



ASSESSMENT OF THE LATEST PROPOSAL BY THE NETHERLANDS AS PRESENTED DURING THE LAST 66th SESSION OF GRB

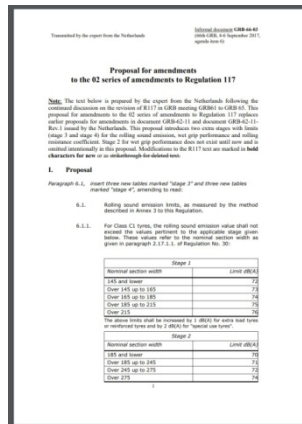
January 22nd, 2018



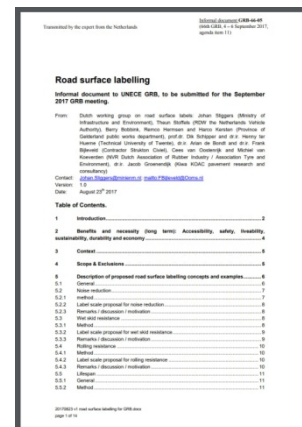
GRB-66-01 Tyres in Europe



GRB-66-03 Proposal for amendments to the 02 series of amendments to Regulation No. 117

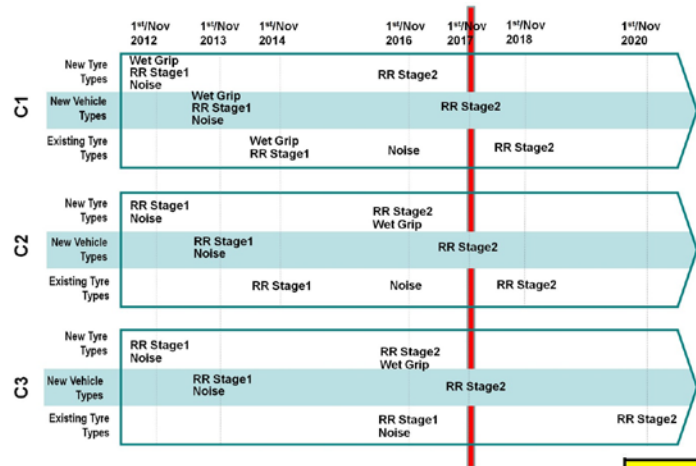


GRB-66-05 Road surface labelling



The following analysis will only address the tyre limits proposed in documents GRB-66-01 and GRB-66-03

Current limits and timeline in EU REGULATION (EC) No 661/2009



**EU Regulation (EC) No 661/2009
is directly linked to
UN Regulation No 117.02**

C1 limit values			
Performance	Tire category		Current
Wet Grip Index (G)	C1 - Normal Use		≥ 1.1
	C1 - Severe Snow	SS ≥ R	≥ 1.0
		SS ≤ Q	≥ 0.9
Rolling Resistance Coeff. [N/kN]	C1 - Normal Use		≤ 10.5
	C1 - Severe Snow		≤ 11.5
Noise [dB(A)]	C1 A (SW ≤ 185)		70
	C1 B&C (185 < SW ≤ 245)		71
	C1 D (245 < SW ≤ 275)		72
	C1 E (SW > 275)		74
	Allowance for XL and/or 3PMSF		1 dB(A)

C2 limit values			
Performance	Tire category		Current
Wet Grip Index (G)	C2 - Normal Use	other	≥ 0.95
		traction	≥ 0.85
	C2 - Severe Snow	other	≥ 0.85
		traction	≥ 0.85
	C2 - Special Use	other	≥ 0.85
		traction	≥ 0.85
Rolling Resistance Coeff. [N/kN]	C2 - Normal Use		≤ 9.0
	C2 - Severe Snow		≤ 10.0
Noise [dB(A)]	C2 - Normal Use	other	72
		traction	73
	C2 - Severe Snow	other	73
		traction	75
	C2 - Special Use	other	74
		traction	75

