Draft decree

THE MINISTER FOR INFRASTRUCTURE AND TRANSPORT

Having regard to Article 75 of Legislative Decree 285 of 30 April 1992 on verification of the requirements relating to suitability for road use and approval of motor vehicles and their trailers, and in particular point 3-*bis* of said Article 75, which requires the Minister for Infrastructure and Transport to issue decrees establishing specific standards for the national approval of systems, components and technical units, as well as suitable procedures for their installation as replacement or supplementary vehicle parts, in types of cars and motorcycles that are new or already on the road;

Having regard to Article 236.2 of the regulation provided for in Presidential Decree 495 of 16 December 1992;

Having regard to Law 120 of 29 July 2010, published in the ordinary supplement to Official Journal 175 of 29 July 2010, on "Road safety provisions";

Having regard to the Minister of Transport and Shipping's Decree 277 of 2 May 2001 adopting the regulation on "Provisions concerning approval procedures for motor vehicles, trailers, agricultural machinery, public works vehicles and related systems, components and technical units" as amended and extended;

Having regard to the Minister for Infrastructure and Transport's Decree of 28 April 2008, published in the ordinary supplement to Official Journal 162 of 12 July 2008, on "Transposition of European Commission Directive 2007/46/EC of 5 September 2007 on the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles";

Having regard to the Minister for Transport's Decree of 3 May 2007, published in Official Journal 165 of 18 July 2007, on "Transposition of Directive 2005/64/EC of the European Parliament and of the Council of 26 October 2005 on the type-approval of motor vehicles with regard to their reusability, recyclability and recoverability and amending Council Directive 70/156/EEC";

Having regard to Legislative Decree 209 of 24 June 2003 on "Implementation of Directive 2000/53/EC on end-of life vehicles", as amended;

Having particular regard to Regulation 124 of the Economic Commission for Europe of the United Nations on "Uniform provisions concerning the approval of wheels for passenger cars and their trailers", published in the Official Journal of the European Union L 375/588 of 27 December 2006, and later corrigendum published in the same Official Journal L 70/413 of 9 March 2007,

In consideration of the need to regulate the replacement of wheels and related tyres on cars,

Having completed the information procedure in the field of technical standards and regulations provided for in Law 317 of 21 June 1986, as amended and expanded by Legislative Decree 427 of 23 November 2000,

Having regard to points 3 and 4 of Article 17 of Law 400 of 23 August 1998,

Having heard opinion No ... of the Council of State, expressed by the Advisory Section for Legal Acts at the sitting of ...,

Having regard to the notification to the Prime Minister pursuant to Article 17.3 of the aforementioned Law 400 of 23 August 1988.

Hereby adopts

The following regulation

Article 1
Scope

1. The regulation applies to wheel-tyre sets, hereinafter “systems” according to the specifications of Article 2 below, intended for installation on vehicles in international categories M1, M1G as replacement parts for the corresponding original components or spares thereof.

2. The systems provided for in point 1 are approved pursuant to Article 75.3-*bis* of the Highway Code provided for in Legislative Decree 285 of 30 April 1992, in accordance with the testing procedures and requirements provided for in this regulation.

3. In consideration of the definitions provided in Article 2 below, the regulation shall not apply to original wheels or vehicle manufacturers’ replacement wheels.

Article 2
Definitions

1. The definitions provided in Article 2 of Regulation 124 of the Economic Commission for Europe of the United Nations, hereinafter “UNECE Regulation 124”, shall apply in full for the purposes of this regulation. The following definitions shall also apply:

1.1 Wheel/tyre “system”: The unit formed by the wheel and potentially one or more of the following:
- tyre, which must already be separately approved in accordance with the relevant standards,
- fixing nuts or screws,
- wheel spacers or adapters,

In which the wheel, on the basis of the definitions given in paragraph 2 of UNECE Regulation 124, is not an original wheel or a vehicle manufacturer's replacement wheel.

1.2 "Manufacturer": Producer of a system.

