



# TÜV SÜD Tire Test 2024

KUMHO ECSTA PS72

255/35 ZR19 (96Y) XL

BENCHMARK TEST

**Add value.  
Inspire trust.**

# TÜV SÜD PS – TIRE TEST 2024

## TIRE DETAILS



### CANDIDATE TIRE



**KUMHO**  
**ECSTA PS72**  
255/35 ZR19 (96Y) XL  
DOT 1H2 C4YC9H 0924

### COMPETITOR TIRES (in testing order)



**FALKEN**  
**AZENIS FK520**  
255/35 ZR19 (96Y) XL  
DOT 1AHAP NVYR 0723-1323



**HANKOOK**  
**VENTUS S1 EVO 3 K127**  
255/35 ZR19 (96Y) XL  
DOT 1T7P8 2B H1 4523



**NEXEN**  
**N'FERA SPORT**  
255/35 ZR19 96Y XL  
DOT 035 VB DADL 1622-0323



**CONTINENTAL**  
**SPORTCONTACT 7**  
255/35 ZR19 (96Y) XL  
DOT 16Y 0327RT 4023-4923



**GOODYEAR**  
**F1 SUPERSPORT**  
255/35 ZR19 (96Y) XL  
DOT 1P132 JAKR 1723-1823

- All Kumho Ecsta PS72 test samples were provided for the tests by the customer.
- All other test samples were purchased in the normal market by TÜV SÜD.
- TÜV SÜD randomly selected the tires for the individual tests.

# TÜV SÜD PS – TIRE TEST 2024

## TEST DETAILS



### TEST LOCATIONS



- Wet & dry: IDIADA (E)
- Rolling noise: Neubiberg (D)
- Rolling resistance & highspeed test advanced: TÜV SÜD Product Service Garching (D)

### TEST VEHICLES



- Audi S5 Sportback TDI, Audi A4 40 TDI, VW Passat Variant 2.0TDI & 1.5TSI

### PROCEDURE & EVALUATION



- In most tests, the reference/control tire is tested repeatedly in the progress of the test to detect and consider changes of the ambient test parameters and correct its performance by linear interpolation.
- Generally, all tires in a test are primarily evaluated in relation to the reference/control tire.
- The performance is expressed as a percentage value, calculated on the basis of the measured and corrected test data.
- In this present evaluation, the performance of each tire is assessed relative to Kumho Ecsta PS72 ( $\triangleq$  100%).
- In all evaluations, a percentage >100% means better and <100% means worse.

