Approved Minutes
ASC OP1 'Scratch and Dig" Draft Standard Review
Sunday January 20, 2002
1:00 p.m. — 5:00 p.m.
Monday, January 21, 2002
8:30 a.m. — 12 Noon
Fairmont Hotel, Valley Room
San Jose, CA

Attending	Committee Members(11/13)	Representing
☒	David Aikens	Thermawave
☒	Gordon Boultbee	OCLI
☒	Andrei Brunfeld	Orbotech
☒	Walt Czajkowski	APOMA
☒	Lincoln Endelman	Endelman Enterprises
☒	John M. Hamilton	Northrop Grumman Corporation
☒	Jonathan E. Hardis	NIST
☒	Hal Johnson	Harold Johnson Optical Lab.
☐	Bruce Netherton	Spectra-Physics
☒	Joseph H. Oberheuser	ITT, Defense A/C Division
☒	Harvey Pollicove	COM
☐	Kathleen Richardson	Schott Glass Technologies
☒	William Royall	Eastman Kodak Company
	Observers (2)	
☒	Gene Kohlenberg	OEOSC
☒	Shaun Mulkin	Coherent

Auditor's Summary of Meeting

The committee started with BSR/OEOSC OP1.002 document 2001-2a for this review session.

A subcommittee was created to review the terms defined in this draft standard. The subcommittee will make a recommendation concerning what terms should be included and what terms should be dropped at the next BSR/OEOSC OP1.002 draft review meeting.

J. Hamilton prepared a new description and illustration for True Roof Surfaces. This material replaced the previous description for True Roof Surfaces on Prisms and was moved from the Cement Imperfections section to the General Requirements section.

D. Aikens presented changes to the various equations in the draft to make them consistent. These changes were accepted.

The committee voted to accept the edited changes to sections 3, Requirements, – 3.9, Cement Imperfections, as the working draft for the second day of the review.

The subcommittee agreed that a fourth section should be added to include examples of specifications.

The practice of stoning edge chips was reviewed, and the difference between military practice and commercial practice was noted. The Chairperson concluded that the committee must deal with surface imperfections for ground surfaces. The emerging micro optics market must be considered when specifications for fractures and edge chips are set. The Chairperson agreed to work with W. Royall to word this section.

J. Hamilton agreed to begin an e-mail review of the Methods of Inspection section. He also agreed to work on the Area Imperfection and Examples sections.

The committee will review the title to see if it should be expanded beyond surface imperfections.

Welcome and Introductions

The meeting was opened at 1:03 p.m. D. Aikens thanked the group for giving up their Sunday afternoon to work on the draft. D. Aikens asked for a round of introductions.

Adoption of Agenda

W. Royall moved that the draft agenda be approved. J. Hamilton seconded the motion. The motion carried unanimously.

Approval of the July 29, 2001, ASC OP/SC 1, BSR/OEOSC-OP1.002, Optics and Electro-Optics — Surface Imperfection Standard for Optical Elements and Cemented Subassemblies Draft Review minutes

D. Aikens noted that while reviewing the latest draft the committee needed to identify the sections by name since the numbering changed from the 2001-1 document to the 2001-2a document. He asked G. Kohlenberg to make that translation to the draft minutes.

H. Johnson moved that the draft minutes of the July 29, 2001 meeting be approved as amended. W. Royall seconded the motion; the motion carried.

Review surface imperfection standards schedule

D. Aikens concluded that the committee has made no progress since the May meeting. September 11 changed J. Hamilton's company demands so that he was unable to concentrate upon his items listed on the schedule.

D. Aikens said that the group would, therefore, continue reviewing the draft from the version distributed following the last meeting.

Review of BSR/OEOSC OP1.002 language

G. Boultbee moved that the committee accept the wording of the draft standard sections 2.1.1.9, Ripple, through 2.2.2, User. H. Johnson seconded the motion. J. Hamilton asked for time to review that section to confirm that he is satisfied with it. D. Aikens asked those in attendance to review this section. A. Brunfeld stated that definitions should not state how the imperfection was created because the user would then have to know how the defect was created. A general discussion concerning the definitions followed.

H. Pollicove stated that most of the terms listed in this draft are not actually used in the industry, so we should drop them. J. Hamilton suggests that the definition section be set aside until the rest of the standard is completed, then include only those terms that were actually used in the standard. W. Royall said that he uses several of the terms in communications to vendors. A lot of them are used in everyday life.

This motion was defeated by a vote of 8 to 1.

J. Hardis suggested that the terms could be listed in the appendix and be deprecated, meaning they are no longer in use.

D. Aikens recessed the meeting for fifteen minutes so that the committee could review section 3, Requirements, — 3.9, Cement Imperfections.

