

Vehicle regulations

Summary

In the Netherlands, vehicles can only be introduced to the market if they adhere to the entry requirements. For this purpose, the vehicle has to undergo the so-called type approval requirements test in a European test location. The European Union members are obliged to admit all vehicles with type approval. They are, however, allowed to impose their own rules of behaviour on the user, such as the obligation to wear a helmet. Motor vehicles using public roads must adhere to the so-called permanent requirements. These are inspected periodically in the MOT test for motor vehicles. Next to these statutory requirements, vehicle manufacturers take the (crash) safety criteria of the test programme Euro NCAP into account; they aim to achieve the best possible results in this test. At present, there are still no objective criteria for the vehicle dynamic features of cars, which are relevant to the avoidance of crashes.

Background and content

The Dutch government imposes certain requirements on motor vehicles in the interest of road safety. In this it has to adhere to the relevant European Union Directives. The European Directives for motor vehicles are established after international consultation. Road safety is one of the criteria taken into account; removing trade barriers is another. This fact sheet discusses the national and international vehicle regulations that apply in the Netherlands.

Which regulations apply?

The Dutch motor vehicle requirements have been incorporated in the Vehicle Regulations; these are mainly determined by international regulations. The new Vehicle Regulations have been in force since 1 May 2009, they have made the old Motor Vehicle Regulations and the corresponding Ministerial regulations obsolete.

National: Vehicle Regulations

The Dutch Vehicle Regulations are part of the Road Traffic Act 1994. There are three types of vehicle requirements: type approval requirements, permanent requirements, and practical requirements (see also <http://lexius.nl/regeling-voertuigen>).

Type approval requirements apply to vehicles for which a licence number is obligatory, such as cars, lorries, delivery vans, motorcycles, mopeds and trailers. Type approval requirements also apply to certain types of agricultural vehicles and to vehicle parts such as safety equipment, mirrors, lights, trailer hitches and tyres. International requirements are an integral part of the national type approval requirements. Before a vehicle licence number is issued, each vehicle is assessed on whether it meets the type approval requirements. This will be discussed later in this fact sheet.

Permanent requirements are requirements the vehicle must comply with when used on the road. These requirements are less extensive than the type approval requirements, as it must be possible to test the vehicle concerned on the road (by the police) or during a periodic vehicle inspection (MOT test). There are also permanent requirements for types of vehicle for which there is no type approval, such as bicycles and Segways.

Practical requirements concern usage: coupling trailers, loading, and requirements regarding the dimensions and masses of vehicles.

International: Directives and Regulations

Most of our current requirements regarding motor vehicles are determined in Brussels by the EU, in the form of *Directives*. These EU Directives are mandatory for all Member States based on Framework Directive 2007/46/EG which coordinates individual Directives. This is a comprehensive system of requirements (with associated tests) for type approval of vehicles and their relevant parts (see also <http://eur-lex.europa.eu/en/index.htm>). Access to the market may not be denied to any vehicles or parts of vehicles that comply with the EU requirements by any Member State. Moreover, once vehicles

or parts have been admitted Member States are not allowed to impose more stringent requirements on them than described in the Directive in question.

In addition to the European Directives, there are also international *Regulations* which are mainly concerned with technical requirements. They are determined in extensive consultation by the United Nations Economic Commission for Europe in Geneva (see also www.unece.org/trans/welcome.html). The consultations are also attended by non-EU countries such as the United States, Korea and Japan. The legal basis of these regulations is the 'ECE Agreement of 1958'. The ECE requirements are not obligatory until a country has voluntarily agreed to be a (co-) signatory. These ECE regulations are often adopted word for word in EU Directives (see also RDW, 2010).

Scope of EU Member States

As mentioned earlier, EU Member States are not allowed to exclude a vehicle that complies with EU requirements. However, EU countries are allowed to impose certain rules of behaviour, for instance that one-seat cars with moped engines (& registration) are not allowed to drive on a road that has vehicle-type exclusion, and that a helmet is not compulsory in an enclosed two-wheeled vehicle, but that a seat belt is. In the Netherlands these national provisions are contained in the Traffic Code (RVV, 1990, see also <http://lexius.nl/reglement-verkeersregels-en-verkeerstekens-1990-rvv-1990>). However, there are prerequisites to the imposing of rules of behaviour (Van Kampen, Krop & Schoon, 2005):

- From the point of view of trade protection, the rules may not extend to making the actual use of the vehicle on the road impossible.
- The rules must be motivated on the basis of government interests that are to be protected, including road safety interests.
- It must be possible to enforce the regulations in practice.

