

Tyres in Europe

Tightening of tyre limits and further suggestions for improvement

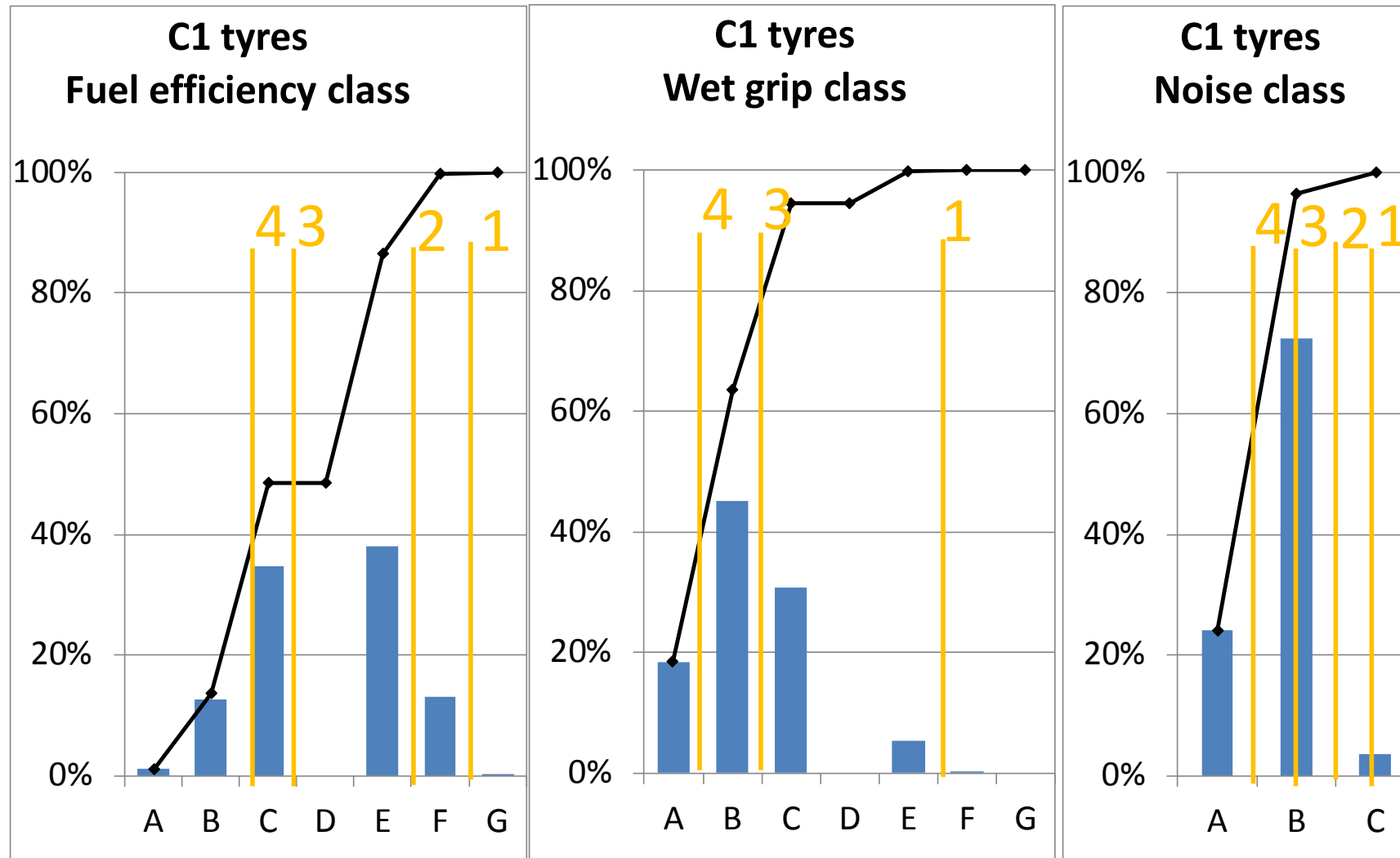
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Erik de Graaff (M+P)

