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World Forum for Harmonization of Vehicle Regulations**Working Party on Brakes and Running Gear****Seventy-sixth session**

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Item 6 of the provisional agenda

Regulation No. 90 (Replacement brake linings)**Proposal for amendments to Regulation No. 90 (Replacement brake linings)****Submitted by the experts from the European Association of Automotive Suppliers, from the International Organization of Motor Vehicle Manufacturers and from the Federation of European Manufacturers of Friction Materials ***

The text reproduced below was prepared by the experts from the European Association of Automotive Suppliers (CLEPA), from the International Organization of Motor Vehicle Manufacturers (OICA) and from the Federation of European Manufacturers of Friction Materials (FEMFM) to amend the provisions of Regulation No. 90. The modifications to the existing text of the Regulation are marked in bold characters or as strikethrough.

* In accordance with the programme of work of the Inland Transport Committee for 2012–2016 (ECE/TRANS/224, para. 94 and ECE/TRANS/2012/12, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

I. Proposal

A. Brake discs and drums

Paragraph 2.3.3.2., amend to read:

"2.3.3.2. **"Identical brake disc"** is a replacement brake disc ~~which is chemically and physically identical in every respect with the exception of the vehicle manufacturer mark, which is absent, to the original brake disc~~ **identical to the brake disc supplied and fitted as original equipment and included in the vehicle type approval to Regulation No. 13 or Regulation No. 13-H of the vehicles/axes mentioned under Annex 1B point 4, with the exception of the vehicle/brake assembly manufacturers mark and the identification code which are omitted.**"

Paragraph 2.3.3.3., amend to read:

"2.3.3.3. **"Identical brake drum"** is a replacement brake drum ~~which is chemically and physically identical in every respect with the exception of the vehicle manufacturer mark, which is absent, to the original brake drum~~ **identical to the brake drum supplied and fitted as original equipment and included in the vehicle type approval to Regulation No. 13 or Regulation No. 13-H of the vehicles/axes mentioned under Annex 1B point 4, with the exception of the vehicle/brake assembly manufacturers mark and the identification code which are omitted.**"

Paragraph 5.3.2.1., amend to read:

"5.3.2.1. The applicant for approval shall demonstrate to the **Technical Service and/or** approval authority that they **produce and** supply the **submitted** brake discs or drums to the vehicle manufacturer as original equipment ~~of the vehicles/axes/brakes~~ **for the specific model/models, axes, mentioned under Annex 1B point 4 for which approval is being sought. In particular, This demonstration shall include verifiable evidence that** the brake discs or drums ~~shall be~~ **are** produced under the same production and quality assurance systems ~~and conditions~~ as for the Original parts pursuant to paragraph 2.3.1. **Specifically it is required that the applicant for approval continues to produce the original and identical parts:**

- (a) **from the same raw material, composition and microstructure;**
- (b) **with the same manufacturing process;**
- (c) **on the same production line;**
- (d) **with the same quality assurance system; and**
- (e) **with the same results of the conformity of production tests referenced in paragraph 8.4.2., as for the original parts.**

The demonstration of compliance to requirements specified in this paragraph shall be supported by an onsite audit, conducted by the technical services in charge of the approval. To support the audit the manufacturer shall provide access to the process flow chart and control plan."

Annex 1B, point 4., amend to read:

- "4. Vehicles/axles/~~brakes~~² for which the replacement brake disc or a replacement brake drum is approved:

B. Brake linings

Insert new paragraphs 2.2.13. and 2.2.14., to read:

- 2.2.13.** **"Identical brake lining assembly"** is a replacement brake lining assembly identical to the brake lining assembly supplied and fitted as original equipment and included in the vehicle type approval to Regulation No. 13 or Regulation No. 13-H ~~of the vehicles/axles/brakes mentioned under Annex 1A point 6,~~ with the exception of the vehicle/brake assembly manufacturers mark which is omitted. "
- 2.2.14.** **"Identical drum brake lining"** is a replacement drum brake lining identical to the drum brake lining supplied and fitted as original equipment and included in the vehicle type approval to Regulation No. 13 or Regulation No. 13-H ~~of the vehicles/axles/brakes mentioned under Annex 1A point 6,~~ with the exception of the vehicle/brake assembly manufacturers mark which is omitted."

Insert new paragraph 5.1.3., to read:

- 5.1.3.** **Identical replacement brake lining assemblies and identical drum brake linings do not need to be tested according to the requirements of paragraph 5.2.1, provided the following conditions are fulfilled:**
- (a) That the applicant for approval demonstrates that they produce and supplies the submitted brake lining assemblies or drum brake linings to the vehicle or brake manufacturer as original equipment for the specific vehicle models, axles and brakes mentioned under Annex 1A point 6, for which approval is being sought.
- (b) That the Technical Service and/or approval authority verifies that the applicant is producing and supplying the relevant part mentioned in Appendix 1 of Annex 2 of Regulation No. 13 / Appendix of Annex 1 of UN Regulation No. 13-H approval, in paragraph related to "Make and type of brake linings" (see Footnote).
- (c) The applicant for approval continues to produce the original and identical parts:
- (i) from the same raw material mixture;
- (ii) with the same manufacturing process;
- (iii) on the same production line;
- (iv) with the same quality assurance system; and
- (v) with the same results of the conformity of production tests referenced in paragraph 8.4.1, as for the original parts.

The demonstration of compliance to requirements specified in this paragraph shall be supported by an onsite audit, conducted by the Technical Services in charge of the approval. To support the audit the

manufacturer shall provide access to the process flow chart and control plan."

/Footnote: "At the request of (an) applicant(s) for Regulation No. 90 approval, the information shall be provided by the Type Approval Authority as contained in Appendix 1 of Annex 2 of UN Regulation No. 13-H approval or the Appendix of Annex 1 of UN Regulation No. 13-H approval. However, this information shall not be provided for purposes other than Regulation No. 90 approvals."

II. Justification

A. Brake discs and drums

1. The concept of an "identical" part was first conceived by the UN Regulation No. 90 Brake Disc and Drum Working Party and was intended to allow the manufacturer of the Original (OE) part to sell this part in their own brand image without the need for additional testing (and cost) over and above that which had already been conducted to approve the product as the original equipment fitment.

2. Unfortunately in practice, the current definition for an "identical" part has proved inadequate, with a number of parts makers seeking approval for their parts under this category even though they clearly were not the manufacturer of the original part. The new definitions, which are far more exhaustive, are intended to address the problem and provide clarity for all involved in the approval process.

B. Brake linings

3. Following the introduction of the concept of an "identical" part for brake discs and drums, FEMFM made a proposal to the GRRF to extend it to linings, but their initial proposals were deemed inadequate by many delegates and GRRF consequently requested that interested parties form a task force to arrive at a mutually acceptable definition for re – submission to the GRRF.

4. An extended meeting hosted by CLEPA, with delegates from CLEPA, OICA and FEMFM, Technical Services and Contracting Parties, arrived at a more robust definition which addresses the technical concerns that were raised and reflects the lessons learned from the recent requests to approve supposed identical brake discs and drums.

5. Brake linings are a highly complex product; their performance is derived from both the mixture of raw materials that are used in their composition, the manufacturing process that is employed and the equipment used in their production. It is, therefore, very important that all of these factors are fully recognised in the definitions of an "Identical" part and it is for this reason that requirement has been made both rigorous and exhaustive.