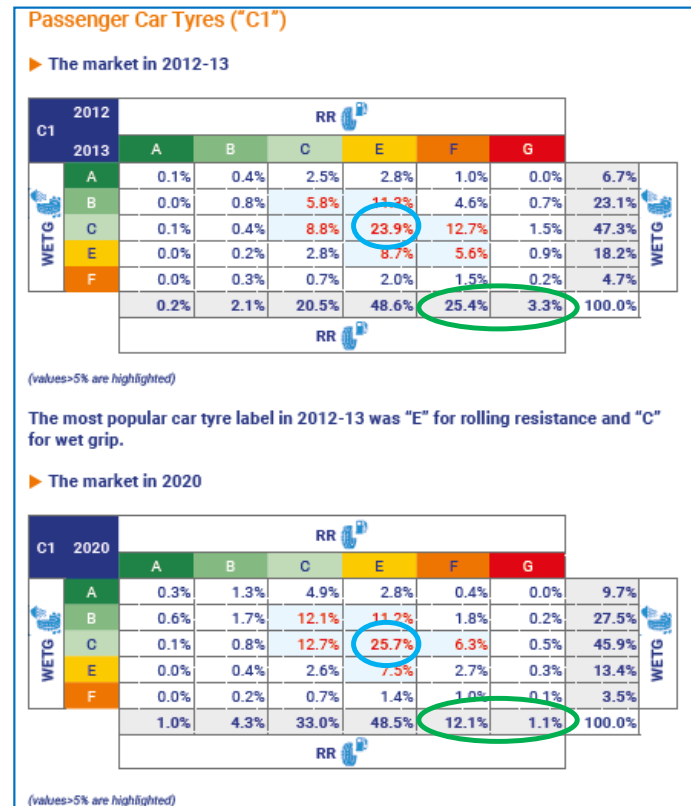
EU Tyre labelling market evolution*
for wet grip and rolling resistance
was assessed in 2021.

It shows:

- Representation in RR "F" and "G" changed due to tighter limits in UN R117
- Most popular categories for both RR "E" and Wet grip "C" are still the same in 2020 vs 2012/13

Global climate change efforts
and road safety improvements
call for tighter rolling resistance
and safety limits

➔ To deliver on both climate and safety, a new regulatory framework is needed.



Similar trends observed for C2 and C3



Tyres can deliver with a short term effect, a Climate & Safety Impact on the existing vehicle park

* equivalent to removing ~1 mio vehicles from EU roads



* Lizeo Study "Tyre labelling 2012-2020", Feb 2021

AMBITION TO DELIVER ON SUSTAINABILITY TARGETS

Global sustainability dimension	Tyre Performance	New Limits
✓ Climate	RR	C1-C2-C3
✓ Safety	Wet Grip @ new	C1-C2*-C3*
✓ Safety/Waste red.	Wet Grip @ worn	C1**-C2-C3
Other on-going activities : work on test method improvement		
✓ Health	Noise	

* C2-C3 limits at new will consider performance evolution from *new* to *worn* state

** new test method for C1 for wet grip at worn state



Tyres can deliver with a short term effect, a Climate* & Safety Impact on the existing vehicle park

* equivalent to removing ~1 mio vehicles from EU roads



Tyre performance limits evolution, since first time introduced through UN Regulation No 117

		till Nov-12	Nov-12	Nov-13	Nov-14	Nov-15	Nov-16	Nov-18	Nov-19	Nov-20
C1	Noise Stage 1	X								
	RR Stage 1		New TA							
	Wet Grip		New TA							
	Noise Stage 2		New TA							
	RR Stage 2						New TA			
C2	Noise Stage 1	X								
	RR Stage 1		New TA							
	Wet grip						New TA			
	Noise Stage 2		New TA							
	RR Stage 2						New TA			
C3	Noise Stage 1	X								
	RR Stage 1		New TA							
	Wet Grip						New TA			
	Noise Stage 2		New TA							
	RR Stage 2						New TA			

Rolling Resistance

RR	Stage 1	Stage 2	Reduction
C1	12.0	10.5	-12.5%
C2	10.5	9.0	-15.0%
C3	8.0	6.5	-18.8%

3PMSF: +1 N/kN

Wet Grip

C1 Wet grip	
Normal tyre	1.1
Snow tyre	1.1
Snow tyre 3PMSF SS>Q	1.0
Snow tyre 3PMSF SS<=Q	0.9
Special use tyre	Not defined

C2 Wet grip	Other	Traction
Normal	0.95	0.85
Snow tyre	0.95	0.85
Snow tyre 3PMSF	0.85	0.85
Special Use tyre	0.85	0.85

C3 Wet grip	Other	Traction
Normal	0.80	0.65
Snow tyre	0.65	0.65
Snow tyre 3PMSF	0.65	0.65
Special Use tyre	0.65	0.65

