

C. Coulomb Law

$$F_r = \frac{a}{R} L$$

1831

INFORMATION

Rolling Resistance Problem Consideration. History (2001-2009) and Today Action.

EC – GRRF/GRB – ETRTO – ISO TC31/WG6

RF experts – 23-07-2009



Steps of RR problem consideration by GRRF, ETRTO and ISO TC31 WG6.

2001

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| 1. | Modification of Dir 92/23 EC with the introduction of dispositions concerning safety, environment and tyre rolling resistance (RR). (Dir 2001/43 EC article 3-§2) |
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2002

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| 2. | RF inserted the proposal to include into the working program of WP.29 and GRRF developing of additions to the ECE Reg. Nos. 30&54, according which the tyre manufacturer has to announce the value of the RR coefficient. | 128-th WP.29, November |
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2003

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| 3. | RF introduced additions to the Regulations Nos.30&54 regarding manufacturer's information on tyre's RR coefficient. | 53-rd GRRF, February |
| 4. | RF submitted a draft of a global rolling resistance measurement standard for discussion at the next session to the secretarial office. GRRF was of the opinion that, before the consideration of the proposal, the tyre manufacturers should inform GRRF about their work to improve rolling resistance. The discussion will be resumed at the next session. | 54-th GRRF, October |

2004

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| 5. | <p>ETRTO informed GRRF about readiness to prepare a working paper accounting the existing standards and the RF proposals.</p> <p>GRRF requested the experts from the RF and ISO to provide, as soon as possible, an input to this work.</p> | <p>55-th GRRF, February</p> |
| 6. | <p>ETRTO created a working group to define a Reference method for RR measurement and international cooperation based on ISO 18164 norm.</p> | <p>March</p> |

2004 (continue.)

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| 7. | <p>GOST R addressed to ISO TC31 with proposal of new item "Revision of the ISO 18164 partition concerned deceleration method of tyre RR measuring"(N683 project). RF proposed the specified variant of ECE Reg. Nos.30 & 54 Amendment.</p> <p>ETRTO showed a presentation on the ETRTO activity in the field of tyre RR.</p> <p>GRRF did not take any decision on the subject and was waiting for a proposal from ETRTO for a possible reference method for RR measurement.</p> | <p>56-th GRRF, September</p> |
| 8. | <p>San Diego meeting. ISO TC31 WG6 approved the project N683 as an active work item.</p> | <p>November, Voting on December</p> |

2005

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| 9. | <p>Expert from RF turned the GRRF attention to the disastrous level of heat dissipation due to the RR of world tyre fleet.</p> <p>GRRF resumed the consideration of the RF proposal underlying the importance of the subject.</p> <p>ETRTO informed GRRF about action plan of its RR WG.</p> <p>GRRF did not take any decision on the subject awaiting a proposal from ETRTO for a possible test method for RR measurement.</p> | <p>57-th GRRF, February</p> |
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2005 (continue)

RF proposed compromise variant of ECE Reg. Nos.30 &54 amendments.

ETRTO informed GRRF that the task to reach RR interlab measurement accuracy 2-5% is solved.

GRRF resumed the consideration of the RF proposal concerning RR, preceded by a presentation underlining the importance of the subject and followed with interest also a presentation on the ETRTO activity in the field of tyre rolling resistance.

The EC expert informed GRRF about an ongoing study on the same purpose within the European Union.

GRRF deferred consideration on this subject to its sixtieth session in September 2006, awaiting the final results of the studies by ETRTO and the EC.

58-th
GRRF,
September

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2006

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| 11 | Recalling its decision of the previous session, GRRF agreed to defer consideration on this subject to its 60-th session in September 2006, awaiting the final results of the studies by ETRTO and the EC in the field of tyre RR. | 59-th GRRF, February |
| 12 | ISO TC31 WG6 approved the project N715 (ETRTO RR reference method) as a working draft (WD). | Voting on June |
| 13 | ISO TC31 WG6 meeting in Brussels had considered ETRTO presentation of WD Reference RR method and GOST R presentation of Amendment draft to ISO 18164 standard (project N683 "RR deceleration method based on time-distance variables"). | August |

2006 (continue.)

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| 14 | <p>The expert from ETRTO reported on the ongoing work regarding the development of a proposal on tyre rolling resistance aimed at including new provisions in the ISO standard concerned. He announced that further meetings on this subject would be held in December 2006 and in February 2007. The EC expert underlined the importance of this wide-ranging issue with regard to the environmental protection. He welcomed the work of the ISO group in developing test methods for rolling resistance, since it was essential to have a robust test method before proceeding with any regulatory work in this area. GRRF welcomed a presentation by the expert from the Russian Federation on the same subject (GRRF-60-22). He suggested preparing, in cooperation with ETRTO, a proposal on this subject.</p> | 60th GRRF, September |
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2007

