ASTM E136-94
BEHAVIOR OF MATERIALS IN A VERTICAL TUBE FURNACE AT 750°C

3M E-50 INTERAM™ SERIES MAT

Project No. 14540-99234

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Prepared for:

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OMEGA POINT LABORATORIES

ABSTRACT

Specimens of 3M E-50 INTERAM™ SERIES MAT were submitted by Peak Seals Inc. for evaluation by ASTM E136-94 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C. The samples met the criteria for surface and interior temperatures, flaming and weight loss.

THE TEST SPECIMEN PASSED THIS TEST.

The description of the test specimen and the results presented herein are true and correct to the best of our knowledge and within the bounds of normal engineering methods and techniques.

Date: 1-17-96

Manuel Rocha III
Fire Test Technologist

Reviewed and approved:

William E. Fitch, P.E. No. 55296

Date: 1-17-96

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I. INTRODUCTION

This report describes the results of the ASTM E136-94 Standard Method of Test for Behavior of Materials in a Vertical Tube Furnace at 750° C.

This standard should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use.

II. PURPOSE

The results of the ASTM E136-94 test method may be used to characterize those materials which do not support combustion under the specified test conditions (750° C). The method is not intended to be used for laminated or coated materials. Materials passing the test are permitted limited flaming, glowing and mass loss.

III. DESCRIPTION OF TEST SPECIMENS

The test specimens consisted of pieces 38 mm (1.5 in.) x 38 mm (1.5 in.) x 51 mm (2.0 in.) thick. If the specimens were less than 51 mm thick, they were stacked and wired together to create a total height of 51 mm (2 in.). A hole was drilled into the geometric center of each specimen from the top in order to insert a thermocouple. Another thermocouple was placed along one side face. The specimens were attached to pieces of support wire for insertion into the furnace.

IV. TEST PROCEDURE

The specimens were conditioned at 60° ± 3°C for a minimum of twenty-four hours and a maximum of forty-eight hours, then stored in a desiccator for at least one hour. The furnace temperature was stabilized at 750 ± 5.5°C (1382° ± 10°F). Each specimen was inserted into the furnace chamber and kept there until failure or until all temperature rise had ceased. Our furnace was constructed without the thermocouple "T_1" in the location indicated in the 1994 version of the standard. However, by the present wording of this standard, thermocouple T_1 is not required to be used. Therefore, in all significant aspects, our furnace and test procedure comply with the standard test method.

V. RESULTS AND OBSERVATIONS

Specimen I. D.: 3M E-50 INTERAM™ SERIES MAT
Specimen Description: Flexible Endothermic Fire Wrap
Date Received: 11-27-95
Date of Test: 12-14-95

The results of these tests are presented in the following table:

Specimen Number	Initial Wt. (g)	Final Wt. (g)	Wt. Loss (%)	Furnace Temp. at Start of Test (°C)	Max. Surface Temp. (°C)	Max. Interior Temp. (°C)
1	60.9	49.1	19.4	750	703	283
2	59.2	47.8	19.3	750	768	367
3	63.8	51.3	19.6	750	761	392
4	64.2	52.0	19.5	750	774	306

VI. CONCLUSIONS

The specimens met the specific criteria in this standard.