Noise

C1 Noise	Stage 1	Stage 2	Sound energy
Nominal section width	Limit dB(A)	Limit dB(A)	reduction
145 and lower	72	70	-35%
Over 145 up to 165	73	70	-50%
Over 165 up to 185	74	70	-60%
Over 185 up to 215	75	71	-60%
Over 215 up to 245	76	71	-75%
Over 245 up to 275	76	72	-60%
Over 275	76	74	-35%

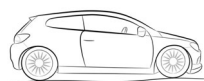
Extra Load and Snow Tyres with additional allowances

C2 Noise	Stage 1	Stage 2	sound energy	Stage 1	Stage 2	sound energy
	Limit dB(A)	Limit dB(A)	reduction	Limit dB(A)	Limit dB(A)	reduction
Normal tyre	75	72	-50%	75	73	-35%
Snow tyre	77	72	-70%	77	73	-60%
Snow tyre 3PMSF	77	73	-60%	77	75	-35%
Special Use tyre	78	74	-60%	78	75	-50%

C3 Noise	Stage 1	Stage 2	sound energy	Stage 1	Stage 2	sound energy
	Limit dB(A)	Limit dB(A)	reduction	Limit dB(A)	Limit dB(A)	reduction
Normal tyre	76	73	-50%	76	75	-20%
Snow tyre	78	73	-70%	78	75	-50%
Snow tyre 3PMSF	78	74	-60%	78	76	-35%
Special Use tyre	79	75	-60%	79	77	-35%

Significant changes in limits have already been implemented

New limits for tyre rolling resistance and wet grip in new state



84% of total tyres-market

→ 61% of road traffic emissions (EEA, 2018)

* % share of the Europool market for C1 tyres

C1		LOAD INDEX < 87 (16%)*		LOAD INDEX >= 87 (84%)*				
		Current R117.02	PROPOSED NEXT STAGE	ALL OTHERS (81%)*		EMT/RF/ZRF (3%)*		
				Current R117.02	PROPOSED NEXT STAGE	Current R117.02	PROPOSED NEXT STAGE	
Normal (48%)*	RR	10.5	10.0	10.5	9.0	10.5	10.0	
	WG	1.1	1.2	1.1	1.2	1.1	1.2	
	UHP (4%)*	RR	10.5	10.0	10.5	10.0	10.5	10.0
		WG	1.1	1.2	1.1	1.2	1.1	1.2
SNOW	M+S (2%)*	RR	10.5	10.0	10.5	9.0	10.5	10.0
		WG	1.1	1.2	1.1	1.2	1.1	1.2
	3PMSF (43%)*	RR	11.5	11.0	11.5	10.0	11.5	11.0
		WG	1.0	1.1	1.0	1.1	1.0	1.1
	3PMSF+Ice (3%)*	RR	11.5	11.0	11.5	10.0	11.5	11.0
		WG	0.9	1.0	0.9	1.0	0.9	1.0
Special use (1%)*	RR	10.5	10.0	10.5	10.0	10.5	10.0	
	WG	Not defined						

New categories introduced for tighter limits:

- Ice (Grip) tyres
- Split by Load Index
- UHP (potential definition: Speed Symbol >= 'Y' and Aspect Ratio <= 40)
- Runflat / Extended Mobility Tyres
- Special Use – definition to be reviewed

5%-10% improved

15% improved



New limits for tyre rolling resistance and wet grip in new state



9% of total tyres-market

→ 12% of road traffic emissions (EEA, 2018)

C2		ALL but traction (95%)*		TRACTION only (5%)*		
		Current R117.02	PROPOSED NEXT STAGE	Current R117.02	PROPOSED NEXT STAGE	
Normal (47%)*	RR	9.0	8.5	9.0	9.0	
	WG	0.95	1.10	0.85	1.00	
SNOW	M+S (1%)*	RR	9.0	9.0	9.0	
		WG	0.95	1.10	0.85	1.00
	3PMSF (49%)*	RR	10	9.5	10.0	10.0
		WG	0.85	1.00	0.85	1.00
Special use	RR	9.0	8.5	9.0	9.0	
	WG	0.85	1.00	0.85	1.00	

New categories introduced for tighter limits:

- Traction for RR

5% improved

15% improved

* % share of the Europol market for C2 tyres

New limits for tyre rolling resistance and wet grip in new state



7 % of total tyres-market

→ 26% of road traffic emissions (EEA,2018)

C3			Current R117.02	PROPOSED NEXT STAGE	
				other	LT/C **
Normal (8%)*	RR		6.5	6.0	6.5
	WG		0.80	0.95	
		TRACTION	0.65	0.80	
SNOW	M+S only (30%)*	RR	6.5	6.0	6.5
		WG	0.65	0.80	
	3PMSF (62%)*	RR	7.5	7.0	7.5
		WG	0.65	0.80	
Special use (<1%)*	RR		6.5	6.0	6.5
	WG		0.65	0.80	

(**) C3 LT/C estimated to represent < 1%)

New categories introduced for tighter limits:

- Split by tyre size designation

8% improved

18%-23% improved

* % share of the Europol market for C3 tyres



New limits for tyre wet grip in worn state

- C1 Wet grip in worn state:
 - New test method for C1 for wet grip in worn state
 - Limits still under discussion:

Category			WGI in Worn state
Normal			≥0.88
	UHP, Legal Race		≥0.80*
Snow			≥0.88
	All Terrain**		≥0.80*
	3PMSF SS > Q		≥0.80
	3PMSF	Ice	≥0.70
	SS≤Q	Ice	≥0.70
Special Use			Not defined

* Threshold or transitional period for specific tyres to be further assessed

** Cluster position to be confirmed

- C2 and C3 Wet grip in worn state:
 - Limits at new state will consider performance evolution from *new* to *worn* state (reference [GRBP-73-22](#))

Expected Impact



Improving **tyre rolling resistance performances**, that would apply to the whole vehicle market:

- From 2024, **gradually removing from the market worst performing tyres for rolling resistance**
- CO₂ savings equivalent to taking close to **1 million vehicles off the road**.

Raising wet grip performance limits for new tyres by 10-20% depending on the tyre category.

And, introducing **wet grip performance at worn stage** from 2024

- Contributing to UN zero-road fatalities goal
- Supporting maximization of tyre-life usage

Timeline

Submitted by the representative of the European Union

Informal document WP.29-185-17
185th WP.29, 23-25 November 2021
Agenda item 2.2.



EU Work Programme - UNECE activities 2022-2023

Proposals under the responsibility of DG GROW (Internal Market, Industry, Entrepreneurship and SMEs)

[...]

Test on worn tyres

New test on wet grip of worn tyres (also linked to revision of the General Vehicle Safety Regulation)

Target date for WP29 vote: Q1-Q2 2022 for C1 tyres, Q1 2023 for C2 and C3 tyres

[...]

New wet grip limits for C1 tyres in new state

UN R117 amendments to introduce new limits for C1 tyres' wet grip in new state.

Target date for WP29 vote: Q1 2023

New rolling resistance limits of tyres in new state

UN R117 amendments to introduce new limits for tyres' rolling resistance in new state.

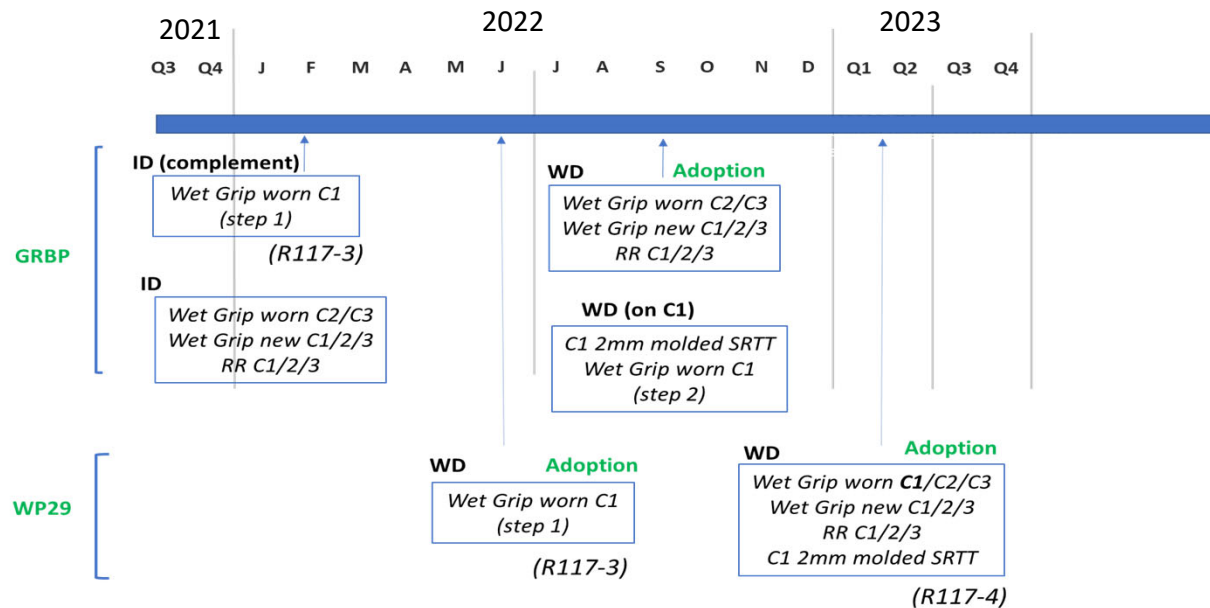
Target date for WP29 vote: Q1 2023

[...]

Timeline - Evolution of R117

- Be timely ambitious (climate urgency)
- Avoid multiple amendments in a short time frame
- New requirements mandatory for new type-approvals in 2024

Key milestones for introduction of new limits



Implementation dates

- 9/2024** New Type Approvals C1/C2/C3
- 9/2026** All Type Approvals C1
- 9/2028** All Type Approvals C2/C3



Thank you

Images:
If any

For further information:

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