1.3 "Vehicle type": As defined in Annex II, Part B of Directive 2007/46/EC, as amended.

1.4 "Vehicle family": subset of variants/versions belonging to the same vehicle type that do not differ in any of the following features, which are deemed to be essential for the purpose of application of this decree:
- bodywork (for example: AA, AB, ... AF - See Annex II, Part C, Point 1 of Directive 2007/46/EC),
- braking system (dimensional and performance characteristics).

1.5 "Usage scope": the family of vehicles on which the system can be installed.

Article 3
Approval

1. The approval application for a system shall be submitted by the manufacturer, or its duly accredited legal representative, to a technical service of the Department for Transport, Shipping and Information and Statistical Systems, as specified in Article 3 (II) of the Minister of Infrastructure and Transport Decree of 28 April 2008, in the manner specified in Decree 277 of 2 May 2001 issued by the same Ministry. The application shall be attached to a datasheet compiled using the model given in Annex A. The application shall also give details of the testing programme carried out by the manufacturer to check road performance, as provided for in point 2.2.3.2 of Annex C.

2. Individual systems shall be approved, potentially with approval extensions, in relation to one or more vehicle families. The suitability of the system, for the purposes of approval, shall be checked using the criteria and procedures set out in Annex C.

3. Each system approved in accordance with the provisions of this decree shall be assigned an approval number, pursuant to the provisions of Annex IV of Ministry of Transport and Shipping Decree 277 of 2 May 2001.

4. The Directorate General for Road Traffic shall issue the approval certificate for the system using the model given in Annex B.

Article 4
General characteristics of systems

1. Each system must be designed, built and assembled such that, under normal usage conditions and despite any stresses to which it may be subjected, the original performance and safety characteristics of the vehicle remain unchanged.

2. In particular, the system must be designed, built and assembled such as to withstand the corrosive and ageing agents to which it is exposed.

3. The prior authorisation of the vehicle manufacturer shall be required if the system requires the replacement or modification of vehicle parts outside the system itself or of the software used to control the anti-locking, traction-control and vehicle-stability systems with others having characteristics different to those provided for by the vehicle manufacturer.

4. Once installed on the vehicle, individual systems must enable the original configuration of the vehicle to be restored by simply removing the system and fitting the corresponding original parts.

5. The provisions of point 4 above may be waived if the vehicle manufacturer authorises the modifications required to install the system for the individual vehicle.

Article 5

Requirements applicable to system manufacturers

1. All approved systems shall bear a clearly legible and permanent mark of the basic approval obtained (omitting any extensions). This mark shall be affixed directly to each wheel in the system and must be legible even once the wheel is fitted to the vehicle.

2. Markings must comply with the provisions of Annex D.

3. For each system produced, the manufacturer shall issue the certificate of conformity and the installation instructions, including general guidelines and any specific requirements.

Article 6

Requirements for installation of the system on vehicles

1. The installer of the system on the vehicle shall issue a declaration certifying compliance with the installation instructions provided by the manufacturer or, under the circumstances provided for in Article 4.3 above, the vehicle manufacturer. The declaration shall be drafted using the model given in Annex E.

2. Installation of the “systems” on vehicles shall not require any modification of the bodywork of the vehicle itself, especially mudguards, wheel arches and body panels. Furthermore, the use of additional wheel-arch flares is not permitted, unless already provided for as an alternative or option in the vehicle approval documentation.

Article 7

Updating the logbook

1. Notwithstanding the provisions of point 3 below, installation of the system on an individual vehicle shall result in the updating of the logbook pursuant to Article 78 of the Highway Code, following a testing visit to the appropriate vehicle licensing centre (UMC), in accordance with the procedure set out by the Directorate General for Road Traffic.

2. When updating the logbook, in accordance with the provisions of point 1 above, any modifications or requirements provided for in the documentation issued by the wheel

manufacturer, as provided for in Article 5 above, and the new size of the tyres in the system where applicable, shall be recorded.