# TÜV SÜD PS – TIRE TEST 2024

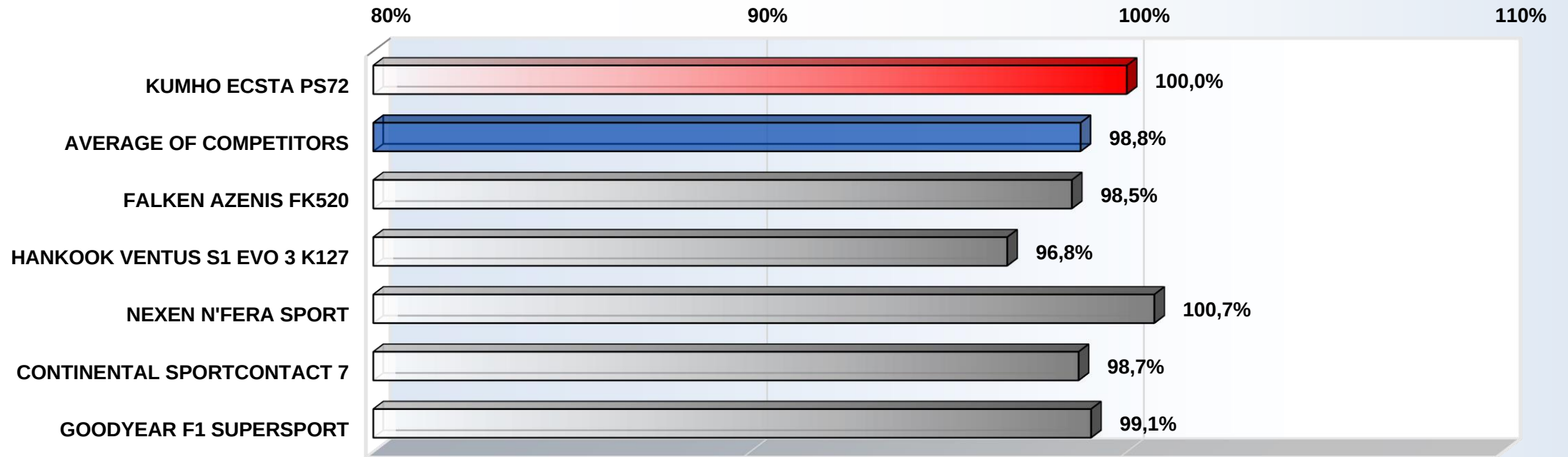
## TEST RESULTS



### AQUAPLANING STRAIGHT-LINE

- Objective measurement of longitudinal aquaplaning performance; water depth ~ 6 mm
- Result: Aquaplaning speed [km/h] at 15% slip

#### AQUAPLANING STRAIGHT-LINE PERFORMANCE \* [%]



\*) The calculation of the percentage performance is based on the measured aquaplaning speeds.

# TÜV SÜD PS – TIRE TEST 2024

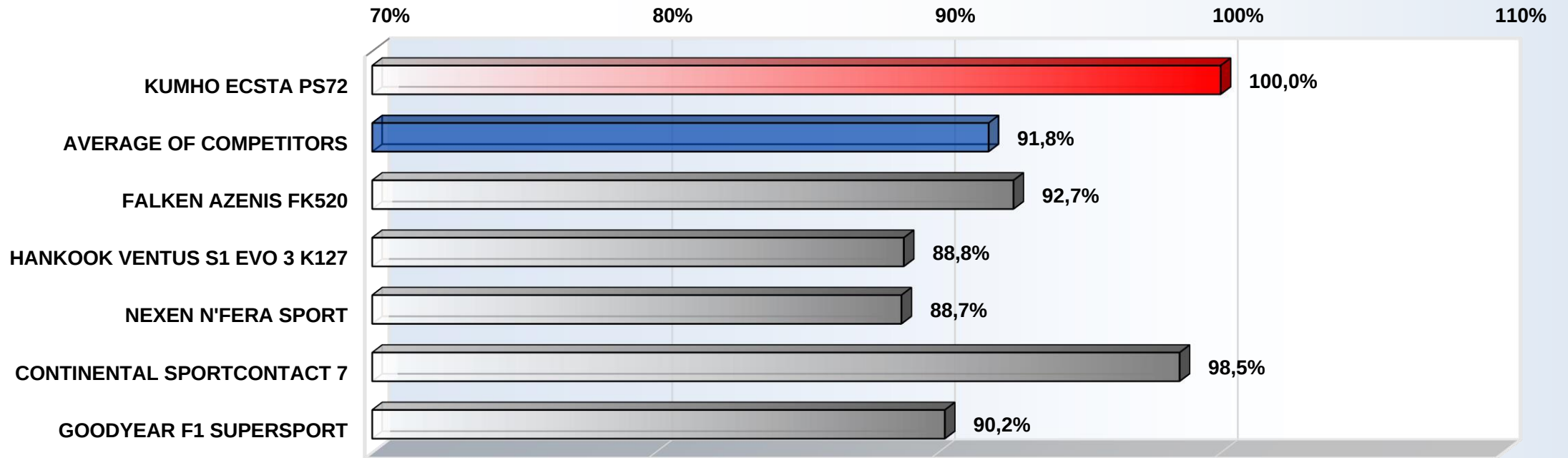
## TEST RESULTS



### WET BRAKING

- ABS-braking on wet asphalt surface
- Result: Ø Stopping distance [m] from 80 to 20 km/h → Mean deceleration [m/s<sup>2</sup>]

#### WET BRAKING PERFORMANCE \* [%]



\*) The calculation of the percentage performance is based on the mean deceleration values resulting from the measured braking distances.

