

# LOG OF MEETING

DIRECTORATE FOR ENGINEERING SCIENCES

OFFICE OF THE SECRETARY  
SECTION

2000 DEC 14 P 2: 12

**SUBJECT:** NIST proposal to develop a mattress flammability screening test

**DATE OF MEETING:** December 7, 2000

**DATE OF LOG ENTRY:** December 7, 2000

**SOURCE OF LOG ENTRY:** Margaret Neily, ESME *M*

CPSC A6 (b)(1) Cleared  
No Mfrs/Providers or  
Products Identified  
Exempted by  
Firms Notified,  
Comments Processed

**LOCATION:** Sleep Products Safety Council (SPSC) offices, 501 Wythe St.,  
Alexandria, VA

**CPSC ATTENDEES:** Margaret Neily and Allyson Tenney, ESME

**NON-CPSC ATTENDEES:** See attached list of attendees.

**SUMMARY OF MEETING:** This was a meeting of the Task Group on Screening Tests/Performance Measures of Mattresses—Open Flame Ignition. Tom Ohlemiller of the National Institute of Standards and Technology (NIST) briefed the group on the research proposal submitted to the U.S. Consumer Product Safety Commission (CPSC). The proposal outlines the development of a set of small scale tests that could serve as a surrogate for full-scale tests of mattresses exposed to ignited bedding or equivalent gas burners. Three tests of the integrity of fire barrier technologies and one test of mattress constructions utilizing modified interior components are proposed. Test 1 would evaluate flame penetration to the interior of the mattress through the components on top of the mattress. Test 2 would evaluate penetration through materials used in conjunction with tape edges and side panel seams. Test 3 would evaluate the integrity of the seams following exposure to the ignition source, especially those seams under tension. If the mattress design does not perform adequately in Tests 1-3, Test 4 would measure the mass loss rate of the complete system (mattress and foundation materials) under severe test conditions intentionally compromising the cover. The mass loss rate would be correlated with peak rate of heat release in full-scale tests. NIST will record time as a critical factor in these tests since it may tie into the hazard analysis to be done later in Phase 2 of the SPSC/NIST research and become part of the eventual acceptance criteria.

A possible standard for open flame ignition of mattresses could incorporate a full-scale test with burning bedding or standard burner. These small-scale tests, however, would be more severe and used as screening tests to identify constructions requiring performance confirmation with the more expensive full-scale tests. Such a practical and economical tool would be needed for enforcement and for manufacturers designing their mattress products or interchanging components. CPSC will provide funds and testing support for this effort; SPSC will coordinate acquisition of test materials duplicating those being used in Phase 1 and 2 of the SPSC/NIST research.



Phase 2 of the research being sponsored by SPSC has been expanded to include tests of pillows, comforters, and mattress pads constructed with a variety of flame resistant filling and cover materials. These tests will be similar to earlier ones of Phase 1 that characterized various bedding combinations. Mini mattress tests of Phase 2 will begin at Omega Point Laboratories next week.

