

Type Approval of AT tyres

Reference to document ECE/TRANS/WP.29/GRRF/2013/20,
document ECE/TRANS/WP.29/GRRF/2013/22 and
Informal document GRRF-75-06

Background

Type Approval of L category vehicles

On 15 January 2013, the new Regulation (EU) No. 168/2013 of the European Parliament and of the Council of on the approval and market surveillance of two- or three-wheel vehicles and quadricycles (L category vehicles) was published.

Background

Installation of tyres on L category vehicles

ANNEX XV of Regulation (EU) N° 3/2014 (RVFSR) supplementing Regulation (EU) No 168/2013 of the European Parliament and of the Council with regard to vehicle functional safety requirements for the approval of two- or three-wheel vehicles and quadricycles (L category) clarify the requirements regarding the installation of tyres as follow:

Background

1. Requirements for the approval of a type of vehicle with regard to the **installation of tyres**

1.1. Subject to the provisions of point 1.2., **all tyres fitted to vehicles, including any spare tyre, shall be type-approved according to UNECE regulation No 75.**

1.1.1. Tyres which are deemed suitable for fitment on vehicles of categories L2e and L5e in accordance with UNECE regulation No 75 shall be deemed suitable for fitment on vehicles of categories L6e and L7e.

1.1.2. Vehicles of categories L1e, L2e and L6e with a technically permissible maximum mass ≤ 150 kg may be fitted with non-type-approved tyres with a section width ≤ 67 mm.

1.2. **Where a vehicle is designed for conditions of use which are incompatible with the characteristics of tyres type-approved according to UNECE regulation No 75** and it is therefore necessary to fit tyres with different characteristics, the requirements of point 1.1. do not apply, provided that the following conditions are met:

– the **tyres are type-approved according to Directive 92/23/EC35, Regulation (EC) No 661/200936 or UNECE regulation No 106**; and

– the approval authority and technical service are satisfied that the tyres fitted are suitable for the operating conditions of the vehicle. The nature of the exemption and reasons for acceptance shall be clearly stated in the test report.








Vehicle categories vs tyre regulations

Vehicle category	Reg ECE 30	Reg ECE 54	Reg ECE 75	Reg ECE 106
M1	x			
M2		x		
M3		x		
N1	x	x		
N2		x		
N3		x		
O1	x			
O2		x		
O3		x		
L1 A (e.bikes)	n.a.	n.a.	n.a.	n.a.
L1 B (mopeds)			x	
L2			x	
L3			x	
L4			x	
L5 A (motorcycles)			x	
L5 B (transport)		x		
L6 A (light quads)			AT ?	
L6 B (minicars)	x			
L7 A (road quads)			AT ?	
L7 B (ATV quads)			AT ?	
L7 C (minicars)	x	x (transp)		
T		x (over 65km/h)		x
T SbS			AT ?	x (IMP)
R		x (over 65km/h)		x
S		x (over 65km/h)		x

Vehicles covered by EU Regulation 168/2013 are equipped with the following tyres.

Scope of the Commission proposal (2)

■ 2-wheel

Category & Category Name	Sub category & Sub category name	Example
L1e, light two-wheel vehicle	L1Ae powered cycle	
	L1Be Moped	 
L2e Three-wheel moped		
L3e, motorcycle	A1, A2, A3 < 130 km/h ≥ 130 km/h	 
L4e, motorcycle with side car	-	

Category	Tyre type	Type approval	Notes
L1Ae	bicycle	none	Request exemption
L1Be	motorcycle	UNECE 75	
L2e	motorcycle	UNECE 75	
L3e	motorcycle	UNECE 75	
L4e	motorcycle	UNECE 75	For the sidecar maybe also UNECE30

Vehicles covered by EU Regulation 168/2013 are equipped with the following tyres:

3-wheel vehicles

Category & Category Name	Sub category & Sub category name	Example
L5e, tricycles	L5Ae Tricycles	
	L5Be Commercial tricycles	

Category	Tyre type	Type approval	Notes
L5Ae	motorcycle	UNECE 75	
L5Be	motorcycle	UNECE 75	Also UNECE30 or C-type UNECE54

Vehicles covered by EU Regulation 168/2013 are equipped with the following tyres.