# TÜV SÜD PS – TIRE TEST 2024

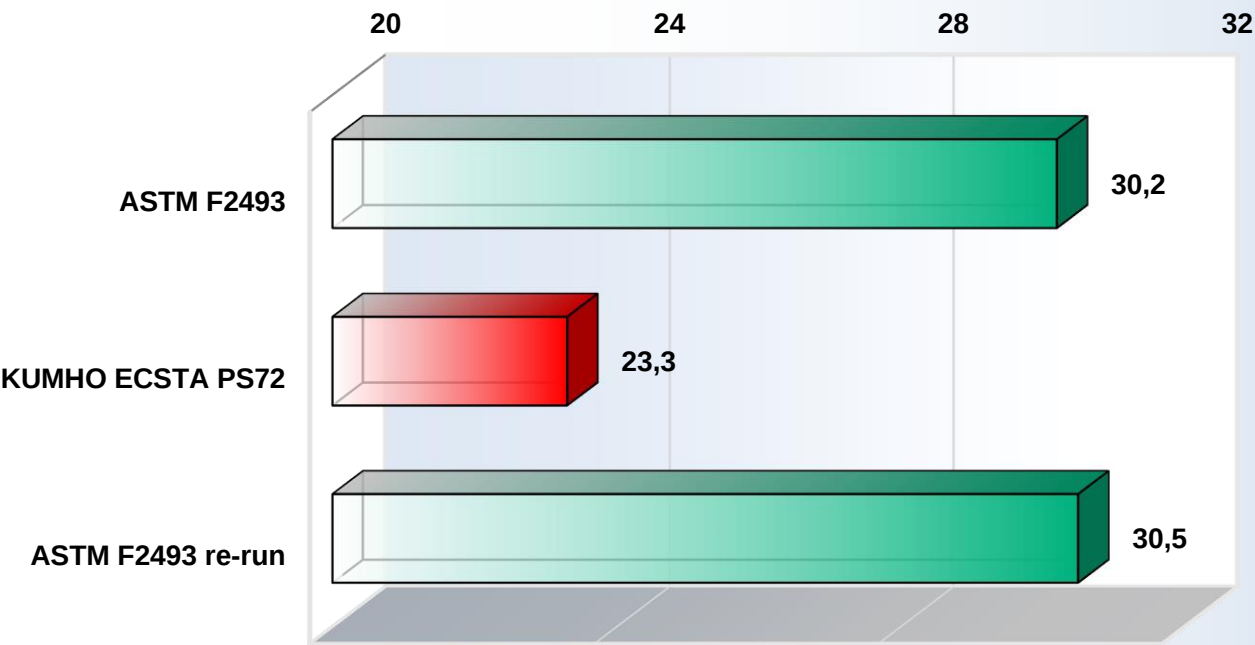
## TEST RESULTS



### WET GRIP INDEX acc. to ECE R117

- ABS-braking on wet asphalt surface acc. to ECE R117 Annex 5
- Result: Ø Stopping distance [m] from 80 to 20 km/h → Mean deceleration [m/s²] → Wet Grip Index (G)

#### STOPPING DISTANCE [m]



| TIRE BRAND        | T <sub>Air</sub> / T <sub>Surface</sub> [°C] |      | WET GRIP INDEX (G) |
|-------------------|----------------------------------------------|------|--------------------|
| ASTM F2493        | 13,3                                         | 14,5 | -                  |
| KUMHO ECSTA PS72  | 15,3                                         | 16,6 | 1,64               |
| ASTM F2493 re-run | 17,3                                         | 18,7 | -                  |

