

Section 1: General Information

0. Identification of the type

0.1 0.2 0.4 Type ID: 71-098-0002-4-001-001
0.3 Date of record: 2021-12-03

1. General Information

1.1 Type name: Pick-up Nissan Navara 1435/1668 INDEMAIN
1.2 Alternative type name: Bimodal Nissan Navara 1435/1668 INDEMAIN

1.3 Manufacturer:

1.3.1 Manufacturer identification data:

1.3.1.1 Name of organisation: Iniciativas de Maquinaria Industrial S.L. INDEMAIN
1.3.1.2 Registered business number: B02531283
1.3.1.3 Organisation code:

1.3.2 Manufacturer contact data:

1.3.2.1 Address of organisation, street and number: Parque Empresarial Campollano C/F nº11
1.3.2.2 Town: Albacete
1.3.2.3 Country code: ES
1.3.2.4 Post code: 02006
1.3.2.5 E-mail address: oficinatecnica@indemain.es

Registration Method: New Type
Registered Vehicle Type:
1.4 Category: Special Vehicles
1.5 Subcategory: Self-propelled special vehicle
1.6 Platform: NISSAN NAVARA

Section 2: Conformity with TSI

2.1 Conformity with TSI and Sections not complied with:

1435mm / Autonomous / None **Not conform to any TSI**

1668mm / Autonomous / None **Not conform to any TSI**

2.3 Applicable specific cases (specific cases conformity with which has been assessed)

2.2 Reference of 'EC type examination certificates'

Reference of 'EC type examination certificates' - if module SB applied - and/or 'design verification certificate' - if module SH1 applied CERTIFER BELGORAIL/1/SB/2021/RST/ES/19080067MR-2/V01

Section 3: Authorisations

Spain

3.0 Area Of Use: ES(Spain)

3.1.1 Member state of authorisation: Spain(ES)

3.1.2.1 Status: Valid

3.1.2.2 Validity of Authorisation (until):

3.1.2.3 Coded conditions for use and other restrictions:

1435mm / Autonomous / None

1 Technical restriction related to construction

1.1 Minimum curve radius in meters: 150

1.2 Track circuit restrictions: True

1.3 Speed restrictions in Km/h: 10

2 Geographical restriction

2.1 Kinematic gauge (coding WAG TSI): G1 (partes altas) / GI1 (partes bajas)

2.2 Wheelset gauge: 2.2.4 Gauge 1435

2.3 No CCS on board: True

3 Environmental restrictions

3.1 Climatic zone: 3.1.3 T3

1668mm / Autonomous / None

1 Technical restriction related to construction

1.1 Minimum curve radius in meters: 150

1.2 Track circuit restrictions: True

1.3 Speed restrictions in Km/h: 10

2 Geographical restriction

2.1 Kinematic gauge (coding WAG TSI): G1 (partes altas) / GI1 (partes bajas)

2.2 Wheelset gauge: 2.2.8 Gauge 1668

2.3 No CCS on board: True

3 Environmental restrictions

3.1 Climatic zone: 3.1.3 T3

3.1.2.4 Non-coded conditions for use and other restrictions:

1435mm / Autonomous / None

El vehículo no puede ser incorporado a un tren.

El vehículo no podrá remolcar a ningún otro cuando se emplee como vehículo ferroviario.

El vehículo deberá circular al amparo de una entrega de vía bloqueada (EVB).

El paso por aparatos de vía y tramos metálicos deberá realizarse a velocidad reducida [≤ 5 km/h].

El vehículo es susceptible de interferir el gálibo en partes bajas debido a las ruedas neumáticas. Por tanto, se deberá verificar la compatibilidad del sistema de rodadura con el trayecto que se desea efectuarl.

La carga máxima del vehículo no deberá estar por encima de 395 kg.

Para los trabajos en vía, la dotación del vehículo deberá incluir, como mínimo dos dispositivos de comunicación de radio de largo alcance tipo "walkie-talkie" o teléfono móvil. En cualquier caso, se deberá disponer de cargador para dichos dispositivos.

Para los trabajos en vía, la dotación del vehículo deberá incluir barra de tracción para su uso en caso de requerir ser remolcado.

1668mm / Autonomous / None

El vehículo no puede ser incorporado a un tren.

El vehículo no podrá remolcar a ningún otro cuando se emplee como vehículo ferroviario.

