

Draft Minutes v2

ASC OP/TF 2 –Committee for Optics and Electro-Optical Instruments –

Appearance Imperfections Standard Meeting

August 8, 2013, 13:00 EDT

Teleconference

Welcome and introductions. G. Boulton began the meeting at 13:07 EDT with introductions. In the meeting were D. Aikens, F. Dombrowski, D. Howland, W. Royall, T. Turner and A. Krisiloff. A quorum was not established. C. Gaugh joined at 13:17.

Approval of Agenda. A. Krisiloff moved we approve the agenda, corrected with the corrected date for the previous meetings, and F. Dombrowski seconded. The motion carried.

Approval of Minutes from the May Meeting. W. Royall moved we approve the minutes from the previous meeting. A. Krisiloff seconded, and the motion carried.

Traceability of Scratch and Dig Standards. D. Aikens presented a history of the traceability of scratch and dig standards, from the Army limit masters down to currently available standards. The slides are available on the website.

History of OP1.002 revision. G. Boulton reported on the history of the current revision of the OP1.002 standard, beginning with our initial charter to simply reorganize the standard to make it more readable. At the time, several of us were concerned about the viability of the visibility approach, given the results of the Northrop Grumman gauge R&R study which showed poor results, and the reports of Brysen sets and others that were obviously way off, and practically unusable. In addition, different people used the standards differently, and were not doing the inspection correctly. Now, with the OEOSC course helping with the latter problem, and the SavvyInspector designed by Ari Siletz and Dave Aikens helping with the former we are converging on a very useful standard, and we need to get this latest edition published and into peoples' hands.

Toward that end, G. Boulton has taken v11 from the last meeting, reviewed all of the noted questions, resolved them all, and did some rewording and simplifying. D. Aikens also reviewed it and made some further corrections and changes, and that is the v12 currently on the website. After today's review, he would like to have the version circulated for a formal paper ballot at the Task Force level.

Overview of OP1.002 version 12. G. Boulton reviewed the revision.

There is a question regarding what to do with short scratches; when should they be judged as a dig. T. Turner had suggested that 0.5 mm is a good break-point, so that is what he put in.

We are concerned that we can't get permission from the army to post a version of C7641866, so we will just reference our own version of the drawing in the annex.

He also fixed the wording of 3.1.2.1.3 to more carefully follow the wording of the Army standard, based on "apparent size."

In section 3.1.2.4 he clarified the lighting requirement for minimum resolved defects.

For the dimensional standard, there was some debate as to the smallest allowable specification for scratches and digs. The new draft sets this at A1-A10; 1 μm wide scratches and 10 μm digs.

On disregard limits, we removed the references to the disregard limit in section 3.1.4.1.2.

In 3.1.4.2.2 we corrected an error in wording, which implied that you did not need to do accumulation if there were no max size digs present.

In 3.1.4.3.2, we have gone with the "apparent size" language, rather than the "brighter" definition.

In 3.3, we have refined the area imperfection requirement such that any area imperfection visible under the standard viewing conditions is cause for rejection.

In section 5.3, there are no area bulk imperfections, so that section was deleted.

In section 6.3 and 7.3.1, the wording was tweaked.

In section 8.2, 8.3, and 8.4, C. Gaugh proposed converting over the wattage language to a level of brightness or luminance. W. Royall said that when EK studied this many years ago, they found that you could get variations of an order of magnitude; even staying within the rules of 40W tungsten and 15W cool white fluorescent.

In section 9.1.3, the definition of a linear dimension was removed.

In 9.4.1, the definition of aperture was greatly simplified, but even so, it's still not clear enough, and it doesn't directly impact the standard in any way. D. Aikens suggested we just drop the definition entirely.

The definitions of edges and surfaces have been refined greatly. In addition, D. Aikens proposed adding a figure to clarify these terms. F. Dombrowski pointed out that a Rim is a surface, and maybe a Bevel is, too, but they show up in the "edges" subsection. Perhaps we should combine these sections? Also, the definition 2 of "edge" is now completely covered by the "edge surface."

The section on prism surfaces was also revised, to include the language from the MIL standard regarding the combination of all reflecting surfaces as a single surface for some prism cases.

Several other definitions were refined and improved. The most important definition is that a sleek is now defined as a long, narrow, faint line without conchoidal fractures. W. Royall pointed out that the definition of “one angle” is ambiguous, and thought that it should be “a small range of angles.”

Digs are now defined as 0.5 mm or less, which could be problematic on very small optics. W. Royall proposed we use the dig diameter as the scratch length limit.

Annex B is messed up. The artwork no longer has the actual features of the imperfections. F. Dombrowski offered to supply an image of the Gage-Line artwork for the Annex.

Annex E references the OEOSC version of C7641866. A. Krisiloff mentioned that this may be problematic, since we reference the Army version in the definition of scratch and dig, and the normative reference.

Action: C. Gaugh will find the old Davidson study, and offer some potential language for luminance specifications, rather than bulb wattage, and work with D. Aikens to make a proposal, with consultation from Frank and Bill.

Action: D. Aikens to search for the word Ground, and change them to “edge.”

Action: G. Boulton to add the new figure defining rim, edge, and edge surface to the document.

Procedure and timeframe for voting G. Boulton asked if we could ballot the standard, in its current state, within 30 days. D. Aikens said that he needed a final version from Gordon, and could get a ballot out in about one week for the TF level, depending on travel.

Time and place for the next meeting. A. Krisiloff moved we schedule a conference call on Wednesday October 9th at 11:00 EDT. C. Gaugh seconded and the motion carried.

Adjourn. F. Dombrowski moved we adjourn, and D. Howland seconded. The motion carried and we adjourned at 15:48 EDT.