APPENDIX

TEST DATA AND PLOTS

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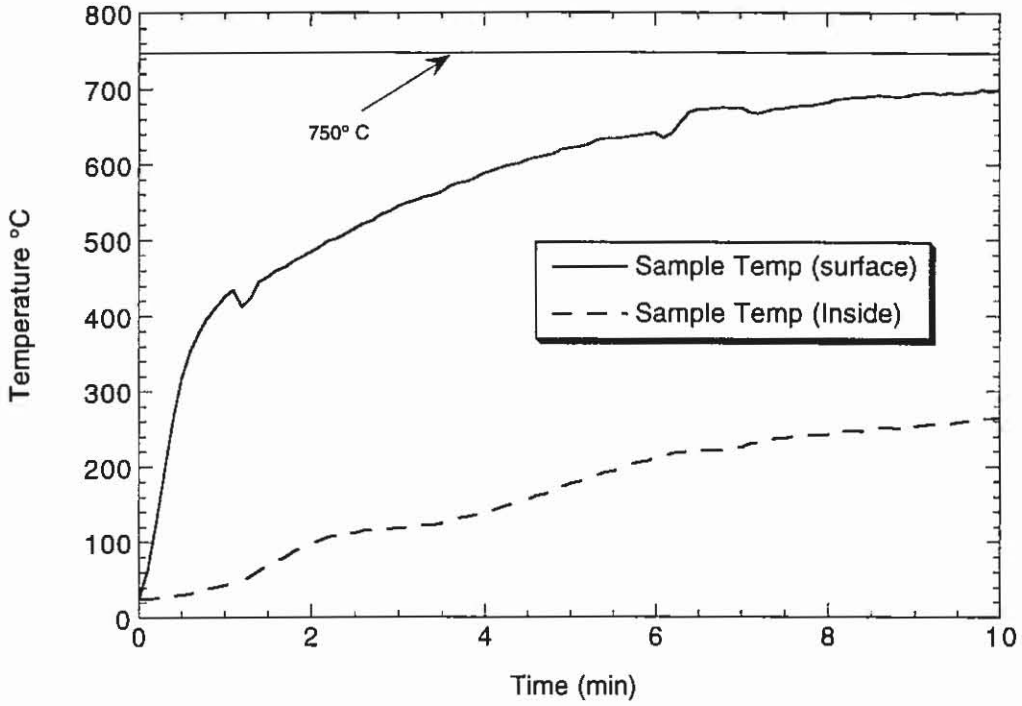
Test 1



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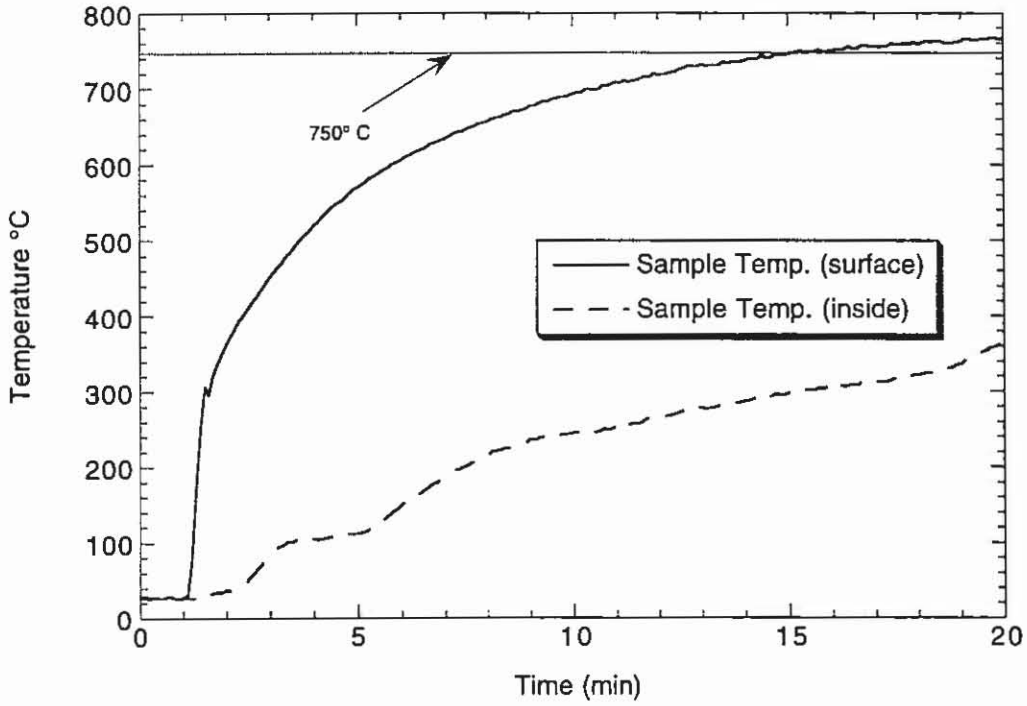
Test 2



