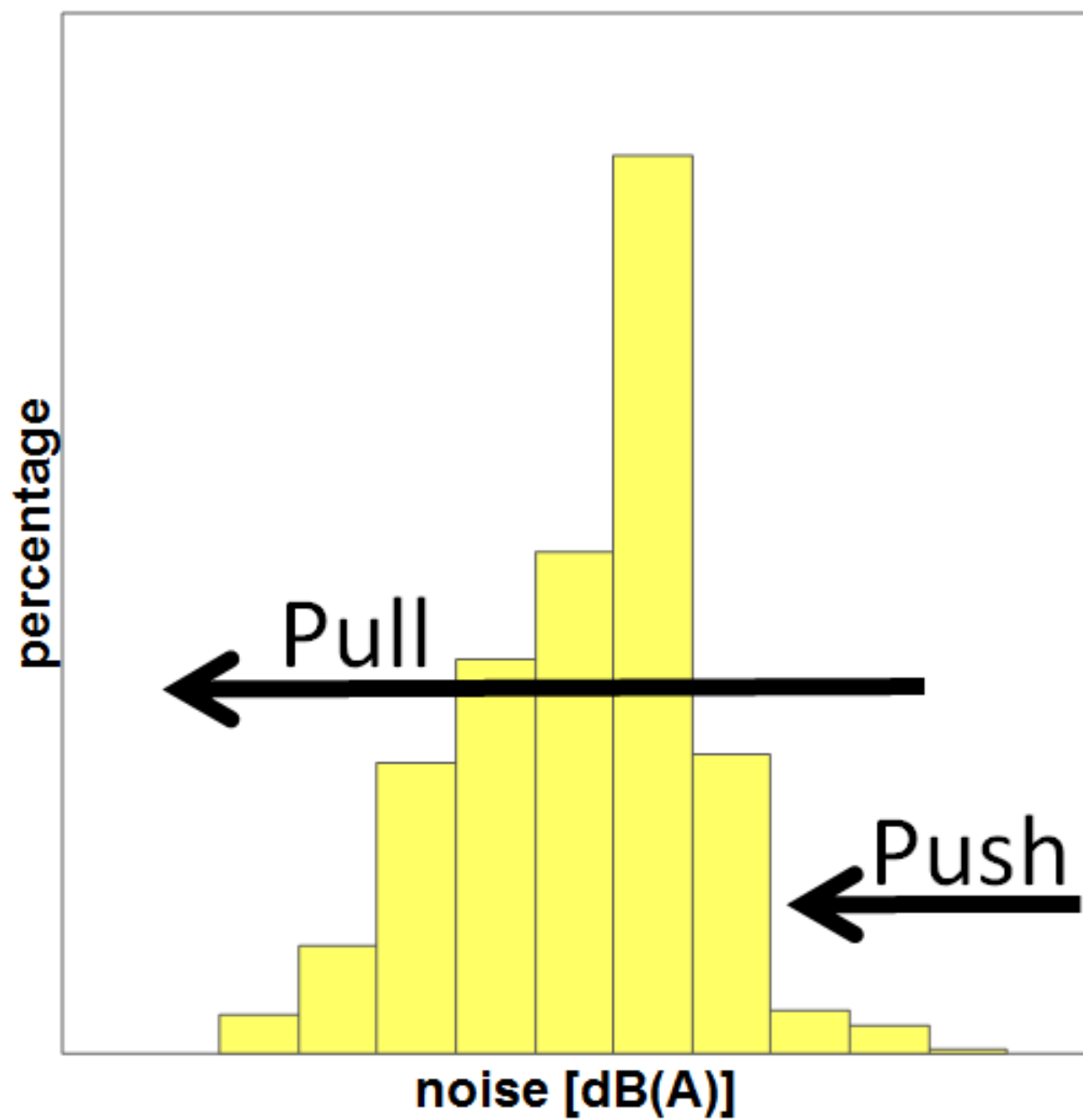


Push and Pull for Noise Emission Reduction from Road Traffic in the NLs and EU

Johan Sliggers
Ministry of Environment
The Netherlands



Noise Emission from Road Traffic

	Emission Road Surfaces	Emission Tyres	Emission Powertrain
Limits (Push)	No	EU and UNECE	EU and UNECE
Labelling (Pull)	Demonstrated Consortium NLs	EU	Demonstrated NLs
Campaign (Pull)	No	Some countries, ETRTO	No