# TÜV SÜD PS – TIRE TEST 2024

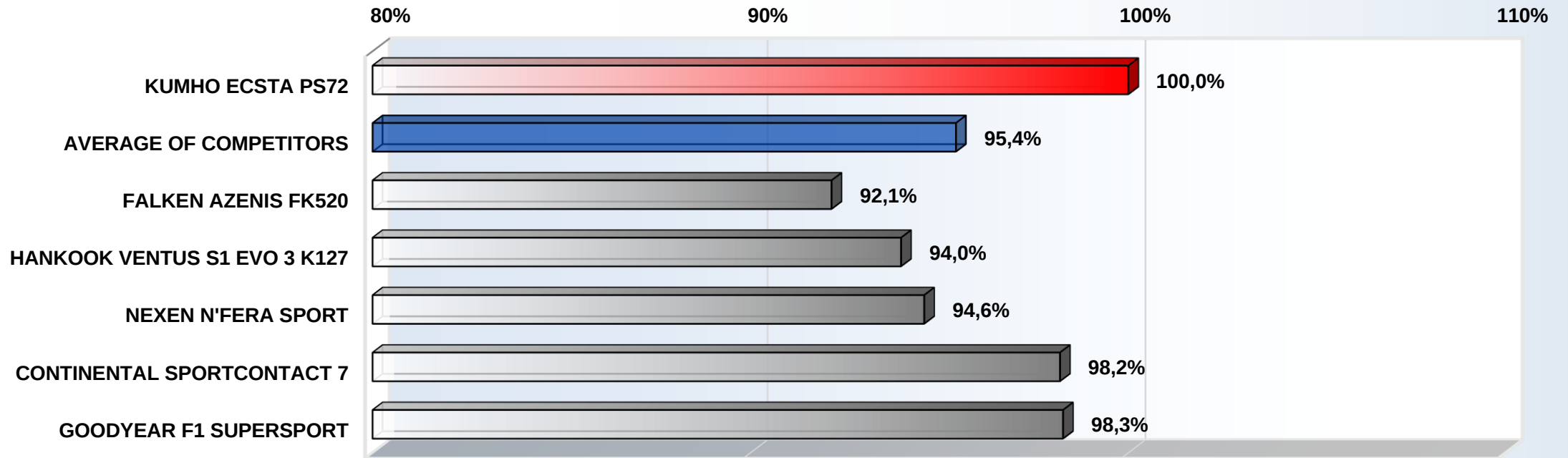
## TEST RESULTS



### WET HANDLING

- Subjective assessment and lap time on a wet handling circuit (track length: 1500 m)
- Result: Ø Rating (min. 1, max. 10) and Ø lap time [s] → average speed [km/h]; total result from speed and rating scores (2:1)

#### WET HANDLING PERFORMANCE \* [%]



\*) The calculation of the percentage performance is based on the speed and the rating scores (at the ratio 2:1).