The European Directives also offer Member States the possibility to postpone the admittance of a type approved vehicle. The Netherlands has made no use of this until now. However, the Netherlands does sometimes impose certain limitations. For instance, the Dutch Vehicle Technology and information Centre RDW considered a particular type of quad to be unsuitable for high speeds. For this reason, a speed limit of 60 km/h was imposed on the vehicle (the minimum speed legally allowed on motorways), which is stated on the registration certificate (Schoon & Hendriksen, 2000).

Which vehicle requirements are there?

For the legal vehicle requirements, we must look at the EU Directives. Most of the Directives apply to all vehicle types, although the requirements may be different for each type. The Directives that are most important with regard to road safety are those for the:

- braking system;
- lighting;
- steering system;
- seat belts;
- headrests;
- passenger protection in the event of a head-on crash;
- passenger protection in the event of side impact;
- pedestrian protection in the event of a crash with the car front.

The Directives also relate to noise, emissions, mass, dimensions and licence plates.

The Directives for vehicles and their parts mentioned earlier, consist of separate requirements and corresponding texts, and are part of the abovementioned framework Directive 2007/46/EG. The EU Directives also classify and name the various types of vehicle for which the Directives apply. For instance, 'M1' is a passenger vehicle with a maximum total weight of 3,500 kg. The most extensively classified vehicle types are cars, delivery vans, lorries and buses with the code letters M and N (see *Table 1*). Two and three-wheeled motor vehicles such as mopeds and motorcycles are classified under the letter L. Tractors for use in agriculture and forestry (which under certain conditions are also allowed on public roads) fall under the letter T. Finally, a distinction is made between four types of trailers and semi-trailers (O1 to O4). The category O1 goes up to a mass of 750 kg. Since 2002, trailers that are heavier (O2 to O4) must have their own licence number.

| Category | Type of motor vehicle | Equipped to carry | Mass |
|----------|-----------------------|--------------------|-----------------|
| M1 | Car | Max. 9 people | ≤ 3,500 kg |
| M2 | Minibus | More than 9 people | ≤ 5,000 kg |
| M3 | Bus | More than 9 people | > 5,000 kg |
| N1 | Van | Freight | ≤ 3,500 kg |
| N2 | Light lorry | Freight | 3,500-12,000 kg |
| N3 | Heavy lorry | Freight | > 12,000 kg |

Table 1. *The types of vehicle classified in the EU Directives for passenger transport (category M) and goods transport (category N).*

How are the regulations enforced?

The legal vehicle requirements are enforced by means of various tests; the so-called type approval and periodic vehicle inspection.

Type approval (admission requirements)

Type approval takes place at EU level. Using the prescribed tests, a vehicle is examined to see if it complies with the individual EU Directives. This requires a uniform interpretation of these Directives and careful application of the tests. The vehicle manufacturer is free to select the inspection authority for the type approval, provided that it is authorised and is located in an EU Member State. This may result in a certain amount of 'shopping around' to find the least critical authority. Increasingly often, type approval authorities will also approach the vehicle manufacturer. The type approval authority in the Netherlands is TNO Automotive in Helmond.

The type approval contains an idiosyncrasy, namely that vehicles presented individually (by importers or individuals), or vehicles that are part of a small series do not 'need' to comply with all the requirements. This is because these vehicles do not have to undergo destructive tests, and that therefore certain requirements cannot be tested.

Periodic Vehicle Inspection (permanent requirements)

The technical condition of motor vehicles requiring registration of the M and N categories is determined by means of the periodic vehicle inspection (MOT test). For lorries the MOT 1 applies, for passenger cars the MOT 2 applies. For MOT 2, the frequency of inspection varies according to whether the car concerned is old or new, and the fuel type used for the car; see the SWOV Fact sheet [Periodic Vehicle Inspection of cars \(MOT\)](#). The MOT test is no more than an inspection at a given moment in time. It would be better to continuously monitor the state of crucial parts and to be made aware of problems. Most cars already have a monitoring system for wear of the brakes. It would be good to extend this, for example with monitoring of lighting and tyre pressure.