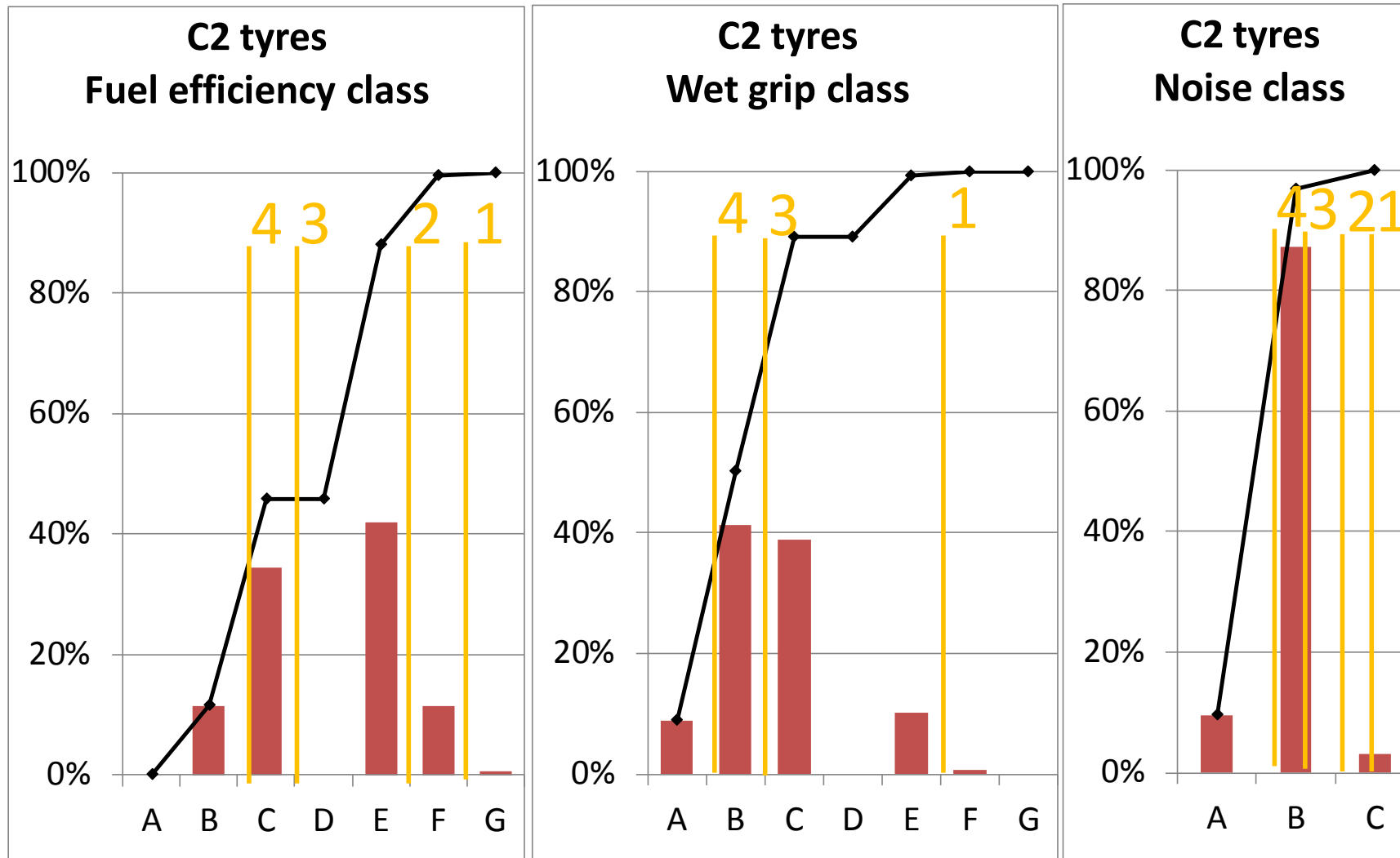
Tyre Limits

- 2014: On the agenda GRB: GRB-59-11
- 2015: Proposals for **Noise limits (stage 3)**: GRB-61-03, GRB-62-11
- 2016: Proposal for **all three tyre limits (stage 3)**: GRB-62-11-REV.1 (at GRB-64)
- 2017: Revised proposal for **all three tyre limits (stage 3 and 4)**: GRB-66-03

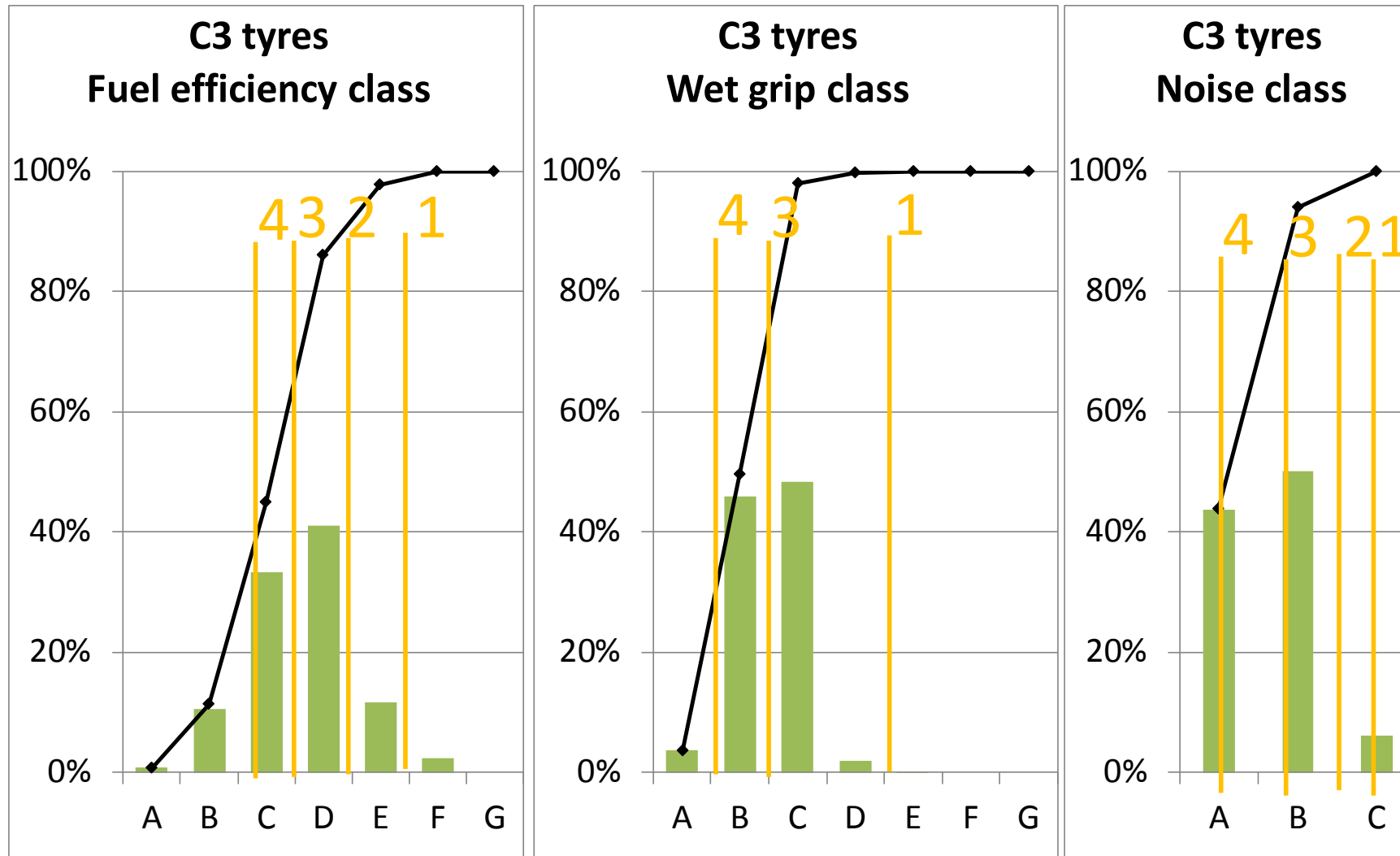
Statistics of C1 label values and (suggested) stages of limit values



Statistics of C2 label values and (suggested) stages of limit values



Statistics of C3 label values and (suggested) stages of limit values



Developments

- Rapid improvements tyres (noise) 2007-2013
- Premium tyres are dominant in the market (>90% in OEM) (>50% in replacement)
- Premium OEM tyres perform (much) better than aftersales tyres
- Updated Stage 3 limits at 50 Percentile of 2016 data
- New stage 4 limits at 20 Percentile of 2016 data

Rolling Resistance coefficient (N/kN)

Tyre type	Current limit	GRB-62-11-Rev.1	Stage 3	Stage 4
C1	10.5	9.0	9.0	8.0
C2	9.0	8.0	8.0	7.0
C3	6.5	6.0	6.0	5.5

