Annex 1

 Engine and vehicle characteristics and information concerning the conduct of tests

The following information, when applicable, shall be supplied in triplicate and include a list of contents.

If there are drawings, they shall be to an appropriate scale and show sufficient detail; they shall be presented in A4 format or folded to that format. Photographs, if any, shall show sufficient detail.

If the systems, components or separate technical units have electronic controls, information concerning their performance shall be supplied.

Part 1 In the case that all vehicles included in the approval to this Regulation are also approved to Regulation [WLTP]:

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| x.x.x. | Approval number(s) to Regulation [WLTP] |

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| 0 | GENERAL |
| 0.1. | Make (trade name of manufacturer): … |
| 0.2. | Type: … |
| 0.2.1. | Commercial name(s) (if available): … |
| 0.2.2.1. | Allowed Parameter Values for multistage type approval to use the base vehicle emission values (insert range if applicable): Final Vehicle mass in running order (in kg): Frontal area for final vehicle (in cm2): Rolling resistance (kg/t): Cross-sectional area of air entrance of the front grille (in cm2): |
| 0.2.3.  | Family identifiers:  |
| 0.2.3.3. | PEMS family identifier: |
| 3. | PROPULSION ENERGY CONVERTER (k) |
| 3.1. | Manufacturer of the propulsion energy converter(s): … |
| 3.1.1. | Manufacturer's code (as marked on the propulsion energy converter or other means of identification): … |
| 3.2. | Internal combustion engine |
| 3.2.1.1. | Working principle: positive ignition/compression ignition/dual fuel (1)Cycle: four stroke/two stroke/rotary (1) |
| 3.2.1.2. | Number and arrangement of cylinders: … |
| 3.2.1.3. | Engine capacity (m): … cm3 |
| 3.2.2. | Fuel |
| 3.2.2.1.  | Diesel/Petrol/LPG/NG or Biomethane/Ethanol (E 85)/Biodiesel/Hydrogen (1),  |
| 3.2.2.4. | Vehicle fuel type: Mono fuel, Bi fuel, Flex fuel (1) |
| 3.2.4. | Fuel feed |
| 3.2.4.1. | By carburettor(s): yes/no (1) |
| 3.2.4.2. | By fuel injection (compression ignition or dual fuel only): yes/no (1) |
| 3.2.4.2.1. | System description (common rail/unit injectors/distribution pump etc.): … |
| 3.2.4.2.2. | Working principle: direct injection/pre-chamber/swirl chamber (1) |
| 3.2.4.3. | By fuel injection (positive ignition only): yes/no (1) |
| 3.2.4.3.1. | Working principle: intake manifold (single-/multi-point/direct injection (1) /other (specify): … |
| 3.2.7. | Cooling system: liquid/air (1) |
| 3.2.8.1. | Pressure charger: yes/no (1) |
| 3.2.8.1.2. | Type(s): … |
| 3.2.12. | Measures taken against air pollution |
| 3.2.12.1. | Device for recycling crankcase gases (description and drawings): … |
| 3.2.12.2. | Pollution control devices (if not covered by another heading) |
| 3.2.12.2.1. | Catalytic converter |
| 3.2.12.2.1.1. | Number of catalytic converters and elements (provide the information below for each separate unit): … |
| 3.2.12.2.1.2. | Dimensions, shape and volume of the catalytic converter(s): … |
| 3.2.12.2.1.3. | Type of catalytic action: … |
| 3.2.12.2.1.9. | Location of the catalytic converter(s) (place and reference distance in the exhaust line): … |
| 3.2.12.2.4. | Exhaust gas recirculation (EGR): yes/no (1) |
| 3.2.12.2.4.1. | Characteristics (make, type, flow, high pressure/low pressure/combined pressure, etc.): … |
| 3.4. | Combinations of propulsion energy converters |
| 3.4.1. | Hybrid electric vehicle: yes/no (1) |
| 3.4.2. | Category of hybrid electric vehicle: off-vehicle charging/not off-vehicle charging: (1) |
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Part 2 In the case that any vehicles included in the approval to this Regulation are not approved to Regulation [WLTP]:

