

MINUTES
FLOORS WORKING GROUP
Wednesday, October 31, 2001
Orlando/Omni Rosen
Orlando, Florida

Chair: Tim Hansen, Oasis Stage Werks, principal; producer
Recording Secretary William L. Maiman, ESTA

1 Opening Remarks

Tim Hansen noted that we had a quorum present, welcomed everyone to the meeting and we started at 8:15.

2 Attendance and Membership

2.1 Introduction of those present

A Gray sign-in sheet was passed. While it was passed, those present introduced themselves.

2.2 Attending:

Members: Tim Hansen; Oasis Stage Werks; Principal; Producer
Tim Cox; PLASA; Principal; General Interest
Nevin Kleege; Kleege Industries; Observer; General Interest
Steven Wiese; Wenger Corp.; Principal; Producer
Keith Sklar; Actors' Equity Association; Observer; General Interest
Michael Sean Graves; Rosco Laboratories; Principal; Producer
Ken Greenwood; Actors' Equity Association; Observer; General Interest
Bob Dagger; American Harlequin Corp.; Principal; Producer

Visitors: Wally Blount, Columbus McKinnon

3 Requirements for membership

Tim Hansen reviewed the requirements for membership. Every principal member of the working group is required to attend meetings. Any principal member and voting alternate that both miss three consecutive meetings will have their membership status changed to observer. This action will be taken as the last item of business at each meeting and recorded in the minutes of that meeting.

4 Approval of minutes from the previous meeting

Bob Dagger moved that the minutes from the previous meeting be accepted. The motion was seconded by Steve Wiese. The motion was accepted unanimously on a voice vote.

5 ESTA Declarations

Tim Hansen read aloud the anti-trust statement:

5.1 Anti-Trust statement:

"The ESTA Board of Directors, the Technical Standards Committee and the leadership of this Working Group will reject or nullify any actions that unlawfully restrain trade. Anyone who feels that such an action is being or has been taken is requested to bring that matter to the attention of the chair immediately. Anyone who feels that actions in restraint of trade have been taken

and not properly annulled is requested to notify the TSC Chair(s), or the ESTA President immediately."

"ESTA legal counsel has informed us that violations of the antitrust laws can have serious consequences. Individuals engaged in certain unlawful conduct can be found criminally liable. An individual convicted of a criminal violation of the Sherman Act may be fined as much as \$100,000 and imprisoned for up to three years. An easy to read pamphlet describing restraint of trade issues is available from the Technical Standards Manager."

No anti-trust issues were brought to the attention of the chair.

5.2 Call for Patents:

Tim Hansen read aloud the call for patents:

"ESTA intends not to publish any standard that contains protected intellectual property, unless that property can be licensed by anyone for a reasonable fee. ESTA uses a process of open patent and copyright disclosures to implement its intent. ESTA does not conduct patent or copyright searches and does not warrant that its programs contain no protected intellectual property."

"In keeping with the open disclosures policy, I ask if anyone present wishes to notify the working group of the existence of a patent that might protect material in a standard being developed by the working group. You need not be the holder of the patent or copyright to notify the working group of its existence."

No patent or copyright issues were brought to the attention of the chair.

6 Approval of Agenda

Michael Sean Graves moved that the agenda be approved. Tim Cox seconded the motion. It was accepted unanimously on a voice vote.

The full list of Floors Working Group voters during the period of the meeting was thus:

Name	Company	Representing	Voting Status	Int. Cat.
Tim Hansen	Oasis Stage Werks	Oasis Stage Werks	P	P
Tim Cox	PLASA	PLASA	P	G
Nevin Kleege	Kleege Industries	Kleege Industries	O	G
Steven Wiese	Wenger Corp.	Wenger Corp.	P	P
Keith Sklar	Actors' Equity Association	Actors' Equity Association	O	G
Michael Sean Graves	Rosco Laboratories	Rosco Laboratories	P	P
Ken Greenwood	Actors' Equity Association	Actors' Equity Association	O	G
Bob Dagger	American Harlequin Corp.	Harlequin Corporation	P	P

7 Old Business

7.1 News from Rosco Italy and Rosco Russia –

Michael Sean Graves reported that the Europeans are using company specific terms, not manufacturer neutral descriptions and meanings. He noted that everyone recognizes the existence of the DIN standard but that few use it, probably due to the expense of implementing the standard.