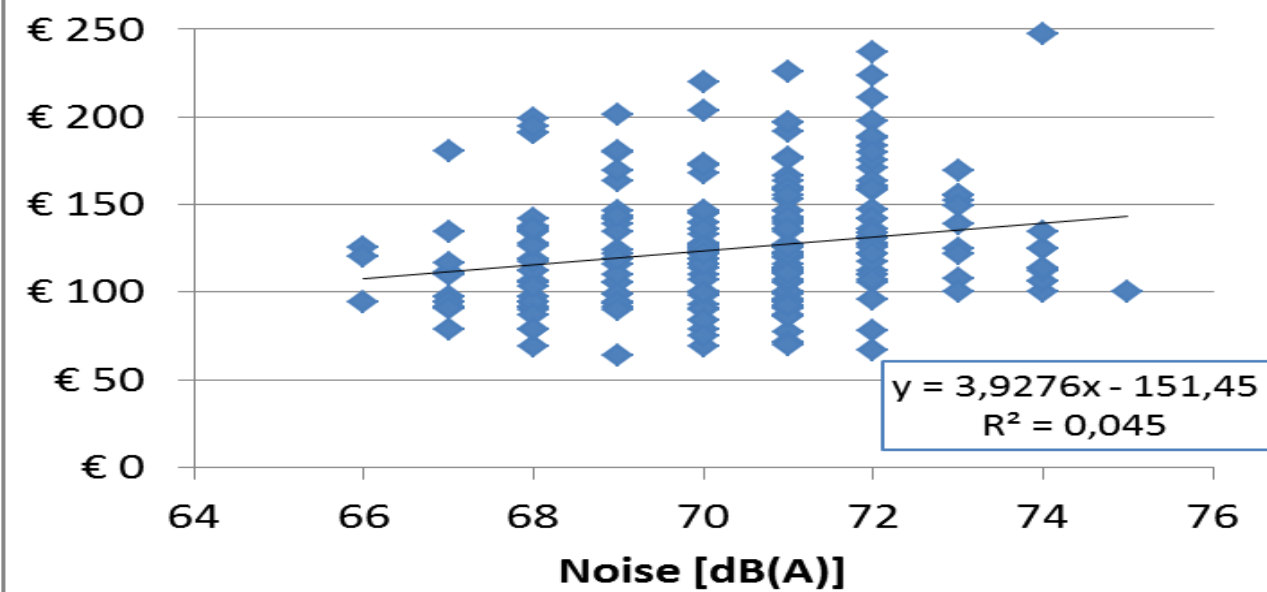
Wet Grip index (G)

Tyre type	Current limit	GRB-62-11-Rev.1	Stage 3	Stage 4
C1	1.1	1.4	1.45	1.6
C2	0.95	1.25	1.25	1.35
C3	0.80	1.1	1.1	1.2

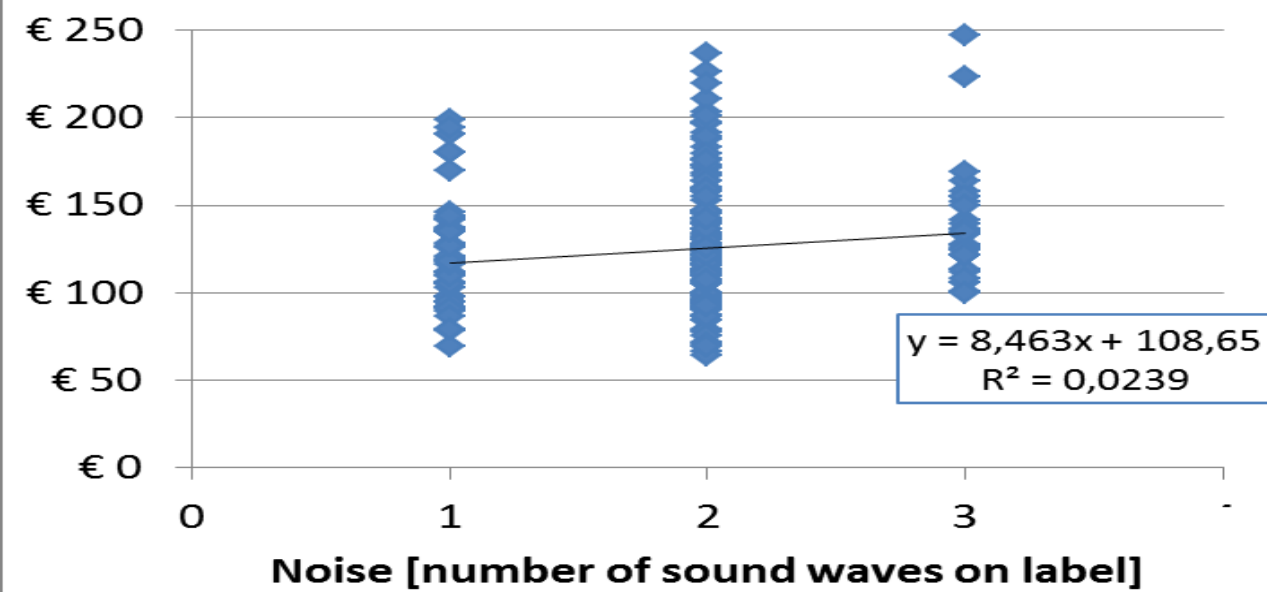
Noise (rolling sound emissions dB(A))

Tyre type	Current limit	GRB-62-11-Rev.1	Stage 3	Stage 4
C1	70-74	67-71	69-73	67-71
C2	72	70	71	70
C3	73	69	71	69

