

REPORT OF THE ISO/TC 43/SC 1/WG42 STATUS OF THE DEVELOPMENT OF AN ADVANCED URBAN DRIVING PROCEDURE

The ISO/TC 43/SC 1/WG 42 continues the development of an advanced urban driving procedure. The work of developing an improved ISO 362 test procedure, has been accepted by the Global Community, and has recently advanced to Active Status within the ISO Secretariat. The working group (WG) is conducting the final review of the Working Draft including the definition of specific performance parameters. Some technical areas require additional discussion/investigation, however significant progress is evident. All remaining open issues will be resolved within the next year to provide a Draft International Standard, by early 2003.

The ISO New Work Item Proposal NWIP 362 "Acoustics - Measurement of noise emitted by accelerating road vehicles - Engineering method (Revision of ISO 362: 1998)" includes operations for all road vehicles from motorcycle, to passenger vehicles, to medium duty delivery vehicles, and also heavy trucks. Through careful consideration of the operating conditions of these multiple vehicle classes, a test has been developed to provide consistent meaningful results in a harmonized procedure.

The revision of ISO 362 is directly focused to address the concerns of the 1996 European Union Green Paper. This paper stated that.... "the test procedure (ISO 362) doesn't reflect realistic driving conditions", it also stated that "In the case of motor vehicles other factors are also important such as the dominance of tyre noise above quite low speeds (50 km/h)". Scientific investigation of this concern by the ISO Working Group led to the understanding that the current ISO 362 test procedure did not properly address the distribution of vehicle noise sources. In fact certain vehicle noise sources (the power-unit/drivetrain system) were overly emphasized, while others (tyre/road noise) was not adequately considered. The new procedure aims to balance the contribution of all vehicle noise sources in a manner which, is more representative of actual urban driving behavior.

The WG has revised the ISO 362 procedure, with these principle features:

- Simulation of actual urban driving.
- Target acceleration in one or two gears based on the vehicles power to weight ratio.
- Cruise under light engine (driveline) load similar to urban constant speed driving.
- Acceleration under wide open throttle to reproduce a worst case event, and most accurately evaluate the effectiveness of powerplant silencers.
- Combining the results of the two operating modes to rate the vehicles urban sound level.

It is strongly believed that potential new vehicle noise regulations based on the revised ISO 362 procedure will more directly address the noise concerns of the community. Toward this end, ISO is pleased to offer technical expertise to GRB in support of the revision of vehicle noise regulations when requested.

There continues to be some disagreement among the members of the ISO Working Group concerning the ability of the new procedure to adequately discriminate between certain classes of vehicle, and some vehicle operating conditions. To address these concerns testing with "normal" and "quiet" vehicles must be carried out in order to determine the influence of individual partial noise sources. The objective of these investigations should be to ensure that the revised ISO 362 procedure adequately considers all such partial noise sources in the proper perspective.

If the on-going evaluation of the revised ISO 362 proves to be deficient for some operating conditions, the WG may put forth a New Work Item Proposal within ISO to develop a Part2 procedure. Due to technical issues, the group has rejected previous Part 2 proposals. A new proposal to be drafted by the expert from the Netherlands, is expected by the Spring of 2003.

In addition to the work on the ISO 362 procedure, WG42 is also reviewing the test road surface requirements documented in ISO 10844. The on-going updated of this procedure documents enhanced requirements which will provide a test road surface which is more representative of typical road surfaces in the community. Incorporation of the improvements documented in the revised ISO 10844 into the ISO 362 test procedure will help to further reduce test variability.

The WG is also developing an improved ISO 5130 procedure, which is the measure of vehicle noise when stationary. This procedure is envisioned as a simple tool for road-side evaluation of vehicle noise control devices. Specific requirements of measurement location and vehicle operating conditions will be evaluated. A new Working Draft outlining an improved ISO 5130 will be reviewed at the September 2002 meeting.

Signed

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Joint with ISO/TC 22