C3 limit values			
Performance	Tire category		Current
Wet Grip Index (G)	C3 - Normal Use	other	≥ 0.80
		traction	≥ 0.65
	C3 - Snow (M&S) non - Severe Snow	other	≥ 0.65
		traction	≥ 0.65
	C3 - Snow (M&S) - Severe Snow	other	≥ 0.65
		traction	≥ 0.65
C3 - Special Use	other	≥ 0.65	
	traction	≥ 0.65	
Rolling Resistance Coeff. [N/kN]	C3 - Normal Use		≤ 6.5
	C3 - Severe Snow		≤ 7.5
Noise [dB(A)]	C3 - Normal Use	other	73
		traction	75
	C3 - Snow (M&S) non - Severe Snow	other	73
		traction	75
	C3 - Snow (M&S) - Severe Snow	other	74
		traction	76
C3 - Special Use	other	75	
	traction	77	



2.1 Tightening of the EU tyre limit values

To explore what tyre limits would be possible M+P investigated the sales of tyres in the Netherlands and their tyre label values (Ref [1], [3], [5]), see figures 2.

Based on the outcome of these research projects one could imagine two further stages of tightening the tyre limits. The suggested limits for the short term could be set such that around 50% of the tyres sold in 2016 would comply with the limits as given in Stage 3. One could say that Stage 3 limits would follow technology. The top 20% of the tyres sold in 2016 would be the basis for the suggested limits for the longer term as given in Stage 4. Stage 4 limits would push technology. These percentages are taken from the data analysis of 2016 tyre label data (see figure 2). The affiliated percentage of compliant tyres, following Dutch statistics¹, are given in table I, table II and table III.

1 Note: although the used statistics are Dutch, the market in the Netherlands reflects the European market. The data are in agreement with data from Denmark (Danish Road Safety Agency, 15th July 2016, reaction to the Commission after the 132nd meeting of the WGMV, 5th July 2016))

[1] GRB-59-11 - (The Netherlands) Tyre noise data.

[3] GRB-60-08 - (Netherlands) Tyre noise limits of EC/661/2009 and ECE R117: Evaluation based on sold tyres in the Netherlands

[5] GRB-60-12 and GRB-60-08-Add.1 - (Netherlands) Shifts in tyre sound levels between 2007 and 2013

2 Tyre limits

Over the past years, the quality of sold tyres in the Netherlands has improved. This is partly due to autonomous development. The tyre label, in effect since November 2012, will have contributed significantly. This development gives room for improving the tyre limit values in EU and ECE regulations (Ref [20], [22]). The current limits were set in 2009 and introduced several phases. In 2020 the final step of Stage 2 of both EU and ECE Regulations will come into force. Therefore, it is time to consider further tyre limits for the future. This chapter first explores new limits for the short and longer term. In the second paragraph, the potential benefits of better tyres have been calculated. The last paragraph shows that better quality tyres do not cost more, on the contrary.

2.1 Tightening of the EU tyre limit values

To explore what tyre limits would be possible M+P investigated the sales of tyres in the Netherlands and their tyre label values (Ref [1], [3], [5]), see figures 2.

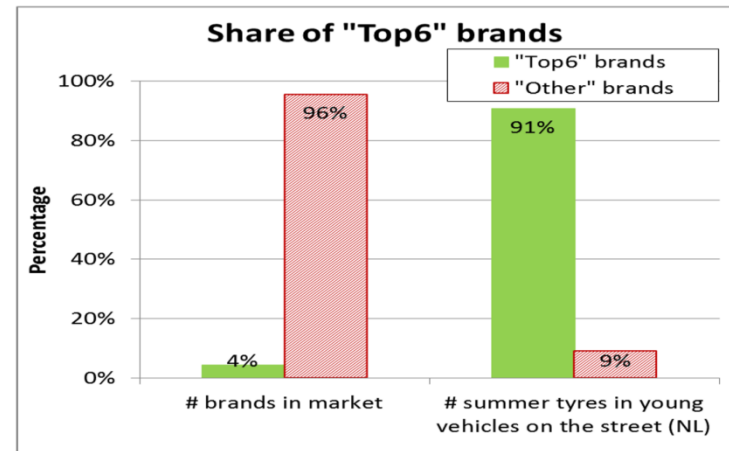
In addition, a study was performed on the quality of tyres of new cars (OEM tyres) (Ref [10]). It was concluded that there is a significant spread in the performance of tyres. Most tyres perform much better than the limits. There is only a small group of products which perform close to the limit. Over 90% of the tyres on the streets belong to the top 6 or 'premium tyre brands'. These brands are mainly sold as OEM tyres. The average performance of these tyres is significantly better than the average performance of the rest of the brands. The average noise emission is 0,9 dB(A) lower and the number of A and B labels for Rolling Resistance and Wet Grip is twice as high.