Road Surfaces

- EUROCITIES Brochure (GRB 60-04 and 60-04-Add.1)
- CEDR, 27 Member States (GRB 61-16)
 - Overview noise, lifetime, costs (investments and maintenance) from 15 MS
- NLs Consortium (GRB 65-20,21,22 and 65-22-Add.1)
 - Labelling Road Surfaces

CEDR: Pavements: Noise (GRB 61-16)

- initial noise reduction (in dB)

MAIN PAVEMENTS:	AT	BE-F	DE	DK	ES	GR	IT	NL	NO	SE	UK	average
Dense Asphalt Concrete	0		-2	0	0	0	0	0	0/-3			0
Stone Mastic Asphalt	0/-3	0	-2	0,6/-1					0/-3	0	3,5	0/-3
Cement Concrete	+1/0	1	-2								6	+6/0
Porous Asphalt	-4		-5		0/-3	-2	-3	-2				-2/-4
Thin Layers				-2	-2/-3			-2/-3			0	-2/-3
Two Layer Porous Asphalt								-5/-6		-8/-6		-5/-6

- transition from much used pavements (DAC/SMA) to noise reducing pavements (PA/TL) reduces noise with 2 to 3 dB
- average lifetime noise reduction is less than initial reduction
- acoustic properties of pavements are covered in regulation and noise calculation model in CEDR MS
- harmonization at EU level (END and CNOSSOS-EU)

Road Surface Labels (GRB 65-20, 21, 22 and 22-Add.1)

Reference

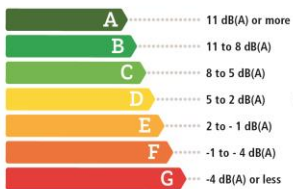
Best

Road surface label

ZOAB (PA16): DEEE



Noise reduction
in dB(A)



D



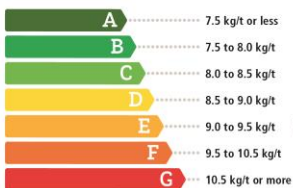
Wet skid resistance
in Side Way Force



E



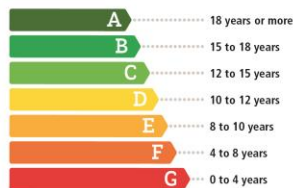
Rolling resistance
coefficient in kg/t



E



Lifespan
in years

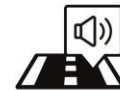


E

Version: 10-02-2017

Road surface label

OPA8-Plus: CDDC



Noise reduction
in dB(A)



C



Wet skid resistance
in Side Way Force



D



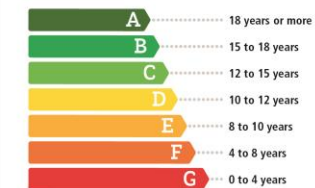
Rolling resistance
coefficient in kg/t



D



Lifespan
in years



C

Version: 10-02-2017

Road Surface Labelling

- Benefits: same as for tyres? Or more?
- EU Regulation Vehicle Noise (Preamble nr 13: classification of road surface types)

Powertrain

- Limits set in 2014
 - Future reduction equals traffic growth
 - Allowance for testing with worn tyres!
- Labeling asked for in EU Regulation Vehicle Noise (article 7)
- Possible Labelling system demonstrated by the NLs (GRB 61-01 and 61-01-Add.1)

A noise label for motor vehicles: towards quieter traffic (GRB 61-01-Add.1)