El vehículo deberá circular al amparo de una entrega de vía bloqueada (EVB).

El paso por aparatos de vía y tramos metálicos deberá realizarse a velocidad reducida [≤ 5 km/h].

El vehículo es susceptible de interferir el gálibo en partes bajas debido a las ruedas neumáticas. Por tanto, se deberá verificar la compatibilidad del sistema de rodadura con el trayecto que se desea efectuarl.

La carga máxima del vehículo no deberá estar por encima de 395 kg.

Para los trabajos en vía, la dotación del vehículo deberá incluir, como mínimo dos dispositivos de comunicación de radio de largo alcance tipo "walkie-talkie" o teléfono móvil. En cualquier caso, se deberá disponer de cargador para dichos dispositivos.

Para los trabajos en vía, la dotación del vehículo deberá incluir barra de tracción para su uso en caso de requerir ser remolcado.

3.1.3.1.1 Date of the original authorisation:

2021-12-02

3.1.3.1.2 Authorisation holder:

3.1.3.1.2.1 Authorisation holder identification data:

3.1.3.1.2.1.1 Name of organisation: Iniciativas de Maquinaria Industrial S.L. INDEMAIN
3.1.3.1.2.1.2 Registered business number: B02531283
3.1.3.1.2.1.3 Organisation code:

3.1.3.1.2.2 Authorisation holder contact data:

3.1.3.1.2.2.1 Address of organisation, street and number: C/Dionisio Acebal 7
3.1.3.1.2.2.2 Town: Albacete
3.1.3.1.2.2.3 Country code: ES
3.1.3.1.2.2.4 Post code: 02004
3.1.3.1.2.2.5 E-mail address: oficinatecnica@indemain.es

3.1.3.1.3 Authorisation document reference: ES8020210228

3.1.3.1.4 Certificate of verification : Reference of type examination or design examination type:

ES/0000B0253
1283/2021/00
01

3.1.3.1.5 Parameters for which conformity to applicable national rules has been assessed:

1435mm / Autonomous / None
2015/2299/EU
1.2.1 Maintenance instructions
2 Structure and mechanical parts
2.1.2.1 Load conditions and weighed mass
2.1.5 Fixing of devices to car body structure
2.2.2 Characteristics of rescue coupling
3 Track interaction and gauging
3.1 Vehicle gauge
3.2.5 Minimum horizontal curve radius, vertical concave curve radius, convex curve radius
3.3.2 Wheelset (complete)
3.3.3 Wheel
3.3.4 Wheel/rail interaction influencing systems
3.3.6 Bearings on the wheelset
3.3.8 Axle bearing condition monitoring
3.4 Limit of maximum longitudinal positive and negative acceleration
4.1 Functional requirements for braking at train level
4.4.1 Emergency braking command
4.4.2 Service braking command

- 4.4.3 Direct braking command
- 4.4.5 Parking braking command
- 4.5 Brake performance
 - 4.5.1 Emergency braking performance
 - 4.5.2 Service braking performance
 - 4.5.3 Calculations related to thermal capacity
 - 4.5.4 Parking brake performance
 - 4.5.5 Brake performance calculation
- 4.7.5 Parking brake
- 6 Environmental conditions and aerodynamic effects
 - 7.2.1 Vehicle marking
 - 7.2.2 External lights
 - 7.2.2.1 Headlights
 - 7.2.2.2 Marker lights
 - 7.2.2.3 End-of-train signal
 - 7.2.2.4 Lamp controls
 - 7.2.3 Audible signal systems
- 12.2.5.4 Safety requirements
- 13 Specific operational requirements
- 1668mm / Autonomous / None
- 2015/2299/EU
 - 1.2.1 Maintenance instructions
- 2 Structure and mechanical parts
 - 2.1.2.1 Load conditions and weighed mass
 - 2.1.5 Fixing of devices to car body structure
 - 2.2.2 Characteristics of rescue coupling
- 3 Track interaction and gauging
 - 3.1 Vehicle gauge
 - 3.2.5 Minimum horizontal curve radius, vertical concave curve radius, convex curve radius
 - 3.3.2 Wheelset (complete)
 - 3.3.3 Wheel
 - 3.3.4 Wheel/rail interaction influencing systems
 - 3.3.6 Bearings on the wheelset
 - 3.3.8 Axle bearing condition monitoring
- 3.4 Limit of maximum longitudinal positive and negative acceleration
- 4.1 Functional requirements for braking at train level