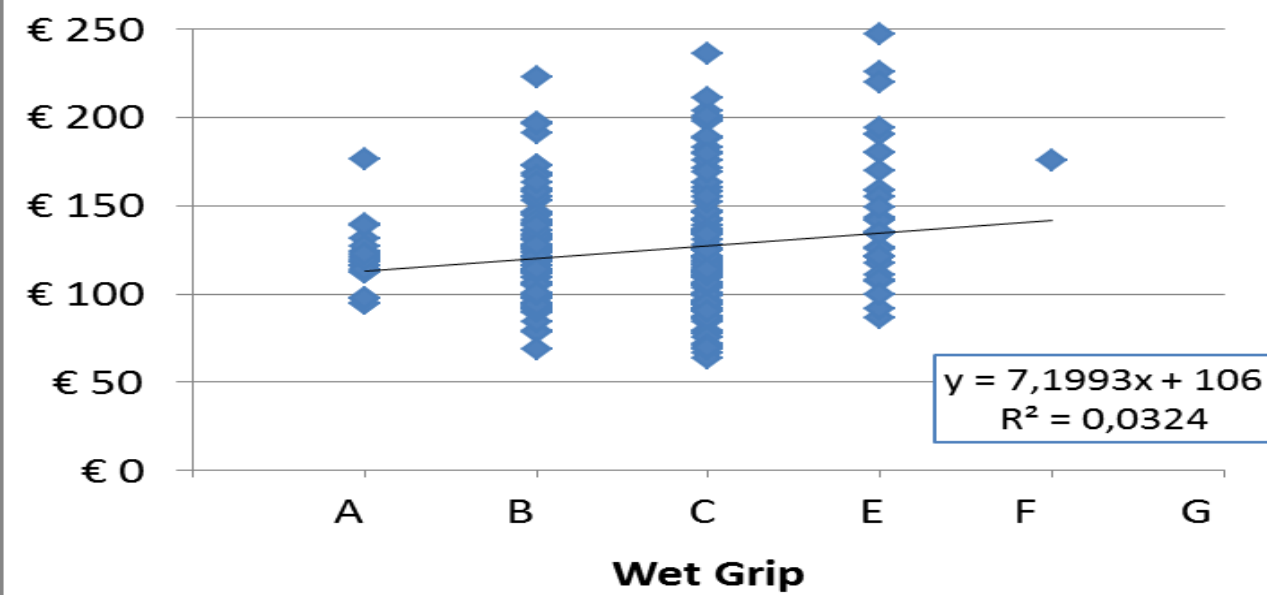
Noise (dB(A))



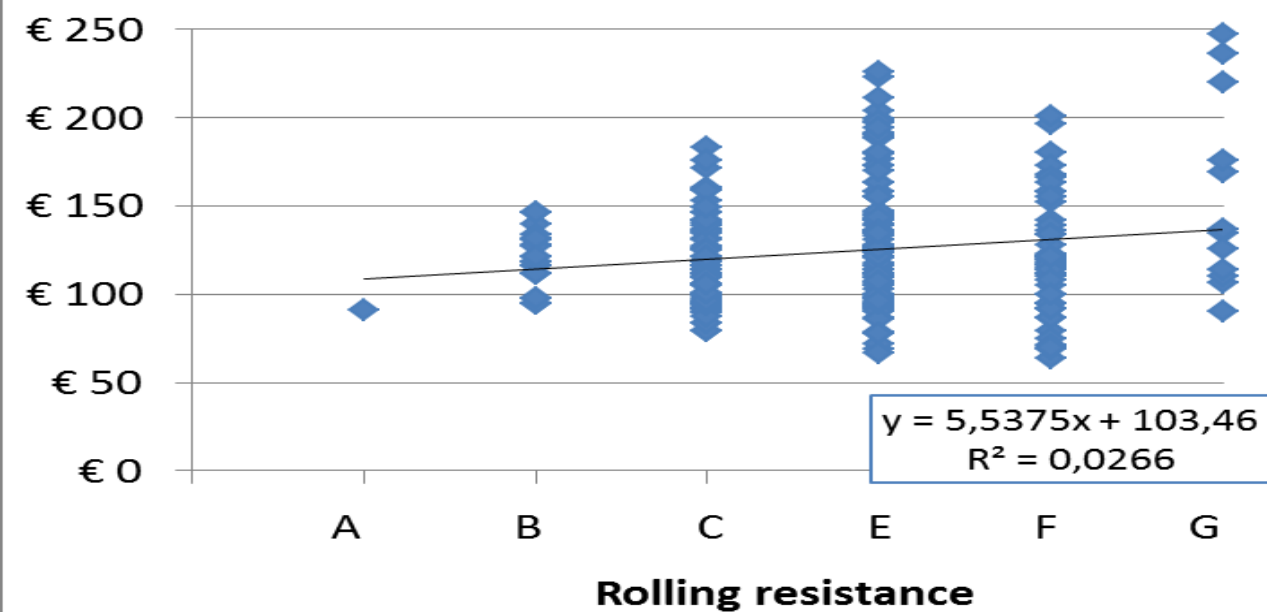
Noise (class)



Wet Grip



Rolling resistance



Potential benefits Stage 3, 4 and Proper tyre pressure in the EU

	Stage 4 limits	Stage 3 limits	Proper pressure
Fuel savings [billion l/yr]	17	8	5
CO2 reduction [Mt/yr]	42	21	12
Reduced # of fatalities	2567	1300	140
Reduced # of slight/ serious injuries	19631/ 12353	10000/ 6000	1100/ 7000
Reduced # of annoyed people [millions]	13	6	1.5
Reduced # of sleep disturbed people [mill.]	6	3	0.6
Cost savings [billion €/y]	34	17	6

Potential benefits A label tyres for fuel efficiency equivalent Stage 4 (incl. proper tyre pressure)

Vehicle type	Km/year	Fuel savings/year [l]	Cost savings/year [€]
Passenger car (Petrol)	17.000	84 (19)	121 (27)
Passenger car (Diesel)	35.000	138 (31)	151 (34)
Delivery van (D)	35.000	183 (41)	201 (45)
Delivery truck (D)	60.000	388 (70)	427 (78)
Heavy duty truck (D)	130.000	2150 (414)	2365 (456)
Bus (D)	50.000	789 (155)	868 (171)