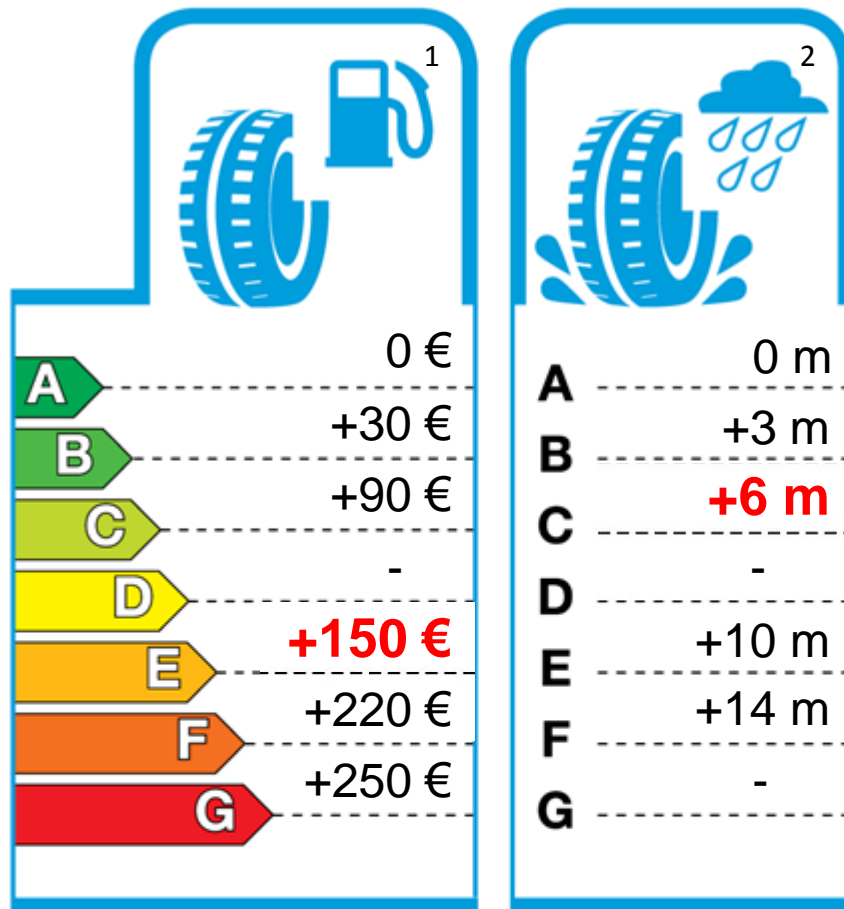
- Points rating for private cars (and other vehicles)
- Three elements (each 5 pnts max)
 - Interior noise
 - Powertrain noise
 - Tyre noise

Noise label	Points total	Description of quality
A	14-15	Excellent
B	12-13	Good
C	10-11	Fair
D	8-9	Satisfactory
E	6-7	Moderate
F	4-5	Noisy
G	0-3	Extremely noisy

Gurka S	Interior (69 dB)	Powertrain (68 dB)	Tyre (66 dB)
Label D Satisfactory 8 pts	Insufficient ^a 2 pts	Insufficient ^a 2 pts	Good ^a 4 pts
Remarks: In terms of noise emissions, this model is average for its type and class.	At 100 km/h, the interior noise level is 3 dB above the baseline ^b .	The engine and exhaust system produces 4 dB above the baseline ^b .	These tyres are quiet tyres, 4 dB lower than the baseline ^b .
^a Score in each sub-category: 5 = Excellent; 4 = Good; 3 = Satisfactory; 2 = Insufficient; 1 = Bad ^b A difference of -3 dB represents a 50% reduction in the emission of acoustic energy.			

