

0 General / Allgemeine Angaben:

- 0.1 Make (trade name of manufacturer) /
Fabrikmarke
(Firmenname des Herstellers): Anadolu Isuzu Otomotiv Sanayi ve Ticaret A.Ş.
- 0.2.1 Commercial description(s) /
Handelsname(n): Citiport
- 0.4 Category of vehicle /
Fahrzeugklasse: M₃
- 0.5 Manufacturer's name and address /
Name und Anschrift des Herstellers: Anadolu Isuzu Otomotiv Sanayi ve Ticaret A.Ş.
Şekerpınar Mahallesi Otomotiv Caddesi No:2
TR-41435 Çayırova / Kocaeli
- 0.8 Address of assembly plant /
Name(n) und Anschrift(en) der
Fertigungsstätte(n): Anadolu Isuzu Otomotiv Sanayi ve Ticaret A.Ş.
Şekerpınar Mahallesi Otomotiv Caddesi No:2
TR-41435 Çayırova / Kocaeli

1 Test record / Prüfprotokoll:

See appendix /
Siehe Anhang

2 Attachments / Anlagen:

- 2.1 Technical details /
Technische details:
- 2.2 Test photographs /
Testaufnahmen:


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YAZILIM TEKNOLOJİLERİ A.Ş.
S.L.B.T. 339

3 Statement of conformity / *Schlussbescheinigung*:

With regard to the required level of performance to be achieved, the test specimens were representative for the type to be approved. /
Die verwendeten Prüfmuster waren im Hinblick auf das erforderliche Leistungsniveau für den zu genehmigenden Typ repräsentativ.

The tests were carried out in accordance to the relevant requirements of the
Die Durchführung der Prüfungen entsprach den relevanten Anforderungen der

EN ISO/IEC 17025:2005 EN ISO/IEC 17020:2012

Test Laboratory / *Prüflaboratorium*
SGS-TÜV Saar GmbH

Responsible expert /
Verantwortlicher Sachverständiger

Conformity check by /
Konformitätsprüfung durch

M. Fatih Altun

Tuba Erbulucu

Kocaeli, 14.04.2017

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Test record

1 Test object and measuring equipment

| | | |
|-------|--------------------------------|--------------------------------|
| 1.1 | Category of vehicle: | M ₃ |
| 1.2 | Vehicle identification number: | NNAM0BHLB02000007 |
| 1.3 | Unladen mass: | 11208 kg |
| 1.4 | Technically permissible mass: | 17800 kg |
| 1.5 | Test mass: | 13760 kg |
| 1.7 | Engine: | |
| 1.7.1 | Manufacturer: | Cummins |
| 1.7.2 | Type: | ISB6.7E6C 300B |
| 1.7.3 | Approval no of engine: | e11*595/2009*627/2014C*0443*00 |
| 1.8 | Gearbox: | |
| 1.8.1 | Manufacturer: | ZF |
| 1.8.2 | Type: | 6AP 1200B Ecolife |

2 Test Results / Prüfergebnisse

Tests were performed in accordance to Standardised on-road test cycles.
 See Attachments 2.1 and 2.2 for details.

**3 Other information
Allgemeine Angaben**

| | | |
|-----|--|------------------|
| 3.1 | Place of testing / <i>Ort der Prüfung:</i> | Sakarya / Turkey |
| 3.2 | Date of testing / <i>Datum der Prüfung:</i> | 12-13.04.2017 |

**4 Remarks /
Bemerkungen:** n.a.



Test protocol

| | |
|-----------------------------------|--|
| Date of test | 12.04.2017 (SORT 1) / 13.04.2017 (SORT 2, 3) |
| Time of test begin | 11:30 / 10:40 |
| Time of test end | 13:00 / 12:45 |
| Place of test | Sakarya, Turkey |
| Establishment carrying out the m. | Anadolu Isuzu Otomotiv A.S |