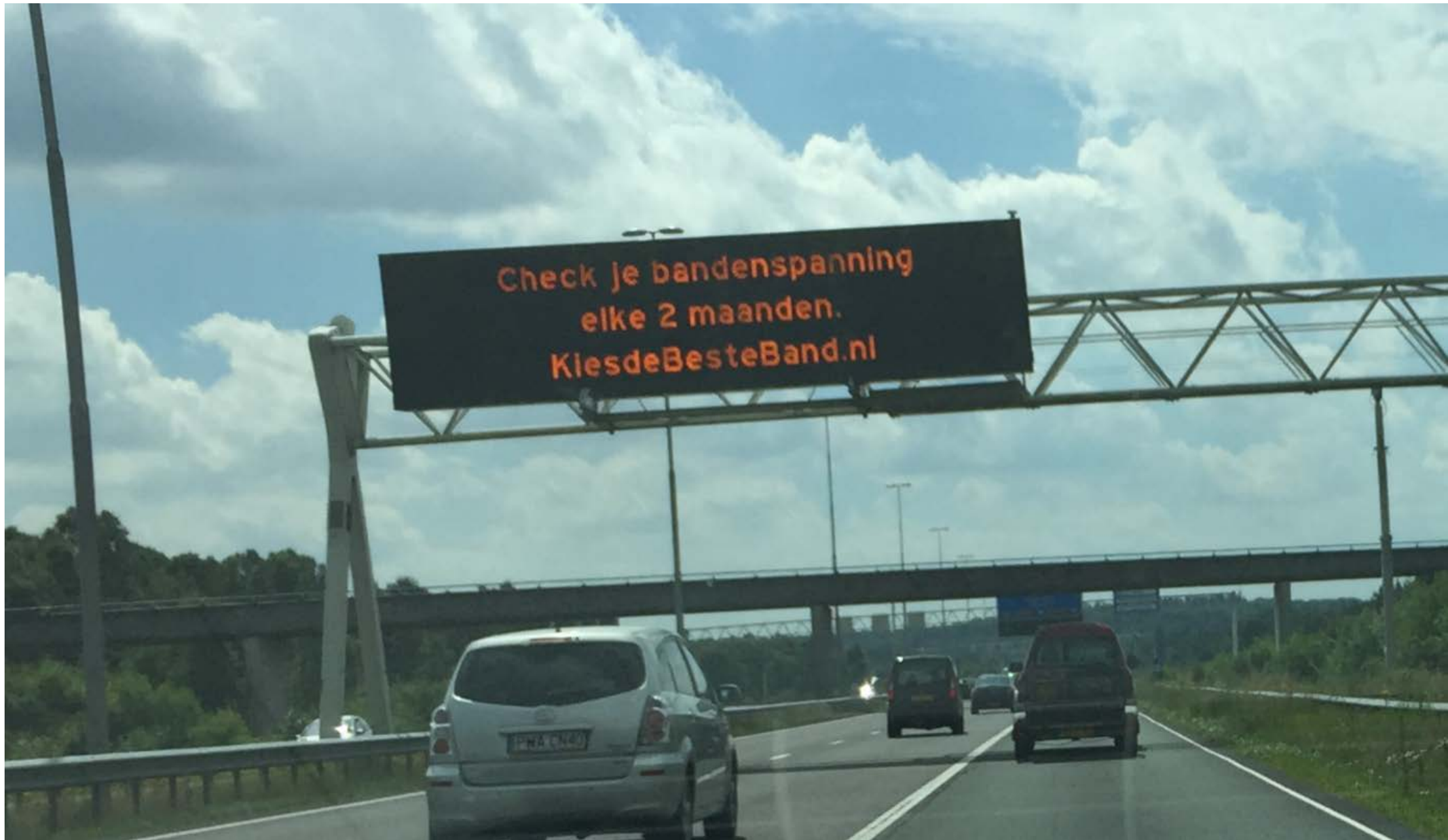
Clean Vehicle Directive: Potential benefits for car fleets

Potential benefits	Dutch National Road Authority (RWS)	Amsterdam	Rotterdam
Number of vehicles	1575	781	1097
Vehicle average [km/yr]	26.000	17.200	17.300
Fuel savings (correct pressure) [thousands ltr/yr]	153.000 (26.500)	147.000 (33.000)	200.000 (45.000)
CO2 reduction [ton/yr]	388 (66)	379 (86)	514 (116)
Cost savings [€/yr]	237.500 (42.000)	224.000 (51.000)	303.000 (69.000)
Cost savings per vehicle [€/yr]	150 (36)	287 (65)	277 (63)

Tyre pressure

- 60% of cars have underinflated tyres
- Tyres deflate 3-5% a month
- User manuals prescribe: 'inflate when cold'
 - Frequency?
 - Warm tyres? What then?

Check je bandenspanning
elke 2 maanden.
KiesdeBesteBand.nl

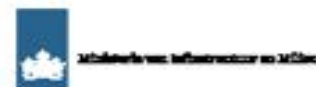


CHECK JE BANDENSPANNING ELKE 2 MAANDEN!

Heb je 15 minuten / 5 km gereden?
Tel 0,3 bar op bij de adviesspanning!



En rij veiliger, zuiniger en stiller
KiesdeBesteBand.nl



Tyre pressure monitoring systems (TPMS)



Tyre wear

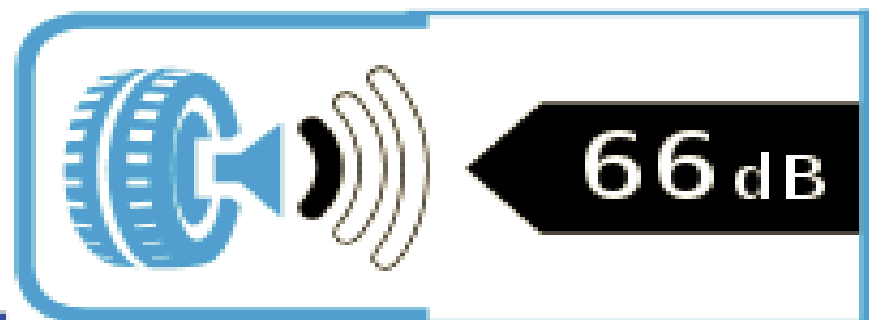
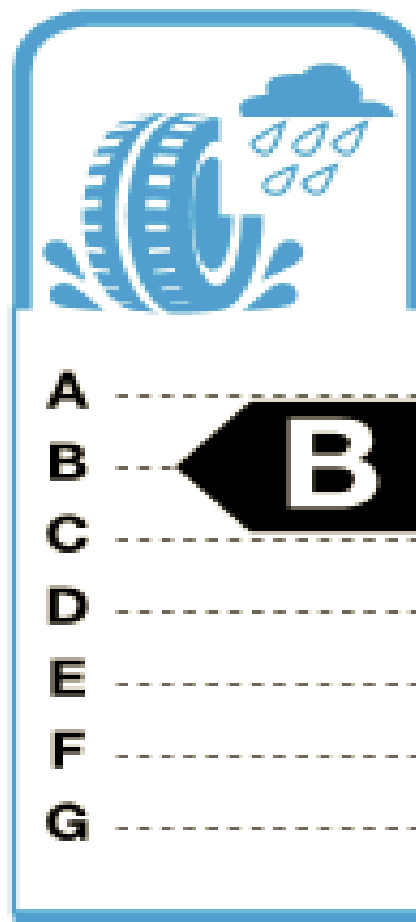
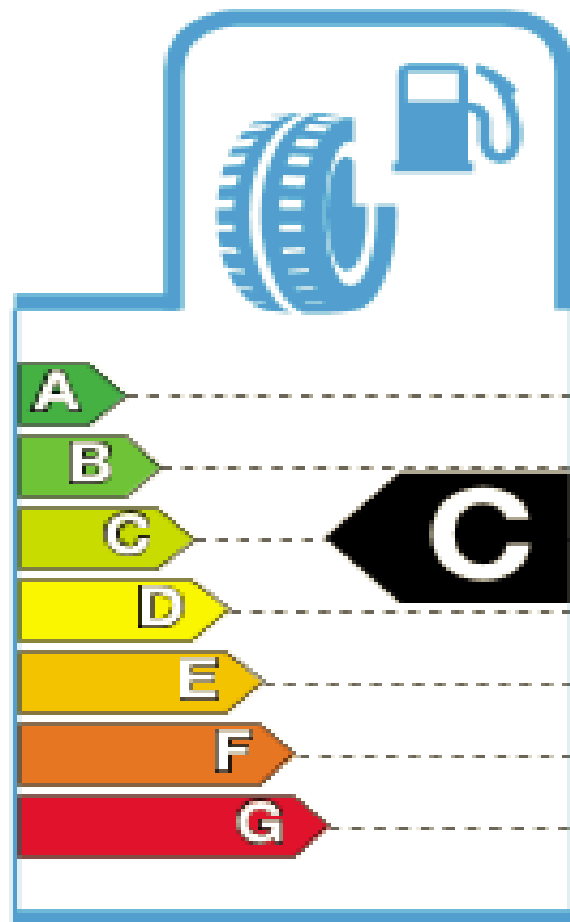
- In NLs 1 kg per capita, in EU 0.5 Mton/yr
- 40% of total microplastics emissions
- 30% under inflation increases wear by 50%
- No standards/limits for tyre wear
- Wear/Durability/Abrasion rate on tyre label?
- Wheel alignment in periodic road worthiness tests?

