

## **OICA comments to FEMFM proposal ECE/TRANS/WP.29/GRRF/2013/4 Identical disc/drums - Identical linings**

OICA challenges the proposal from FEMFM to use of the “identical disc / drum” philosophy for the definition of identical brake linings, based on the following grounds:

1. During the 73<sup>rd</sup> session of GRRF in September 2012, it was highlighted that the current definition of identical discs and drums per UN R90.02 is today creating problems to some technical services. Thus, OICA recommends investigating what these problems are and seeing whether and how they can be fixed, before extending this philosophy to brake linings.

From our recollection, one of the highlighted problems was that the applicants for UN R90 approval of identical discs/drums were not limited to the original equipment supplier of the vehicle manufacturer, but to any discs/drums manufacturers, based on a simple chemical analysis and physical dimensions measurement showing identical results to the original part. This approach can be questioned, since it simply ignores factors of major importance for ensuring quality of the parts, like COP, quality insurance system, production process etc. Such kind of problem shows this philosophy is not ready to be extended to linings, which are technically far more complex components (see points 2. and 3).

2. From a purely technical standpoint, the definition of identical discs / drums is not applicable to linings, since the lining manufacturing involves a technology more complex than that of machined castings. Indeed, two linings can have the same chemical content and same physical dimensions, and yet have fully different friction or thermal performance, due to **different manufacturing process**. Thus, the definition proposed in GRRF-73-04 is irrelevant for linings:

*"2.2.14. **Identical drum brake lining** means a replacement drum brake lining which is **chemically and physically identical** in every respect with the exception of the vehicle and/or brake manufacturer mark, which is absent, to the original drum brake lining."*

The minimum here would be to add in the definition that the manufacturing process of the identical lining and the original part have to be identical. The next questions where OICA is seeking for an answer are then to define what an “identical process” is, and how to practically check, at the time of the approval, that they are identical. Performing an **audit of the production line** to check that both the identical and the original parts are produced on the **same production line** looks to be the strict minimum.

3. The proposed definition in paragraph 2.4 states that *“Chemically and physically identical means identical in dimensions and the **relevant** mechanical and chemical...”*. What is “relevant” versus “not relevant” is not defined. The issue here is that only the lining manufacturer (the applicant) is really able to define what is “relevant” vs. “not relevant”, since he is the only one having the complete knowledge of the product and of the manufacturing process. The minimum requirement here would be that **all** physical characteristics are identical, but how can this be practically checked?  
This is why OICA believes the most robust way to guarantee that a replacement part is safe enough to be used on a vehicle, is to perform performance testing according to UN R90 (or R13 / R13H), since this testing is not subject to interpretation of what is relevant or not relevant. Should GRRF experts consider such a performance test not necessary, the minimum would be **to sample identical and original parts** from the

production line and to perform a chemical and physical analysis. The number of samples, list and methods of tests to be used for the analysis, should be defined in the R90. It is not the case today.

4. The philosophy proposed by FEMFM is developing a fairly different situation compared to current situation on linings. Today, the UN R90 applicant gets some information from the vehicle manufacturer, in order to be able to perform their own R90 approval tests. With the “identical lining” philosophy, the R90 applicant is using vehicle manufacturer R13/R13H type approval to avoid R90 approval tests. Since being the only one having tested the linings on a vehicle for type approval, does it mean the vehicle manufacturer becomes liable for the identical linings? At what stage of the R90 approval process should the vehicle manufacturer be informed in order to give his agreement for using his own type approval data? A proper process would avoid potential product liability issues, as well as intellectual property conflicts. At least the question of product liability should be clarified.
5. OICA also questions the situation when a vehicle manufacturer selects a new brake lining supplier. Sustainable COP, production process, list of second row suppliers, quality assurance system cannot be guaranteed in this case. As the vehicle manufacturer won't anymore perform any quality or process audit on the production of this supplier, the latter will be free to change anything, without any control from the vehicle manufacturer. In this case, the product liability has to be clarified as well.

Moreover, in the case where the specifications of the new linings from the new supplier are modified to improve thermal or durability performance (for example), the old part is no longer “identical” to the original parts of all vehicles produced with the new parts. In this case as well, the product liability has to be clarified, as well as the validity of the identical part type approval for the new vehicles.

As a conclusion, OICA still sees a number of major issues directly connected to the philosophy of the proposal and the feasibility of the practical implementation. OICA recommends that the philosophy be reviewed on identical disc and drums before being extended to linings. From a general standpoint, OICA believes the most robust way to guarantee that a replacement part is safe to be used on a vehicle, is to conduct performance testing according to UN R90 (or R13 / R13H), since this testing is not subject to interpretation and clearly assigns product liability to the vehicle or component manufacturer applying for the approval. If the philosophy of “identical linings” were to be supported by GRRF, OICA would of course be willing to participate in the work to amend UN R90. OICA has already given some tracks for improvements, yet we are not sure they would be sufficient to solve the listed concerns.

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