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| 0 | GENERAL |
| 0.1. | Make (trade name of manufacturer): … |
| 0.2. | Type: … |
| 0.2.1. | Commercial name(s) (if available): … |
| 0.2.2.1. | Allowed Parameter Values for multistage type approval to use the base vehicle emission values (insert range if applicable): Final Vehicle mass in running order (in kg): Frontal area for final vehicle (in cm2): Rolling resistance (kg/t): Cross-sectional area of air entrance of the front grille (in cm2): |
| 0.2.3.  | Family identifiers:  |
| 0.2.3.1. | Interpolation family: …   |
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| 0.2.3.3.  | PEMS family identifier: |
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| 0.2.3.6.   | Periodic regeneration family(s): …   |
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| 0.2.3.10.   | ER family(s): … |
| 0.2.3.11. | Gas Fuelled Vehicle family(s): … |
| 0.2.3.12.  | other family(s): …  |
| 0.4. | Category of vehicle (c): … |
| 0.8. | Name(s) and address(es) of assembly plant(s): … |
| 0.9. | Name and address of the manufacturer's representative (if any): … |
| 1. | GENERAL CONSTRUCTION CHARACTERISTICS |
| 1.1. | Photographs and/or drawings of a representative vehicle/component/separate technical unit (1): |
| 1.3.3. | Powered axles (number, position, interconnection): … |
| 2. | MASSES AND DIMENSIONS (f) (g) (7)(in kg and mm) (Refer to drawing where applicable) |
| 2.6. | Mass in running order (h)(a) maximum and minimum for each variant: …  |
| 2.6.3.  | Rotational mass: 3 % of the sum of mass in running order and 25 kg or value, per axle (kg): …   |
| 2.8. | Technically permissible maximum laden mass stated by the manufacturer (i) (3): … |
| 3. | PROPULSION ENERGY CONVERTER (k) |
| 3.1. | Manufacturer of the propulsion energy converter(s): … |
| 3.1.1. | Manufacturer's code (as marked on the propulsion energy converter or other means of identification): … |
| 3.2. | Internal combustion engine |
| 3.2.1.1. | Working principle: positive ignition/compression ignition/dual fuel (1)Cycle: four stroke/two stroke/rotary (1) |
| 3.2.1.2. | Number and arrangement of cylinders: … |
| 3.2.1.2.1. | Bore (1): … mm |
| 3.2.1.2.2. | Stroke (1): … mm |
| 3.2.1.2.3. | Firing order: … |
| 3.2.1.3. | Engine capacity (m): … cm3 |
| 3.2.1.4. | Volumetric compression ratio (2): … |
| 3.2.1.5. | Drawings of combustion chamber, piston crown and, in the case of positive ignition engines, piston rings: … |
| 3.2.1.6. | Normal engine idling speed (2): … min–1 |
| 3.2.1.6.1. | High engine idling speed (2): … min–1 |
| 3.2.1.8. | Rated engine power (n): … kW at … min–1 (manufacturer's declared value) |
| 3.2.1.9. | Maximum permitted engine speed as prescribed by the manufacturer: … min–1 |
| 3.2.1.10. | Maximum net torque (n): … Nm at … min–1 (manufacturer's declared value) |
| 3.2.2. | Fuel |
| 3.2.2.1.  | Diesel/Petrol/LPG/NG or Biomethane/Ethanol (E 85)/Biodiesel/Hydrogen (1),  |
| 3.2.2.1.1. | RON, unleaded: …  |
| 3.2.2.4. | Vehicle fuel type: Mono fuel, Bi fuel, Flex fuel (1) |
| 3.2.2.5. | Maximum amount of biofuel acceptable in fuel (manufacturer's declared value): … % by volume |
| 3.2.4. | Fuel feed |
| 3.2.4.1. | By carburettor(s): yes/no (1) |
| 3.2.4.2. | By fuel injection (compression ignition or dual fuel only): yes/no (1) |
| 3.2.4.2.1. | System description (common rail/unit injectors/distribution pump etc.): … |
| 3.2.4.2.2. | Working principle: direct injection/pre-chamber/swirl chamber (1) |
| 3.2.4.2.3. | Injection/Delivery pump |
| 3.2.4.2.3.1. | Make(s): … |
| 3.2.4.2.3.2. | Type(s): … |
| 3.2.4.2.3.3. | Maximum fuel delivery (1) (2): … mm3 /stroke or cycle at an engine speed of: … min–1 or, alternatively, a characteristic diagram: … (When boost control is supplied, state the characteristic fuel delivery and boost pressure versus engine speed) |
| 3.2.4.2.4. | Engine speed limitation control |
| 3.2.4.2.4.2.1. | Speed at which cut-off starts under load: … min–1 |
| 3.2.4.2.4.2.2. | Maximum no-load speed: … min–1 |
| 3.2.4.2.6. | Injector(s) |
| 3.2.4.2.6.1. | Make(s): … |
| 3.2.4.2.6.2. | Type(s): … |
| 3.2.4.2.8. | Auxiliary starting aid |
| 3.2.4.2.8.1. | Make(s): … |
| 3.2.4.2.8.2. | Type(s): … |