# TÜV SÜD PS – TIRE TEST 2024

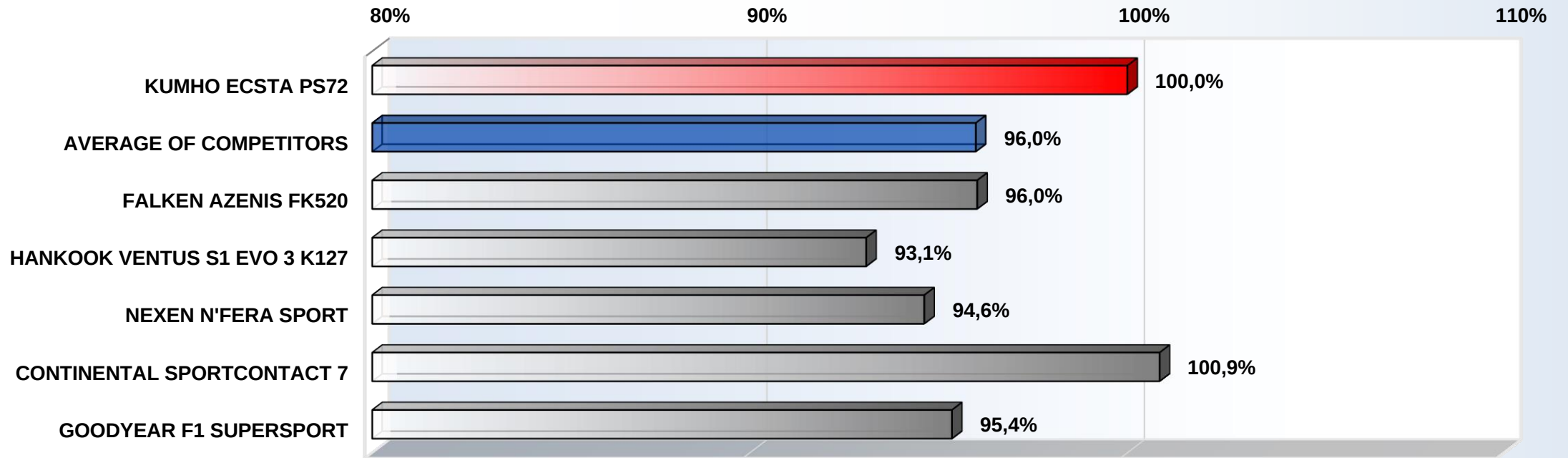
## TEST RESULTS



### DRY BRAKING

- ABS-braking on dry asphalt surface
- Result: Ø Stopping distance [m] from 100 to 0 km/h → Mean deceleration [m/s<sup>2</sup>]

#### DRY BRAKING PERFORMANCE \* [%]



\*) The calculation of the percentage performance is based on the mean deceleration values resulting from the measured braking distances.

