

# Technical Bulletin 117- Residential Upholstered Furniture Standard

## Fact Sheet

### **EXISTING LAW:**

In 1972, AB 2165 (Burton) required the Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation (Bureau) to establish upholstered furniture flammability standards. AB 2165 enacted Business and Professions Code Section 19161.

### **BRIEF BACKGROUND:**

The Bureau develops flammability standards in the form of Technical Bulletins which are adopted through regulation. There are also a number of other federal flammability standards developed by the United States Consumer Product Safety Commission (CPSC) which are currently in effect nationwide. While CPSC has been studying a national residential upholstered furniture standard for several years, California remains the only state with a residential upholstered furniture flammability standard.

### **CURRENT STANDARD:**

In October 1975, regulations were promulgated and resulted in the development of a residential upholstered furniture flammability standard entitled Technical Bulletin 117 (TB 117). This mandatory performance standard requires that the concealed filling materials of upholstered furniture undergo individual component testing to ensure that they pass open flame and cigarette smolder tests.

Upholstery cover fabric must withstand a one-second small flame impingement test. Historically, 99% of these fabrics pass this small open flame test. The current test method of fabric is ineffective in determining ignition.

Interior filling materials must withstand exposure to open flame and smolder testing; a 12 second small open flame test is required of the foam. Manufacturers meet the open flame requirement predominately by using foam treated with flame retardant chemicals. Studies show that flame retardant tested foam does not provide a meaningful difference in egress time from non-flame retardant foam and increases smoldering propensity.

### **NEW STANDARD:**

The new smolder standard (Technical Bulletin 117-2013) addresses upholstery cover fabric and tests the interactions of components of upholstery furniture (e.g., fabric, batting and interior foam). This standard provides greater fire safety protection against smoldering sources (e.g., cigarettes, radiant heaters, extension cords, other electrical sources), which is the leading ignition source of fires and losses today.

The new flammability standard is based, in part, on the American Society for Testing and Materials International (ASTM) - ASTM E-1353-08a standard. ASTM is a non-profit organization that develops voluntary consensus standards. Their Standard was developed and is modified with broad stakeholder participation and the test methods are reproducible, reliable, and well known and practiced by industry and independent laboratories.

The supporting data for the new smolder standard is as follows:

- A CPSC study found that upholstery cover fabrics play a more important role in fire behavior performance than filling materials.<sup>1</sup>
- A CPSC study found there is no significant difference between the flame retardant foams formulated to pass TB 117 and untreated foams.<sup>2</sup>

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- A CPSC study found that flame retardant treated foam with a relatively low concentration of flame retardant chemicals actually increases the damage to cover fabrics from a smoldering cigarette relative to untreated foam.<sup>3</sup>
- Smoking materials remain the leading cause and the greatest risk factor of upholstered furniture fires and losses today.<sup>4</sup>
- Approximately 92% of residential fire fatalities occur as a result of smoke inhalation and or a combination of smoke inhalation and thermal burns.<sup>5</sup>
- A Department of Homeland Security Study concluded smoke inhalation alone accounts for 40 percent of residential fire fatalities and is the primary source of all residential fire fatalities.<sup>5</sup>
- A Department of Homeland Security Study concluded the fatality rate was more than seven times greater in smoking-related residential fires than non-smoking-related residential fire; the injury rate is triple that of non-smoking related fires.<sup>6</sup>
- Bureau research concluded that when the cover fabrics were changed to less smolder prone fabrics, smoldering resistance of the mock-up assembly significantly improved.<sup>7</sup>
- The California Department of Public Health reports that California mortality averages 234,000 per year.

*Annual Counts of Mortality in California							
Year	All Causes	Cardiovascular	Cancer	Accidents	Auto Accidents	Homicides	Firearms
2005	236,220	67,719	55,817	10,926	4,323	2,528	1,481
2006	236,452	67,836	55,355	11,236	4,379	2,596	1,385
2007	233,467	65,409	56,254	11,426	4,213	2,356	1,468
2008	234,072	64,156	55,906	10,667	3,577	2,269	1,522
2009	231,764	62,355	57,033	10,608	3,200	2,104	1,543
2010	233,143	61,756	57,481	10,108	2,824	1,908	1,503
* Data from the California Department of Public Health, Health Information and Research Section, Death Statistical Master Files (2005-2010)							
** Data based on the U.S. Department of Homeland Security, U.S. Fire Administration, National Fire Data Center, Topical Fire Report Series, Smoking Related Fires in Residential Buildings (2008-2010)							

\*\*In California upholstered furniture fires cause an estimated 50 deaths annually, 44 are smoking-related deaths.

### CONCLUSION:

The current standard provides a lesser level of fire protection to consumers as it ineffectively tests the cover fabric which is the first item to ignite and does not test the interactions of components of upholstered furniture. Technical Bulletin 117-2013 tests the smolder resistance of cover fabrics, the interaction of upholstery components, and requires use of barrier materials when using smolder prone fabrics. These test methods are more indicative of an actual upholstered furniture fire. Additionally, the requirement to use barrier materials with smolder prone cover fabrics will further slowdown the time of ignition. Testing the smolder resistance of products protects consumers from the leading ignition sources of fires today. This will provide consumers with a greater level of fire protection by reducing upholstered furniture's smolder ignition potential.

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## REFERENCED DOCUMENTS:

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U. S. Consumer Product Safety Commission, “Upholstered Furniture Full Scale Chair Tests – Open Flame Ignition Results and Analysis” .....	2
U. S. Consumer Product Safety Commission, “Performance Criteria, and Standard Materials for the CPSC Staff Draft Upholstered Furniture Standard” .....	3
National Fire Protection Association, “Home Fires that Began with Upholstered Furniture” .....	4
U.S. Department of Homeland Security, “Civilian Fire Fatalities in Residential Buildings (2008-2010)” .....	5
U.S. Department of Homeland Security, “Smoking-Related Fires in Residential Buildings (2008-2010)” .....	6
Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation Laboratory Data, “Development of a Flammability Standard for Testing the Smolder Resistance of Upholstered Furniture” .....	7
Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation “California Statistical Data Related to Mortality and Fire-Related Losses” .....	8