

Submitted by the expert from Spain

Informal document **GRRF-86-39**  
86th GRRF, 12-16 February 2018  
Agenda item 6

**Applus<sup>+</sup>**  
**IDIADA**

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**UNECE Regulation No 90**  
**Special Interest Group, SIG**  
**GRRF 86th session, February 2018**

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## Summary

00\_ Introduction

01\_ Items for discussion

02\_ Progress made before and during GRRF 84

03\_ Open Issues

04\_ New Items of Discussion

05\_ Next steps

## 00\_ Introduction

On GRRF 83<sup>th</sup>, February 2017 and 84<sup>th</sup>, September 2017, the matter of future developments of UN Regulation No 90 were raised.

Two initial informal meetings were held, -in UTAC, France and IDIADA, Spain-, to discuss future developments on R90 as well as to agree common interpretations for requirements not so clear that were open to discussion:

- 1st Meeting **UTAC Paris** July 2016
- 2nd Meeting: **IDIADA Spain** October 2016

01\_ Items of Discussion: Consideration was given to the following aspects:

## Regarding the current UN Regulation No 90.02

- Brake disc type definition (in particular, ventilation design)
- Concept of equivalent disc
- Consideration of other materials (Carbon fiber...)
- Inertia values and mass (front / rear) distribution
- Testing details. Calculation of inertia used to simulate
- Light trailers: new testing procedure
- Open issues regarding L category vehicles

## New items to be considered

- Inclusion of AM calipers in the scope of Regulation No90
- Inclusion of harmonized COP procedures
- Inclusion of Remanufactured parts in UN Regulation No90

## 02\_ Progress made during last GRRF 84:

### a) New items to be considered → Agreements GRRF 84

#### Inclusion of harmonized COP procedures FEMFM request

→ **No agreement was made in this matter.**

COP procedures are responsibilities of the national Approval Authorities and the mutual recognition is not a matter of a single regulation

COP procedures are to be discussed in the relevant context (e.g., Agreement 1958?)

#### Inclusion of **AM calipers** in the scope of Regulation No.90

→ **Agreement:** this matter will not be included in the agenda for R90.

CLEPA available to participate in future discussions if more information is provided

#### Inclusion of **Remanufactured parts** in UN Regulation No.90

→ **Agreement:** this matter will not be included in the agenda for R90 until additional information is available.

Remanufactured parts would mean process approval instead of the current system of type approval

02\_ Progress made during last GRRF 84:

## b) Current UN Regulation No 90.02 → Agreements made

- **Disc type definition**, consideration of ventilation:

**Agreement was made** during informal group meeting

- **Disc type definition**, new materials (carbon fiber)

**Agreement was made** that either disc or pad made of carbon fiber **are not replacement material** for classic ones (not subject to UN R90 but a different brake system, a separate UN R13H)

**Agreement was made:** R90 must allow for carbon fiber discs and corresponding pads to be approved if they are replacement of similar OE

- **Testing and Homologation procedures.** Grandfathering

**Agreement was made** that families are not foreseen in R90 and grandfathering is not legal. Already included in early version of R90

- **Administrative provisions**, label information / maximum mass of the approval

**Agreement was made:** no need to modify current text

## 03\_ Open Issues:

### a) Current UN Regulation No 90.02 → Open issues

- **Disc type definition**, material table: **No agreement was made**

Current material composition tables are not practical

Concept of EQUIVALENT disc (**retain/modify/remove?**)

**CLEPA position: discussion ongoing**

**SIG general position: to remove category EQUIVALENT**

#### Proposal:

- **To eliminate the material table** since it appears to be design restrictive

- **To eliminate the concept of EQUIVALENT disc**

since this opens the door  
to bargain the amount of testing

→ The classification  
will be reduced to  
identical / interchangeable  
(thus, no test, full test...)