Also, Michael reports that Rosco is working with other EU companies. Unfortunately, nothing is written, but he is still looking for information.

Regarding the issue of RAKE, the rake stages are more prevalent in Italy. Michael also commented that companies are looking at slippage; though appear to mainly concerned about floor resiliency. Also, the load rating is important. Finally, he noted, one floor can't do it all –but at least one can rate it.

7.2 ANSI Standard on Floors – Define the scope, determine the process and assign tasks

The discussion continued on the usage and meaning of the DIN standard. However Bob Dagger noted that an official English translation does not exist. Tim Hansen and Tim Cox noted that the values are normalized for athletes and sports floors. All agreed that other ASTM standards are relevant, though none are as comprehensive as the DIN standard, and that thirty other standards are referenced. Ken Greenwood noted that the values on absorption are important, especially the categorizing of floors by the different types of absorption. Tim Hansen suggested that further discussion on this topic be held till after he gives his report (section 7.4)

7.3 Report on the International Association of Dance, Medicine, and Science. (IADMS) (Website URL is <www.iadms.org>) and relevancy to floors Working Group – Robert Dagger reported that Rachel Rist is the chair, meetings alternate between Europe and New York City, and the group is comprised of mostly people concerned about exercise and physical fitness issues.

7.4 Preliminary results of floor testing –

Tim Hansen traveled to the Robbins Sports testing facility in Cincinnati –observing the testing of various floors, over three days, using the methods outlined in the DIN standard. Amongst the special conditions being tested were, shock absorption, point and area deflection and rolling load –i.e. caster wheel –1K lbs. The regimen of testing did not cover weights on a specific section of floor, or long-term testing – Also, little control of ambient air during the testing. Samples from many manufacturers were tested. Tim notes that testing with the Din standard was probably appropriate –though no residual indentation testing was performed. Tim concluded that the DIN standard could be used to generate data, but there is no information as to what numbers are acceptable.

Tim Hansen suggested that we expand the discussion and review the importance and relevancy of the DIN standard to the work of the Floors Working Group.

Tim Cox offered to review the cost of an official English translation if arranged/procured through PLASA. The English translation currently being used by the Working Group, while informative, is not adequate in that details of reference values are missing.

Tim Hansen will contact Dr. Paul Elliott, the research engineer at Robbins Sports Surfaces, and holder of a PhD. in Bio-mechanical Engineering from Purdue University, for details on suspension testing.

Ken Greenwood asked Keith Sklar to research other appropriate DIN standards.

Tim Hansen will examine the values used in the Cincinnati testing to develop a range of values for dance, i.e. maybe a range – and then preferences and then retrospectively view the values– for safety injuries.

Ken Greenwood wants to continue to look at resiliency and rake as interdependent issues and will look for more information.

Bob Dagger explained that drag slip testing is very important as far as Dance is concerned and that he is working on developing a portable testing machine. He will report on it at the next meeting.

The discussion returned to the testing at Cincinnati and Tim Hansen noted that nothing exists to correlate a particular sport with one value, testing will determine what is needed. Therefore, the best way is to establish a value for the desired floor and let the company/supplier design the dance floor. Also, the Cincinnati testing consisted of testing a sample at multiple points up to 5 or 6 points, per sample type. Of course, longevity testing, deflection and dancer preferences were beyond the testing conducted. So, still need a matrix of types of activities and values.

Tim Cox is looking at terminology, i.e. for Resilience, a better term may be shock absorption, (i.e. must be within a range), and slip resistance, rake, load also need better definitions.

Steve Wiese reminded everyone that acoustical performance of a surface is important for some clients.

Tim Hansen reminded everyone that eventually a Task Group will decide the criteria that are needed and what should be tested. and that data will need to be collected.

Bob Dagger offered the services of Harelquin to work on testing, etc.

Steve Wiese offered the services of Wenger to work on testing, etc.

Tim Cox offered to carefully examine the mission statement for appropriate terminology.