A. Test external conditions (for information)

1. Street conditions

| Nr. | Item | Value | Unit |
|-----|----------------------------|-------------------|------|
| 1.1 | State of track surface | asphalt, dry | |
| 1.2 | Max. longitudinal gradient | | 1 % |
| 1.3 | Track altitude | 44,20 up to 51,11 | m |
| 1.4 | Min. radius | - | m |
| 1.5 | Track length | 2200 | m |

2. Weather conditions

| Nr. | Item | Value | Unit |
|-----|----------------------|-----------------------------------|------|
| 1.1 | | Test begin / Test end | |
| 2.1 | Wind speed | 0,9 / 1,3 / 1,3 / 1,8 | m/s |
| 2.2 | Temperature | 17 / 13 / 15 / 13 | °C |
| 2.3 | Humidity | 59 / 68 / 63 / 71 | % |
| 2.4 | Atmospheric pressure | 1,0150 / 1,0112 / 1,0146 / 1,0098 | bar |

B. Vehicle set-up

1. Vehicle characteristics

1.1 type and dimensions

| Nr. | Item | Value | Unit |
|-------|--------------|-----------------------|------|
| 1.1.1 | Vehicle type | M3 Citybus (12metres) | |
| 1.1.2 | Length | 12,03 | m |
| 1.1.3 | Width | 2,55 | m |
| 1.1.4 | Height | 3,14 | m |
| 1.1.5 | Empty weight | 11208 | kg |
| 1.1.6 | Mileage | 2985 | km |

1.2 Engine

| Nr. | Item | Value | Unit | at (rpm) |
|-------|-----------------------------------|--------------------------------|------|------------|
| 1.2.1 | Manufacturer and type | CUMMINS ISB6.7E6C 300B EURO6 C | | |
| 1.2.2 | Engine capacity | 6700 | cc | Non relev. |
| 1.2.3 | Max. power | 220 | kW | 2100 |
| 1.2.4 | Max torque | 1182 | Nm | 1150-1400 |
| 1.2.5 | Driving mode of engine ventilator | hydraulic | | |

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1.3 Gearbox

| Nr. | Item | Value |
|-------|-----------------------|-----------------------|
| 1.3.1 | Manufacturer and type | ZF 6AP 1200 B Ecolife |
| 1.3.2 | Programme used | ZF 6070.205.195 BS |

1.4 Tyres

| Nr. | Item | Value | Unit |
|-------|---------------------------------|---------------|------|
| 1.4.1 | Manufacturer and type | PIRELLI MC:01 | |
| 1.4.2 | Dimensions (front axle tyres) | 275/70R22.5 | |
| 1.4.3 | Dimensions (central axle tyres) | - | |
| 1.4.4 | Dimensions (rear axle tyres) | 275/70R22.5 | |
| 1.4.5 | Front axle nomin. pressure | 8,96 | bar |
| 1.4.6 | Middle axle nomin. pressure | - | bar |
| 1.4.7 | Rear axle nomin. Pressure | 8,96 | bar |
| 1.4.8 | Pattern depth of new tyres | 17 | mm |
| 1.4.9 | Actual pattern depth measured | 16 | mm |

1.5 Rear axle

| Nr. | Item | Value |
|-------|-----------------------|--------------|
| 1.5.1 | Manufacturer and type | ZF AV 133/80 |
| 1.5.2 | Reduction ratio | 5,73 |

1.6 Engine lubricant

| Nr. | Item | Value |
|-------|----------------|------------------------|
| 1.6.1 | Type | Castrol Vecton CJ 4/E9 |
| 1.6.2 | Sae Grade | SAE 15W-40 |
| 1.6.3 | Other features | - |

1.7 Gearbox Lubricant

| Nr. | Item | Value |
|-------|----------------|---------------------|
| 1.7.1 | Type | ZF TE-ML 20.110 20F |
| 1.7.2 | Sae Grade | no SAE-class |
| 1.7.3 | Other features | - |

1.8 Batteries

| Nr. | Item | Value | Unit |
|-------|----------------------|--------------------------------------|--------|
| 1.8.1 | Type | Mutlu, water type heavy duty battery | |
| 1.8.2 | Number | 2 | Pieces |
| 1.8.3 | Nominal unit voltage | 12 | V |
| 1.8.4 | Unit weight | 60 | kg |