Tyres

- The Tyre Label !!!
- It all started by looking at the numbers behind the colours and letters
- NLs average label: **D, C, B**

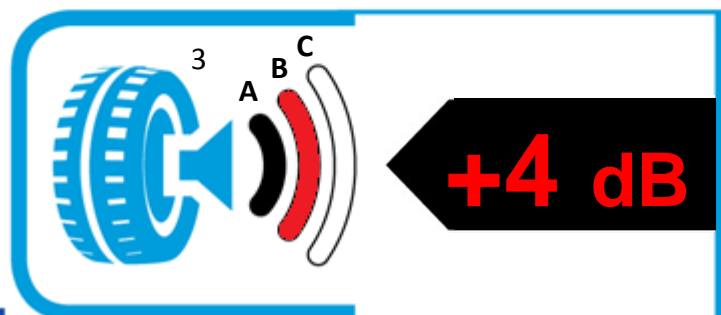


¹ Extra fuel costs per year (17000 km/yr)

² Extra braking distance wet road at 80 km/h (Braking distance A=27 m)

³ Noise

- A: 2 times as quiet
- B: average
- C: 2 times as loud



Potential Benefits of Triple A tyres

- Netherlands (GRB 60-3) and EU (GRB 60-14-Rev.1)
- EU (GRB 60-13)
- City of Rotterdam (GRB 62-01)
- Carfleets of Amsterdam, Rotterdam and Dutch National Road Authority (RWS) (GRB 62-02-Rev.1)

Benefits Triple A in EU

Potential benefits	Energy	Safety	Noise	TOTAL
Annual fuel savings [billion l]	17	-	-	
Annual CO ₂ reduction [MtCO ₂]	42	-	-	
Reduced number of fatalities	-	2567	-	
Reduced number of slight/ serious injuries	-	19631/ 12353	-	
Reduced number of annoyed people [millions]	-	-	13	
Reduced number of sleep disturbed people [millions]	-	-	6	
Annual cost savings [billion €]	13	10	11	34

Tyres: a two track approach in the NLs

- Pull
 - A public awareness raising campaign
- Push
 - Strengthen the tyre limits (EU and UNECE)

Dutch Campaign 'Choose the Best Tyre'



**& RIJ VEILIGER,
ZUINIGER EN STILLER**
WWW.DEBESTEBAND.NL

Website: www.debesteband.nl

Firefox Bestand Bewerken Beeld Geschiedenis Bladwijzers Extra Venster Help

Kies de beste band

https://kiesdebesteband.nl

Facebook Drive Air BNB Facturatie Analytics De Buurtcamping CMS BC Mijn ING Rabobank Triodos WeTransfer CMS R&D Dept. Natuurhuisje.nl

DIJ BESTE BAND KIES

QUIZ WAAROM BELANGRIJK? WINTERTIPS WINTERBANDEN BANDENSPANNING TIPS FAQ

HET IS WEER TIJD VOOR WINTERBANDEN. [LEES MEER.](#)

WAAROM ZIJN BANDEN BELANGRIJK?

Banden zijn het enige contact van je auto met de weg en bepalen voor een groot deel de prestaties van je auto. Door te kiezen voor betere én goed opgepompte banden rij je veiliger, zuiniger en stiller.

BANDENLABEL

Op alle nieuwe banden voor personen- en bestelwagens zit het Europese bandenlabel. Hiermee kun je de grip, de brandstofefficiëntie en het afromgeluid van banden vergelijken.

[LEES MEER](#) [BANDENLABEL](#)

ZUINIGER

VEILIGER

STILLER

KIES DE BESTE



WAT WEET JIJ OVER WINTERBANDEN?

Test in 1 minuut je bandenkennis en ontvang handige tips over winterbanden.

START DE QUIZ



VRAAG 1 VAN 5

BENEDEN WELKE TEMPERATUUR GELDT HET ADVIES OM OP WINTERBANDEN TE GAAN RIJDEN?



°C?