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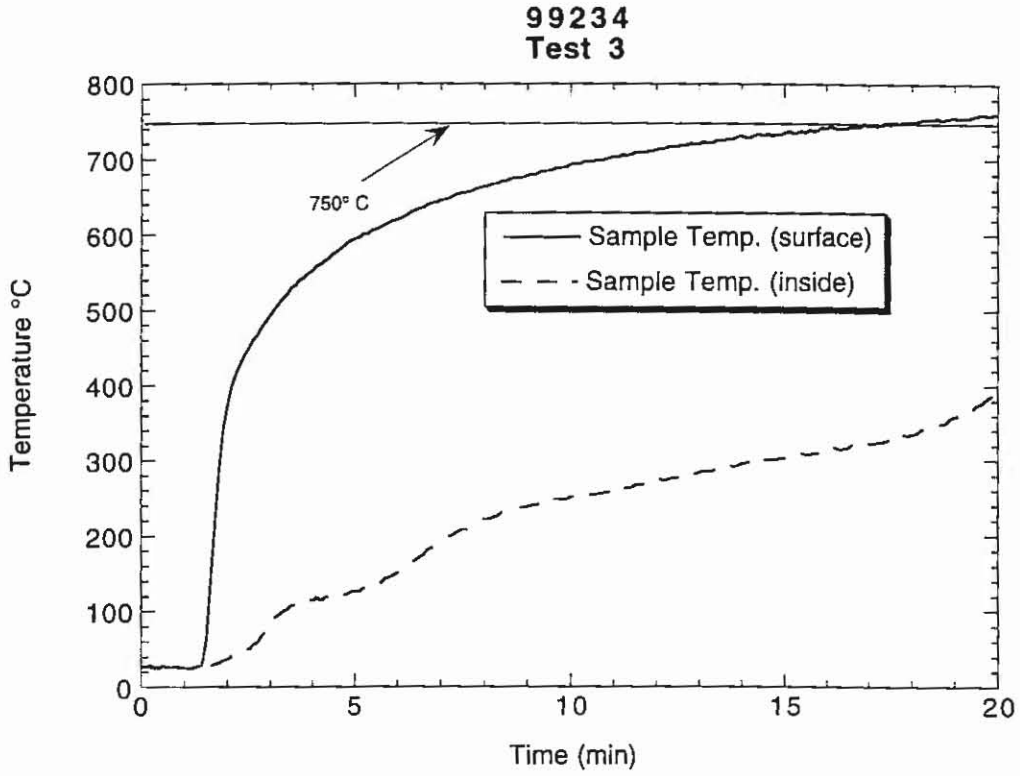

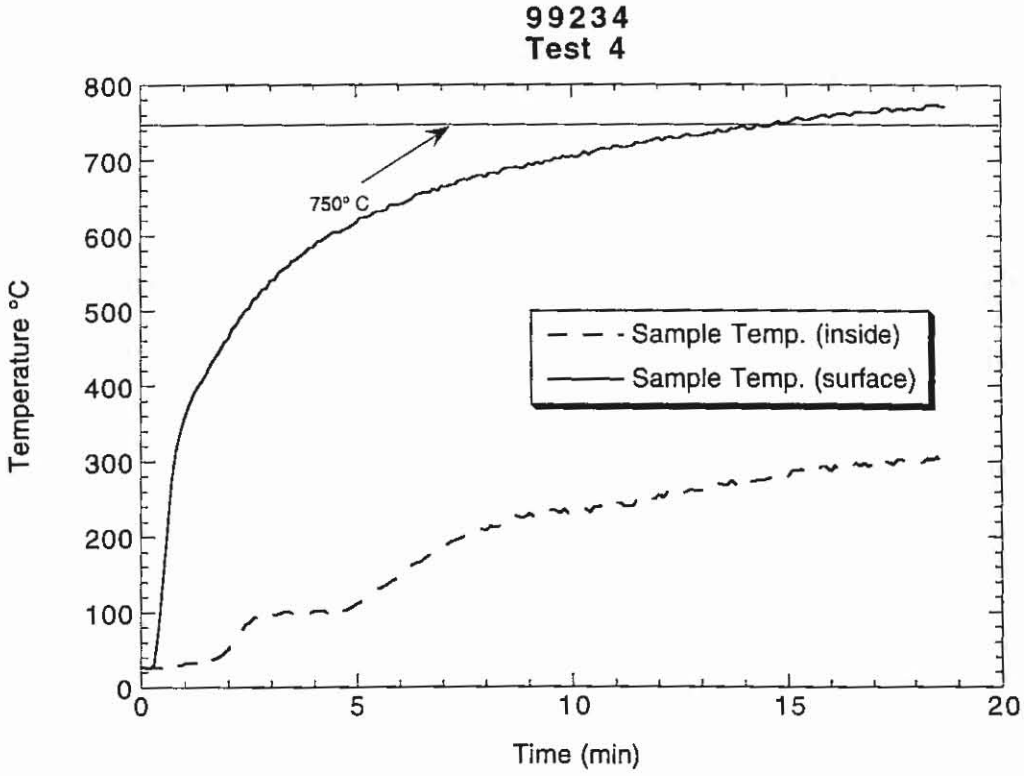

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