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1.9 Miscellaneous equipment

| Nr. | Item | Value |
|-------|------------------|--|
| 1.9.1 | Number of doors | 3 |
| 1.9.2 | Retarder | ZF Intarder acculated in transmission, hydraulic |
| 1.9.3 | Air conditioning | Konvekta |
| 1.9.4 | Other | - |

1.10 Calculation of the load characteristics CI, of the tested vehicle

| Nr. | Item | Formula | Calculated value |
|--------|-----------------------|---------------------------------------|-------------------|
| 1.10.1 | Load factor CI (load) | $CI = 116,19 \times (L-1,2) \times W$ | 3208,76 kg |
| CI | Lump load | | |

1.11 Optional equipment

| Nr. | Item | Weight to deduct from lump load |
|------------|---|---------------------------------|
| 1.11.1 | Air-conditioning | 225 kg |
| 1.11.2 | Ticketing equipment (excl? Pay desk) | 0 kg |
| 1.11.3 | Automatic vehicle monitoring system (AVM) | 2 kg |
| 1.11.4 | Information equipment | 5 kg |
| 1.11.5 | Security driver cabin | 40 kg |
| 1.11.6 | Double glazing | 0 kg |
| 1.11.7 | Lubrimatic equipment | 18 kg |
| (1) | Total weight to be deducted from lump load | 290 kg |

1.12 Other factors to take into account

| Nr. | Item | Act. Weight (A) | Ref. Weight (B) | Difference (A-B) |
|------------|---|--------------------------|---------------------------|-----------------------------------|
| 1.12.1 | Seats | | 27 | |
| | Load factor Cs (seats) | | 30 | |
| | N is the actual number of seats in the tested vehicle | $N \times 10 \text{ kg}$ | $Cs \times 10 \text{ kg}$ | $(Cs - N) \times 10 \text{ kg}$ |
| | Calculated values | 270 | 301 | 31 |
| 1.12.2 | Fuel tank capacity (litres x 0.840) | | 300 | |
| | Load factor Cf (fuel volume) | | 200,50 | |
| | V is the actual volume of fuel tank of the tested vehicle | $V \times 0.840$ | $Cf \times 0.840$ | $(Cf - V) \times 0.84 \text{ kg}$ |
| | Calculated values | 252 | 168,42 | -83,58 |
| 1.12.3 | On-board persons (number Y) excluding the driver | 170 | Real weight measured | 170 |
| 1.12.4 | Fuel measuring equipment & batteries | 155 | None | 155 |
| (2) | Total weight of other factors | 847 | 469,44 | 377,56 kg |

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1.13 Final value of the load and the weight of the complete vehicle

| Nr. | Item | See section | Value | |
|----------|-------------------------|-------------|-----------------|----|
| 1.13.1 | Empty weight | 1.1.5 | 11208 | kg |
| 1.13.2 | Lump load (Cl) | 1.10 | 3208,76 | kg |
| 1.13.3 | Optional equipment (1) | 1.11 | 290 | kg |
| 1.13.4 | Other factors (2) | 1.12 | 377,56 | kg |
| 1.13.5 | (3) = Cl - (1) - (2) | | 2541,20 | kg |
| 1.13.6 | Empty weight + Load (3) | Calculated | 13749,20 | kg |
| Final w. | | Measured | 13760,00 | kg |

2. Fuel

| Nr. | Item | | |
|-----|---------------------------------------|-------------|-----|
| 2.1 | EC standard | | |
| 2.2 | Sulphur rate | 3,5 | ppm |
| 2.3 | Fuel temperature at test begin | 29,0 / 26,1 | °C |
| 2.4 | Fuel temperature at test end | 29,9 / 30,0 | °C |
| 2.5 | Adblue | | |
| | Quantity at the beginning of the test | 47,5 | l |
| | Quantity at the end of the test | 46,5 | l |
| | Difference | 1 | l |

