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| Submitted by the expert from CLEPA | Informal document **GRVA-01-12**  1st GRVA session, 25-28 September 2018  Agenda item 12 |

Proposal for a Supplement to the 02 Series of Amendments   
to UN Regulation No. 90

Note: This proposal aims at correcting editorial errors in the consolidation document ECE/TRANS/WP29/2016/58 relating to GRRF-80-37, ECE/TRANS/WP.29/  
GRRF/2015/22 and GRRF-81-04-Rev.1 and insert the word "tolerance" in para. 2.3.3.4.1.

**Proposal:**

*Paragraph 2.3.3.4.1.*, amend to read:

"2.3.3.4.1."*Equivalent brake discs* ***for categories M, N and O***" is a replacement brake disc which is identical to the original brake disc in respect to all dimensions, geometric features, **tolerances** and basic design and is also from the same material subgroup as the original brake disc as defined in paragraph 5.3.3.2."

*Paragraph 5.3.4.1.1.*, amend to read:

"5.3.4.1.1  For discs the following maximum values shall be met:

|  |  |  |  |  |
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|  | *M1, N1, O1, O2* | *M2, N2,* | *M3, N3, O3, O4* | ***L1, L2, L3, L4 , L5*** |
| Thickness variation | 0.015 mm | 0.030 mm | 0.040 mm | 0.020mm |
| Cheek thickness variation  (for ventilated disc only) | 1.5 mm | 2.0 mm | 2.0 mm | (\*\*\*) |
| Lateral run-out friction surface | 0.050 mm\* | 0.15 mm\* | 0.15 mm\* | 0.150mm\*\*\* |
| Location bore variation | H9 | H9 | H9 | D10 or H11\*\*\*\* |
| "Top hat" parallelism | 0.100 mm | 0.100 mm | 0.100 mm | - |
| Location face flatness | 0.050 mm | 0.050 mm | 0.050 mm | 0.100mm |
| Friction surface roughness\*\* | 3.2 µm | 3.2 µm | 3.2 µm | 1.6µm |

*\**  n/a in the case of a floating disc

*\*\**  Ra-value according to ISO 1302:2002

**\*\*\* 0**.100 mm for maximum straightness for "full floating" disc (without elastic constraints between bell and braking ring)

\*\*\*\*  n/a for vehicles categories L1, L2, L3, L4 and L5

\*\*\*\*\* Location bore variation where applicable, related to manufacturing process.”