

MEETING LOG
Directorate for Engineering Sciences

PRODUCT: Adult Bath Tubs

SUBJECT: ASTM F15.03 Safety Standards for Bathtub and Shower Structures

LOCATION: Video Teleconference via Zoom

DATE: Wednesday April 21, 2021, 2-2:30pm ET

ENTRY DATE: Monday May 3, 2021

LOG ENTRY SOURCE: Susan M. Bowley, Ph.D. Mechanical and Biomedical Engineer

COMMISSION ATTENDEES: Susan M. Bowley, Ph.D.

NON-COMMISSION ATTENDEES: John Leffler (TG Lead, FORCON International), Peter Townsend (Rimkus), C.J. Lagan (American Standard), Grant Davidson (Tile Council of North America, TCNA), Ben Elkin (MEA Forensic)

MEETING SUMMARY:

Abbreviated meeting due to conflicting meeting scheduled for CPSC staff. This ongoing meeting was held to revisit and discuss an overview of the withdrawn standard ASTM F462 Standard Consumer Safety Specification for Slip-Resistant Bathing Facilities and obstacles to ASTM providing a new standard to address slip/fall hazards in bath tubs.

The ASTM F462 standard was not based on human slip research and focused on use of only one slip resistance tester to determine coefficient of friction. The Task Group (TG) would like to focus development of a new standard that uses reference surfaces and human subject testing. To date TG members have not created any reference surfaces for testing. CPSC staff would like a new standard to address vulnerable populations, such as the elderly.

Discussion of CPSC request for work on this project announced on GSA May 2020 and limited release to only four (4) firms, including Rimkus. Plans for a future release from CPSC this year for a new request for work to include a larger audience and human testing on bath surface slip research.

Tasks for next steps from this meeting:

- Peter Townsend will inquire of the Rimkus person who received last year's RFQ from CPSC.

- CJ Lagan will see if he can obtain cosmetic production rejects of different designs of the vacuum-formed sheet plastic bathing surface floors one of his company's divisions makes, so that John Leffler can expand his research with Pendulum testing beyond porcelain enamel surfaces.
- Ben Elkin will speak to co-worker Gunter Siegmund about his past study, as to whether more-detailed data is available on uCOF "impact" measurements when the bather steps over the tub wall into the tub. Ben has concerns about the relevance of Pendulum testing's friction mechanisms to barefoot human frictional requirements; we discussed in the meeting that that may not be something we can do much about.
- John Leffler believes the Pendulum device is the most logical candidate for bathing surface friction measurement and different tribometers may not be adoptable for other reasons to be discussed.
- Grant Davidson will check into whether there are ceramic tiles that are available in both plain flat tiles and mosaic tiles, and if so, whether square-cut-edge mosaics can be consistently milled to have a radius similar to most vitrified ceramic mosaics. A small percentage of (typically) showers have mosaic tile floors, and there is no data on how much "friction" the mosaic gaps provide to barefoot people. Data on humans with barefoot contact with mosaic patterns is needed.

Ongoing tasks for future meetings:

- Review of current research concerning slip/fall in bath tubs
- Review the CPSC staff bid process used previously (May 2020) to allow for notification to a larger audience (no bids were received) and provide any publicly available information to the TG
- Draft a human research study protocol
- Determine how NIST measures coefficient of friction
- Leverage other ASTM standards activity related to common slip/fall issues
- Plan for CPSC staff to place a new bid to gather human research data on slip/fall in bath tubs
- Plan for CPSC staff to provide incident data on an ongoing basis related to elderly slip/fall incidents and bath tubs
- TG members to evaluate internal hurdles to producing reference surfaces
- Plan for CPSC staff to evaluate having Commission provide a letter to highlight the importance of a new standard to address this issue, and sponsoring human subject data to support a new standard.

Future meetings are planned to occur on a monthly basis to provide additional discussion, and updates and feedback on progress for tasks noted above.