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| 15 | <p>The expert from ETRTO gave a presentation on the work progress regarding the development of a proposal on tyre rolling resistance aimed at including new provisions from the revised ISO standard ISO 28 580 CD.</p> <p>GRRF agreed to develop, in a first step, a harmonized test procedure for rolling resistance of tyres and to insert, in a further step, a set of performance requirements (i.e. limit values).</p> | 61st GRRF, February |
| 16 | <p>The expert from the Russian Federation introduced GRRF-62-39 regarding the need for information on the tyre rolling resistance coefficient. The expert from ETRTO raised concern about gathering such information and preferred that an impact assessment would have to be done in a first step.</p> <p>Following the discussion, GRRF agreed to resume consideration of this subject at the next GRRF session.</p> | 62nd GRRF, September |

17 The expert from the Russian Federation introduced GRRF-62-25 proposing to insert into Regulations Nos. 30 and 54 new provisions for the indication in the type approval communication of the tyre rolling resistance coefficient. The expert from ISO informed GRRF that ISO 28580, aimed at improving the accuracy of the measurement method, was expected to be published by the end of 2008. The expert from ETRTO recalled the concerns he raised during the previous GRRF session and requested to wait for a clear view on the reliability and reproducibility of the new test method.

Following the discussion, a large number of experts agreed to proceed, in principle, to adopt rolling resistance measures into Regulations Nos. 30 and 54 based upon the proposals contained in GRRF-62-25.

GRRF agreed with the Chairman's proposal to adopt the measures at the next GRRF session where a clearer view on the publication timetable of ISO 28580 could be taken. RF experts – 23-07-2009

**63rd GRRF,
February**

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The Chairman recalled the purpose of the discussion in WP.29 on whether to insert these new provisions either into Regulations Nos. 30 and 54 or into Regulation No. 117. The expert from the Russian Federation reminded GRRF that the proposal was aimed to indicate the tyre rolling resistance coefficient in the type approval communication, but without any limit values.

The expert from the European Commission underlined the intention of his organization to implement, within the European Union, new requirements for the reduction of rolling resistance for new tyre types in 2012. Moreover, he expressed his preference to rely on the ongoing work of the UNECE and ISO.

The expert from ETRTO preferred to insert the provisions into Regulation No. 117, as the latter is based on a modular tyre family concept. The expert from ISO informed GRRF that standard ISO 28580, aimed at improving the accuracy of the measurement method, was in the balloting procedure and expected to be published by mid 2009.

Following the discussion, GRRF agreed to recommend the adoption of the rolling resistance measures into Regulation No. 117.

**64th
GRRF,
September**

2008 (continue.)

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| 19 | <p>The GRRF Chairman, Mr. Yarnold informed WP.29 about the results achieved by GRRF during its 64th session.</p> <p>He reported that GRRF had considered in detail the possible insertion of the provisions for rolling resistance either into Regulations Nos. 30 and 54, or into Regulation No. 117. As rolling resistance is mainly an environmental issue linked to fuel efficiency, GRRF had finally agreed to insert these provisions into Regulation No. 117 and that GRB should resume consideration of this subject at its next session in February 2009 on the basis of a revised proposal.</p> <p>WP.29 endorsed that decision by GRRF.</p> | 146th WP.29, November |
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2009

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| 20 | <p>GRB agreed on the principle to insert the rolling resistance measures into Regulation No. 117.</p> <p>The Chairman invited the experts from EC to prepare, jointly with the experts from ETRTO, a proposal for amendments to Regulation No. 117 for consideration at the next GRB session on the basis of an official document.</p> <p>GRB noted the intention of the European Commission to develop, by the end of 2010, a new regulation on general safety issues and the need to insert into the UNECE Regulations concerned a definition for "special tyres" (i.e. snow tyres or tyres for off-road use). GRB also noted the discussion of GRRF at its February 2009 session and its suggestion to set up a joint GRRF/GRB informal group on special tyres, subject to the consent by WP.29 at its March 2009 session. A large number of GRB experts expressed their interest to participate in</p> | 49th GRB, February |
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that work.

Tyre Rolling Resistance. Course of Standardizing.

History
(8 years)

Prognosis
(4 years)

ETRTO Alignment and RR
Reference method ISO 28580

EC RR norms

EC Dir
2001/43

GRRF consideration
Reg. 30&54 Amendments

GRB
Reg.117

2001

2002

2003

2004

2005

2006

2007

2008

2009

2010

2011

2012

Every day 2,0 millions tonnes of fuel burns up to overcome RR.₁₄

METHODS of MEASURING RR (force, torque, power, deceleration)

ISO 8767 (for PC tyres)
First edition **1992-08-01**

ISO 9948 (for TB tyres)
First edition **1992-08-01**

ISO 18164
Passenger car, truck, bus
and motorcycle tyres –
Methods of measuring
rolling resistance
First edition **2005-07-01**

**Amd. Deceleration
method
in time-distance variables
Final issue:??**

ISO 28580
Passenger car, truck and
bus tyres -Methods of
measuring rolling
resistance - Single point
test and correlation of
measurement results
Final issue:**2009-07-01**

**Interlaboratory
alignment**

**Skim test
reading
reglamentation**

- - Traditions
- - Novations

Thank you for attention!