- 4.4.1 Emergency braking command
- 4.4.2 Service braking command
- 4.4.3 Direct braking command
- 4.4.5 Parking braking command
- 4.5 Brake performance
 - 4.5.1 Emergency braking performance
 - 4.5.2 Service braking performance
 - 4.5.3 Calculations related to thermal capacity
 - 4.5.4 Parking brake performance
 - 4.5.5 Brake performance calculation
- 4.7.5 Parking brake
- 6 Environmental conditions and aerodynamic effects
 - 7.2.1 Vehicle marking
 - 7.2.2 External lights
 - 7.2.2.1 Headlights
 - 7.2.2.2 Marker lights
 - 7.2.2.3 End-of-train signal
 - 7.2.2.4 Lamp controls
 - 7.2.3 Audible signal systems
- 12.2.5.4 Safety requirements
- 13 Specific operational requirements
- Área de uso España RFIG ancho de vía 1435 mm / 1668 mm

Declaración del proponente_v2, de fecha 22/11/2021

3.1.3.1.6 Comments:

3.1.3.1.7 Reference to the written declaration by the proposer referred to in Article 3(11) of Regulation (EU) 402/2013:

3.1.3.1 Initial Registration

3.1.2.3 Coded conditions for use and other restrictions:

1435mm / Autonomous / None

1 Technical restriction related to construction

1.1 Minimum curve radius in meters: 150

1.2 Track circuit restrictions: True

1.3 Speed restrictions in Km/h: 10

2 Geographical restriction

2.1 Kinematic gauge (coding WAG TSI): G1 (partes altas) / GI1 (partes bajas)

2.2 Wheelset gauge: 2.2.4 Gauge 1435

2.3 No CCS on board: True

3 Environmental restrictions

3.1 Climatic zone: 3.1.3 T3

1668mm / Autonomous / None

1 Technical restriction related to construction

1.1 Minimum curve radius in meters: 150

1.2 Track circuit restrictions: True

1.3 Speed restrictions in Km/h: 10

2 Geographical restriction

2.1 Kinematic gauge (coding WAG TSI): G1 (partes altas) / GI1 (partes bajas)

2.2 Wheelset gauge: 2.2.8 Gauge 1668

2.3 No CCS on board: True

3 Environmental restrictions

3.1 Climatic zone: 3.1.3 T3

3.1.2.4 Non-coded conditions for use and other restrictions:

1435mm / Autonomous / None

El vehículo no puede ser incorporado a un tren.

El vehículo no podrá remolcar a ningún otro cuando se emplee como vehículo ferroviario.

El vehículo deberá circular al amparo de una entrega de vía bloqueada (EVB).

El paso por aparatos de vía y tramos metálicos deberá realizarse a velocidad reducida [≤ 5 km/h].

El vehículo es susceptible de interferir el gálibo en partes bajas debido a las ruedas neumáticas. Por tanto, se deberá verificar la compatibilidad del sistema de rodadura con el trayecto que se desea efectuarl.

La carga máxima del vehículo no deberá estar por encima de 395 kg.

Para los trabajos en vía, la dotación del vehículo deberá incluir, como mínimo dos dispositivos de comunicación de radio de largo alcance tipo "walkie-talkie" o teléfono móvil. En cualquier caso, se deberá disponer de cargador para dichos dispositivos.

Para los trabajos en vía, la dotación del vehículo deberá incluir barra de tracción para su uso en caso de requerir ser remolcado.

1668mm / Autonomous / None

El vehículo no puede ser incorporado a un tren.

El vehículo no podrá remolcar a ningún otro cuando se emplee como vehículo ferroviario.

El vehículo deberá circular al amparo de una entrega de vía bloqueada (EVB).

El paso por aparatos de vía y tramos metálicos deberá realizarse a velocidad reducida [≤ 5 km/h].

El vehículo es susceptible de interferir el gálibo en partes bajas debido a las ruedas neumáticas. Por tanto, se deberá verificar la compatibilidad del sistema de rodadura con el trayecto que se desea efectuarlo.

La carga máxima del vehículo no deberá estar por encima de 395 kg.

