



**Draft Report
of the 31st meeting of ISO/TC 108/SC 4 "Human exposure to mechanical vibration
and shock" held on 2008-09-08/12 in Oslo, Norway**

1. Opening of the meeting (10:00 h)

The meeting was opened by the Chairman, Mr E. Christ, who welcomed the delegates and thanked Standards Norway for hosting the meeting in Oslo.

Ms T. Tveter, Managing Director of Standards Norway, also welcomed the delegates and wished the meeting success. Ms I. Turunen-Rindel, Standards Norway, gave some organizational information.

2. Roll call of delegates

The roll call of delegates was made. The list of delegates is enclosed as **Annex 1**.

3. Adoption of the draft agenda

The revised draft agenda was adopted, see doc. **N 571**.

4. Appointment of the drafting committee

The drafting committee was established with the following members:
Mr. Pitts, Mr. Springard, the Chairman and the Secretary.

5. Review of the resolutions and report of the 30th meeting of ISO/TC 108/SC 4 in St. Julians, Malta, 2007-10-22/25

Since no written comments were submitted the report was approved. There were no further comments on the report. The resolutions will be addressed under item 6 of the agenda.

6. Report of the Secretariat on the activities of ISO/TC 108/SC 4

The Secretary referred to the written report, doc. **N 567**, and gave some additional information.

Since the last meeting no changes in the membership were recorded. Mr Pitts, UK, accepted to succeed Mr Nelson as convenor of WG 3. The new WG 15 was established.

He draw the attention of delegates to the result of the regular review of ISO 2631-1, ISO 5805 and ISO 8727, and to seven standards currently under review.

Regarding item 7, Res. 12/2007, it was reported that ISO/TMB would decide on a case by case basis on request to reduce the number of P-members committing to participate actively in new work from 5 to 4. Such a request is to be justified in detail. Regarding item 8, Global Directory, the Secretary reminded the delegates of the obligation to be registered in the ISO Global Directory by their member bodies as well as directly at the SC 4 secretariat if they want to be member of a group.

7. Report on the activities of CEN/TC 231 "Mechanical vibration and shock"

The Secretary referred to the written report, doc. **N 568**. The Chairman suggested that SC 4 members consider the possibility to propose European standards for implementation as ISO standards if this is considered appropriate. The procedure is established in the Vienna Agreement of ISO and CEN.

8. Consideration of committee drafts and documents which have been circulated for vote or comments

8.1. ISO 13091-1:2001/DAmD 1 "Mechanical vibration — Vibrotactile perception thresholds for the assessment of nerve dysfunction — Part 1: Methods of measurement at the fingertips — Amendment 1"

The draft Amendment 1 was approved with one negative vote from UK. The result and the comments were circulated as document **N 565**. WG 8 was asked to discuss the comments and to revise the text accordingly.

8.2. ISO 2631-1:1997/CDAmD 1 "Mechanical vibration and shock — Evaluation of human exposure to whole-body vibration — Part 1: General requirements — Amendment 1"

The CD was approved with one negative vote from Japan. The result and the comments were circulated as document **N 562**. WG 13 was asked to discuss the comments on this draft together with those received on the systematic review of ISO 2631-1:1997 (**N 559**) and to revise the text accordingly.

8.3. ISO/NP 10819 "Mechanical vibration and shock — Hand-arm vibration — Method for the measurement and evaluation of the vibration transmissibility of gloves at the palm of the hand" (Revision of ISO 10819:1996)

The NP for the revision of ISO 10819:1996 was approved as active work item, the result was circulated as document **N 564**. The WG 12 was asked to develop the committee draft, target date for this first CD is 2009-05-14.

8.4. ISO 2631-4/NPAmD 1 "Mechanical vibration and shock — Evaluation of human exposure to whole-body vibration — Part 4: Guidelines for the evaluation of the effects of vibration and rotational motion on passenger and crew comfort in fixed guideway transport systems — Amendment 1"

The NP for an Amendment 1 was approved but the necessary number of five P-members committing to participate actively in the new work was not achieved. Norway announced that it would check the possibility to join the work actively and this was confirmed during the meeting. Therefore, the work item was eventually approved and the WG 9 was asked to review the text in order to proceed to DIS voting.

9. Review of the result of the Systematic Review and final decision

9.1. ISO 2631-1:1997 "Mechanical vibration and shock — Evaluation of human exposure to whole-body vibration — Part 1: General requirements"

The Secretary referred to document **N 559** and explained that no final decision could be taken since technical changes had been proposed. As already proposed under item 8.2 of the agenda, the comments received on the systematic review should be dealt with by WG 13 in connection with the discussion of the amendment.

9.2. ISO 5805:1997 "Mechanical vibration and shock — Human exposure — Vocabulary"

The Secretary referred to document **N 560** and explained that no final decision could be taken since changes had been proposed that were not clearly editorial. The Chairman asked the delegations to consider the situation and to propose further action at the second plenary meeting under an additional item 17.2.