■ Quadricycles

L6e, Light quadricycle	L6Ae Light quad	
	L6Be Light mini car	
L7e, Heavy quadricycle	L7Ae On-road quad	
	L7Be All Terrain Vehicles	
	L7Be Heavy mini car	

Category	Tyre type	Type approval	Notes
L6Ae	ATV	none	Waiting for addition to UNECE75
L6Be	Passenger Car	UNECE 30	
L7Ae	ATV	none	Waiting for addition to UNECE75
L7Be -ATV	ATV	none	Waiting for addition to UNECE75
L7Be-minicar	Passenger Car	UNECE 30	

Facts

AT tyres are classified

either with Cycle and Motorcycle tyres

- in the ISO 29802 standard under the responsibility of ISO/TC31/SC10 Cycle and motorcycle tyres
- in the European Tyre and Rim Technical Organisation (ETRTO) 'Engineering Design Information'

or in a separate section but not with Agricultural tyres

- In the Tire and Rim Association Inc. (TRA) 'Year Book'
- In the Japan Automobile Tire Manufacturers Association (JATMA) 'Year Book'

Facts

Major manufacturers of AT tyres have already submitted dossiers during past years to request a type approval of AT tyres to Authorities and all of them have been done based on the tests included in UN Reg. 75.



Facts

As an example, the following link

http://www.bkt-tires.com/bkt_product_search.html?category=atv-tyres&subcategory=sportstyres gives access to the catalogue of tyres for AT Vehicles from BKT which is one of the major producers of AT tyres.

Most of their tyres are already available with the “E” mark.

BKT confirmed that all tyres have been type approved according to UN Reg. 75.

Facts



AT 25x8-12 43 F E₄ - 75R



AT 25x10-12 53 F E₄ - 75R



AT 21x7-10 25 F E₁₁ - 75R



Facts



AT 25x8-12 43 F E₄ - 75R



AT 25x10-12 50 N E₄ - 75R



AT 21x7-10 25 N E₁₁ - 75R



AT 20x11-9 43 N E₁₁ - 75R

Facts



Facts



AT 26x12R12 58 N E₄ - 75R



AT 26x9R12 49 N E₄ - 75R



AT 26x8-14 70 N E₄ - 75R



AT 26x10-14 78 N E₄ - 75R



Conclusions

- A. According to this market survey, which show AT tyres with SS "J" and "N", the range of possible speeds is appropriate with the test conditions of UN Reg. 75.
- B. Major manufacturers of AT tyres have already submitted dossiers during past years to request a type approval of AT tyres to Authorities and all of them have been done based on the tests included in UN Reg. 75.
- C. There is no evidence that AT tyres actually Type Approved according to UN Reg. 75 are not appropriate to fit vehicles of category L6a, L7a and L7b or some agricultural tractors (SbS vehicles).

Conclusions

D. AT and IMP tyres in Annex 5 Table 7 of UN Reg.106 are different.

Example below with the size 21x7.00-10 and AT21x7-10

Table 7 (1 of 4)
Agricultural high flotation tyres

Tyre size designation	Theoretical rim width code (A1)	Nominal section width (S1) (mm)	Overall diameter (D) (mm)	Nominal rim diameter (d) (mm)
21x7.00-10	5,5	177	533	254
21x8.00 - 10	7	203	525	254
AT21x7 - 10	5,5	177	533	254
21x11.00 - 8	8,5	282	518	203

The first size is for a lawn tractor when the second one is for a trail sport ATV with different service conditions and therefore different performances.

Conclusions

Moreover:

- ATV tyres: AT prefix in the size designation, pressures up to 45 kPa; speed symbols F to N
- Implement tyres (UN Reg.106): suffix IMP in the tyre size designation, pressures over 80 kPa, speed symbols A8 or B.

Consequently, the two sizes have a different structure as they will withstand different loads and pressures, and in any case an implement tyre, having speed symbol A8 or B, is not subject to any drum test, but just to burst test.

Conclusions

Therefore, although listed in Annex 5 Table 7 of UN Reg.106, AT tyres have been requested to be Type Approved according to UN Reg. 75, which support the proposal from ETRTO to amend UN Reg. 106 (Ref. document ECE/TRANS/WP.29/GRRF/2013/22) and to transfer those sizes to the UN Reg. 75 which is the right place where AT tyres have to be listed.



Thank you for you attention!