3. The logbook need not be updated following installation of systems that do not involve changing the tyre size originally provided for the vehicle in question. In such cases, the installer's declaration provided for in Article 6.1 above and the declaration of conformity of the system must be kept in the vehicle.

Article 8

Manufacturing conformity

1. The systems used to check manufacturing conformity at the plants at which the systems are manufactured shall be subject to inspection, as provided for in the Decree *(Decreto Dirigenziale)* of 21 April 2009, published in Official Journal 107 of 11 May 2009.

2. Approved systems shall be manufactured such as to ensure they are compliant with the approved type.

3. The Directorate General for Road Traffic may order any test provided for in the regulation when checking:

a) manufacturing conformity of the system,
b) procedures for assessing system durability,
c) product monitoring.

4. The approval granted for a system type shall be withdrawn if the provisions of this article, among others, are not observed.

Article 9

Recognition of systems approved by Member States of the European Union

1. Systems approved in other Member States of the European Union, Turkey or parties to the agreement on the European Economic Area, if accompanied by suitable documentation issued by one of the aforementioned States, shall be subject to checks relating to product and user safety on the basis of certificates issued in the country of origin.

2. If the related documentation demonstrates that product and user safety are at least equivalent to that required by the regulation, the verification provided for in point 1 shall not require the checks already undertaken during the original approval procedure to be repeated.

Article 10

Transitory and final provisions

1. The Directorate-General for Road Traffic shall issue specific provisions to define the

procedures for updating logbooks of vehicles belonging to specific vehicle types, for which the vehicle manufacturer has specifically authorised the installation of tyre sizes not provided for in the approval process.

2. Until adoption of the measures provided for in point 1 above, the provisions already issued relating to alternative tyres shall remain in force, notwithstanding the need to obtain approval for wheels falling within the scope of the regulation, in accordance with the provisions of this regulation.

3. With regard to the content of this regulation, the provisions of Article 77.3-*bis* of Legislative Decree 285 of 30 April 1992 shall apply from one year after the date of publication of the regulation.

This decree shall be published in the Official Journal of the Italian Republic and shall enter into force on the day after its publication.

Rome,
The Minister for Infrastructure and Transport

Annex A - Model data sheet

Data sheet for approval of a wheel/tyre system

1. Description of the system:

1.1 Brand (trade name of manufacturer): ...

1.2 Type (manufacturer code): ...

1.3 Drawings: in triplicate, sufficiently detailed to enable the wheel type to be identified and showing the anticipated position of the approval mark and wheel marking.

2. Technical description:

2.1 Wheel category (replacement/special): ...

2.2 Rim contour designation: ...

Wheel inset: ...

Wheel attachment details: ...

2.3 Tightening torque for studs and nuts: ...

2.4 Fixing method of balancing weights: ...

2.5 Accessories required for assembly: ...

2.6 International standard reference (rim contour): ...

2.7 Suitable for tubeless tyre mounting (yes/no): ...

2.8 Suitable valve types: ...

2.9 Maximum load capacity: ...

2.10 Maximum inflation pressure: ...

2.11 Detail of materials including chemical composition: ...

2.12 Tyre size designations (state whether or not already provided with original vehicle equipment): ...

2.13 Documentation and checks relating to the equipment on the vehicle for which the wheel is intended:

2.13.1 Vehicle characteristics:

2.13.2 Additional characteristics (UNECE 124 Annex 10.1.3),

2.13.3 Fitting instructions (UNECE 124 Annex 10.1.4),

2.13.4 Additional requirements (UNECE 124 Annex 10.2),

2.13.5 Additional checks, as per Annex C (for special wheels).

2.14 Sample wheels representative of the wheel type necessary for the performance of laboratory tests or test reports issued by appropriate laboratories.

2.15 In case of application for approval of an identical wheel, the applicant shall satisfy the type approval authority that the wheel is indeed an “identical replacement wheel” as defined in UNECE Regulation 124.