# TÜV SÜD PS – TIRE TEST 2024

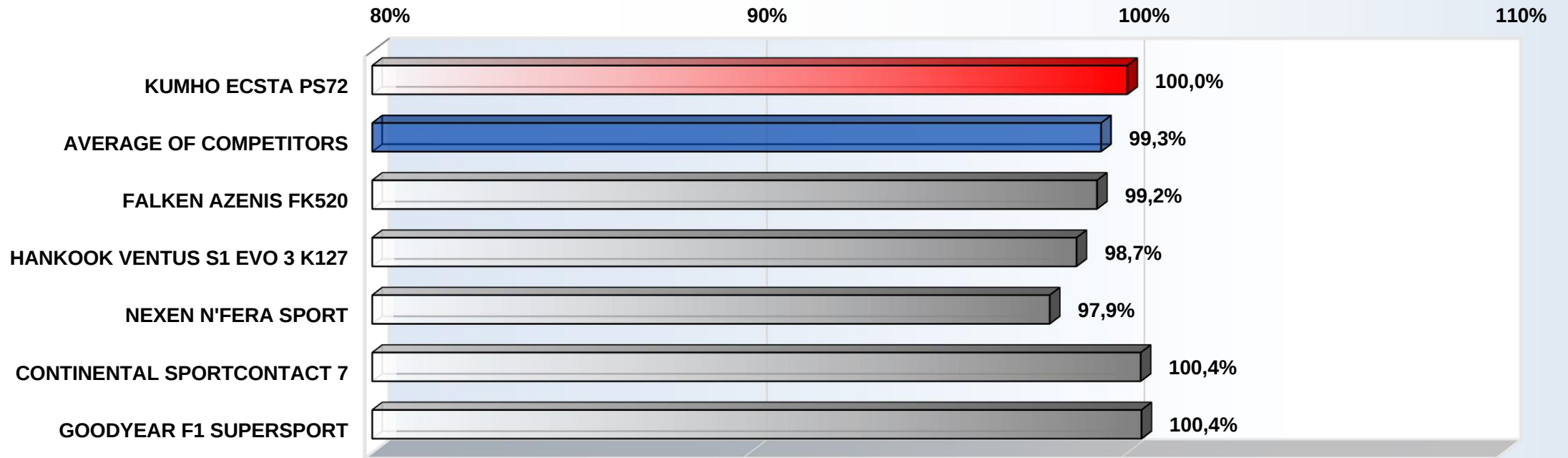
## TEST RESULTS



### DRY HANDLING

- Subjective assessment and lap time on a dry handling circuit (track length: 2160 m)
- Result: Ø Rating (min. 1, max. 10) and Ø lap time [s] → average speed [km/h]; total result from speed and rating scores (2:1)

#### DRY HANDLING PERFORMANCE \* [%]



\*) The calculation of the percentage performance is based on the speed and the rating scores (at the ratio 2:1).

# TÜV SÜD PS – TIRE TEST 2024

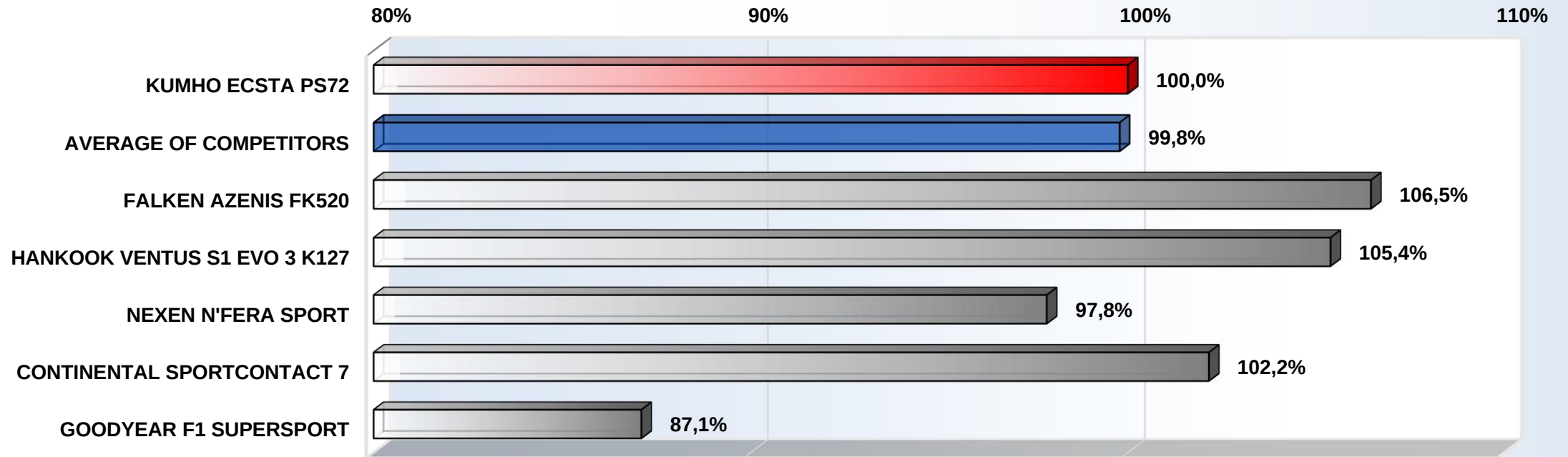
## TEST RESULTS



### ROLLING RESISTANCE

- Acc. to ECE R117 Annex 6
- Result: Rolling resistance coefficient ( $c_R$ ) EC label value [kg/t]

#### ROLLING RESISTANCE PERFORMANCE \* [%]



\*) The calculation of the percentage performance is based on the reciprocal values of the measured rolling resistance forces.

