

U.S. Consumer Product Safety Commission



CPSC Staff Assessment of Cigarette Ignition Risk

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American Home Furnishings Alliance Flammability Update

March 20, 2008

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CPSC Jurisdiction

- CPSC jurisdiction covers about 15,000 different types of consumer products.
- CPSC does not regulate tobacco products but uses cigarettes when testing to requirements of certain flammability regulations.

Presentation Overview

- Cigarettes as an ignition source
- Reduced Ignition Propensity (RIP)
- CPSC staff project to assess possible change in hazard

Incident Data

- Incident data show that numerous residential fires involving upholstered furniture and mattresses are caused by cigarettes.
- From 2002 to 2004, 50% of deaths and 32% of injuries in residential fires, where upholstered furniture and mattresses were the items first ignited, had smoking materials as the ignition source.
 - 5,500 fires
 - 460 civilian deaths
 - 730 civilian injuries
 - \$146 million in property damage

CPSC Standards

- Flammability standards are designed to address the ignition hazard.
- 16 C.F.R. 1632 - Standard for the flammability of mattresses and mattress pads (smoldering ignition).
- Proposed standard for the flammability of upholstered furniture, 73 FR 11702 (March 4, 2008).
- Standard ignition source used by CPSC staff is unfiltered Pall Mall cigarette.

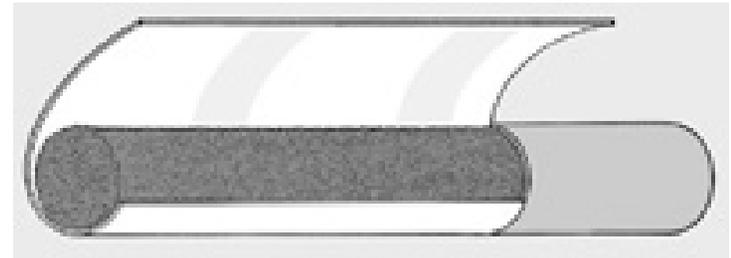
RIP Cigarettes

Introduction

- New state legislation requiring reduced ignition propensity (RIP) cigarettes.
- 22 states have passed legislation.
- Legislation currently applies to more than 50% of U.S. population.
- RIP cigarettes are designed to reduce the hazard of smoldering ignition caused by cigarettes.

Cigarette Ignition Propensity

- Changing combinations of physical properties may affect the ignition propensity of a cigarette.
 - Circumference of the cigarette
 - Filtered or unfiltered
 - Tobacco packing density
 - Tobacco column length
 - Chemicals added to the paper
 - Paper permeability
- Current RIP cigarettes on the market are “banded”.
- The bands have a lower paper permeability; they act like “speed bumps” along the cigarette.



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Research on Cigarette Ignition Propensity

- Previous Studies:
 - Determined characteristics that resulted in lower ignition propensity.
 - Lower ignition propensity cigarettes resulted in fewer ignitions using British and European standard tests for upholstered furniture, mattresses and bed assemblies.
 - Health Canada research: resulted in a mandatory rule to require that cigarettes of reduced ignition propensity to be sold in Canada, effective October 1, 2005.
 - UK Deputy of the Prime Minister tests: NY (RIP) cigarettes showed fewer furniture ignitions but NY brands varied in ignition proportions.
- CPSC staff conclusion: more basic research needed to characterize relative ignition risk of RIP cigarettes.

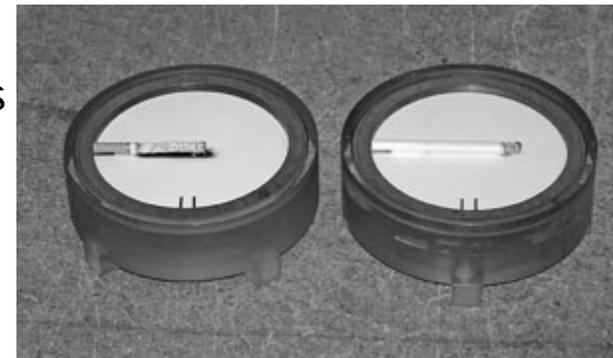
NIST Test Methods

- NIST developed two test methods for RIP cigarettes:
 - Mock Up Ignition Method
 - Extinguishment Test
- Preliminary NIST tests with banded cigarettes similar to today's RIP cigarettes caused fewer smoldering ignitions than popular filtered tip cigarettes.