Workplan

- Collect statistical analysis of tyre label data
- Data source: VACO database (Netherlands tyre branch organisation)
- C1, C2 and C3 tyres; summer, winter and special
- subset of top 7 brands and top 7 sizes
 - Pro:
 - Representing 90% of the tyres sold in the Netherlands
 - Good correlation with performance in the street
 - Good correlation with OEM tyres and premium tyre brands
 - Stable data set for multi year evaluation
 - Con:
 - B and C brands are not very well represented
 - This was thought acceptable as the current tyre limits apply earlier for “OEM” tyres compared to “all” tyres

Note: Representativity of a top 6



New Limits and Data Selection as taken from GRB-66-01



table I Rolling resistance. Suggestion for future Stage 3 and 4 limits for standard tyres^{a,b}

Tyre type	Current limit			Stage 3				Stage 4			
				Short term (e.g. 2020)				Longer term (e.g. 2030)			
	Data analysis			Data analysis			Suggested limit (kg/ton)	Data analysis			Suggested limit (kg/ton)
	Limit (kg/ton)	compliant label values	% tyres compliant	label values analysed	connected limit (kg/ton)	% tyres compliant		label values analysed	connected limit (kg/ton)	% tyres compliant	
C1	≤10.5	A,B,C,E	89%	A,B,C	≤ 9.0	59%	≤ 9.0	A,B	≤ 7.7	19%	≤ 8.0
C2	≤9.0	A,B,C,E	96%	A,B,C	≤ 8.0	65%	≤ 8.0	A,B	≤ 6.7	19%	≤ 7.0
C3	≤6.5	A,B,C,D	96%	A,B,C	≤ 6.0	60%	≤ 6.0	A,B	≤ 5.0	15%	≤ 5.5

^a Special/winter/traction tyres may have different limits and different allowable label values
^b percentage compliant tyres is based on 2016 tyre label data of "top 6" brands (91% of sales in NL)

table II Wet grip. Suggestion for future Stage 3 and 4 limits for standard tyres^{a,b}

Tyre type	Current limit			Stage 3				Stage 4			
				Short term (e.g. 2020)				Longer term (e.g. 2030)			
	Data analysis			Data analysis			Suggested limit (G)	Data analysis			Suggested limit (G)
	Limit (G)	compliant label values	% tyres compliant	label values analysed	connected limit (G)	% tyres compliant		label values analysed	(G)	% tyres compliant	
C1	≥1.1	A,B,C,E	100%	A,B	≥ 1.4	79%	≥ 1.45	A	≥ 1.55	26%	≥ 1.6
C2	≥0.95	A,B,C,E	100%	A,B	≥ 1.25	65%	≥ 1.25	A	≥ 1.4	14%	≥ 1.35
C3	≥0.80	A,B,C,D	99%	A,B	≥ 1.1	59%	≥ 1.1	A	≥ 1.25	5%	≥ 1.2

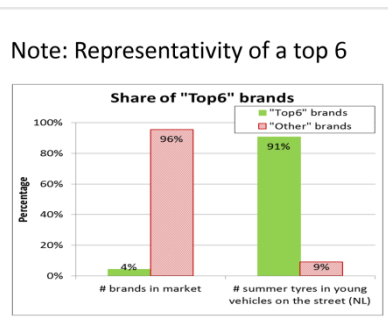
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percentage of compliant tyres is based on 2016 tyre label data of "top 6" brands (91% of sales in NL)

table III External Noise. Suggestion for future Stage 3 and 4 limits for standard tyre^{a,b}