10. Preparation of working group meetings, review of the meeting schedule

It was announced that WG 5 would start on Tuesday not before noon in order to enable delegates to attend the morning meeting of CEN/TC 231/WG 9. It was furthermore noted that WG 15 will meet on Thursday morning at 09:30 h.

Following a question regarding the scope of working groups the Secretary explained that the task of a working group is defined by the respective project (WI) allocated to this group.

Adjournment of the meeting to 2008-09-12

11. Reopening of the meeting (09:00 h)

The meeting was reopened by the Chairman on 2008-09-12.

12. Reports of working groups and ad hoc groups

12.1. WG 3 – Hand-transmitted vibration

The convenor, Mr. Pitts, reported that the group discussed two items, the frequency weighting for HA vibration and the contact forces. It was agreed that the current frequency weighting is well used and should therefore not be changed in the near future. It was also agreed that additional weightings would be desirable but current knowledge is not sufficient. The group agreed to collect a small set of weightings including a flat weighting which will be distributed to WG experts for testing and collecting data. Experiences should be reported at later meetings such as the 12th International Conference on Hand-Arm Vibration which is planned for Ottawa in 2011. The group reviewed the responses with regard to the state of knowledge about contact forces and agreed that there would be no further action at this stage but the item will be on the agenda at the next meeting.

12.2. WG 5 – Biodynamic modelling

The convenor, Mr. Brammer, reported that the group discussed the new data obtained by the ad hoc group for PWI 20945 for the biodynamic response of the hand-arm system. Based on this material the group recommended to start the revision of ISO 10068:1998 since the work on PWI 20945 had been completed. The group reviewed also PWI 20946 for the biodynamic response of the seated body and agreed that the item should be kept in the work programme.

Resolution 1/2008 was taken.

12.3. WG 8 – Vibrotactile perception

The convenor, Mr. Brammer, reported that the group discussed the comments on the draft Amendment 1. After circulation of the revised text to WG members for confirmation it will be sent to the SC 4 secretariat for submission as FDIS.

Resolution 2/2008 was taken.

12.4. WG 9 – Application of ISO 2631-1 to railway vehicles

The convenor, Mr Pollard, reported that the group reviewed the result of voting on the NP for ISO 2631-4/Amendment 1 which was completed by a vote from Norway to participate in the project. The group agreed to forward the text to the secretariat for DIS circulation. The PWI on the guidance on the likelihood of kinetosis as a function of vertical, transverse and rotational motion in railroad vehicles (previous Amendment 1) should be deleted. Two presentations were given on epidemiological research on musculoskeletal disorders among locomotive engineers and various aspects of this work and possible consequences were discussed.

Resolutions 3, 4 and 5/2008 were taken.

12.5. WG 12 – Revision of ISO 10819:1996

The convenor, Mr Reynolds, reported on the results of the discussion of the group. Since the result of the NP ballot was approval of the project, the group agreed to limit the revision of the standard to combine the existing draft amendment developed by CEN/TC 231 with the standard and to make other related modifications to the standard that are necessary to improve the accuracy and the reliability of the method. The group decided to provide the text for a CD to the SC 4 secretariat before May 2009.

Resolution 6/2008 was taken.

12.6. WG 13 – Evaluation of human exposure to whole-body vibration

On behalf of the convenor, Mr Wilder reported that the group reviewed the comments received on the systematic review of ISO 2631-1:1997 and resolved that all comments could be dealt with through the amendment. The group noted the positive result of voting on the CD on the amendment and discussed the comments received. The group recommended to submit the revised text after circulation and confirmation by WG members to the SC 4 secretariat for DIS voting.

Resolutions 7 and 8/2008 were taken.

12.7. WG 14 – Posture related to whole-body vibration

Mr Wilder reported that the group discussed the current state of the draft TR 10687 and that decisions were made about the content in particular with regard to the relevant variables. The text for the DTR will be completed by April 2009 for submission to SC 4 members for approval.

Resolution 9/2008 was taken.

12.8. WG 15 – Estimation of whole-body vibration health hazards

The convenor, Ms Hinz, reported on the presentations given at the meeting of WG 15 and the following discussions. It was resolved that three models will be tested by the experts and results are expected to be available and distributed before the end of October 2008. The group also recommended to change its title back to the one decided at the last meeting: "Revision of ISO 2631-5:2004"

Resolution 10/2008 was taken.

13. Disbanding of working groups

None.

14. Review of liaisons with other committees and organizations

The Secretary referred to the list of liaisons circulated before the last meeting, doc **N 542**, and reported that discrepancies were identified in the kind of registration of liaisons between the Central Secretariat and the SC 4 secretariat that could not be solved before the meeting. It was proposed that the list will be revised in cooperation with CS and circulated to SC 4 members for confirmation. The following two names should be added to ISO 159: Mr E. Lehtinen and Mr D. Wilder. Mr Nelson should be kept as liaison expert for ISO 199 at the time being.