1. Consumption measures (related to 20 °C fuel temperature)

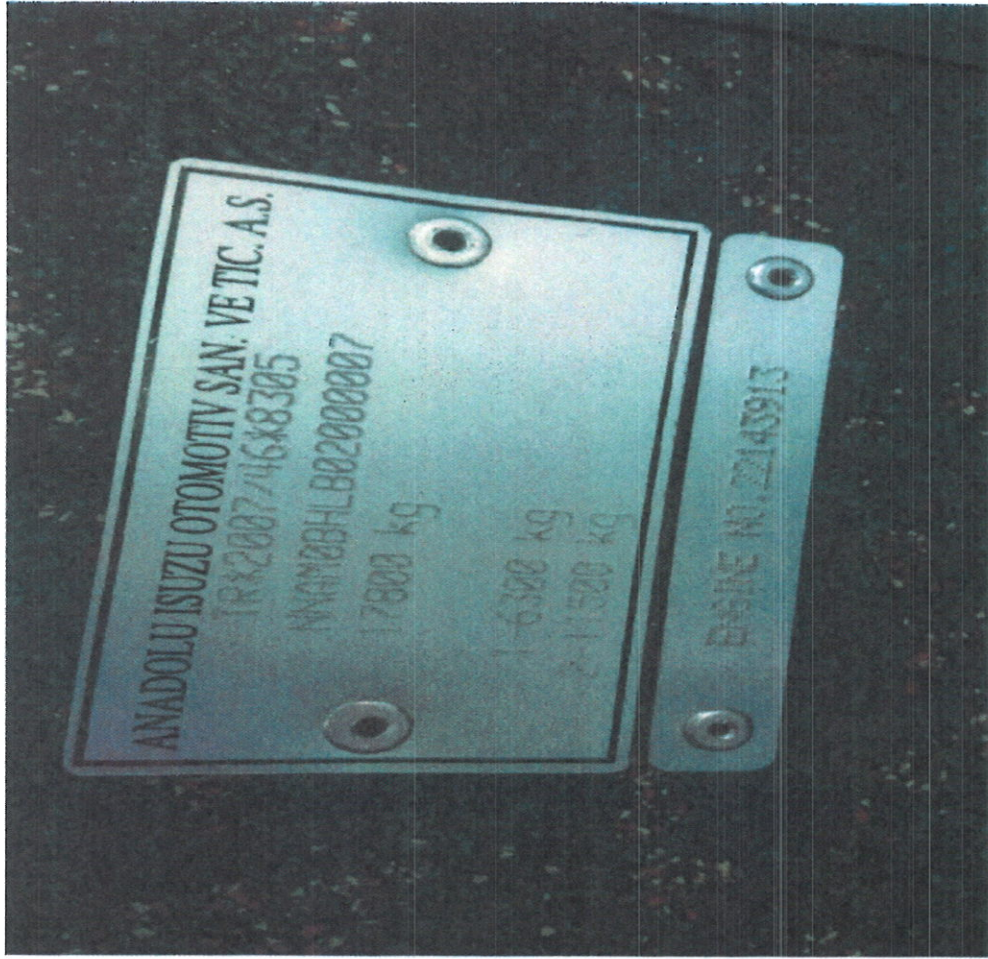
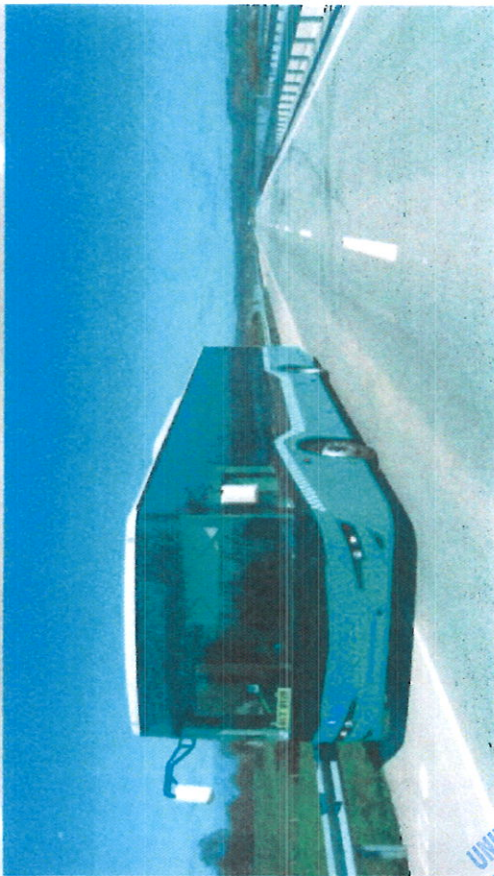
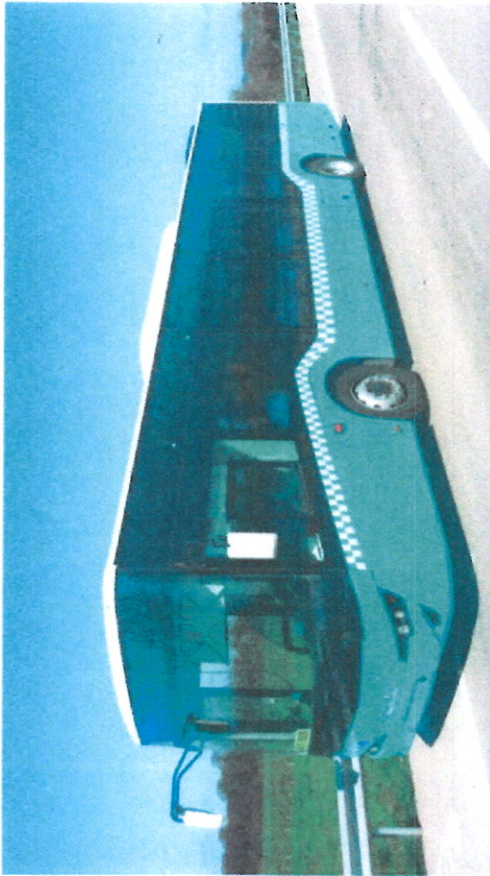
| Nr. | Item | Measured Value | Average temp. of the test | Corresponding density (in kg/l) | Corrected value | Unit |
|-----|------------------|----------------|---------------------------|---------------------------------|-----------------|-----------|
| 1.1 | Cycle 1 urban | 0,236 l | 28,8 | 0,816 | 44,95 | l / 100km |
| 1.2 | Cycle 2 mixed | 0,340 l | 27,7 | 0,818 | 36,65 | l / 100km |
| 1.3 | Cycle 3 suburban | 0,487 l | 29,6 | 0,816 | 32,57 | l / 100km |