2.16 Vehicle family or families for which the wheel is intended:

2.16.1 Vehicle manufacturer/make: ...

2.16.2 Function type: ...

2.16.3 Family 1: ... (variant/version list)...

2.16.4 Family 2: ... (variant/version list)...

2.16.5 Family 3: ... (variant/version list)...

Annex B - Model of approval/extension certificate
Certificate concerning
INITIAL APPROVAL
APPROVAL EXTENSION
REFUSED APPROVAL
WITHDRAWN APPROVAL
FINAL CESSATION OF PRODUCTION
of a system pursuant to Decree No...
Approval No... Extension No...
Issued by (name of authority): .....
1. Manufacturer:...
2. Designation of wheel type:...
Wheel category (replacement/special):...
Materials used:...
Production method:...
Rim contour designation:...
Wheel inset:...
Wheel attachment:...
Maximum load capacity:...
3. Address of manufacturer:...
4. Where applicable, name and address of manufacturer's representative:...
5. Date of submission of system for approval testing:...
6. Technical service responsible for performance of approval tests:...
7. Date of test report issued by technical service:...
8. Number of test report issued by technical service:...
9. Remarks:...
10. Approval issued/refused/extended/revoked:...
11.
Where applicable, grounds for extension:...
12. Vehicle family or families for which the wheel is intended:
12.1 Vehicle manufacturer/Make:...
12.2 Function type:...
12.3 Family 1:... (variant/version list)...
12.4 Family 2:... (variant/version list)...
12.5 Family 3:... (variant/version list)...

13. Place:...
14. Date:...
15. Signed/name:...
16. A list of documents included in the approval file and submitted to the approval-issuing authority is attached. A copy of the documents can be obtained on request.

Annex C
PROCEDURE FOR CHECKING SUITABILITY OF A WHEEL/TYRE SYSTEM FOR APPROVAL PURPOSES

1. General requirements

Wheel/tyre *systems* must:

1.1 comply with mandatory vehicle approval rules (EC and UNECE directives and regulations) and for road use (Highway Code);

1.2 have a nominal external diameter (tyre) equivalent to the tyre measurements provided by the vehicle manufacturer during type approval. Tyre measurements with a variation of ±2% in the rolling circumference in relation to the rolling circumference of the intermediate tyre measurements originally provided (during approval) for a given vehicle type shall be admitted, provided that the related nominal external diameter does not exceed the maximum nominal external diameter provided by the vehicle manufacturer during approval by more than 1%;

1.3 have a tyre width not less than the minimum provided for during vehicle approval for each rim diameter and no more than 10% greater than the maximum original tyre width provided;

1.4 satisfy, in particular, Annex 10 of UNECE Regulation 124;

1.5 comply with prevailing technical standards (CUNA technical committee for motor vehicle standardisation or ETRTO) in terms of wheel-tyre coupling.

Furthermore:

1.6 If the rim diameter is increased, the tyre width must be at least the minimum width provided by the vehicle manufacturer for the lesser rim diameter immediately preceding it.

1.7 The ability (or otherwise) to install snow chains must be checked and specified.

1.8 The ability (or otherwise) to use emergency wheels must be checked and specified.

2. Tests

The suitability of a wheel/tyre system shall be checked using the tests described below.

2.1 Compliance with UNECE Regulation 124

2.1.1. The wheels in the system subject to approval must satisfy the requirements and conditions of UNECE Regulation 124. Special wheels shall be subject to the same tests and conditions as provided for pattern part wheels in UNECE Regulation 124.

2.2 Additional tests

The following checks must be carried out on systems including special wheels or pattern part replacement wheels.

2.2.1 Test vehicle

A vehicle deemed to be representative of the type for which approval of a wheel/tyre system is sought shall be fitted with said system.

2.2.2 Static checks

2.2.2.1 The tread variation, notwithstanding the restrictions of Article 6.2 of this regulation, must not be more than 2 mm less than the minimum original value of the vehicle and must not be more than 2% greater than the original maximum value of the vehicle, provided that the tyres do not protrude beyond the original external contour of the bodywork.