0°C

7°C

Check je bandenspanning
elke 2 maanden.
KiesdeBesteBand.nl



Backside Letter Periodic Technical Inspection (PTI)



Kies de beste band

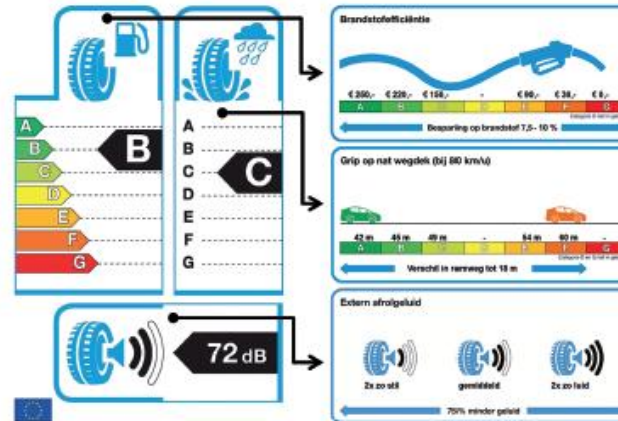
Banden zijn het enige contact van uw auto met de weg. De APK is een goed moment om stil te staan bij uw banden. Bij de APK wordt ondermeer gekeken naar:

- **Bandenprofiel**
Het wettelijk minimum is 1,6 mm.
- **Bandenspanning**
Ongeveer 60% rijdt op te lage spanning. Controleer de bandenspanning elke twee maanden wanneer de banden nog koud zijn.
- **Beschadigingen aan de band**

Bandenlabel

Bij de aanschaf van nieuwe banden kan het bandenlabel helpen bij het maken van een goede keuze. Het label bestaat uit drie onderdelen:

- **Brandstofefficiëntie**
- **Grip op nat wegdek**
- **Geluid**



Kies bij een bandenwissel voor de beste band en houd de band op spanning. Dan rijdt u veiliger, zuiniger en stiller.

Kijk voor meer informatie op www.deBesteBand.nl

Fleets on A for Energy and correct tyre pressure

Potential benefits	RWS	Amsterdam	Rotterdam
Number of vehicles	1575	781	1097
Vehicle average [km/yr]	26000	17200	17300
Annual fuel savings (correct pressure) [thousands ltr]	152 (26)	147 (33)	200 (45)
Annual CO ₂ reduction [ton CO ₂]	388	379	514
Annual cost savings [€]	237000	224000	304000
Annual cost savings per vehicle [€]	150	287	277

