Lab Grade Flooring Committee Web Meeting
Wednesday, February 19, 2025 - 11:00—12:00 (New York Time)
Chair - Tom Ricciardelli

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MEETING AGENDA

- Approve Minutes from Last Meeting
- Review Work on Draft Lab Grade Flooring Guideline
    * General Edits
    * Standards by Lab Type
- Discuss Next Steps for Review/Approval/Publication

MEETING ADJOURNED

SCIENTIFIC EQUIPMENT & FURNITURE ASSOCIATION

2024 Annual Conference

Hilton Hotel at Torrey Pines, La Jolla, California

Minutes of the Lab Grade Flooring Committee

Thursday, October 31, 2024 – 3:00 PM – (La Jolla Canyon)

Present :

Chairman -	Thomas Ricciardelli	SelecTech,
	Kai Schuler	BIMOS Division of Interstuhl, GmbH
	Jim Connell	Biofit Engineered Products
	Ed Metzger	Biofit Engineered Products
	Lloyd Fisk	Research Facilities Design
Guest -	Alyssa Moore	Lab Design Conference

The meeting was called to order.

The minutes from the last meeting were approved.

Tom then gave a review of the current state of the draft SEFA Lab Flooring Guideline, reporting that all sections are now complete in draft form, including a draft of the tables defining Lab-Grade Requirements by Lab Type.

The draft now includes one table that covers all but the requirement for Spill Containment/Seamless Construction. The main table provides requirements for each characteristic by lab type. Not all lab types will have all requirements. In this way, the requirements are relevant to the operations conducted in the lab. The table for Spill Containment/Seamless Construction has requirements specific to the activity in the lab and the nature of the handling of liquids, which the group felt was more appropriate because the use and handling of liquids is not necessarily tied to the lab type.

It was also discussed that the tables should have some guidance on how to apply the various requirements and that the user may consider assigning a lab type more on the basis of the activities conducted in the lab, rather than the name of the lab type. This guidance will be added to the draft.

With regard to Flooring Types, we agreed to label the category for vinyl as “Tile or Sheet” to incorporate both forms of that type of flooring.

The group then reviewed each flooring characteristic and the proposed limits for a flooring material to be considered SEFA lab grade. Specific discussions related to each characteristic included:

- **Chemical Resistance**
  We agreed that the SEFA chemical resistance test would be the appropriate requirement and that the limit would be “No more than 4 Level-3 conditions. There was some concern if this

requirement would otherwise preclude some materials that are currently used in laboratories. Tom agreed to do some more investigation of the various materials and to look into getting some testing done of various materials. It was also suggested that we include pictures from lab testing of the various degrees of chemical attack addressed in the test method.

- **Abrasion and Scratch Resistance**
  Tom reported that the industry does not currently have consensus on a valid test for this attribute, and as such it would be difficult to require this characteristic and set a limit. There are other characteristics that address the general durability of flooring materials, so the group felt those other attributes would help to ensure that flooring materials are durable enough for lab types that would require durability. This feature is still included in the chapter on characteristics to consider, so the user will still have some guidance on this characteristic. We also agreed to continue to look for a representative test, and perhaps come up with one of our own for a future version of the guideline.

- **Ease of Cleaning**
  We agreed that the NEMA LD3-3.4 test standard would be a good requirement for cleanability. This result of this test method is a score from 0 to 75. We agreed that a material would have to achieve a minimum score of 20 to meet this requirement. NEMA LD3-3.4 includes a list of staining agents to be used for the testing. We discussed expanding on this list as appropriate. Tom agreed to look at ASTM F925, which is another standard test method for chemical resistance to see if there are other staining agents to consider adding.

- **Static Load Limit**
  This characteristic was added to the draft to create an additional measure of durability. This is a very common test for flooring materials and is widely used. To pass this standard test, the flooring material must resist permanent indentation beyond 0.005" with a load of 250 psi. We agreed to set this as the limit to be considered for SEFA lab-grade flooring.