2.2.2.2 Notwithstanding the provisions of Annex 10 of UNECE Regulation 124, the internal wheel contour must be such as to maintain a minimum distance at least equal to the distance of the original vehicle wheel/tyre combinations from the internal components (brakes, suspension and bodywork).

2.2.2.3 Tyres that are part of the *"system"*, necessarily of a type approved according to the relevant CE or UNECE standards, must have characteristics equal to or greater than the minimum characteristics provided for during approval by the vehicle manufacturer, in particular with regard to the following:

- load index,
- speed index,
- inflation pressure (ETRTO standard).

2.2.3 Dynamic tests

2.2.3.1 Wheel calliper tests

Warning: calliper tests shall not be required if the calliper of the cross section of the wheel/tyre system proposed fits within the calliper obtained from the original wheel/tyre systems approved by the vehicle manufacturer.

2.2.3.1.1 Vehicle preparation: a layer of plastic at least 15 mm thick must be placed on the parts adjacent to the tyres in the tyre calliper zones. The tests shall be passed if, during performance of the manoeuvres described below, the plastic layer is not removed as a result of contact with the tyres for a thickness equal to or greater than 5 mm or the difference between the real tyre section used for the test and the "maximum in-service" tyre section provided by ETRTO, whichever is less.

2.2.3.1.2 Steering pad

The test must be run twice: first with the wheels steered left and then right, as follows:

- drive the vehicle at a speed such as to reach the adherence limit with the following steering wheel directions (DVOL):
  0°, 45°, 90°, 180° and full lock;
- stop the vehicle by pressing the brake pedal with the wheels on full lock.
  The brakes must be applied sharply, without using ABS.

2.2.3.1.3 Steering pad in reverse

The test must be run twice: first with the wheels steered left and then right, as follows:

- start the vehicle in reverse with the following steering wheel directions (DVOL): 0°, 45°, 90°, 180° and full lock;
- press the brake pedal within the first two seconds, stopping the vehicle with the wheels on full lock. The brakes must be applied sharply, without using ABS.

2.2.3.1.4 Mounting pavement in forward gear (step height = 115 mm)
The test must be repeated steering first to the left and then to the right, as follows:
- position the vehicle parallel to the pavement at a distance of around 2.5 m;
- bring the vehicle to the minimum speed possible in first gear;
- mount the pavement diagonally with the wheels on full lock and break immediately to stop the car.

2.2.3.1.5 Mounting pavement in reverse gear (step height = 115 mm)
Repeat the test steering first to the left and then to the right, performing the following manoeuvres:
- position the vehicle parallel to the pavement at a distance of around 2.5 m,
- bring the vehicle to the minimum speed possible in reverse,
- mount the pavement with the wheels on full lock and break immediately to stop the car.

2.2.3.1.6 Descending step (step height = 150 mm)
Bring the vehicle to the minimum speed possible in first gear. Descend a suitably shaped step with both suspension systems. The test is performed with straight wheels.

2.2.3.1.7 Long undulations: symmetrical sinusoidal route on specific track
Bring the vehicle to the speed appropriate to the overall dimensions of the car (recommended speed 50 km/h). Drive over the long undulations at the predetermined speed. The speed of the vehicle must be such as to guarantee compression of the front suspension on impact.

2.2.3.1.8 Long undulations: asymmetrical sinusoidal route on specific track;
The vehicle travels with one side on the sinusoidal part and the other on the flat part. The action is then repeated in the opposite direction, such as to test the other side of the vehicle:
- bring the vehicle to the speed appropriate to the overall dimensions of the car (recommended speed 50 km/h),
- drive over the long undulations at the predetermined constant speed. The speed of the car must be such as to guarantee compression of the front suspension on impact.

2.2.3.1.9 Uneven and bumpy route (10 km)
- Perform a test on a road with a bumpy surface (for example: cobbled, holed or tram tracks) at speeds of between 30 and 80 km/h. The choice of test road must be validated by the technical service.

NB: If during performance of one or all of the tests detailed in 2.2.3.1.4 to 2.2.3.1.6 parts of the vehicle bodywork or chassis impact with the pavement, the tests may be omitted if they also cannot be performed with the same vehicle fitted with different original rim/tyre systems (as provided for during approval).