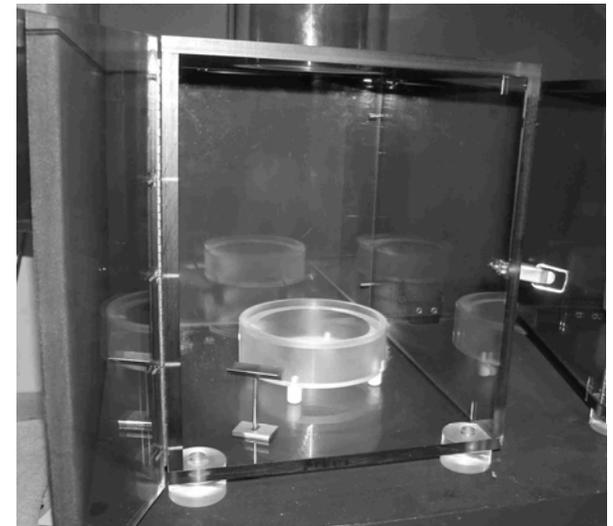
ASTM Standard Test Method

ASTM E2187, Standard Test Method for Measuring the Ignition Strength of Cigarettes

- Based on NIST Extinguishment Test
- Does not prescribe a pass/fail requirement.
- A cigarette is placed on a substrate of 3, 10 or 15 layers of filter paper.
- Observe if the cigarette burns through the tobacco length.
- Test 40 cigarettes of a brand to obtain a relative probability that the cigarette will continue to burn.



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RIP Legislation

- In 2004, New York was the first state to legislate a cigarette fire performance standard.
- The NY rules require that, using ASTM E2187 and 10 layers of filter paper, no more than 25% of tested cigarettes shall exhibit a full length burn.
- If there are lowered permeability bands in the cigarette paper to achieve compliance, the cigarettes:
 - Shall have at least two nominally identical bands on the paper surrounding the tobacco column, with at least one complete band located at least 15 millimeters from the lighting end of the cigarette.
 - For cigarettes on which the bands are positioned by design, there shall be at least two bands fully located at least 15 millimeters from the lighting end and 10 millimeters from the filter end of the tobacco column.

CPSC Staff Project: Objective

To determine the level of hazard that RIP cigarettes present on interior furnishings compared to traditional cigarettes.

CPSC Staff Project: Work to Date

- Literature review on previous research
- Market review
 - 11 brands make up 80% of the market
 - Over 100 brands, which include 600 styles of cigarettes, are certified in New York.
- 13 cigarette styles chosen for evaluation by CPSC staff to include each major brand and the CPSC staff standard ignition source cigarette.
 - Physical characteristics, i.e., dimensions, permeability, etc.
 - Flammability, i.e., burning temperature
 - ASTM E2187 evaluations

CPSC Staff Project: ASTM Tests

- ASTM E2187 testing conducted to assess the relative difference in ignition propensity on filter paper substrates between traditional and RIP cigarettes.
- ASTM data, in combination with physical properties analysis, to determine which brands to use in this project's interior furnishings tests.
- Preliminary analysis indicates that there is a difference between the burning characteristics of different brands of RIP cigarettes.

CPSC Staff Project: Interior Furnishings

- Tests to be conducted with RIP and traditional cigarettes.
- Mattresses and mattress pads, 16 C.F.R. 1632
- Upholstered Furniture: Large scale furniture tests, method TBD

CPSC Staff Project: Future Research

- Upholstered furniture testing planned to begin Fall 2008.
- Mattress testing planned to begin Fall 2008.

Significance of Tests

The data compiled by the CPSC staff through the various test programs will provide a non-statistical evaluation of the fire hazard represented by RIP cigarettes to upholstered furniture and mattresses as compared to traditional cigarettes.

Questions?

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