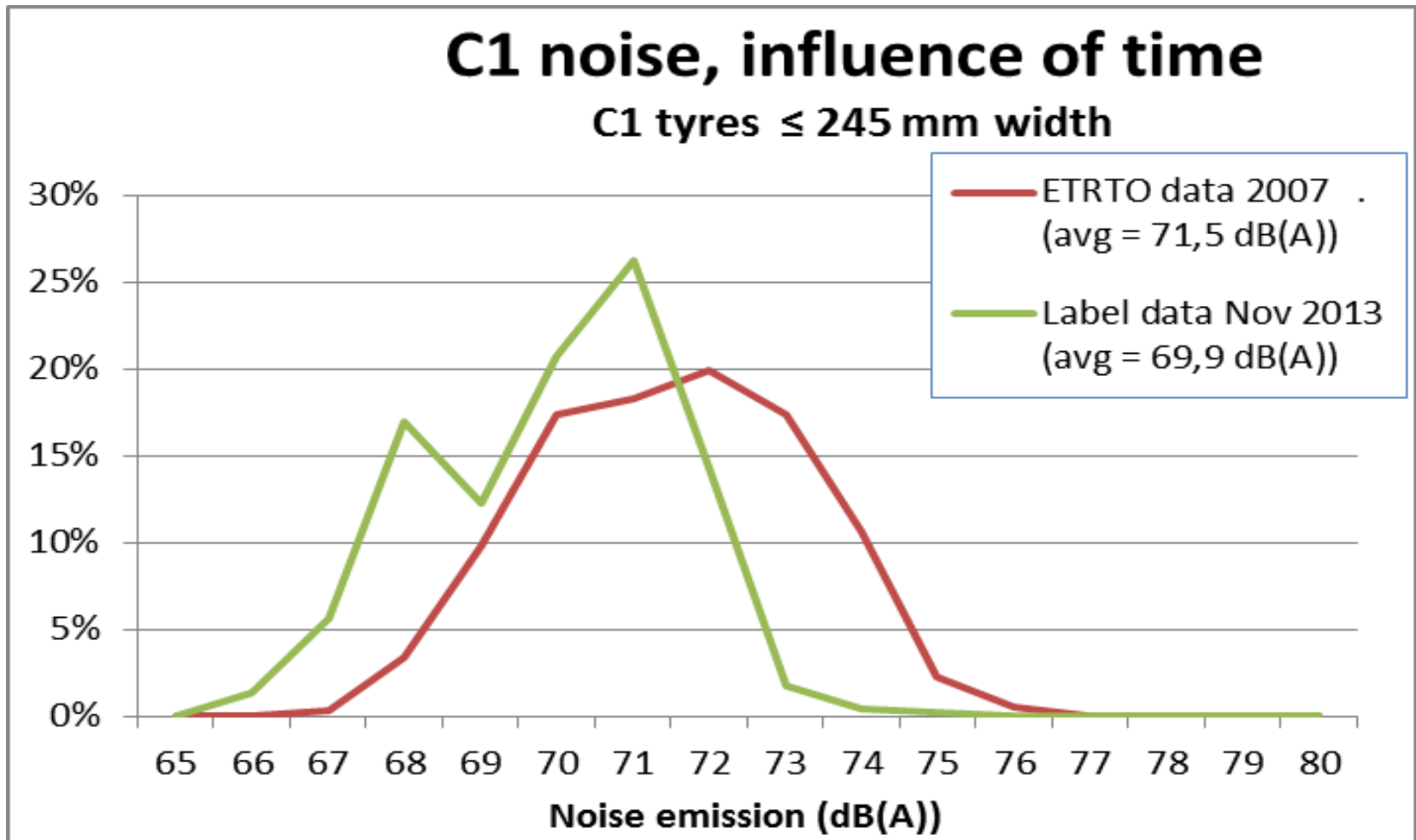
Declaration on Best Tyres

- Netherlands
 - 25 Partners
 - www.betere-banden-nu.nl
- EUROCITIES (200)
 - www.better-tyres-now.eu



Tyres (limits, Push)

Strengthening on agenda GRB (GRB 59-11)



Tyres research

- Shifts in tyre sound levels between 2007 and 2013 (GRB 60-8 and 60-8-Add.1)

Tyre (sub)class	“best 50%”	“best 20%”	“best in class”
C1	-1	-3	-6
C2	-1	-2	-5
C3 normal	-2	-4	-7
C3 traction	-2	-4	-9