| 3.2.4.2.8.3. | System description: … |
| 3.2.4.2.9. | Electronic controlled injection: yes/no (1) |
| 3.2.4.2.9.1. | Make(s): … |
| 3.2.4.2.9.2. | Type(s): |
| 3.2.4.2.9.3 | Description of the system: … |
| 3.2.4.2.9.3.1. | Make and type of the control unit (ECU): … |
| 3.2.4.2.9.3.1.1. | Software version of the ECU: … |
| 3.2.4.2.9.3.2. | Make and type of the fuel regulator: … |
| 3.2.4.2.9.3.3. | Make and type of the air-flow sensor: … |
| 3.2.4.2.9.3.4. | Make and type of fuel distributor: … |
| 3.2.4.2.9.3.5. | Make and type of the throttle housing: … |
| 3.2.4.2.9.3.6. | Make and type or working principle of water temperature sensor: … |
| 3.2.4.2.9.3.7. | Make and type or working principle of air temperature sensor: … |
| 3.2.4.2.9.3.8. | Make and type or working principle of air pressure sensor: … |
| 3.2.4.3. | By fuel injection (positive ignition only): yes/no (1) |
| 3.2.4.3.1. | Working principle: intake manifold (single-/multi-point/direct injection (1) /other (specify): … |
| 3.2.4.3.2. | Make(s): … |
| 3.2.4.3.3. | Type(s): … |
| 3.2.4.3.4. | System description (In the case of systems other than continuous injection give equivalent details): … |
| 3.2.4.3.4.1. | Make and type of the control unit (ECU): … |
| 3.2.4.3.4.1.1. | Software version of the ECU: … |
| 3.2.4.3.4.3. | Make and type or working principle of air-flow sensor: … |
| 3.2.4.3.4.8. | Make and type of throttle housing: … |
| 3.2.4.3.4.9. | Make and type or working principle of water temperature sensor: … |
| 3.2.4.3.4.10. | Make and type or working principle of air temperature sensor: … |
| 3.2.4.3.4.11. | Make and type or working principle of air pressure sensor: … |
| 3.2.4.3.5. | Injectors |
| 3.2.4.3.5.1. | Make: … |
| 3.2.4.3.5.2. | Type: … |
| 3.2.4.3.7. | Cold start system |
| 3.2.4.3.7.1. | Operating principle(s): … |
| 3.2.4.3.7.2. | Operating limits/settings (1) (2): … |
| 3.2.4.4. | Feed pump |
| 3.2.4.4.1. | Pressure (2): … kPa or characteristic diagram (2): … |
| 3.2.4.4.2. | Make(s): … |
| 3.2.4.4.3. | Type(s): … |
| 3.2.5. | Electrical system |
| 3.2.5.1. | Rated voltage: … V, positive/negative ground (1) |
| 3.2.5.2. | Generator |
| 3.2.5.2.1. | Type: … |
| 3.2.5.2.2. | Nominal output: … VA |
| 3.2.6. | Ignition system (spark ignition engines only) |
| 3.2.6.1. | Make(s): … |
| 3.2.6.2. | Type(s): … |
| 3.2.6.3. | Working principle: … |
| 3.2.6.6. | Spark plugs |
| 3.2.6.6.1. | Make: … |
| 3.2.6.6.2. | Type: … |
| 3.2.6.6.3. | Gap setting: … mm |
| 3.2.6.7. | Ignition coil(s) |
| 3.2.6.7.1. | Make: … |
| 3.2.6.7.2. | Type: … |
| 3.2.7. | Cooling system: liquid/air (1) |
| 3.2.7.1. | Nominal setting of the engine temperature control mechanism: … |
| 3.2.7.2. | Liquid |
| 3.2.7.2.1. | Nature of liquid: … |
| 3.2.7.2.2. | Circulating pump(s): yes/no (1) |
| 3.2.7.2.3. | Characteristics: … or |
| 3.2.7.2.3.1. | Make(s): … |
| 3.2.7.2.3.2. | Type(s): … |
| 3.2.7.2.4. | Drive ratio(s): … |
| 3.2.7.2.5. | Description of the fan and its drive mechanism: … |
| 3.2.7.3. | Air |
| 3.2.7.3.1. | Fan: yes/no (1) |
| 3.2.7.3.2. | Characteristics: … or |
| 3.2.7.3.2.1. | Make(s): … |
| 3.2.7.3.2.2. | Type(s): … |
| 3.2.7.3.3. | Drive ratio(s): … |
| 3.2.8. | Intake system |
| 3.2.8.1. | Pressure charger: yes/no (1) |
| 3.2.8.1.1. | Make(s): … |
| 3.2.8.1.2. | Type(s): … |
| 3.2.8.1.3. | Description of the system (e.g. maximum charge pressure: … kPa; wastegate if applicable): … |
| 3.2.8.2. | Intercooler: yes/no (1) |
| 3.2.8.2.1. | Type: air-air/air-water (1) |
| 3.2.8.3. | Intake depression at rated engine speed and at 100 % load (compression ignition engines only) |
| 3.2.8.4. | Description and drawings of inlet pipes and their accessories (plenum chamber, heating device, additional air intakes, etc.): … |
| 3.2.8.4.1. | Intake manifold description (include drawings and/or photos): … |
| 3.2.8.4.2. | Air filter, drawings: … or |
| 3.2.8.4.2.1. | Make(s): … |
| 3.2.8.4.2.2. | Type(s): … |
| 3.2.8.4.3. | Intake silencer, drawings: … or |
| 3.2.8.4.3.1. | Make(s): … |
| 3.2.8.4.3.2. | Type(s): … |
| 3.2.9. | Exhaust system |
| 3.2.9.1. | Description and/or drawing of the exhaust manifold: … |
| 3.2.9.2. | Description and/or drawing of the exhaust system: … |