A. Brunfeld suggested that imperfections should be grouped by volume, surface, and edge. D. Aikens said that this is a surface standard. Some volume imperfections are treated as surface imperfections for classification. If the standard were written as a component imperfection standard, then the volume imperfection section would have to be written as A. Brunfeld suggested. W. Royall asked what increased complexity would result if we were to expand the standard to a component imperfection standard. A. Brunfeld classified fractures as volume imperfections, but D. Aikens said that the industry treats them as surface imperfections.

A. Brunfeld asked if the committee could call section 3.4, "Digs" rather than "Area Imperfections." W. Royall said that there are area imperfections that are not digs. D. Aikens noted that sections 3.4, Area Imperfections, and 3.7, Edge Imperfections, still need work.

There was then a discussion about how to determine when an imperfection is long or round. W. Royall said that Kodak uses a 4:1 aspect ratio; A. Brunfeld uses 3:1. D. Aikens stated that the committee needed to create a definition to distinguish a scratch from a dig.

J. Hardis asked why some dimensions are converted from English units while others are even metric units.

J. Hamilton offered to work with section 3.9.3, True Roof Surfaces on Prisms, to make it clearer. D. Aikens accepted J. Hamilton's offer. A. Brunfeld suggested that we have examples of calculations of combined length of scratches and dig concentrations in the appendix.

L. Endelman suggested that we should also create an appendix with equations, a symbol that accompanies it and a definition.

D. Aikens volunteered to edit the equations to make notations consistent.

D. Aikens recessed the meeting at 3:08 p.m. for 20 minutes so that some editing could be accomplished.

The meeting was called to order at 3:28 p.m.

J. Hamilton showed a diagram of a roof prism to show what was meant by the text in section 3.9.3, True Roof Surfaces on prisms. D. Aikens noted that the last line in the text is unnecessary. However, W. Royall noted that one always views imperfections from the airside. Otherwise, the projected area may have different apparent size.

W. Royall said that this item should not be in section 3.9, Cement Imperfections.

D. Aikens presented his suggested changes to the equations in 3.51, Maximum Combined Length of Maximum Visibility Scratches, and following. He noted that further work on the equations is needed to make clearer the different diameters that are be observed. He listed the equations using his suggested notations. He said that he proposed to use ø as the diameter of either the clear aperture or the element. After some discussion J. Hamilton moved that the committee accept the edited changes to sections 3, Requirements, – 3.9, Cement Imperfections, as the working draft. G. Boultbee seconded the motion. J. Hardis asked if we should not wait until the next version is printed and distributed. It was decided to continue with the motion. The motion carried unanimously.

D. Aikens suggested that the committee select the next meeting date and location. The possible options were Aerosense in Orlando, FL, the week of April 1, CLEO in Long Beach, CA, the week of May 19, Rochester, NY,

sometime in May, or Seattle, WA, the week of July 7. The group selected Rochester for May 12 -13 and Seattle for July 11 and 13.

D. Aikens recessed the meeting until Monday morning at 8:30 p.m.

The meeting was reconvened at 8:30 a.m.

D. Aikens reviewed the surface imperfection standards schedule.

The chair accepted H. Pollicove's offer to create a subcommittee to review section 2, Terms and Definitions. That review will be conducted by e-mail with the final version ready for approval for at the next meeting.

D. Aikens listed the sections that still need examination: 3.3, Area Imperfections, 3.6, Edge Imperfections, 3.9, Methods of Inspection, 3.1.5, Default Specifications, 3.1.6, True Roof Surfaces on Prisms, 3.1.3-4, Clear Aperture, 3.1.4, Calculations of an Equivalent Clear Aperture Diameter or Optical Surface Diameter for Noncircular Surfaces. He set the order of the section review to be 3.15, 3.1.6, 3.1.3-4, 3.6, 3.9, 3.3.

It was decided to add a section 4 to include examples, and an appendix.

The meeting recessed at 9:58 a.m. and reconvened at 10:02 a.m.

H. Pollicove recommended that the title of this standard should be expanded beyond surface imperfections. D. Aikens added the suggestion to the list of items to do.

The committee discussed the practice of stoning edge chips. Military specifications required stoning; however, commercial manufacturers do not stone. W. Royall suggested that the committee first look at chips, then fractures and then address the stoning issue at the end. D. Aikens polled the group and found some do stone and some do not. He concluded that the committee needs to deal with surface imperfections for ground surfaces.

In section 3.6.1, Fractures and Edge Chips, W. Royall expressed concern with the use of absolute numbers rather than relative defaults because small optics require smaller absolute numbers. D. Aikens agreed to take an action item to draft the edge chip wording including a default for cases when the specification is not specifically called out. D. Aikens said that he would confer with W. Royall.

D. Aikens asked J. Hamilton to begin an e-mail review of section 3.9, Methods of Inspection.

J. Hamilton also agreed to edit 3.3, Area Imperfections, and 4, Examples.

Adjournment

J. Hamilton moved that the meeting be adjourned. H. Johnson seconded the motion. The meeting was adjourned at 12:05 p.m.