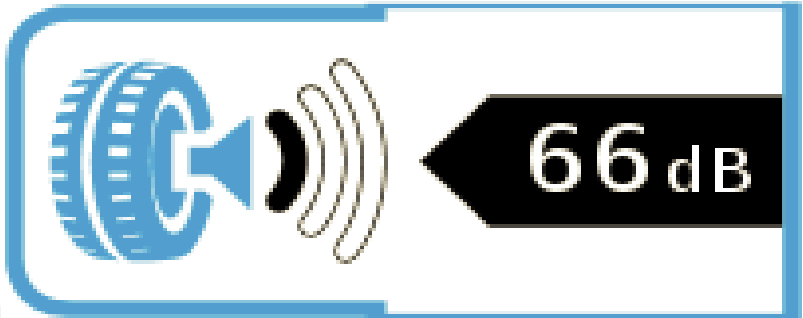
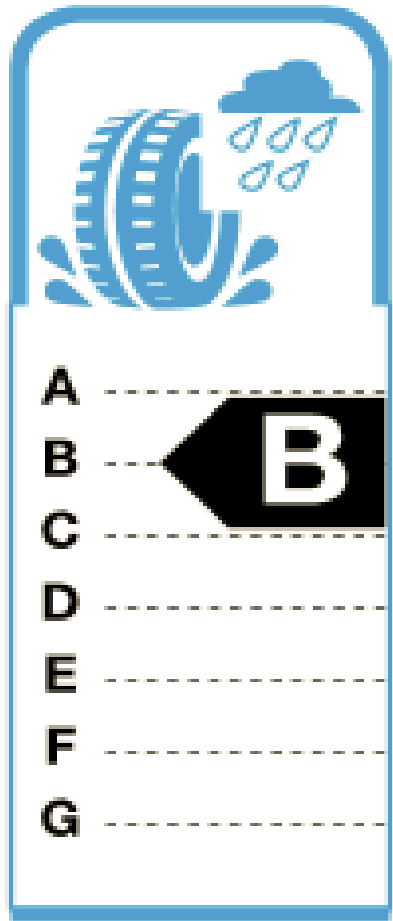
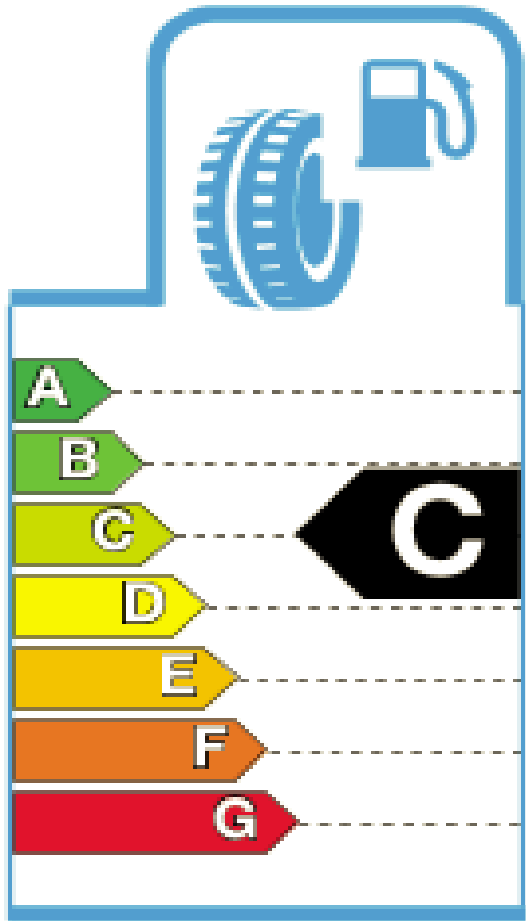
Tyre quality NL 2015 (8 million cars)

Passenger cars with at least one tyre	Percentage	Total NLs (million)
Irregular wear or damage	41	3.35
Damage	25	2.04
Irregular wear	10	0.82
(Ageing) little cracks or tear	26	2.12
Danger to traffic safety	9	0.74
Underinflation	>60	5

Tyre label

- Label lacks information
- Not fit for all season and winter tyres
- Market surveillance
- Stakeholder consultation EU on Tyre label Regulation, September