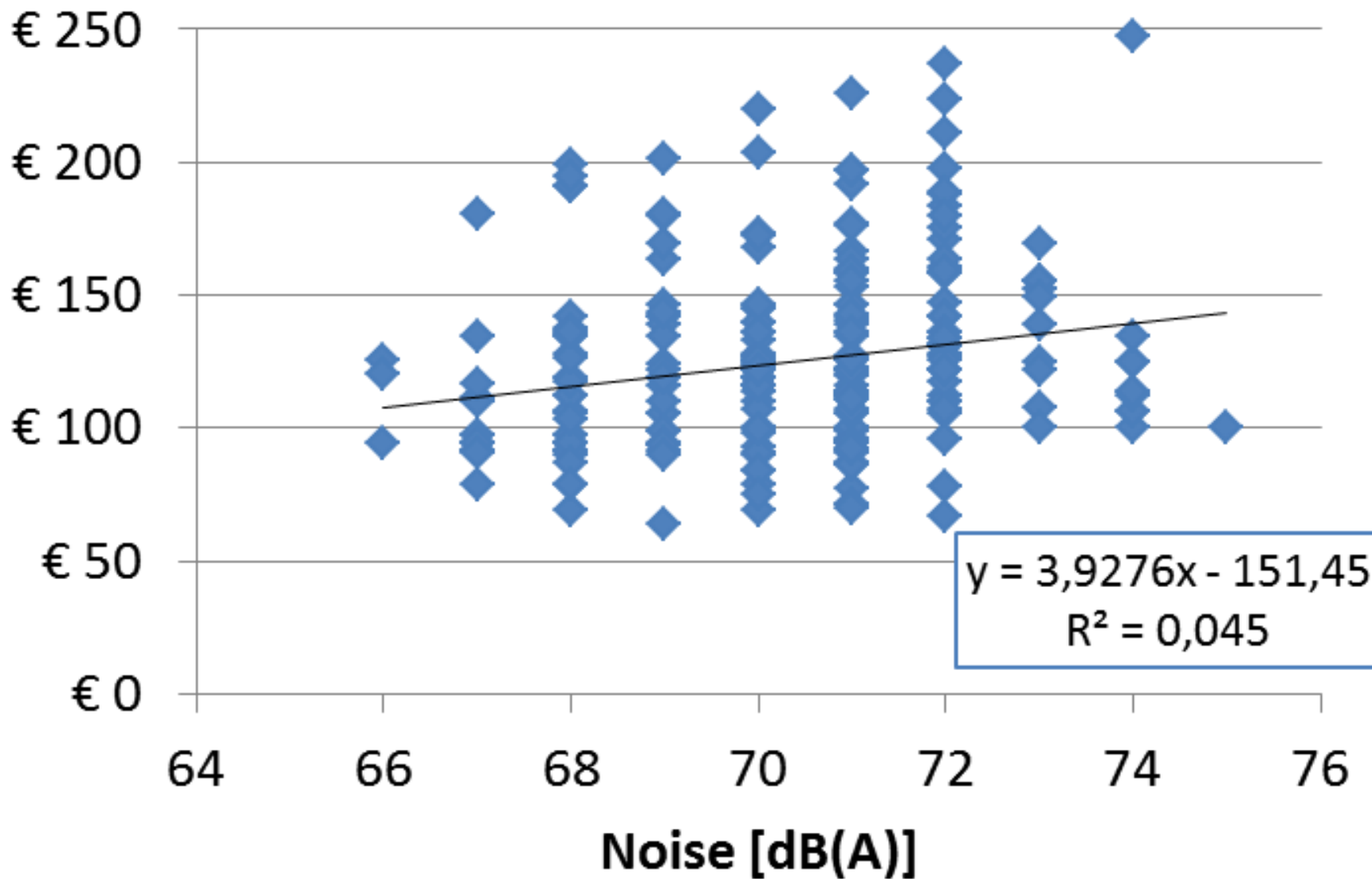
Tyres research (2), Various

- OEM Tyres?
- Statistics of tyre noise label values in OEM tyres (GRB 62-9 and 62-9-Add1)
 - Average OEM perform 1 dB better

GRB 61-3 and 61-3-Add.1

- Better tyres have major benefits
- Better tyres are widely available
- Better tyres do not cost more

Noise (dB(A))