# TÜV SÜD PS – TIRE TEST 2024

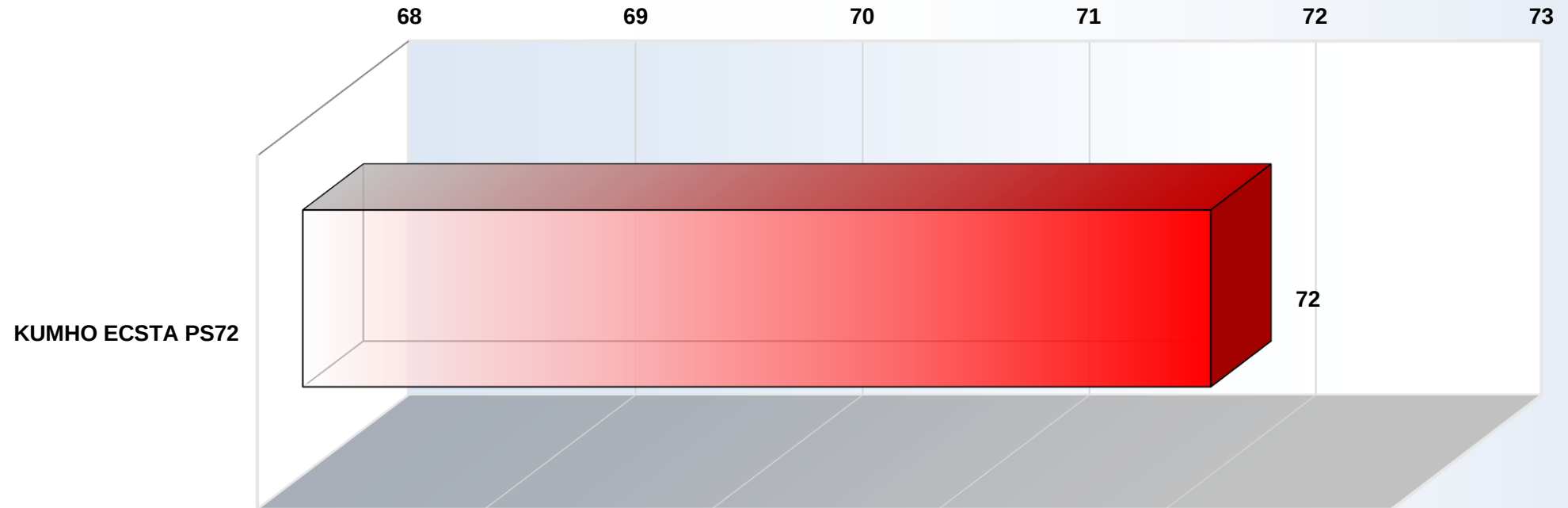
## TEST RESULTS



### ROLLING NOISE

- Acc. to ECE R117 Annex 3
- Result: Rolling noise level (ECE type approval value) [dB(A)]