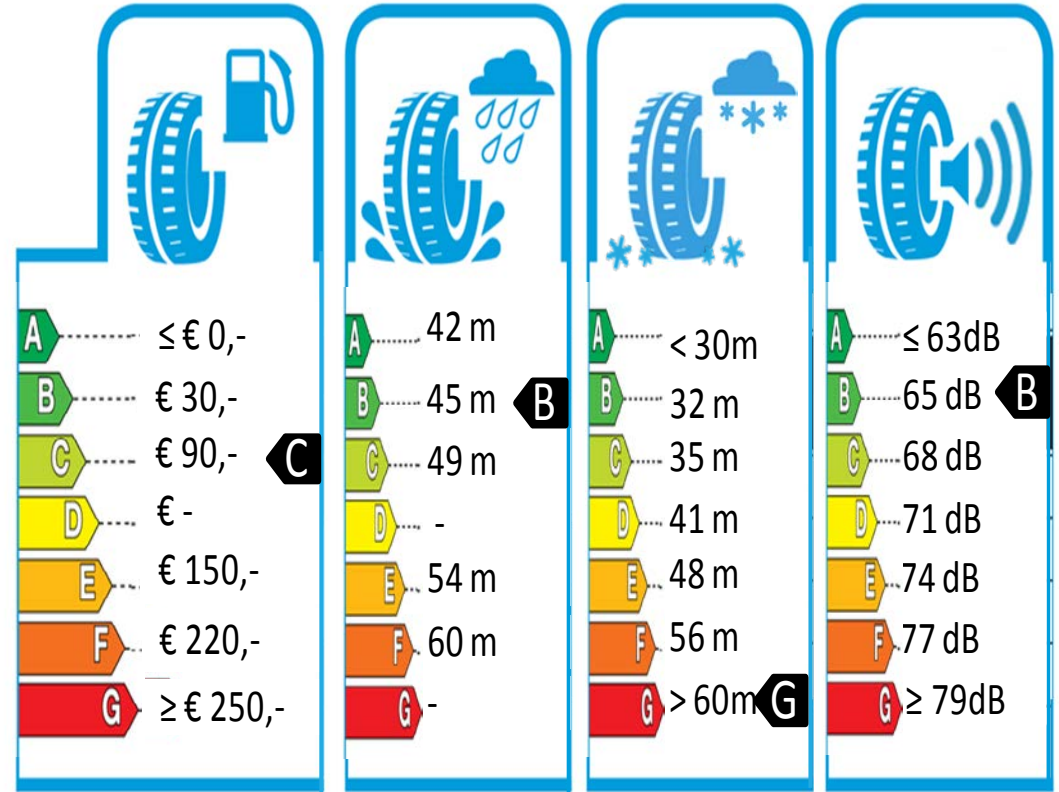
1222/2009 - C1



1222/2009

C1 - Summer tyre 

Tyre label: **CBGB**



Performances medium car:

Extra fuel / yr
17000 km/yr
€ 1,50 / l

ABS braking
80→0 km/h
Wet asphalt

ABS braking
50 → 0 km/h
Compacted snow

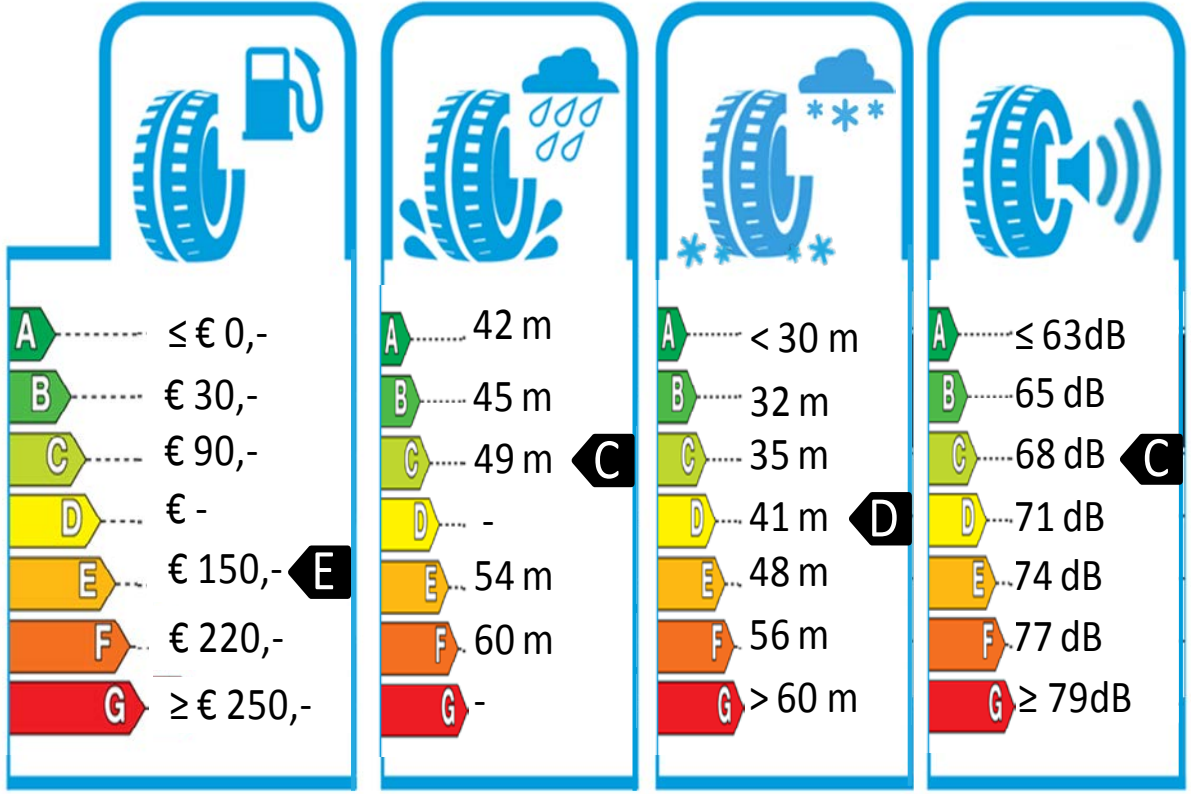
Rolling 80 km/h
Stand. Asphalt
+3dB = 2x as loud