	<i>Test standard</i>	<i>Sub-group 1 Base cast iron DIN EN 1561 EN-GJL-200</i>	<i>Sub-group 2 Base high carbon EN-GJL-150</i>	<i>Sub-group 3 Alloyed high carbon</i>	<i>Sub-group 4 Unalloyed high carbon</i>
Carbon Content (per cent)		3.20-3.60	3.60-3.90	3.55-3.90	3.60-3.90
Silicon Content (per cent)		1.70-2.30	1.60-2.20	1.60-2.20	1.60-2.20
Manganese Content (per cent)		Min 0.40	Min 0.40	Min 0.40	Min 0.40
Chromium Content (per cent)		Max 0.35	Max 0.35	0.30-0.60	Max 0.25
Copper Content (per cent)		–	0.30-0.70	0.30-0.70	Max 0.40
Hardness HBW	ISO 6506-1:2005	190-248	160-210	180-230	160-200
Tensile strength (N/mm <sup>2</sup> )	ISO 6892:1998	Min 220	Min 160	Min 170	Min 150

## 03\_ Open Issues:

### b) Current UN Regulation No 90.02 → Open issues

#### - New categories:

whether to include or not prescriptions for L7 vehicles

#### Proposal:

To extend the scope of Regulation No 90, Annex 7 to cover also L6, L7 (since now R78 has been extended to cover L6, L7)

To align test procedures R90 L category to the new Regulation 78.

Informal document GRRF-86-41.





## 03\_ Open Issues:

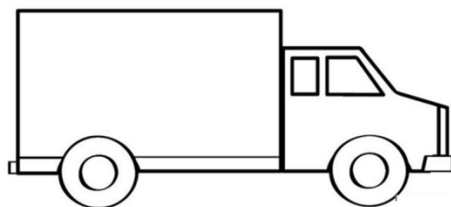
### c) Current UN Regulation No 90.02 → Open issues

- **Test procedures:** Inertia values among axles / formula to calculate inertia

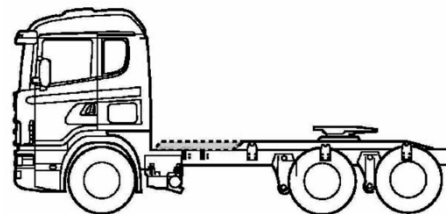
→ Passenger Cars; ongoing discussion among CLEPA

Vehicle category	Percentage by mass <i>m</i> to be taken into account	
	<i>X</i> values (front axle)	<i>Y</i> values (rear axle)
M1	77	32
M <sub>2</sub>	69	44
N <sub>1</sub>	66	39
M <sub>3</sub> , N <sub>2</sub> , N <sub>3</sub>	55	55

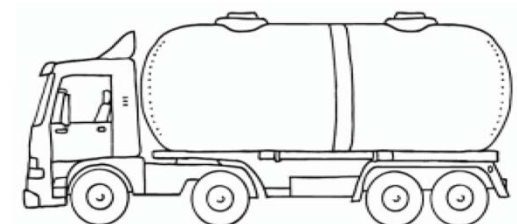
→ Commercial Vehicle Inertia; ongoing discussions



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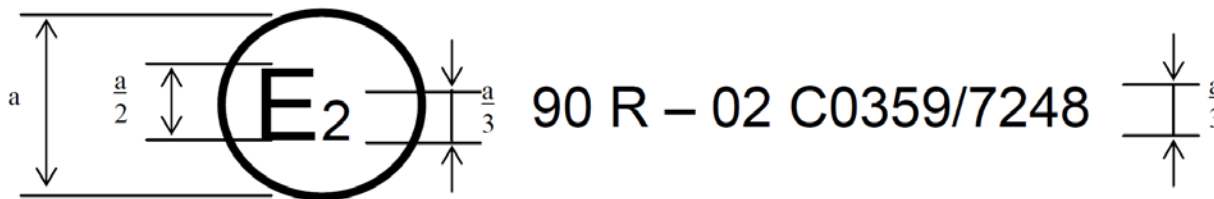
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## 04\_ New Items of Discussion :

### a) Approval numbering system as per Revision 3 Agreement 1958



CLEPA / FEMFM presentation on the impact of align numbering system of after market R90 components to the general rules within Revision 3 of Geneva Agreement 1958

**PROPOSAL:** to present the problem in the relevant forum, IWVTA IWG  
To remark WP29 the problem for the industry and approval process

**PROPOSAL:** to leave R90 as an exemption (justified because this is for purely aftermarket components and has no relation to Whole Vehicle Type Approval)

## 05\_ Next steps

Compromises still pending:

- All members: to progress and contribute in the **open issues**
- All interested GRRF members to express willingness to participate / contribute.**
- Is important to compile all the relevant opinions**
- DECISION: whether or not call an informal group  
( a new SIG meeting is necessary)  
in person / on line discussion / webex meeting?**

Thank you very much for your kind attention



Questions?

Ideas?

Proposals?

Guidance???

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