#### TIRE ROLLING NOISE (ECE type approval value) [dB(A)]



# TÜV SÜD PS – TIRE TEST 2024

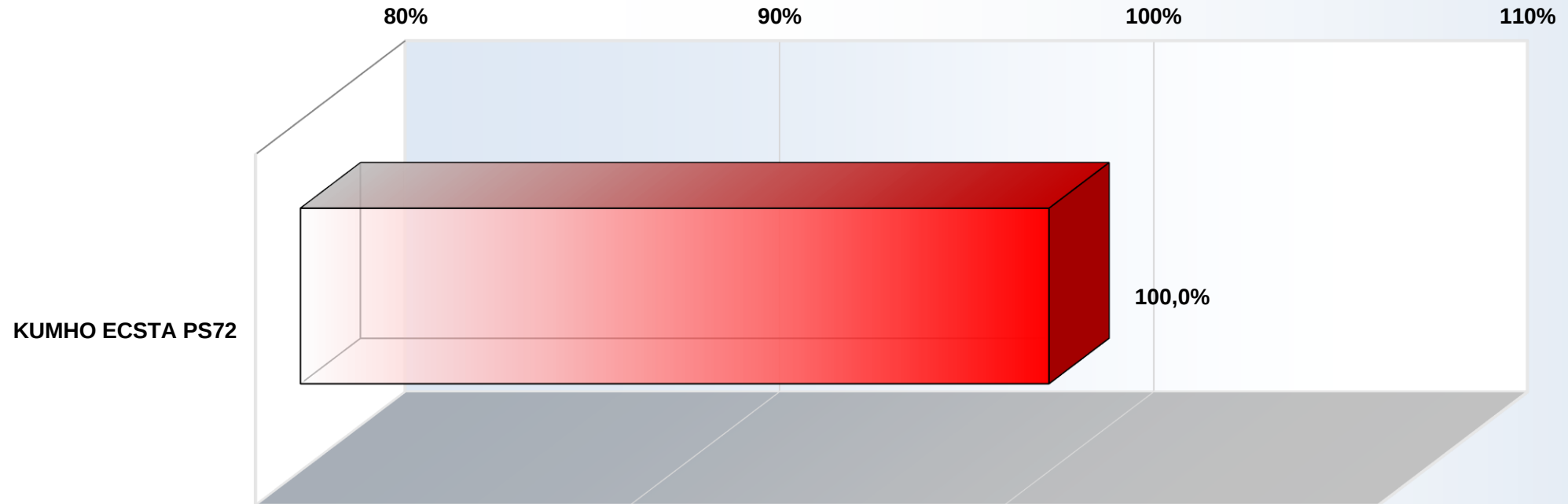
## TEST RESULTS



### HIGHSPEED TEST ADVANCED

- Acc. to ECE R30 + extension at 2° camber at  $v_{\max}$  for max. 60 min
- Result: Total running time without visible defect (max. 120 min  $\triangleq$  100%)

### HIGHSPEED PERFORMANCE \* [%]



\*) The calculation of the percentage performance is based on the total running time without defect.

# TÜV SÜD PS – TIRE TEST 2024

## SUMMARY OF RESULTS

| Percentage > 100% means better,<br>percentage < 100% means worse. | KUMHO<br>ECSTA PS72 | FALKEN<br>AZENIS FK520 | HANKOOK<br>VENTUS S1<br>EVO 3 K127 | NEXEN<br>N'FERA SPORT | CONTINENTAL<br>SPORTCONTACT 7 | GOODYEAR<br>F1 SUPERSPORT |
|-------------------------------------------------------------------|---------------------|------------------------|------------------------------------|-----------------------|-------------------------------|---------------------------|
| AQUAPLANING<br>STRAIGHT-LINE                                      | 100,0%              | 98,5%                  | 96,8%                              | 100,7%                | 98,7%                         | 99,1%                     |
| WET BRAKING                                                       | 100,0%              | 92,7%                  | 88,8%                              | 88,7%                 | 98,5%                         | 90,2%                     |
| WET GRIP INDEX<br>(ECE R117 Annex 5)                              | 1,64                | -                      | -                                  | -                     | -                             | -                         |
| WET HANDLING                                                      | 100,0%              | 92,1%                  | 94,0%                              | 94,6%                 | 98,2%                         | 98,3%                     |
| DRY BRAKING                                                       | 100,0%              | 96,0%                  | 93,1%                              | 94,6%                 | 100,9%                        | 95,4%                     |
| DRY HANDLING                                                      | 100,0%              | 99,2%                  | 98,7%                              | 97,9%                 | 100,4%                        | 100,4%                    |
| ROLLING RESISTANCE<br>(ECE R117 Annex 6)                          | 100,0%              | 106,5%                 | 105,4%                             | 97,8%                 | 102,2%                        | 87,1%                     |
| ROLLING NOISE<br>(ECE R117 Annex 3)                               | 72 dB(A)            | -                      | -                                  | -                     | -                             | -                         |
| HIGHSPEED TEST<br>ADVANCED                                        | 100,0%              | -                      | -                                  | -                     | -                             | -                         |

