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MEETING LOG UPHOLSTERED FURNITURE

Meeting between: CPSC staff and representatives of the American Furniture Manufacturers Association and American Textile Manufacturers Institute

Date of Meeting: September 9, 1998

Site of Meeting: CPSC Engineering Laboratory, Gaithersburg, MD

Meeting Topic: Mechanical testing to evaluate durability of FR backcoatings on upholstery fabrics.

Log Entry By: Linda Fansler, LSE

Participants: AFMA: Joseph Ziolkowski
Hugh Tally
ATMI: Patty Adair

CPSC: Harleigh Ewell, OGC
Robert Garrett, LSE
Rikki Khanna, ES
Linda Fansler, LSE
Dale Ray, Project Manager, EC
George Sushinsky, LSE

Other: Kay Villa
Ron Dombrowski, Albright and Wilson
Rupert Welch, Furniture Today
Sam Cristy, Product Safety Letter
Phil Wakelyn, National Cotton Council

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Summary:

CPSC staff met with representatives of the AFMA and ATMI and others to discuss mechanical testing of cushion mockups as a method to evaluate the durability of flame retardant (FR) backcoatings on upholstery fabrics. Dale Ray, the Project Manager for the Upholstered Furniture Project, opened the meeting with a short explanation of the staff's interest in this subject. This testing is related both to the long-term effectiveness of FR treatments and to concerns about the potential toxicity of FR chemicals used on upholstery fabrics. Both of these issues were raised at the May 5-6, 1998, CPSC public hearing on FR chemicals.



George Sushinsky discussed the methodology in the development of a mechanical approach to evaluate the durability of FR backcoatings found on upholstery fabrics. He reviewed the ASTM standards search he conducted and his evaluation of methods for appropriateness. In addition Mr. Sushinsky discussed his telephone conversation with Dr. D. Hawkrige of Mobel Test Quality Services in the UK concerning applicable British standards addressing evaluating the durability of fabric backcoatings. The standards search and discussions led Mr. Sushinsky to propose a test based on a combination of ideas from ASTM D 3574 -95 Standard Test Methods For Flexible Cellular Materials - Slab, Bonded, and Molded Urethane Foams - Test 1₃ - Dynamic Fatigue Test by Constant Force Pounding (Sections 95 to 99) and BS 4875-85 Strength and Stability of Furniture Part 1 - Methods for Determination of the Strength of Chairs and Stools - Section 7.4 - Test 4: seat and back fatigue tests.

Mr. Sushinsky discussed the cushion mockup and described the test setup which consists of an impactor cycling for 25,000 cycles representing light residential use and 100,000 cycles representing heavy residential use.

Mr. Ziolkowski and Mr. Tally expressed concern that this test may not be representative of backcoating degradation. They stated that backcoatings in general are not durable on fabrics and that the addition of FR chemicals will further reduce the durability of the backcoating.

Mr. Ray stated that CPSC staff is interested in other ideas for test methods that the furniture and textile industries now use or feel are more appropriate.

Ms. Adair stated that she would ask if any members of ATMI has such information. Mr. Ziolkowski and Mr. Tally stated that abrasion, ozone, body oils, sunshine are some of the other factors that should be considered. Mr. Tally suggested two university professors who may have some thoughts on this issue.

Mr. Dombrowski stated that durability tests such as those being conducted by the CPSC laboratory were basically tests of latex or other fabric coatings, but not of the FR chemicals. He noted that a wide variety of latex backcoating materials is currently used, and that some higher quality coatings would likely be more durable than others.

The meeting attendees were then invited to attend a demonstration of the test impactor fatiguing the test specimen (cushion mockup). Ms. Villa suggested that a number of different fabrics and fabrics with different types of backcoatings, be used in this study. Mr. Tally stated that a square edged impactor may be more realistic of the shear stress developed by a sitting motion.

Mr. Ray reaffirmed that CPSC staff is interested in other ideas for test methods that may be appropriate or applicable to evaluate the durability of FR backcoatings on upholstery fabrics.