Mr Hecker informed the delegates about a publication of WHO with the title: "Occupational exposure to hand-transmitted vibration – Teaching guide"; Authors are L. Burström, G. Neely, R. Lundström, T. Nilsson.

15. Review of and decision on preliminary work items

The preliminary work items were confirmed as listed in the resolution.

Resolution 11/2008 was taken.

NOTE: In addition to these items PWI 10068 and PWI 5805 were included in the work programme, see Res. 1/2008 and 12/2008.

16. Work items on which no progress is being made – Status and action to be taken (work items at risk of being cancelled by ISO/CS)

None.

17. Standards under five yearly review

17.1. ISO 2631-2:2003 "Mechanical vibration and shock — Evaluation of human exposure to whole-body vibration — Part 2: Vibration in buildings (1 Hz to 80 Hz)"

The Secretary draw the attention of the delegates on ISO 2631-2:2003, currently under review until 2008-09-19.

17.2. ISO 5805:1997 – Decision on the systematic review

As agreed at the opening plenary meeting this new item was included to decide about further action on ISO 5805:1997. The US delegation proposed to include the revision of ISO 5805 as a PWI in the work programme and to start preparatory work in a new working group with Mr Wilder as project leader. Canada supported the proposal with the argument that more than 40 new terms have been introduced in standards since then.

Resolutions 12 and 13 were taken.

18. Items for future work

Besides the new preliminary work items mentioned under other items of the agenda there was no additional proposal for new work.

19. Requirements concerning a subsequent meeting

There was no formal invitation for a next meeting. The Chairman informed the delegates that informal discussions during the meeting resulted in consideration that the next meeting might be held at a place in North America, probably in October 2009. It is expected to communicate more information within the next six weeks.

20. Any other business

The Secretary informed the delegates about a workshop of the joint Consultative Committee for Units (CCU) – JCGM on 11 and 12 Sept. 2008. ISO/TC 108 was invited to send a representative, this invitation was transferred by the Chairman to SC 4. Unfortunately, attendance of a SC 4 representative was not possible due to the overlapping of meeting dates.

21. Approval of resolutions

The draft resolutions were approved unanimously as recorded in doc **N 572**.

22. Closing of the meeting

With thanks to the delegates for their constructive contributions and to Ms Turunen-Rindel for the good organisation and to the companies sponsored the dinner invitation the Chairman closed the meeting.

List of Participants

**31st meeting of ISO/TC 108/SC 4
2008-09-08/12 in Oslo, Norway**

Chairman **Eberhard Christ**
Germany

Secretary **Dieter Hansen**
Germany

| country | name, first name | head of delegation | opening plenary | closing plenary |
|----------------|------------------------------|---------------------------|------------------------|------------------------|
| <u>Canada</u> | Lehtinen, Edwin | | X | X |
| | Brammer, Anthony | X | X | |
| <u>Denmark</u> | Voss, Palle | X | | X |
| <u>France</u> | Springard, Olivier | X | X | X |
| <u>Germany</u> | Fischer, Siegfried | | X | X |
| | Hecker, Christoph | | X | X |
| | Hinz, Barbara | | X | X |
| | Rissler, Jörg | X | X | X |
| <u>Japan</u> | Hata, Haruhiko | X | X | X |
| | Ishimatsu, Kazuma | | X | X |
| | Iwahashi, Kiyokatsu | | X | X |
| | Nishiyama, Katsuo | | X | X |
| | Nakai, Kazuma | | X | X |
| | Shibata, Nobuyuki | | X | X |
| | Yoshikawa, Kyoji | | X | X |
| <u>Norway</u> | Kåsin, Jan Ivar | | X | |
| | Marheim, Jan Anders | | X | X |
| | Wagstaff, Anthony | | X | X |
| | Rothschild, Karin | X | X | |
| | Turunen-Rindel, Iiris | | | X |
| <u>Poland</u> | Harazin, Barbara | X | X | |
| | Malinowska-Borowska, Jolanta | | X | |

| country | name, first name | head of delegation | opening plenary | closing plenary |
|-----------------------|-------------------------|---------------------------|------------------------|------------------------|
| <u>United Kingdom</u> | Gunston, Tom | | | X |
| | Pitts, Paul | X | X | X |
| | Stayner, Richard | | | X |
| <u>USA</u> | Bass, Cameron | | X | X |
| | Cooperrider, Neil | | X | X |
| | Dong, Ren | | X | X |
| | Jetzer, Thomas | | X | |
| | Johanning, Eckardt | | X | X |
| | Mullinix, Logan | | | X |
| | Pollard, John | | X | X |
| | Price, Brian | | X | X |
| | Reynolds, Douglas | X | X | X |
| | Roley, Dan | | X | X |
| | Smith, Suzanne | | X | |
| | Wilder, David | | X | X |