Tyre type	Current limit			Stage 3				Stage 4			
				Short term (e.g. 2020)				Longer term (e.g. 2030)			
	Data analysis			Data analysis			Suggested limit (dB(A))	Data analysis			Suggested limit (dB(A))
	Limit (dB(A))	compliant label values	% tyres compliant	Change vs current limit	noise values analysed	% tyres compliant		Change vs current limit	noise values analysed	% tyres compliant	
C1 (A-E)	≤70-74	A,B	93%	-1dB	≤69-73	58%	≤69-73	-3dB	≤67-71	16%	≤67-71
C2	≤72	A,B	95%	-1dB	≤71	47%	≤71	-2dB	≤70	28%	≤70
C3	≤73	A,B	95%	-2dB	≤71	60%	≤71	-4dB	≤69	28%	≤69

^a Special/winter/traction tyres may have different limits and different allowable label values
^b Percentage compliant tyres is based on 2016 tyre label data of "top 6" brands (91% of sales in NL)



➡ NOT A SIGNIFICATIVE SAMPLE!
(see next slide)

Representativeness of C1 data used by NL study



C1 tyres in 1958 Agr. Contracting Parties Countries

C1 database of EU market (≈60000 labels)

*C1 database of NL market (VACO)
(>20000 labels = 100%)*

*C1 tire subset
(760 labels = 3.8%)*



96.2% of labels on the NL market in sizes and of brands which are not considered in the subset

Data validity



Data correctness for 3PMSF marking in the VACO database has been analyzed. For example, within ETRTO Members a check was done and the following resulted for C3 tyres: **21%** of all 1084 checked tyres have a **wrong 3PMSF marking** in the VACO database.

		C1 tyres			C2 tyres			C3 tyres						
		# C1 tyres		ETRTO member data		# C2 tyres		ETRTO member data		# C3 tyres		ETRTO member data		
				Non-3PMSF	3PMSF			Non-3PMSF	3PMSF			Non-3PMSF	3PMSF	
3PMSF (3 Peak Mountain Snow Flake)	VACO	No	6006	26	VACO	No	540	6	VACO	No	810	221		
	3PMSF	Yes	89	2795	3PMSF	Yes	26	345	3PMSF	Yes	4	49		
	Total number of C1 tyres checked in VACO						917						1084	
	% of C1 tyres with wrong 3PMSF marking in VACO						3,5%						20,8%	

INACCURACIES EXIST AND NEED TO BE CONSIDERED



The VACO database does not indicate which C2 and C3 tyres are “TRACTION” marked. The study presented by the Netherlands (GRB-60-03) assumes that tyres which are intended for use on the “drive axle” have the “Traction” marking. This assumption leads to a significant overestimation of the number of “Traction” marked tires. The impact of this inaccuracy needs to be considered.

- **Assumption in NL study:** 49.5 % of all C3 tyres have “Traction” marking and get a 2 dB(A) noise allowance
- **Validation by ETRTO members:** 25.2% of the 1084 checked C3 tyres from the VACO database (April 2017) have in reality a “Traction” marking

WRONG ASSUMPTIONS WILL CREATE WRONG CONCLUSIONS

C1 current limits VS proposal for a new Stage 3



The claim in GRB-66-03 “The proposed limits are technically achievable, as in 2016 around 50% of the new tyres meet the limits proposed.” cannot be confirmed.