Para los trabajos en vía, la dotación del vehículo deberá incluir, como mínimo dos dispositivos de comunicación de radio de largo alcance tipo "walkie-talkie" o teléfono móvil. En cualquier caso, se deberá disponer de cargador para dichos dispositivos.

Para los trabajos en vía, la dotación del vehículo deberá incluir barra de tracción para su uso en caso de requerir ser remolcado.

3.1.3.1.1 Date of the original authorisation: 2021-12-02

3.1.3.1.2 Authorisation holder:

3.1.3.1.2.1 Authorisation holder identification data:

3.1.3.1.2.1.1 Name of organisation: Iniciativas de Maquinaria Industrial S.L. INDEMAIN

3.1.3.1.2.1.2 Registered business number: B02531283

3.1.3.1.2.1.3 Organisation code:

3.1.3.1.2.2 Authorisation holder contact data:

3.1.3.1.2.2.1 Address of organisation, street and number: C/Dionisio Acebal 7

3.1.3.1.2.2.2 Town: Albacete

3.1.3.1.2.2.3 Country code: ES

3.1.3.1.2.2.4 Post code: 02004

3.1.3.1.2.2.5 E-mail address: oficinatecnica@indemain.es

3.1.3.1.3 Authorisation document reference: ES8020210228

3.1.3.1.4 Certificate of verification : Reference of type examination or design examination type:

ES/0000B0253
1283/2021/00
01

3.1.3.1.5 Parameters for which conformity to applicable national rules has been assessed:

1435mm / Autonomous / None

- 1.2.1 Maintenance instructions
- 2 Structure and mechanical parts
 - 2.1.2.1 Load conditions and weighed mass
 - 2.1.5 Fixing of devices to car body structure
 - 2.2.2 Characteristics of rescue coupling
- 3 Track interaction and gauging
 - 3.1 Vehicle gauge
 - 3.2.5 Minimum horizontal curve radius, vertical concave curve radius, convex curve radius
 - 3.3.2 Wheelset (complete)
 - 3.3.3 Wheel
 - 3.3.4 Wheel/rail interaction influencing systems
 - 3.3.6 Bearings on the wheelset
 - 3.3.8 Axle bearing condition monitoring
 - 3.4 Limit of maximum longitudinal positive and negative acceleration
 - 4.1 Functional requirements for braking at train level
 - 4.4.1 Emergency braking command
 - 4.4.2 Service braking command
 - 4.4.3 Direct braking command
 - 4.4.5 Parking braking command
 - 4.5 Brake performance
 - 4.5.1 Emergency braking performance
 - 4.5.2 Service braking performance
 - 4.5.3 Calculations related to thermal capacity
 - 4.5.4 Parking brake performance
 - 4.5.5 Brake performance calculation
 - 4.7.5 Parking brake
- 6 Environmental conditions and aerodynamic effects
 - 7.2.1 Vehicle marking
 - 7.2.2 External lights
 - 7.2.2.1 Headlights
 - 7.2.2.2 Marker lights
 - 7.2.2.3 End-of-train signal
 - 7.2.2.4 Lamp controls
 - 7.2.3 Audible signal systems
- 12.2.5.4 Safety requirements
- 13 Specific operational requirements