| 3.2.9.3. | Maximum allowable exhaust back pressure at rated engine speed and at 100 % load (compression ignition engines only): … kPa |
| 3.2.10. | Minimum cross-sectional areas of inlet and outlet ports: … |
| 3.2.11. | Valve timing or equivalent data |
| 3.2.11.1. | Maximum lift of valves, angles of opening and closing, or timing details of alternative distribution systems, in relation to dead centres. For variable timing system, minimum and maximum timing: … |
| 3.2.11.2. | Reference and/or setting ranges (1): … |
| 3.2.12. | Measures taken against air pollution |
| 3.2.12.1. | Device for recycling crankcase gases (description and drawings): … |
| 3.2.12.2. | Pollution control devices (if not covered by another heading) |
| 3.2.12.2.1. | Catalytic converter |
| 3.2.12.2.1.1. | Number of catalytic converters and elements (provide the information below for each separate unit): … |
| 3.2.12.2.1.2. | Dimensions, shape and volume of the catalytic converter(s): … |
| 3.2.12.2.1.3. | Type of catalytic action: … |
| 3.2.12.2.1.4. | Total charge of precious metals: … |
| 3.2.12.2.1.5. | Relative concentration: … |
| 3.2.12.2.1.6. | Substrate (structure and material): … |
| 3.2.12.2.1.7. | Cell density: … |
| 3.2.12.2.1.8. | Type of casing for the catalytic converter(s): … |
| 3.2.12.2.1.9. | Location of the catalytic converter(s) (place and reference distance in the exhaust line): … |
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| 3.2.12.2.1.11. | Normal operating temperature range: … °C |
| 3.2.12.2.1.12. | Make of catalytic converter: … |
| 3.2.12.2.1.13. | Identifying part number: … |
| 3.2.12.2.2. | Sensors |
| 3.2.12.2.2.1. | Oxygen and/or lambda sensor(s): yes/no (1) |
| 3.2.12.2.2.1.1. | Make: … |
| 3.2.12.2.2.1.2. | Location: … |
| 3.2.12.2.2.1.3. | Control range: … |
| 3.2.12.2.2.1.4. | Type or working principle: … |
| 3.2.12.2.2.1.5. | Identifying part number: … |
| 3.2.12.2.2.2. | NOx sensor: yes/no (1) |
| 3.2.12.2.2.2.1. | Make: … |
| 3.2.12.2.2.2.2. | Type: … |
| 3.2.12.2.2.2.3. | Location |
| 3.2.12.2.2.3. | Particulate sensor: yes/no (1) |
| 3.2.12.2.2.3.1. | Make: … |
| 3.2.12.2.2.3.2. | Type: … |
| 3.2.12.2.2.3.3. | Location: … |
| 3.2.12.2.3. | Air injection: yes/no (1) |
| 3.2.12.2.3.1. | Type (pulse air, air pump, etc.): … |
| 3.2.12.2.4. | Exhaust gas recirculation (EGR): yes/no (1) |
| 3.2.12.2.4.1. | Characteristics (make, type, flow, high pressure/low pressure/combined pressure, etc.): … |
| 3.2.12.2.4.2. | Water-cooled system (to be specified for each EGR system e.g. low pressure/high pressure/combined pressure: yes/no (1) |
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| 3.2.12.2.6. | Particulate trap (PT): yes/no (1) |
| 3.2.12.2.6.1. | Dimensions, shape and capacity of the particulate trap: … |
| 3.2.12.2.6.2. | Design of the particulate trap: … |
| 3.2.12.2.6.3. | Location (reference distance in the exhaust line): … |
| 3.2.12.2.6.4. | Make of particulate trap: … |
| 3.2.12.2.6.5. | Identifying part number: … |
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| 3.2.12.2.10. | Periodically regenerating system: (provide the information below for each separate unit) |
| 3.2.12.2.10.1. | Method or system of regeneration, description and/or drawing: … |
| 3.2.12.2.10.2. | The number of Type 1 operating cycles, or equivalent engine test bench cycles, between two cycles where regenerative phases occur under the conditions equivalent to Type 1 test (Distance ‘D’): … |
| 3.2.12.2.10.2.1. | Applicable Type 1 cycle: … |
| 3.2.12.2.10.2.2. | The number of complete applicable test cycles required for regeneration (distance ‘d’) |
| 3.2.12.2.10.3. | Description of method employed to determine the number of cycles between two cycles where regenerative phases occur: … |
| 3.2.12.2.10.4. | Parameters to determine the level of loading required before regeneration occurs (i.e. temperature, pressure etc.): … |
| 3.2.12.2.10.5. | Description of method used to load system: … |
| 3.2.12.2.11. | Catalytic converter systems using consumable reagents (provide the information below for each separate unit) yes/no (1) |
| 3.2.12.2.11.1. | Type and concentration of reagent needed: … |