The presence of most safety systems cannot be noticed visually in the MOT test. Most cars have a system for OBD (on-board diagnosis) which enables the car dealership to read out the technical state of many parts, such as airbags, seat belt tensioners, ESC (electronic stability control), ABS (anti-lock braking system). At present, the data in the OBD are insufficiently standardized, so that it cannot be used in a MOT test. The so-called EOBD system for reading out the content of emissions is standardized better. In all likelihood this system will be used in the MOT 2 in 2012 (RDW, 2011).

Are there any requirements besides legal ones?

The official Directives and the regulations they contain were formulated in international consultation, where not only national governments, but also other interested parties were involved, such as type approval authorities, car manufacturers, and suppliers. Compromises were therefore made between the European Member States. This is why, from a road safety point of view, the Directives must be seen as *minimum requirements*, all the more because their primary goal is to remove trade barriers. At the same time, these Directives represent the *most stringent* requirements possible, as the Member States are not allowed to impose more stringent requirements than the Directive does. However, vehicle manufacturers voluntarily manage to make their products better and safer than legally required. For instance, the braking systems of cars, together with the tyres and the road surface provide a considerably higher deceleration rate than the legally prescribed 5.2 m/s^2 on a dry flat road surface. Airbags, which are not compulsory, also provide occupants with considerably more safety during head-on and side crashes than compulsory seat belts alone.

The crashworthiness (secondary safety) is also promoted by the 'European New Car Assessment Programme' Euro NCAP. Euro NCAP is (as yet) a brief set of crashworthiness safety requirements for head-on and lateral crashworthiness and for the safety of pedestrians. However, for some crash conditions these requirements are at a (considerably) higher level than the legal requirements. The results of these tests are published in the form of a 'five star system', where the highest safety level is represented by five stars. Since 2009, Euro NCAP is also paying attention to the prevention of frontal crashes (primary safety; see also the SWOV Fact sheet [EuroNCAP, a safety instrument](#)).

What vehicle requirements are still lacking?

Neither the legal requirements nor EuroNCAP contain requirements that provide an adequate insight into the most important dynamic vehicle characteristics of cars. This concerns road behaviour where this is relevant to the avoidance of crashes (primary safety). Although there are many informal test methods (e.g. the Moose Test) and although Euro NCAP gives extra points for the presence of ESC, an objective assessment method of the driving features is desirable.

Publications and sources

ECE-reglementen: <http://www.unece.org/trans/main/welcwp29.htm>

EU-richtlijnen: <http://eur-lex.europa.eu/nl/index.htm>

Kampen, L.T.B. van (1998). [Botsveiligheid van personenauto's, deel 2: Een pilot-onderzoek naar de ontwikkeling van een ranglijst van personenauto's](#). R-98-28. SWOV, Leidschendam.

Kampen, L.T.B. van, Krop, W. & Schoon, C.C. (2005). [Auto's om veilig mee thuis te komen. De prestaties van de personenauto op het gebied van de voertuigveiligheid in de afgelopen decennia, en een blik vooruit](#). SWOV, Leidschendam.

RDW (2010). [Survey of ECE-Regulations and EC-Directives as per 1 September 2010](#). RDW Vehicle Standards Development Department, Zoetermeer.

RDW (2011). [Modernisering APK 2.0; Eindrapportage](#). RDW Centrum voor Voertuigtechniek en Informatie, Zoetermeer.

Schoon, C.C. & Hendriksen, H. (2000). [Verkeersveiligheidsconsequenties van nieuwe, bijzondere voertuigsoorten; Veiligheid van de scootmobiel, open drie en vierwielers en motorvoertuigen met beperkte snelheid](#). R-2000-9. SWOV, Leidschendam.

Dutch vehicle requirements:
<http://lexius.nl/regeling-voertuigen>

Reglement Verkeersregels en Verkeerstekens (RVV, 1990):
Maxius.nl/reglement-verkeersregels-en-verkeerstekens-1990-rvv-1990