DIFFERENCE BETWEEN CURRENT LIMITS AND WHAT PROPOSED FOR A NEW **STAGE 3**

Class	Normal Use / Severe Snow	SL / XL	NOI class	Speed Symbol (SS≥ R or SS≤Q)	NOI [dB(A)]	WG []	RR [kg/ton]	% meet all new limits (vs. meeting all current limits)	# tires meet all new limits
C1	Normal Use	SL	all	all	-1	0,35	-1,5	15%	1163
C1	Normal Use	XL	all	all	-2	0,35	-1,5	15%	846
C1	Severe Snow	all	all	SS≤Q	-2	0,35	-1,5	7%	2
C1	Severe Snow	all	all	SS≥R	-2	0,35	-1,5	16%	1130

Based on VACO database (April 2017)

➤ Only **15.5 %** (3141 out of the 20220) of the C1 tires meet the proposed Stage 3 limits

C1 current limits VS proposal for a new Stage 4



Only **0.9 %** (180 out of the 20220) of the C1 tires meet the proposed Stage 4 limits

DIFFERENCE BETWEEN CURRENT LIMITS AND WHAT PROPOSED FOR A NEW **STAGE 4**

Class	Normal Use / Severe Snow	SL / XL	NOI class	Speed Symbol (SS≥ R or SS≤Q)	DIFFERENCE BETWEEN CURRENT LIMITS AND WHAT PROPOSED FOR A NEW STAGE 4			% meet all new limits (vs. meeting all current limits)	# tires meet all new limits
					NOI [dB(A)]	WG []	RR [kg/ton]		
C1	Normal Use	SL	all	all	-3	0,50	-2,5	1%	58
C1	Normal Use	XL	all	all	-4	0,50	-2,5	1%	70
C1	Severe Snow	all	all	SS≤Q	-4	0,50	-2,5	0%	0
C1	Severe Snow	all	all	SS≥R	-4	0,50	-2,5	1%	51

Based on VACO database (April 2017)

MORE THAN 99% OF CURRENT MARKET WOULD BE ELIMINATED

C2 current limits VS proposal for a new Stage 3



The claim in GRB-66-03 “The proposed limits are technically achievable, as in 2016 around 50% of the new tyres meet the limits proposed.” cannot be confirmed.

DIFFERENCE BETWEEN CURRENT LIMITS AND WHAT PROPOSED FOR A NEW **STAGE 3**

Class	Normal Use / Severe Snow	Traction / Other	# tires (meet current limits)	DIFFERENCE BETWEEN CURRENT LIMITS AND WHAT PROPOSED FOR A NEW STAGE 3			% meet all new (vs. meeting all current limits)	# tires meet all new limits
				NOI [dB(A)]	WG []	RR [kg/ton]		
C2	Normal Use	other	1423	-1	0,3	-1,0	16%	222
C2	Normal Use	traction	0	-1	0,3	-1,0	NA	NA
C2	Severe Snow	other	895	-1	0,3	-1,0	27%	238
C2	Severe Snow	traction	0	-1	0,3	-1,0	NA	NA

Based on VACO database (April 2017)

➤ Only **19.8 %** (460 out of the 2318) of the C2 tires meet the proposed Stage 3 limits

C2 current limits VS proposal for a new Stage 4



Only 2.3 % (**54 out of the 2318**) of the C2 tires meet the proposed Stage 4 limits

DIFFERENCE BETWEEN CURRENT LIMITS AND WHAT PROPOSED FOR A NEW **STAGE 4**

Class	Normal Use / Severe Snow	Traction / Other	# tires (meet current limits)	DIFFERENCE BETWEEN CURRENT LIMITS AND WHAT PROPOSED FOR A NEW STAGE 4			% meet all new (vs. meeting all current limits)	# tires meet all new limits
				NOI [dB(A)]	WG []	RR [kg/ton]		
C2	Normal Use	other	1423	-2	0,4	-2,0	1%	17
C2	Normal Use	traction	0	-2	0,4	-2,0	NA	NA
C2	Severe Snow	other	895	-2	0,4	-2,0	4%	37
C2	Severe Snow	traction	0	-2	0,4	-2,0	NA	NA

Based on VACO database (April 2017)

MORE THAN 97% OF CURRENT MARKET WOULD BE ELIMINATED

C3 current limits VS proposal for a new Stage 3



The claim in GRB-66-03 “The proposed limits are technically achievable, as in 2016 around 50% of the new tyres meet the limits proposed.” **cannot be confirmed in its entirety.**