Wally Blount recommended that the working group look to create a document based on the recognized parts of a standard and within this framework answer the who, what, why, when, where. Also, the group needs to beware of verbal communications, and needs to write statements and reach consensus.

Recess

Tim Hansen called for a five-minute recess at 10:15AM. After determining that a quorum was present, he reconvened the meeting at 10:20AM.

Wally, Blount led the Working Group in a brainstorming session dedicated to exploring the components of a standard on floors.

Tim Cox volunteered to write the scope, possibly a combination of the mission statement and who the standard will benefit.

Nevin Kleege prepared the following information based on the brainstorming session. PLEASE note that some WG members volunteered to prepare written information.

- I Scope (Tim Cox)

- II References
 DIN
 UBC
 BOCA and others??

- III Definitions

- IV General Requirements
 Rake
 Bounce
 Slip

- V Specific Requirements
 Test Methods
 Criteria for Testing

Construction related information:

Lbs/Sq.ft
Referred to in scope (Tim Cox)

Standards Written for:

-Producers
-Owners
-Performers
-Manufacturers
-Specifier

- *Scope (Tim Cox)

- *Index (TBD)

- *Reference (TBD – each section should prepare specific list)

- *Glossary (TBD)

- *Rake (Keith Sklar)
1. Criteria
2. Method

*Bounce (Michael Sean Graves)

1. Criteria
2. Method
3. Endurance

*Slip (Bob Dagger)

1. Acceptable Criteria
2. Recommended Testing Method
3. Endurance

Bayou (Parking Lot) (hold for future)

1. Implementation (date)
2. Monitoring – Ongoing and by date
3. Recommended Practice

All agreed that each group is responsible for glossary, reference, and index.

Other notes from the session were arranged as follows:

The items are in a table – however that is primarily to reflect their position on the easel – the Working Group will need to determine if items are linked and if so –exactly how.

Issues for Working Groups to Consider

	Structure	Slip	Rake	Endurance	Test Methods & Results	Test method Scale			Performers?	Theatre Owners	Floor Mfrs.	Performers
	Construction Requirements	Slip Resistance	Permitted Rake	Definition	Longevity	Test Equipment Design	Test Process Validate Data on Facilities		Dancers	User-Facility Owner	Manufacturers	
	Strength		Rake	Resilience		Testing	Test Report Site visits Data Compilation	Equipment (Floor) Specifiers	Performers	Consumer	Floor Mfrs	
	Safety		Slip Resistance	Resilience Shock Absorbency		Testing Methods	Measurement or Characteristics		Actors' Equity		Manufacturers	
	Implementation On / Of Standards		Conclusion Recommendation			Testing Procedure	Identification of Testing Ranges					
	Safety Standards					Defined Values						
						Monitoring Standards						

Wally Blount said that someone will need to prepare a listing of supporting documents; index, glossary, reference documents, and the standard will need to include a mission statement.

Tim Hansen reminded everyone that at the next meeting we will need to decide if the Working Group is ready to write a standard and take a formal vote and notify the Technical Standards Committee, that a standard is officially in development, etc. However, we will need an agreed upon scope.

7.5 Raked Stages

Ken Greenwood reported that a new study to be conducted by Actors' Equity is due to begin soon. Under the supervision of the medical community, a study will be conducted looking at Broadway stages and floors. The doctors involved with the study will develop measurement values, though the exact testing methods are not certain. Actors' Equity is testing the safety values and will analyze actors, injuries and theaters; in particular how severe are the reported injuries. Ken noted that the study period is two years, prospectively and retrospectively. It is expected that the Study will note which floors are "good" and which floors are more "troublesome."

7.6 Discussion on ANSI process

Bill Maiman explained what is ANSI, how the Technical Standards Program Working Groups relate to it and how a standard is written and approved. Usually, specialized discussion and an eventual consensus is obtained by a smaller number of members working on the Task Group level. A Task Group always works under the direction of a recognized Working Group, and frequently the actual writing of portions of the standard is done by members of the Task Group. Usually, 3 - 5 people comprise a Task Group and one person volunteers to write the draft document. (Someone has to have the job -- writing by committee often does not work.) The draft document is circulated between all Task Group members, and then brought to the Working Group.

