Attachment 3 (ATC)

TEST PROTOCOL FOR FIRST ROUND-ROBIN FURNITURE MOCK-UPS

Cigarettes: 6 test samples, covering the property range of the 32 sample TSG test. Cigarettes provided by RJR.

Fabric: A set of test fabrics, scaled from 0 to very high ignitability with respect to the test cigarettes. For the purposes of the current test the direction of warp and fill is identical and direction is not critical.

Substrate: Olympic #2715 polyurethane with no added fire retardants or filler, density = 1.5 lbs./cu. ft.

Mockup Configurations:

1) Flat (horizontal - one piece of 6"x3"x1" foam) (units are in inches due to foam manufacturer's set-up)

Plywood or other wooden frame (see drawing)

Foam should be covered with fabric piece cut to approximately 6"x4" attached to the sides of the foam with straight pins (3 pins per side). Uniform contact must be established between the foam and fabric (no gaps or air pockets). (An analogy is a tablecloth draped carefully over the table top).

FOR INFORMATION PURPOSES ONLY AT THIS TIME:

2) L (90 degree angle)

Same frame

Foam pieces are 6"x3"x1" (vertical) and 6"x2"x1" (horizontal). Foam covered with fabric as in 1).

The foam pieces are then placed at right angles in the wooden frame with the 6"x2"x1" foam against the "lip" of the frame, and the 6"x3"x1" foam against the back of the frame at the right angle (see drawing).

Note: Because the assembled fabric and foam mockups will look alike once they are made up, care must be taken to identify the mockups as they are made. One suggestion is to make a mark on the exposed side of the foam/fabric mockup with a colored marker, with a different color for each treatment level. In this way a number of mockups could be made up before the test begins, and the appropriate mockup selected for the test.

Procedure:

a. All test materials, i.e., cigarettes, fabrics, foams, assembled mockups, should be conditioned at 75F (25C), 60%RH for a minimum of 48 hours.

b. Combinations of mockup types and test cigarettes should be randomized over the course of the test with eight complete replicates of each cigarette on each fabric treatment at the end of the test.

c. All mockup/frame assemblies should be placed under some type of hood before beginning the test.

Note: Air draft around the test assemblies: there should be no excessive drafts in the hood, but there should be sufficient air flow to remove combustion products. If a sliding hood door is available, the door should be closed enough to keep fumes under the hood, but open enough to allow outside air flow (about 1 to 2 "). If instrumentation is available, the air flow should be quantitatively characterized and recorded. In the absence of a uniform hood design among the laboratories, an exact specification cannot be established at this time, but the information recorded will be used to compare results among labs.

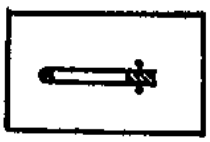
d. Do not use cigarettes with obvious loose ends or other major defects.

e. The cigarette is lit by puffing once with a 35cc/2 sec puff (smoking machine), allowed to establish its firecone for one minute (care should be taken to make sure air flows around all sides of the firecone during this smolder period so the cigarettes do not self-extinguish). If the cigarette should self-extinguish during the one minute smolder, light a NEW cigarette for that test.

Following the one minute smolder period, the cigarette should be placed longitudinally in the center of the foam panel, with the cigarette paper seam up, and the firecone about two inches from the edge of the assembly.

(For the L-configuration mockup assembly, the cigarette is placed in the abutment of the two foam panels, with the cigarette paper seam away from the surfaces and in such a fashion that there is good contact between the cigarette and fabric/foam panels. The firecone should be placed about two inches from the edge of the assembly.

Note: Straight pins may be placed on either side of the filter to hold the cigarette in place:



Note: A plastic squeeze bottle of water should be located near the hood to directly extinguish obvious ignitions to prevent excess fume generation without compromising the results of other tests that are underway. Care should be taken not to use excess water that may wet the wooden frame and interfere with future tests.

f. DEFINITION OF IGNITION: The cigarette has generated a self-sustaining smolder. Primary determination by visual judgment, preferably supplemented by instrumental techniques such as the weight loss rate of the assembly, detection of chemical or heat emissions, etc.

DEFINITION OF NON-IGNITION: The cigarette has burned its entire length or it has self-extinguished without generating a self-sustaining smolder. A cigarette which self-extinguishes will NOT be relit. Self-extinctions should be identified as such in the records.