2.2.3.2 Road performance test
The manufacturer shall run a specific programme of road tests. The programme shall be described in the approval application, pursuant to Article 3 of this regulation. The primary objective of the tests in the programme is to assess the loosening of the tightening torque of the studs and the effects of the system on the vehicle during ordinary use, as well as to identify any abnormal behaviour of the vehicle.

The authority granting approval may require the programme to be modified or expanded.
The testing programme shall require the vehicle to be fitted with temperature sensors in zones deemed to be critical for heat dissipation, and shall include at least the following phases:
a) Assembly of the system in the vehicle and measurement of the stud tightening torque,
b) 200 km route at normal user speeds on roads with bends and uphill and downhill sections,
c) Measurement of stud tightening torque. The average loss must be less than 20%,
d) Without retightening the studs, mixed 15 km route with repeated breaking such as to keep the temperature of the front brake discs between 350 and 400°C,
e) 72 km route with repeated very tight corners and a section of around 9 km over uneven ground (for example: holes or cobbles).
On completion of the test, the average reduction in stud torque must be less than 30%.
The report on the behaviour test results shall be submitted by the manufacturer to the technical service.

2.2.3.3 ABS Breaking on three surfaces: dry, wet and differential right/left adherence, in order to check the balance and stability following inset modification.
2.2.3.4 Test according to ISO standard 3888-2 (elk test): The behaviour must be equal to or better than the behaviour recorded with tyres originally approved by the vehicle manufacturer.

2.3 Checks and tests in application of vehicle approval standards
The technical service shall assess whether the system has any impact on original conformity with the standards listed below and, if it does, shall perform the related tests in accordance with said standards:

2.3.1 ECE Regulation 13H: Active system check (ESC)

2.3.2 Directive 2005/11/EC: Tyre load/speed check

2.3.3 Directive 94/78/EC: Mudguards, chains

2.3.4 Directive 2007/15/EC: External projections

Annex D

Wheel marking

1. Wheel markings must satisfy the requirements of points 4 and 5 of UNECE Regulation 124, i.e. each wheel must include the following permanent and legible markings in a position chosen by the manufacturer that is visible once the tyre has been mounted on the wheel:

1.1 Name or trade name of the manufacturer;

1.2 Wheel or rim contour designation;

1.3 This designation shall be expressed in accordance with the provisions of an international standard on tyres and rims, and shall include at least the following:

Rim size designation including

- Nominal rim diameter and rim contour designation
- The symbol “x” for one-piece rims
- The symbol “-” for multipiece rims
- The letter “A” if the well is located asymmetrically (optional)
- The letter “S” if the well is located symmetrically (optional).

1.4 The wheel inset;

1.5 Date of manufacture (at least the month and year);

1.6 Wheel/rim part number.

1.7 The approval mark of the wheel, according to the conditions set out by the Directorate General for Road Traffic.

Annex E

Declaration of installation of the wheel/tyre system on a vehicle.

Company stamp or headed notepaper

The undersigned ... born in ... on ... residing at ... in his capacity as ... for the company ... having registered offices at ... VAT or tax code ...
Entered in the ... No ...

Being aware of the criminal sanctions provided for in Article 76 of Presidential Decree 445/2000 in the event of untruthful or false declarations

HEREBY DECLARES

pursuant to and for the purposes of Article 47 of Presidential Decree 445/2000:

- that he has installed on the vehicle with registration number ... and chassis number ... the wheel/tyre system identified by approval number ... and comprising the following elements:

1) ...
2) ...
3) ...
...

- that the installation was performed professionally and in accordance with the instructions provided by the system manufacturer and the vehicle manufacturer[1].

The following are attached to this document:

- Copy of the identity document (if the signature was not provided at the appropriate vehicle licensing centre (UMC))

Place and date Signature (in full and legible)

[1] Cross out “and the vehicle manufacturer” if not applicable.