| 3.2.12.2.11.2. | Normal operational temperature range of reagent: … |
| 3.2.12.2.11.3. | International standard: … |
| 3.2.12.2.11.4. | Frequency of reagent refill: continuous/maintenance (where appropriate): |
| 3.2.12.2.11.5. | Reagent indicator: (description and location) |
| 3.2.12.2.11.6. | Reagent tank |
| 3.2.12.2.11.6.1. | Capacity: … |
| 3.2.12.2.11.6.2. | Heating system: yes/no |
| 3.2.12.2.11.6.2.1. | Description or drawing |
| 3.2.12.2.11.7. | Reagent control unit: yes/no (1) |
| 3.2.12.2.11.7.1. | Make: … |
| 3.2.12.2.11.7.2. | Type: … |
| 3.2.12.2.11.8. | Reagent injector (make type and location): … |
| 3.2.12.2.11.9. | Reagent quality sensor (make, type and location): … |
| 3.2.12.2.12.  | Water injection: yes/no (1)  |
| 3.2.14. | Details of any devices designed to influence fuel economy (if not covered by other items):.… |
| 3.2.15. | LPG fuelling system: yes/no (1) |
| 3.2.15.1. | Approval number (approval number of UN Regulation No. 67): …  |
| 3.2.15.2. | Electronic engine management control unit for LPG fuelling |
| 3.2.15.2.1. | Make(s): … |
| 3.2.15.2.2. | Type(s): … |
| 3.2.15.2.3. | Emission-related adjustment possibilities: … |
| 3.2.15.3. | Further documentation |
| 3.2.15.3.1. | Description of the safeguarding of the catalyst at switch-over from petrol to LPG or back: … |
| 3.2.15.3.2. | System lay-out (electrical connections, vacuum connections compensation hoses, etc.): … |
| 3.2.15.3.3. | Drawing of the symbol: … |
| 3.2.16. | NG fuelling system: yes/no (1) |
| 3.2.16.1. | Approval number (approval number of UN Regulation No. 110):  |
| 3.2.16.2. | Electronic engine management control unit for NG fuelling |
| 3.2.16.2.1. | Make(s): … |
| 3.2.16.2.2. | Type(s): … |
| 3.2.16.2.3. | Emission-related adjustment possibilities: … |
| 3.2.16.3. | Further documentation |
| 3.2.16.3.1. | Description of the safeguarding of the catalyst at switch-over from petrol to NG or back: … |
| 3.2.16.3.2. | System lay-out (electrical connections, vacuum connections compensation hoses, etc.): … |
| 3.2.16.3.3. | Drawing of the symbol: … |
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| 3.3. | Electric powertrain (for PEV only) |
| 3.3.1. | General description of electric power train  |
| 3.3.1.1. | Make: ..........................  |
| 3.3.1.2. | Type: ..........................  |
| 3.3.1.3. | Use (1): Monomotor/multimotors (number): ..........................  |
| 3.3.1.4. | Transmission arrangement: parallel/transaxial/others, to precise: ..........................  |
| 3.3.1.5. | Test voltage: .......................... V  |
| 3.3.1.6. | Motor nominal speed: .......................... min-1  |
| 3.3.1.7. | Motor maximum speed: ..........................min-1or by default: reducer outlet shaft/gear box speed (specify gear engaged): .......................... min-1 |
| 3.3.1.9. | Maximum power: .......................... kW  |
| 3.3.1.10. | Maximum thirty minutes power: .......................... kW  |
| 3.3.1.11. | Flexible range (where P > 90 per cent of max. power): speed at the beginning of range: .......................... min-1speed at the end of range: .......................... min-1  |
| 3.3.2. | Traction REESS  |
| 3.3.2.1. | Trade name and mark of the REESS: ..........................  |
| 3.3.2.2. | Kind of electro-chemical couple: ..........................  |
| 3.3.2.3. | Nominal voltage: .......................... V  |
| 3.3.2.4. | REESS maximum thirty minutes power (constant power discharge): .......................... kW  |
| 3.3.2.5. | REESS performance in 2 h discharge (constant power or constant current): (1)  |
| 3.3.2.5.1. | REESS energy: .......................... kWh  |
| 3.3.2.5.2. | REESS capacity: .......................... Ah in 2 h  |
| 3.3.2.5.3. | End of discharge voltage value: .......................... V  |
| 3.3.2.6. | Indication of the end of the discharge that leads to a compulsory stop of the vehicle: (1) .......................... |
| 3.3.2.7. | REESS mass: .......................... kg  |
| 3.3.2.8. | Number of cells:……  |
| 3.3.2.9. | REESS position:…………  |
| 3.3.3. | Electric Motor  |
| 3.3.3.1. | Working principle:  |
| 3.3.3.1.1. | direct current/alternating current (1) /number of phases: ..........................  |