1668mm / Autonomous / None

1.2.1 Maintenance instructions

2 Structure and mechanical parts

2.1.2.1 Load conditions and weighed mass

2.1.5 Fixing of devices to car body structure

2.2.2 Characteristics of rescue coupling

3 Track interaction and gauging

3.1 Vehicle gauge

3.2.5 Minimum horizontal curve radius, vertical concave curve radius, convex curve radius

3.3.2 Wheelset (complete)

3.3.3 Wheel

3.3.4 Wheel/rail interaction influencing systems

3.3.6 Bearings on the wheelset

3.3.8 Axle bearing condition monitoring

3.4 Limit of maximum longitudinal positive and negative acceleration

4.1 Functional requirements for braking at train level

4.4.1 Emergency braking command

4.4.2 Service braking command

4.4.3 Direct braking command

4.4.5 Parking braking command

4.5 Brake performance

4.5.1 Emergency braking performance

4.5.2 Service braking performance

4.5.3 Calculations related to thermal capacity

4.5.4 Parking brake performance

4.5.5 Brake performance calculation

4.7.5 Parking brake

6 Environmental conditions and aerodynamic effects

7.2.1 Vehicle marking

7.2.2 External lights

7.2.2.1 Headlights

7.2.2.2 Marker lights

7.2.2.3 End-of-train signal

7.2.2.4 Lamp controls

7.2.3 Audible signal systems

12.2.5.4 Safety requirements

13 Specific operational requirements

3.1.3.1.6 Comments:

Área de uso España RFIG ancho de vía 1435 mm / 1668 mm

3.1.3.1.7 Reference to the written declaration by the proposer referred to in Article 3(11) of Regulation (EU) 402/2013:

Declaración del proponente_v2, de fecha 22/11/2021

Section 4: Technical Characteristics

4.1.3 Wheel set gauge RC

1435 mm
1668 mm

4.1.11 Wheelset gauge Changeover facility RC

Cambio de ancho de forma manual

4.13.1 Signalling

4.13.1.1 ETCS equipment on-board and the set of specifications from CCS TSI Annex A RC

None

4.13.1.5 Class B or other train protection control and warning systems installed (system and if applicable version) RC

None

4.13.1.8 ETCS System Compatibility

Not applicable

4.13.2 Radio

4.13.2.1 GSM-R Radio voice on board and its Baseline RC

None

4.13.2.3 Class B or other radio systems installed (system and if applicable version) RC

None

4.13.2.5 Radio Voice System Compatibility

Not applicable

4.13.2.7 GSM-R Radio Data communication on board and its Baseline RC

None

4.13.2.8 Radio Data System Compatibility

Not applicable

4.10.1 Energy supply system (voltage and frequency) RC

Autonomous

4.1.2 Speed

4.1.2.1 Maximum design speed	1435mm / Autonomous / None	10	km/h
	1668mm / Autonomous / None	10	km/h
4.2.1 Reference profile RC		GI1 (Specific case Spain – lower parts) G1	
4.3.1 Temperature range		T3 (-25 to +45)	
4.3.3 Snow, ice and hail conditions		Nominal	
4.4.1 Fire safety category RC		OTM	
4.5.2 Design mass			
4.5.2.1 Design mass in working order		2340	kg
4.5.2.2 Design mass under normal payload		2340	kg
4.5.2.3 Design mass under exceptional payload RC		2340	kg
4.5.3 Static axle load			
4.5.3.1 Static axle load in working order		1300	kg
4.5.3.2 Static axle load under normal payload		1800	kg
4.5.3.3 Static axle load under exceptional payload RC		1825	kg
4.5.3.4 Position of the axles along the unit (axle spacing) : a: Distance between axles b: Distance from end axle to the end of the nearest coupling plane c: distance between two inside axles	1435mm / Autonomous / None	a: 0003,15 m b: 0001,17 m c: 0003,15 m	Explanations: Vehículo de dos ejes
	1668mm / Autonomous / None	a: 0003,15 m b: 0001,17 m c: 0003,15 m	Explanations: Vehículo de dos ejes
4.5.5 Total vehicle mass (for each vehicle of the unit)	1435mm / Autonomous / None	2340	kg
	1668mm / Autonomous / None	2340	kg
4.7.1 Maximum average deceleration		2.31	m/s ²
4.7.2.1 Brake performance on steep gradients with normal payload			

4.7.2.1.2 Speed (if no reference case is indicated)	10	km/h
4.7.2.1.3 Gradient (if no reference case is indicated)	0	‰ (mm/m)
4.7.2.1.4 Distance (if no reference case is indicated)	0.00055	km

4.7.3 Parking brake

4.7.4.1 Eddy current brake

4.7.4.1.1 Eddy current track brake fitted RC False

4.7.4.2 Magnetic brake

4.7.4.2.1 Magnetic track brake fitted RC False

4.7.4.3 Regenerative brake (only for vehicles with electrical traction)

4.7.4.3.1 Regenerative brake fitted RC False

4.7.8 Wheel slide protection system 1435mm / Autonomous / None False
1668mm / Autonomous / None False

4.8.1 Vehicle length 6.06 m

4.8.2 Minimum in-service wheel diameter RC 225 mm

4.8.4 Minimum horizontal curve radius capability RC 150 m

4.9.1 Type of end coupling **Manual**

4.9.2 Axle bearing condition monitoring (hot axles box detection) RC No aplica

4.14.1 Type of train detection systems for which the vehicle has been designed and assessed RC None