DIFFERENCE BETWEEN CURRENT LIMITS AND WHAT PROPOSED FOR A NEW **STAGE 3**

Class	Normal Use / Snow (M+S)	Severe Snow	Traction / Other	# tires (meet current limits)	DIFFERENCE BETWEEN CURRENT LIMITS AND WHAT PROPOSED FOR A NEW STAGE 3			% meet all new limits (vs. meeting all current limits)	# tires meet all new limits
					NOI [dB(A)]	WG []	RR [kg/ton]		
C3	Normal Use	non - Sever Snow	other	362	-2	0,3	-0,50	33%	118
C3	Normal Use	non - Sever Snow	traction	51	-2	0,3	-0,50	12%	6
C3	Snow (M+S)	non - Sever Snow	other	412	-2	0,3	-0,50	55%	226
C3	Snow (M+S)	non - Sever Snow	traction	83	-2	0,3	-0,50	26%	21
C3	Snow (M+S)	Severe Snow	other	115	-2	0,3	-0,50	66%	76
C3	Snow (M+S)	Severe Snow	traction	145	-2	0,3	-0,50	72%	104

Based on VACO database (April 2017)

➤ **47.2 % (551 out of the 1168) of the C3 tires meet the proposed Stage 3 limits***

*** Specific detailed analyses should be made to assess the proposed limits within specific applications / axle fitment**

C3 current limits VS proposal for a new Stage 4



Only **8.0 % (93 out of the 1168)** of the C3 tires meet the proposed Stage 4 limits

DIFFERENCE BETWEEN CURRENT LIMITS AND WHAT PROPOSED FOR A NEW **STAGE 4**

Class	Normal Use / Snow (M+S)	Severe Snow	Traction / Other	# tires (meet current limits)	DIFFERENCE BETWEEN CURRENT LIMITS AND WHAT PROPOSED FOR A NEW STAGE 4			% meet all new limits (vs. meeting all current limits)	# tires meet all new limits
					NOI [dB(A)]	WG []	RR [kg/ton]		
C3	Normal Use	non - Sever Snow	other	362	-4	0,4	-1,00	4%	16
C3	Normal Use	non - Sever Snow	traction	51	-4	0,4	-1,00	1%	0
C3	Snow (M+S)	non - Sever Snow	other	412	-4	0,4	-1,00	8%	34
C3	Snow (M+S)	non - Sever Snow	traction	83	-4	0,4	-1,00	1%	1
C3	Snow (M+S)	Severe Snow	other	115	-4	0,4	-1,00	17%	19
C3	Snow (M+S)	Severe Snow	traction	145	-4	0,4	-1,00	15%	22

Based on VACO database (April 2017)

MORE THAN 99% OF CURRENT MARKET FOR SPECIFIC APPLICATIONS WOULD BE ELIMINATED



➤ The claim in GRB-66-03 “*The proposed limits are technically achievable, as in 2016 around 50% of the new tyres meet the limits proposed.*” cannot be confirmed:

❖ **The data subset used** for the NL limit proposal **has some limitations**:

- **the filters applied by NL to the database are reducing the representativeness** especially considering that we need to refer to UN 1958 agreement tyre population (in terms of both size and brands);
- **some of the database data are not correct or inaccurate**: for example some of 3PMSF or TRACTION markings are incorrectly reported.

❖ **The methodology** to derive from the data subset the proposed limits, **is not correct**:

- **as overall analysis**: even using the VACO database, the assessment is not analyzing each-single-tire performance: for example by accurate analysis of the data, it appears that we cannot even consider the tyre classes (C1, C2 or C3) as a whole, because doing so the specific products/applications would be neglected, and they are not interchangeable (i.e. a trailer tyre and a drive tyre cannot serve the same purpose);
- **as impact assessment**: the size-only assessment is not taking into account the actual effect on the market, considering the market popularity of each size. There is a risk that vehicle owners will not be able to purchase new tires for their existing vehicles. A deeper data analysis will be needed also in this perspective.