| 3.3.3.1.2. | separate excitation/series/compound (1)  |
| 3.3.3.1.3. | synchronous/asynchronous (1)  |
| 3.3.3.1.4. | coiled rotor/with permanent magnets/with housing (1)  |
| 3.3.3.1.5. | number of poles of the motor: ..........................  |
| 3.3.3.2. | Inertia mass: ..........................  |
| 3.3.4. | Power controller  |
| 3.3.4.1. | Make : ..........................  |
| 3.3.4.2. | Type : ..........................  |
| 3.3.4.3. | Control principle: vectorial/open loop/closed/other (to be specified): (1) ..........................  |
| 3.3.4.4. | Maximum effective current supplied to the motor: (2) .......................... A during .......................... seconds  |
| 3.3.4.5. | Voltage range use: .......................... V to .......................... V  |
| 3.3.5. | Cooling system: Motor: liquid/air (1) Controller: liquid/air (1) |
| 3.3.5.1. | Liquid-cooling equipment characteristics:  |
| 3.3.5.1.1. | Nature of the liquid .......................... circulating pumps: yes/no (1)  |
| 3.3.5.1.2. | Characteristics or make(s) and type(s) of the pump: ..........................  |
| 3.3.5.1.3. | Thermostat: setting: ..........................  |
| 3.3.5.1.4. | Radiator: drawing(s) or make(s) and type(s): ..........................  |
| 3.3.5.1.5. | Relief valve: pressure setting: ..........................  |
| 3.3.5.1.6. | Fan: characteristics or make(s) and type(s): ..........................  |
| 3.3.5.1.7. | Fan duct: ..........................  |
| 3.3.5.2. | Air-cooling equipment characteristics  |
| 3.3.5.2.1. | Blower: characteristics or make(s) and type(s): ..........................  |
| 3.3.5.2.2. | Standard air ducting: ..........................  |
| 3.3.5.2.3. | Temperature regulating system: yes/no (1)  |
| 3.3.5.2.4. | Brief description: ..........................  |
| 3.3.5.2.5. | Air filter: .......................... make(s): .......................... type(s):  |
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| 3.3.8. | Lubrication system principle: (1) Bearings: friction/ball Lubricant: grease/oil Seal: yes/no Circulation: with/without |
| 3.3.9. | Charger  |
| 3.3.9.1. | Charger: on board/external (1) in case of an external unit, define the charger (trademark, model): ..........................  |
| 3.3.9.2. | Description of the normal profile of charge:  |
| 3.3.9.3. | Specification of mains:  |
| 3.3.9.3.1. | Type of mains: single phase/three phase (1)  |
| 3.3.9.3.2. | Voltage: ..........................  |
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| 3.4. | Combinations of propulsion energy converters |
| 3.4.1. | Hybrid electric vehicle: yes/no (1) |
| 3.4.2. | Category of hybrid electric vehicle: off-vehicle charging/not off-vehicle charging: (1) |
| 3.4.3. | Operating mode switch: with/without (1) |
| 3.4.3.1. | Selectable modes |
| 3.4.3.1.1. | Pure electric: yes/no (1) |
| 3.4.3.1.2. | Pure fuel consuming: yes/no (1) |
| 3.4.3.1.3. | Hybrid modes: yes/no (1)(if yes, short description): … |
| 3.4.4. | Description of the energy storage device: (REESS, capacitor, flywheel/generator) |
| 3.4.4.1. | Make(s): … |
| 3.4.4.2. | Type(s): … |
| 3.4.4.3. | Identification number: … |
| 3.4.4.4. | Kind of electrochemical couple: … |
| 3.4.4.5. | Energy: … (for REESS: voltage and capacity Ah in 2 h, for capacitor: J, …) |
| 3.4.4.6. | Charger: on board/external/without (1) |
| 3.4.5. | Electric machine (describe each type of electric machine separately) |
| 3.4.5.1. | Make: … |
| 3.4.5.2. | Type: … |
| 3.4.5.3. | Primary use: traction motor/generator (1) |
| 3.4.5.3.1. | When used as traction motor: single-/multimotors (number) (1): … |
| 3.4.5.4. | Maximum power: … kW |
| 3.4.5.5. | Working principle |
| 3.4.5.5.5.1 | Direct current/alternating current/number of phases: … |
| 3.4.5.5.2. | Separate excitation/series/compound (1) |
| 3.4.5.5.3. | Synchronous/asynchronous (1) |
| 3.4.6. | Control unit |
| 3.4.6.1. | Make(s): … |
| 3.4.6.2. | Type(s): … |
| 3.4.6.3. | Identification number: … |
| 3.4.7. | Power controller |
| 3.4.7.1. | Make: … |
| 3.4.7.2. | Type: … |
| 3.4.7.3. | Identification number: … |
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| 3.5.7.1.  |

