UNIFORM BUILDING CODE STANDARD 26-6
IGNITION PROPERTIES OF PLASTICS

Normandy Pro Lite

Project No. 3181043SAT-003A

May 29, 2009

Prepared for:
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ABSTRACT

Specimens submitted by Ultraflex Systems and identified as "Normandy Pro Lite" were tested in accordance with the UBC 26-6 Standard Test Method for Ignition Properties of Plastics with the following results:

Flash-Ignition Temperature:	*370°C (698°F) flaming*
Spontaneous-Ignition Temperature:	*460°C (860°F) flaming*

The material was tested using Procedure B, with an air flow of 5ft/min.

"These tests results relate only to the behavior of the test specimens under the particular conditions of the test. They are not intended to be used, and shall not be used, to assess the potential fire hazards of a material in use."

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May 29, 2009

Reviewed and approved:

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May 29, 2009

INTRODUCTION

This test standard outlines a laboratory determination of the spontaneous-ignition and flash-ignition temperatures of plastics using a hot air furnace.

This standard should be used solely to measure and describe the properties of materials, products, or systems in response to heat and flame under controlled laboratory conditions and should not be considered or used for the description, appraisal, or regulation of the fire hazard of materials, products, or systems under actual fire conditions.

Test results from this standard method can be of considerable value in comparing the relative ignition characteristics of different materials. Values obtained represent the lowest ambient air temperature that will cause ignition of the material under piloted and non-piloted conditions such as those presented herein. Test values are expected to rank materials according to ignition susceptibility under actual use conditions.

This test however, is not intended to be the sole criterion for fire hazard. In addition to ignition temperatures, fire hazard includes such other factors as burning rate or flame spread, intensity of burning, fuel contribution, products of combustion, and others.

DEFINITIONS

Flash-Ignition Temperature - the lowest initial temperature of air passing around the specimen at which a sufficient amount of combustible gas is evolved to be ignited by a small external pilot flame.

Spontaneous-Ignition Temperature - the lowest initial temperature of air passing around the specimen at which, in the absence of an ignition source, the self-heating properties of the specimen lead to ignition or ignition occurs of itself, as indicated by an explosion, flame, or sustained glow.

Spontaneous-Ignition by Temporary Glow - In some cases slow decomposition and carbonization of the plastic results only in glow of short duration at various points in the specimen without general ignition actually taking place. This is a special case of spontaneous-ignition temperature, defined as "spontaneous-ignition by temporary glow."

TEST PROCEDURE

The test apparatus is a hot air ignition furnace with an inside diameter of 76 mm (3 in), with an adjustable movement of hot air rising up through it. The electrically heated furnace is adjusted so that the air temperature (at a given air velocity rate) is at a preselected and equilibrated temperature, and then the test specimen is lowered to the approximate center of the tube furnace either wired to a suspension wire of heavier gage, or contained in a flat metal specimen holder. A cover is then placed over the top of the furnace, which contains a 1 in^2 hole in the center, through which excess furnace air and any gases given off by the specimen escape. If that test is to be for flash-ignition, a small pilot flame is placed over the hole in the cover to ignite the gases if an ignitable concentration occurs. Thermocouples located in the center of the test specimen, and slightly below and to one side of the specimen monitor the test.

The determination of flash and spontaneous-ignition temperatures is then determined to be the temperatures at which the material will flash or self-ignite at that temperature, but not at 10°C lower. The test standard describes several methods of approximation of these temperatures during the determination of these values, with different temperature rise rates and air flow rates.

Thermoplastic materials may be tested in pellet form normally supplied for molding. Where only sheet samples are available for thermosetting materials, 20 by 20 mm (3/4 in. x 3/4 in.) squares of the available sheet or film shall be bound together with fine wire. A total specimen weight of 3±0.5 grams is required.

Test specimens are conditioned at 23 ± 2°C (73.4 ± 3.6°F) and 50 ± 5% relative humidity for not less than 40 hours prior to test, for those tests where conditioning is required.

Test specimens were conditioned as specified, and then tested in accordance with Procedure B. The furnace temperature was taken to be that measured by the "furnace air thermocouple" and the specimen temperature was monitored by a thermocouple located within the steel specimen cup. When the furnace temperature was stable at the selected temperature, the specimen was placed into the specimen cup and the test begun. The current to the furnace heating coils was governed by a variable transformer. Once the furnace was equilibrated to the starting temperature, the variac setting was not changed, regardless of the furnace temperature during the test.

TEST SPECIMEN

Specimens submitted by: Ultraflex Systems, Inc.

Received Date: May 20, 2009
(This specimen was received in good condition.)

Test Date: May 28, 2009
Report Date: May 29, 2009

Report No.: 3181043SAT-003A

Specimen ID: Normandy Pro Lite

Sample Preparation: The specimens were cut from a larger piece of material.

Environmental Conditions: 70°F and 51% r.h.

This Test Witnessed by: No witnesses

Specimen preparation :
The sample was cut from a larger piece of material into 0.75" square specimens with a weight 3 ± 0.20 grams. One specimen consisted of a stack of 20 flat sheets.

TEST RESULTS & OBSERVATIONS

Spontaneous-Ignition: Smoking started at 0:50. Ignition at 6:14 by flaming

Flash-Ignition: Smoking started at 1:16. Ignition at 5:48 by flaming

Air flow through the furnace for all tests was metered at 5 ft./min., in accordance with "Procedure B" of the test standard. Repeat runs, under each test condition, were conducted at 10 ft./min. air flow rate at the temperatures where no ignition occurred, in order to verify the results at 5ft./min.

CONCLUSIONS

The spontaneous-ignition temperature of this material was determined to be 460°C (860°F) and the flash-ignition temperature was determined to be 370°C (698°F).