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Comment from Jake Pauls

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Comment

While I am not in total agreement with the NFSI comment, I am hoping that CPSC examines another option —not the adoption of NFSI's approach—but the incorporation, in the proposed tests of another option that is readily available to all users of bathtubs and showers to effectively mitigate slipping on wet, underfoot bathing surfaces.

(Beyond injury prevention, these interventions offer other benefits that can be immediately achieved in any bathing situation using only resources that are in every existing bathroom with a tub or shower and which involve a wet environment. These techniques have been employed extensively in many hotel bathrooms I have used as a frequent worldwide, business traveler for years (before my recent retirement) using only the terry cloth towels (and bathing water) provided by hotels as normal elements of their service to guests. Simply take the oldest (most use-worn) towel at hand, lay it in the bottom of the bathtub or the shower pan where it can be stepped—wet—on during entry, bathing/showering, and exiting.

If the bather's leg is at an angle (to vertical) less than about 27 degrees (with a tangent of about 0.5) the foot on the wet or sufficiently damp terry cloth towel, the bather's foot is highly unlikely to slip on the (near) horizontal wet bathtub or shower pan surface. This conclusion is based on the commenter's use of many bathing facilities around the world. (These include the higher wall, more rounded-bottom bathtubs found in the UK.) Of the many surfaces experienced over a period of years, only two were found to provide comparable underfoot slip resistance, when wet, without the underfoot terry cloth towel.

I have presented this experience at several fall prevention conferences over recent years, including one conference with a skilled user of a tribometer was able to provide slip resistance data for towels of various composition. In a word, the cheaper the towel, the better its slip resistance is underfoot when wet. Here are the citations for a publication and presentations (including several videos that are freely available at my Website, https://vimeo.com/channels/866600) where this work has been shared with a wide range of investigators of bathing safety and fall prevention around the world.

Publications from relevant conferences and smaller dedicated discussions by experts, around the world, are available: Here is the citation to the most detailed of all the publications I have prepared on the topic, coauthored with Dr. Daniel Johnson who contributed the very insightful section of the paper on tribology testing of surfaces with and without various damp towels serving as a interlayer: Pauls, J. and Johnson, D.A. (2018). Applying Ergonomics to Bathing Safety: Including adoption of unorthodox practices for slip-resistant underfoot surfaces of bathtubs plus showers and provision of effective points of control. Proceedings of the 20th Congress of the International Ergonomics Association (IEA2018), Vol II, Springer, pp. 486-500. A full copy of the paper will be included with this comment if the submission system permits this.

As a member of the ASTM F15 committee that is most directly concerned with this topic, I have frequently urged the applicant for this work to seriously address what I have learned about bathing safety in terms of underfoot conditions as well as upper body points of control such as grab bars and stanchions (which NFPA 101 and NFPA 5000 requirements, both being ANSI standards, address). The person most responsible for the subject research proposal, for funding by CPSC, has not been very fair with his negativity toward the work that Dr. Johnson and I have done to improve bathing safety.

I would be happy to meet with CPSC staff to discuss this topic and how it has been addressed thus far by ASTM. I maintain offices, even in my retirement, in both Toronto, ON, and Silver Spring, MD. This comment is submitted from the Canadian apartment-based office where the 40-year old (enamel steel) bathtub serves me well in my 82rd year thanks to my (re)use, underfoot, of one of two very old terry cloth, intermediate size towels for all my daily, tub-based showers.

Attachments 2

Pauls-Johnson paper_317 for IEA-2021

Download (https://downloads.regulations.gov/CPSC-2024-0045-0008/attachment_1.pdf)

Pauls Johnson - Bathing Safety - IEA2018 - FINAL

Download (https://downloads.regulations.gov/CPSC-2024-0045-0008/attachment_2.pdf)

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