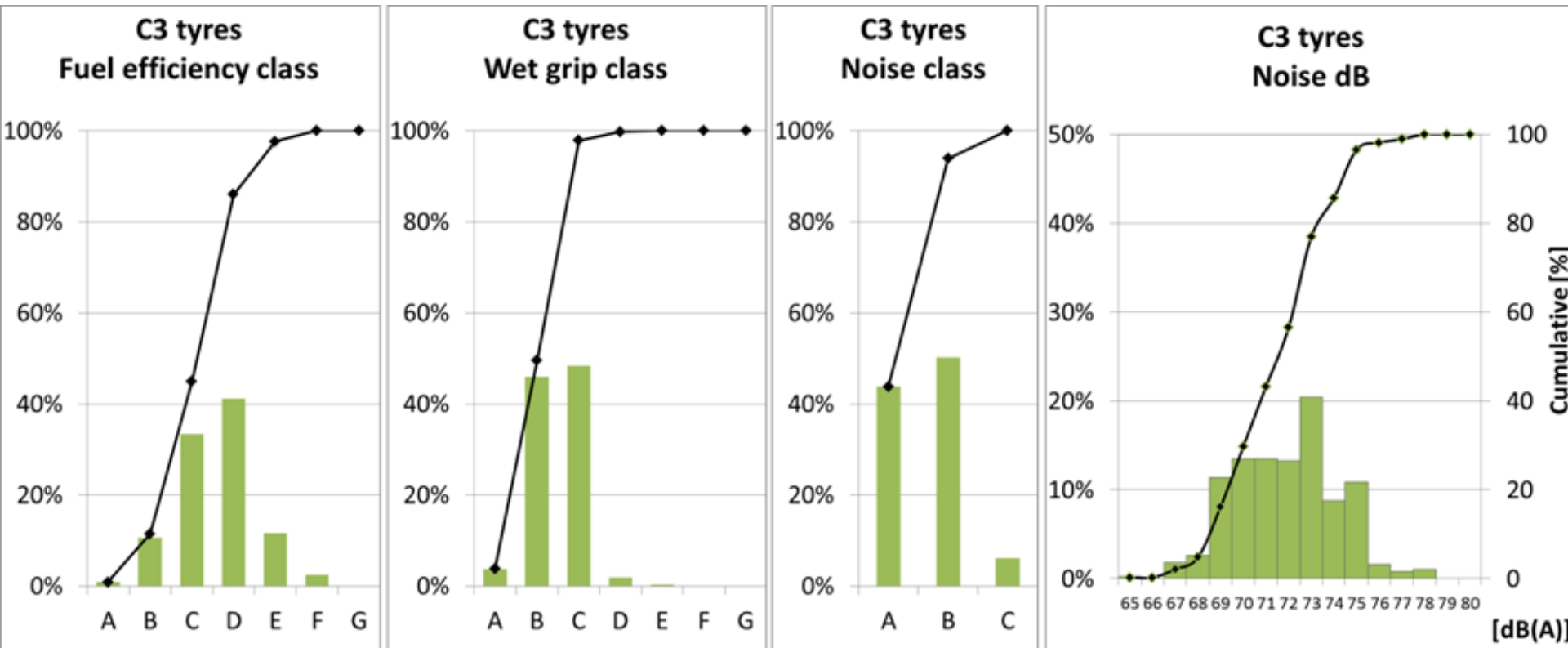


Proposals to strengthen tyre limits

- First: only noise in January 2015 (GRB 61-3 and 61-8)
- Last: all three tyre limits 64th session GRB, September 2016 (62-11-Rev.1 and 62-11-Rev.1/Add.1)
- Label values: **C, B, A**

NLs average: DCB

Sales 2016 NLs 50% CBA or better (GRB 62-11-Rev.1/Add.1)



Policy Indicator (GRB 62-14, 62-14-Add.1 and 62-11-Add.1)

- E Road S. + E Tyres + E Powertrain = E Tr. Noise
- E Tr Noise → # annoyed/sleepdisturbed people
- E Road S. + E Tyres + E Powertrain = # a/s people
- Noise emission and people!

- 2016 update Triple A in NLs (a.o. new tyre sales data and influence tyre pressure) (GRB 62-11-Rev.1/Add.1 , september 2016, GRB 64)

Potential Benefits EU

	Triple A Tyres	Tyre Pressure	Limits Prop. (GRB 62-11-Rev.1)
Fuel savings (b. l)	17	5	Sep. '17
Reduced CO2 (Mton)	42	12	Sep. '17
Reduced # casualties	F. 2567 Inj. 12353/19631	-	Sep. '17
Reduced # Ser. Annoyed (mil.)	8.2	1.5	8.2
Reduced Ser. Sleepdist. (mil.)	3.4	0.6	3.4
Cost savings (b. €)	34	6	Sep '17

To conclude

- TPMS counter productive?
- Advice tyre pressure (cold/warm)?
- Huge benefits for:
 - Better tyres
 - More strict tyre limits
 - Correct tyre pressure
- Action EU and UNECE !

Thank you for your attention



**CHOOSE THE BEST TYRE & DRIVE SAFER,
MORE ECONOMICAL AND QUIETER**