

**Minutes of the meeting of ISO TC 156 WG 13
at DECHEMA e.V.
Frankfurt/Main 18th November 2005**

Agenda

1. Welcome and introduction by the convenor
2. Short discussion about any changes of the international situation on standardization of high temperature corrosion testing
3. Work items of WG 13 (reporting and discussion)
 - 3.1 Thermo gravimetric testing (not active)
 - 3.2 Continuous and discontinuous isothermal oxidation testing
Completion of working document ISO/TC 156 N 1122 (current version 22 August 2005) "Test method for Isothermal Exposure Testing under High Temperature Corrosion Conditions for Metallic Materials" (submitted for CD voting)
 - 3.3 General guidelines for post-exposure examination
Discussion of the draft prepared by Steve Osgerby
 - 3.4 Cyclic oxidation testing
Discussion of the code of practice developed within the European COTEST project
 - 3.5 New work items
4. Resolutions on the next steps
5. AOB
6. Date and place of next meeting

Minutes

The meeting started at 9:00 a.m.

1. Welcome and introduction

Michael Schütze welcomed all participants of the meeting.

2. Changes of the international situation on standardisation of high temperature corrosion testing

No changes in the international situation on standardisation of high temperature corrosion testing are known.

3. Work items of WG 13

The actual status of the work items was shown. It was suggested to summarize a scheme about the work flow of documents during the course of standard developments in the minutes as a reminder for the members of WG 13.

Document flow within ISO

- Submission of NWIP (New Work item proposal) to ISO
- Voting on NWIP
- Submission of working document to TC as a CD (committee draft)
- The TC secretariat submits the draft to the P- and O-members and compiles their comments.

- The committee draft, after revision if necessary, is submitted to the ISO Central Secretariat for preparation as a DIS (Draft International Standard).
- The ISO Central Secretariat circulates the document for technical inquiry to the ISO member bodies that conduct a national inquiry by inviting national experts and interested public.
- The national comments are collated by the ISO Central Secretariat and sent to the committee secretariat that decides about the further procedure (approval with slight amendments or resubmission as a second, third etc. DIS after substantial amendment or no approval).

A scheme is added ("*Document flow ISO.pdf*").

3.1 Thermo gravimetric testing is not active and was not discussed.

3.2 The working document ISO/TC 156 N1122 has been submitted to ISO TC156 secretariat for voting as committee draft on 26 August 2005, but voting has been postponed as the document refers to the working document for post-exposure investigation which had not been registered as work item so far and therefore cannot be used as a reference. However a NWIP (New Work Item Proposal) "*Post-exposure investigations*" has been prepared in the meantime and has been submitted on 07 September 2005. The ISO TC 156 secretariat has circulated the NWIP and voting is closed on 09 December 2005.

A re-submission of the working document N1122 to ISO TC 156 secretariat is planned after the (positive) results of the NWIP voting have become available.

Slight modifications on the working document N1122 were found to be necessary and have been inserted during the meeting. Besides smaller editing corrections the section about determination of k and n has been revised to clearly emphasise that both descriptors shall be reported together as they must not be reported independently of each other. Figure 7 has been modified and now also includes the case of break away behaviour. The unit which has to be used for k was added.

The final version is attached and will be sent to the ISO TC156 secretariat for voting as a committee draft after updating the reference to NWIP "*Post-exposure investigations*" depending on the outcome of the voting procedure.

3.3 The discussion on the draft for post exposure examination prepared and modified after discussion at the last meeting in October 2004 by Steve Osgerby was continued.

Modifications to the document will be made by **Steve Osgerby**. The following modifications were suggested:

- Figure 1: the different layers in the figure should use the terms used in the definition
- Details on how to prepare a probability plot should be given
- Figure 6: a simplified version of figure 1 should be used
- 7.5.4: The 4% value has to be explained (evaluation of metallographic examination procedure by Round-Robin investigation)

The modified version will be distributed by the **convenor** after introduction of the modifications.

3.4 The COTEST project was completed and a final code of practice is available. According to DIN a NWIP (New work item proposal) was submitted to ISO TC156 secretariat in May 2005, but the voting procedure has not yet been commenced by ISO TC156. Discussion on this work item was started at the meeting and amendments to the draft were made where necessary. It was suggested to complete section 4.1 (Design of apparatus)

with an additional scheme for a test design with a fixed furnace and movable specimens. **Toshio Maruyama** will send an electronic version of such a scheme to Maik Malessa. In section 4.2 (temperature monitoring) **Steve Osgerby** will check for the existence of ISO standards about thermocouples.

The work on the document was closed after section 6.2.4. Work will be continued at the next meeting starting with the section 6.3 (test duration). The current version is attached.

4. Resolutions on the next steps

It was agreed to submit two new work item proposals (*Method of electrochemical corrosion test for metallic materials in molten salts* and *Method of dipping and embedding test in molten salt for metallic materials*). Toshio Maruyama will submit the NWIP's before the end of December.

5. AOB

No other business was discussed.

6. Next meeting

The next meeting of ISO TC156 WG13 will be held on **1st June 2006 in Tokyo** in conjunction with the plenary meeting of ISO TC156 which takes place from 29th May to 2nd June 2006.

It was suggested to have a meeting in autumn 2006 in **Frankfurt** again preferably in conjunction with an EFC workshop taking place on 12./13. October 2006 (possibly on **16th October 2006**), no final decision has yet been made.

The meeting was closed at 6:00 p.m.

Table 1: Attendees at the meeting

Maik Malessa, Dechema e.V., Germany
Toshio Maruyama, Tokyo Institute of Technology, Japan
Steve Osgerby, National Physical Laboratory, UK
Francisco Perez-Trujillo, UCM, Spain
Rachel Pettersson, SIMR, Sweden
Michael Schütze, Dechema e.V., Germany

Frankfurt/Main, 23rd Novmeber 2005

Maik Malessa