2. Average speeds

| Nr. | Item | Length | Average time elapsed | Average speed |
|-----|---------|---------|----------------------|---------------|
| 2.1 | Cycle 1 | 522,18 | 141,05 | 13,33 km/h |
| 2.2 | Cycle 2 | 921,82 | 165,6 | 20,04 km/h |
| 2.3 | Cycle 3 | 1451,76 | 180,4 | 28,97 km/h |

3. Performance measurements (for informations)

| Nr. | Item | Time elapsed (sec) | | | |
|-----|----------------------|--------------------|-------|-----------|--------------|
| | | Urban bus | | Mixed bus | Suburban bus |
| | | Direction | | | |
| | | 1 | 2 | | |
| 3.1 | from 0 to 50 metres | 8,96 | 8,70 | - | - |
| 3.2 | from 0 to 100 metres | 13,16 | 12,85 | - | - |
| 3.3 | from 0 to 200 metres | 19,75 | 19,35 | - | - |
| 3.4 | from 0 to 300 metres | 25,28 | 24,81 | - | - |
| 3.5 | from 0 to 400 metres | 30,21 | 29,67 | - | - |
| 3.6 | from 0 to 500 metres | 34,71 | 34,12 | - | - |
| 3.7 | from 0 to 30 km/h | 6,81 | 6,49 | - | - |
| 3.8 | from 0 to 50 km/h | 14,05 | 13,40 | - | - |
| 3.9 | from 30 to 50 km/h | 7,24 | 6,91 | - | - |



[Signature]
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