- **Impact Resistance**
  No one test method is applicable to all the materials addressed in this guideline. The draft now includes three test methods to be used, depending on the material type as follows:

  Vinyl, Rubber, Linoleum, VCT - ASTM F1265 is a commonly used standard that can be used to evaluate these types of flooring materials. This is a pass/fail test and a flooring would have to pass this test to be considered lab grade.

  Ceramic/Porcelain/Quarry Tile/Polished Concrete – ASTM C1870 is a commonly used test method that can be used to evaluate these types of flooring materials. This test method reports a value in inch-pounds. Tom agreed to further research results for materials currently in the market to create a proposal for this limit.

  Coatings/Finishes/Paints/Resinous Flooring – ASTM D2794 is a commonly used test method that can be used to evaluate these types of flooring materials. This test

methods reports a value in inch-pounds. Tom agreed to further research results for materials currently n the market to create a proposal for this limit.

- **Slip Resistance**
  ASTM D2047 is a commonly used method for evaluating the static coefficient of friction of a flooring material. This test method can be done on a dry or wet sample. We agreed that flooring materials should have a minimum static coefficient of friction in dry conditions of 0.5. We also agreed that guidance should be added that users should consider higher values in areas that require enhanced slip resistance, such as in wet environments.

- **Dynamic Rolling Load Resistance**
  ASTM F2753 is a commonly used standard that can be used to evaluate various resilient flooring materials. We discussed that hard surface materials, like concrete and ceramic, would naturally meet this requirement and that only resilient materials would need a lower limit to meet. The test method applies a rolling load on a sample for a number of cycles and reports whether there is any damage or change to the sample. 10,000 cycles is commonly used and many materials show no change or damage when subjected to this number of cycles. We agreed to use this as the limit to be considered SEFA lab grade.

- **Bacterial Resistance**
  ASTM G21 is a commonly used method for evaluating flooring materials for their resistance to growth of fungi. It provides a rating of:

    - 0 = Specimen remained free of fungal growth
    - 1 = Traces of growth on the specimen (less than 10%)
    - 2 = Light fungal growth on the specimen (10% to 30%)
    - 3 = Medium fungal growth on the specimen (30% to 60%)
    - 4 = Heavy fungal growth on the specimen (60% to complete coverage)

  We agreed to include a minimum rating of 2 to be considered SEFA lab grade for those applications that would require this characteristic.

- **Spill Containment**
  A table is now included in the draft that relates various levels of spill containment/seamless construction to the activities that are conducted. We did not have time to review this table during the meeting so comments will be solicited offline for discussion at our next meeting.

- **ESD/Static Control**
  This characteristic is well-defined, with specific limits for labs that would require it.

- **Offgassing and Particle Emissions**
  We agreed to include that SEFA lab grade flooring materials be required to meet the CA Protocol 01350 for VOC emissions. This is a characteristic that contributes to LEED scores and is widely used in the industry. We agreed that particle emissions would not be included in this version of

the guidance document and would be considered for addition in a future version. The seating committee is evaluating a test method that may generally prove useful for this purpose. This requirement is limited to cleanrooms and so should be consistent with the ISO cleanroom standards for particulate emissions.

- **Hardness -** We had a brief discussion around ergonomics. There is currently no agreed upon test method to assess ergonomics in the flooring industry. Some suppliers will report the hardness/softness of their products. For flooring materials, there are standard, commonly used test methods for hardness. We agreed to include this characteristic with some discussion that the user should consider durometer when choosing a flooring material for their lab. Durometer will not be included in the list of requirements for SEFA lab grade.

We also had a brief discussion around the damage that liquid nitrogen can do to flooring materials. We agreed to add some guidance regarding this issue.

Tom agreed to update the current draft based on these discussions and circulate to the group for comments. Tom also agreed to set a virtual meeting before the end of the year to discuss any comments and hopefully have a draft that addresses any comments to the advisory committee before their January meeting.

The meeting was adjourned at 3:00 pm (PDT).