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| 3.6.5. | Lubricant temperatureMinimum: … K — maximum: … K |
| 3.8. | Lubrication system |
| 3.8.1. | Description of the system |
| 3.8.1.1. | Position of lubricant reservoir: … |
| 3.8.1.2. | Feed system (by pump/injection into intake/mixing with fuel, etc.) (1) |
| 3.8.2. | Lubricating pump |
| 3.8.2.1. | Make(s): … |
| 3.8.2.2. | Type(s): … |
| 3.8.3. | Mixture with fuel |
| 3.8.3.1. | Percentage: … |
| 3.8.4. | Oil cooler: yes/no (1) |
| 3.8.4.1. | Drawing(s): … or |
| 3.8.4.1.1. | Make(s): … |
| 3.8.4.1.2. | Type(s): … |
| 3.8.5.  | Lubricant specification: …W…  |
| 4. | TRANSMISSION (p) |
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| 4.4. | Clutch(es) |
| 4.4.1. | Type: … |
| 4.4.2. | Maximum torque conversion: … |
| 4.5. | Gearbox |
| 4.5.1. | Type (manual/automatic/CVT (continuously variable transmission)) (1) |
| 4.5.1.4. | Torque rating: … |
| 4.5.1.5. | Number of clutches: … |
| 4.6. | Gear ratios |
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| --- | --- | --- | --- |
| Gear | Internal gearbox ratios (ratios of engine to gearbox output shaft revolutions) | Final drive ratio(s) (ratio of gearbox output shaft to driven wheel revolutions) | Total gear ratios |
| Maximum for CVT |  |  |  |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| … |  |  |  |
| Minimum for CVT |  |  |  |