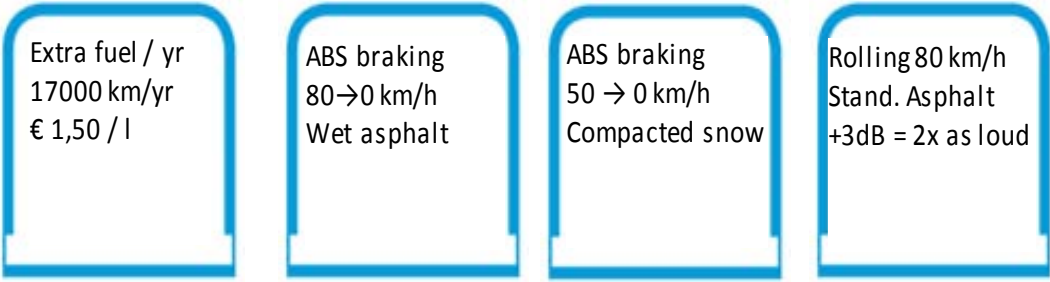
1222/2009

C1 - All Season tyre

Tyre label: **ECDC**



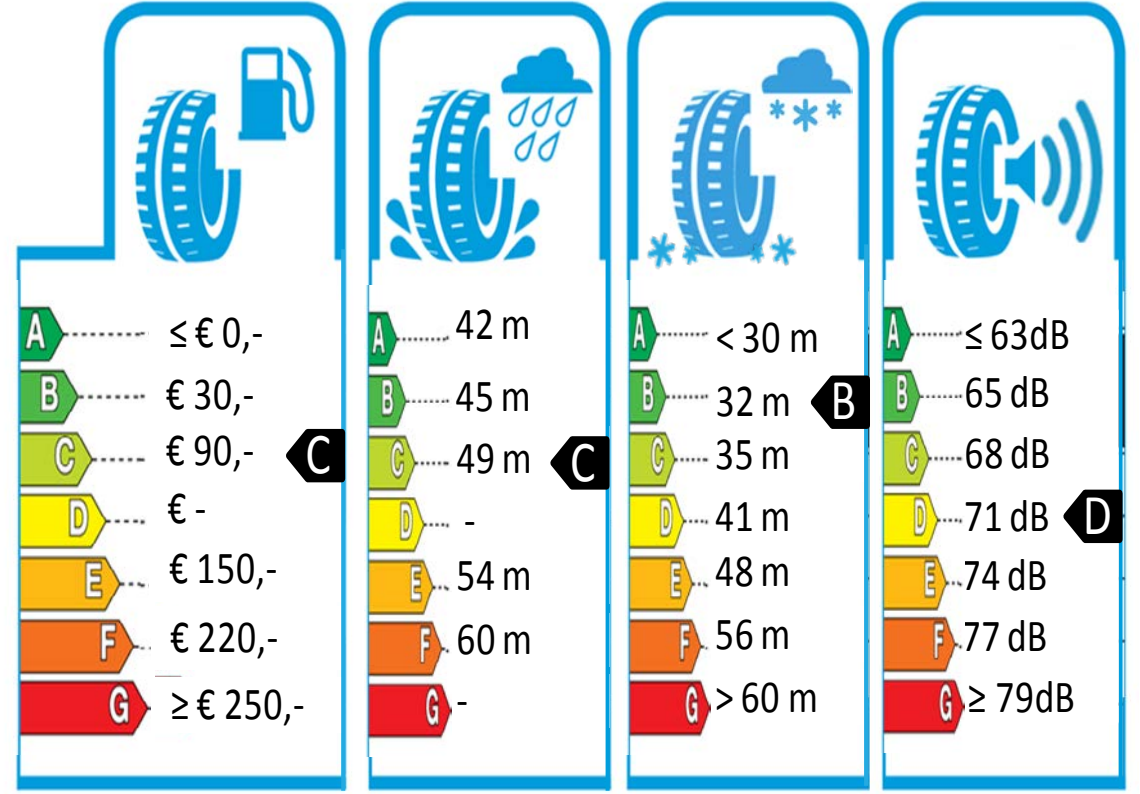
Performances medium car:



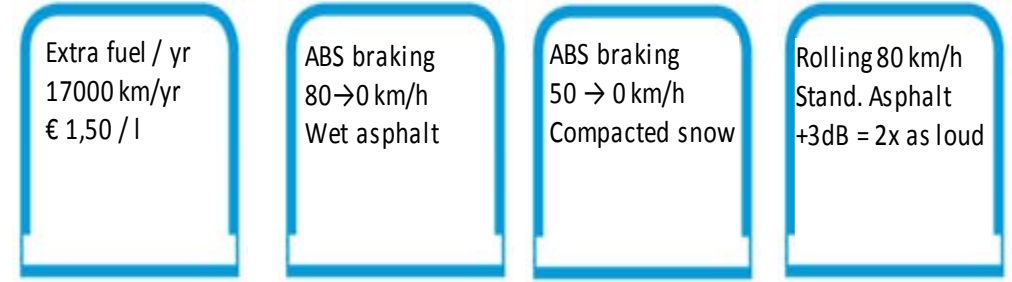
1222/2009

C1 - Winter tyre

Tyre label: **CCBD**



Performances medium car:



Interaction tyres with roads

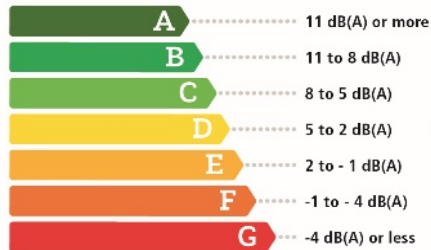
Road surface label



ZOAB (PA16): DEEE



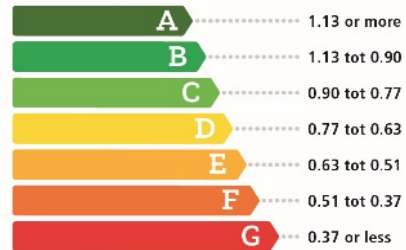
Noise reduction
in dB(A)



D



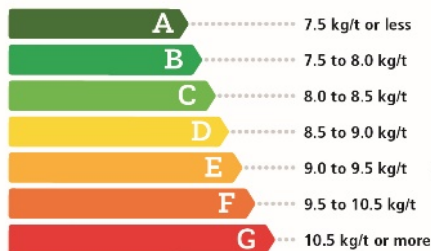
Wet skid resistance
in Side Way Force



E



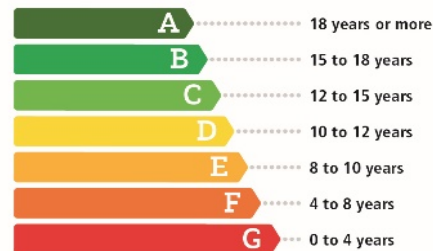
Rolling resistance
coefficient in kg/t



E



Lifespan
in years



E

Thank you for your attention !



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MORE ECONOMICAL AND QUIETER**
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