At some point, the finished document is acceptable and the Working Group chair decides to submit the document to a vote (according to the P&P) and to a formal public review process. A key point is balancing PERFECTION vs. CAN WE LIVE WITH THE STANDARD? It should be noted that a standard can be changed later and/or reaffirmed on an annual basis. However, the informal circulation can continue till absolute perfection is achieved however, obtaining public comment and getting a standard finished is very important. Also, members of a Working Group can add comments during the Public Review cycle. The timing of the submittal of a written standard to Public Review is a judgment call, usually decided by the Working Group Chair and then voted by all members of the Working Group.

So, a standard is voluntary, developed with industry participation, reviewed by interested parties in the industry and beyond, and following a recognized development process. Though standard must be based on fact, a rationale, and not be unfair or capricious, the consensus body is to decide.

The ANSI process regulates many steps, i.e. application of members, meeting operation, and the public review process. Only some groups are ANSI recognized (ESTA is), though many groups claim to regulate or approve something.

7.7 Discussion of developing additional studies (PT related)

There is the possibility of working with Physical Therapists, but no one was aware of a pending proposal.

7.8 Expansion of Working Group and adding users

All potential applicants have been contacted and sent information about the Floors Working Group and the meetings. It was noted that travel to attend meetings is a factor in limiting membership. Tim Hansen reminded everyone to continue to invite potential members to attend Floors Working group meetings.

8 New Business

There was no new business

9 Other Business

It was noted that two articles regarding floors were distributed to the Working Group with the agenda for the meeting. The articles distributed were: Steven Di Pilla, "Walkway Surface Safety & Traction in the Workplace – The Rest of the Equation," American Society of Safety Engineers, July, 2001, pp. 25 – 27 and: Steven Di Pilla, "Slips & Falls on the Manufacturing Floor," www.ohsonline.com, January 2001, pp. 43-45. Tim Hansen thanked Jerry Gorrell for locating the articles and encouraged others to forward relevant articles to the Working Group.

10 Schedule for Future Meetings

Bill Maiman announced that the next meeting is scheduled for Friday, February 15, from 13:00 to 17:00 at the Hyatt Hotel in New Orleans, during the USITT Stage Expo. All members were reminded to make travel/hotel arrangements early. Due to USITT being scheduled for mid February, there will not be any Technical Standards meetings scheduled in Dallas during January. Instead, the Technical Standards Program will hold meetings in Dallas over the weekends of May 3 – 5 and July 26 – 28. LDI 2002 is scheduled for November 25 – 28 in Las Vegas.

11 Adjournment

Steve Wiese moved that the meeting adjourn. Bob Dagger seconded the motion. The motion was accepted unanimously by a show of hands. Tim Hansen declared the meeting adjourned at 11:50AM.

Floors Working Group Membership List at the End of the Meeting

Name	Company	Representing	Voting Status	Interest Category
Keith Sklar	Actors' Equity Association	Actors' Equity Association	O	G
Ken Greenwood	Actors' Equity Association	Actors' Equity Association	O	G
Bob Dagger	American Harlequin Corp.	American Harlequin Corp.	P	P
Fred Allen	Fred Allen & Associates	Fred Allen & Associates	O	U
Edward Paget	Jones & Phillips Associates, Inc.	Jones & Phillips Associates, Inc.	O	G
Nevin Kleege	Kleege Industries	Kleege Industries	O	G
Seth Popper	League of American Theatres and Producers, Inc.	League of American Theatres and Producers, Inc.	O	G
Gary Justesen	Oasis Stage Werks	Oasis Stage Werks	A	P
Tim Hansen	Oasis Stage Werks	Oasis Stage Werks	P	P
Tim Cox	PLASA	PLASA	P	G
Michael Sean Graves	Rosco Laboratories	Rosco Laboratories	P	P
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	P	U
Mark Elliott	Walt Disney Co.	Walt Disney Company	O	U
Steven Wiese	Wenger Corp.	Wenger Corp.	P	P

Voting Status

- O Observer, non-voting
- P Principal voting on behalf of an organization or company
- A Alternate voting member representing an organization or company
- I Individual voting member representing no entity other than him or herself

Interest Category

- G General Interest
- U User of floors or flooring products
- P Manufacturer of floors or flooring products