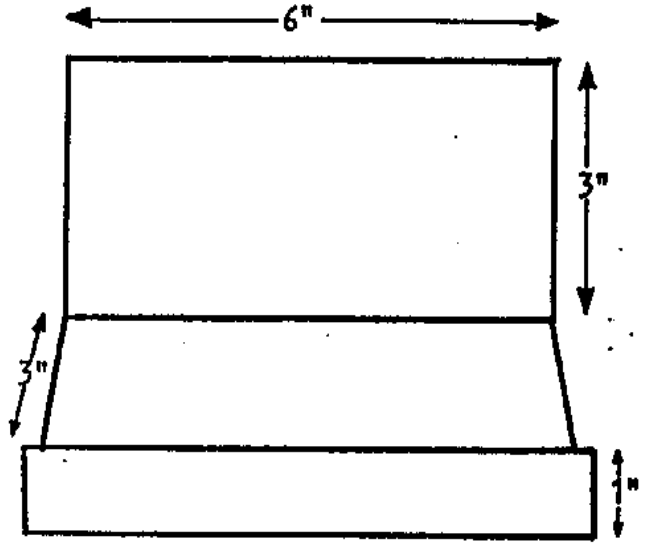
If the test outcome is not obvious, the final judgment should be made 30 minutes from the beginning of the test.

g. For information purposes, a timer (stopwatch) should be used and the times of self-extinctions, ignitions, or non-ignitions (with the cigarette burning its entire length) recorded as closely as possible.

h. The results are to be expressed in % ignitions observed. For example, the following are possible outcomes:

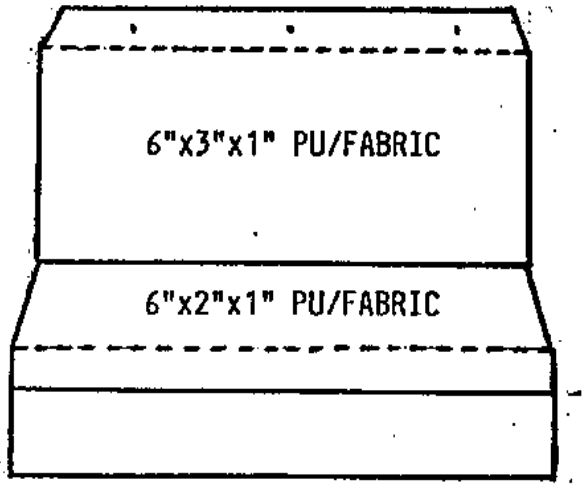
0, 12.5, 25, 37.5, 50, 62.5, 75, 87.5, and 100% ignitions.

FRAME

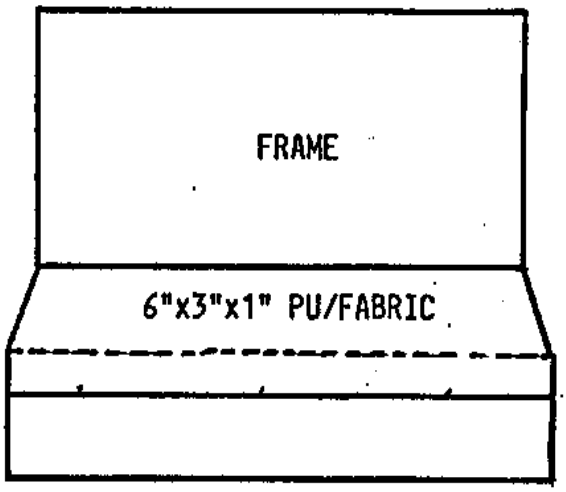


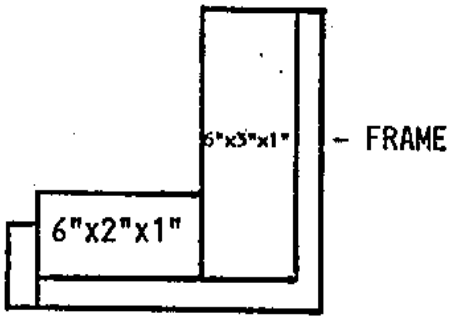
ASSEMBLED MOCKUPS

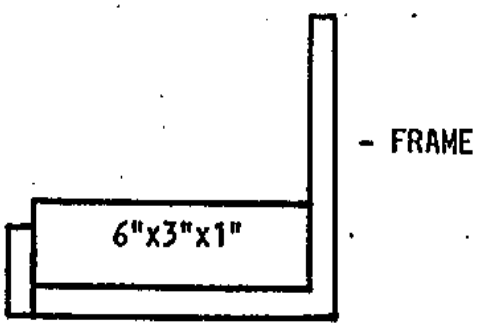
L-Configuration



Flat Configuration







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