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| 4.7. | Maximum vehicle design speed (in km/h) (q): … |
| 4.12.  | Gearbox lubricant: …W…  |
| 6. | SUSPENSION |
| 6.6. | Tyres and wheels |
| 6.6.1. | Tyre/wheel combination(s) |
| 6.6.1.1. | Axles |
| 6.6.1.1.1. | Axle 1: … |
| 6.6.1.1.1.1. | Tyre size designation |
| 6.6.1.1.2. | Axle 2: … |
| 6.6.1.1.2.1. | Tyre size designation |
|  | etc. |
| 6.6.2. | Upper and lower limits of rolling radii |
| 6.6.2.1. | Axle 1: … |
| 6.6.2.2. | Axle 2: … |
| 6.6.3. | Tyre pressure(s) as recommended by the vehicle manufacturer: … kPa |
| 9. | BODYWORK |
| 9.1. | Type of bodywork (c): … |
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***Explanatory notes***

(1) Delete where not applicable (there are cases where nothing needs to be deleted when more than one entry is applicable).

(2) Specify the tolerance.

(3) Please fill in here the upper and lower values for each variant.

(6) [ Reserved]

(7) Optional equipment that affects the dimensions of the vehicle shall be specified.

(x) For insulation volume and insulation weight, state to 2 decimal places. Not to be documented if “no” in paragraph 3.2.20.2.5. or 3.2.20.2.7.

(c) As defined in the Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.6, para. 2. - www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29resolutions.html.

(f) Where there is one version with a normal cab and another with a sleeper cab, both sets of masses and dimensions are to be stated.

(g) Standard ISO 612: 1978 — Road vehicles — Dimensions of motor vehicles and towed vehicles — terms and definitions.

(h) The mass of the driver is assessed at 75 kg.

The liquid containing systems (except those for used water that must remain empty) are filled to 100 % of the capacity specified by the manufacturer.

(i) For trailers or semi-trailers, and for vehicles coupled with a trailer or a semi-trailer, which exert a significant vertical load on the coupling device or the fifth wheel, this load, divided by standard acceleration of gravity, is included in the maximum technically permissible mass.

(k) In the case of a vehicle that can run either on petrol, diesel, etc., or also in combination with another fuel, items shall be repeated.

In the case of non-conventional engines and systems, particulars equivalent to those referred to here shall be supplied by the manufacturer.

(l) This figure shall be rounded off to the nearest tenth of a millimetre.

(m) This value shall be calculated (π = 3.1416) and rounded off to the nearest cm3.

(n) Determined in accordance with the requirements of UN Regulation No. 85.

(p) The specified particulars are to be given for any proposed variants.

(q) With respect to trailers, maximum speed permitted by the manufacturer.