

**TEST REPORT FIRES-RF-040/04 CS ( E )**

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**Polymethylmethacrylate – PMMA, Akrylon XT**

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# TEST REPORT

## FIRES RF 040/04 CS (E)

**Tested property:** Reaction to fire  
**Test method:** EN ISO 11925-2: 2002  
Number of accreditation 1321  
**Type of test:** At the time of test testing laboratory was accredited by  
Czech Institute for Accreditation, o.p.s.,  
**Date of issue of English  
language version:** 09. 12. 2014  
**Date of issue of Slovak  
language version:** 05. 11. 2004

**Name of the product:** Polymethylmethacrylate – PMMA, Akrylon XT

**Manufacturer:** Barlo Plastics Slovakia s.r.o., M.R. Štefánika 71, 010 39 Žilina, SK  
**Sponsor:** Barlo Plastics Slovakia s.r.o., M.R. Štefánika 71, 010 39 Žilina, SK

**Test carried out:** FIRES, s.r.o., Testing laboratory  
**Project No.:** S-RF-04/181-04/025  
**Specimens received:** 06. 10. 2004  
**Date of the tests:** 29. 10. 2004

**Technician responsible for the technical side of this report:** Ing. Samuel Skokan

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## 1. INTRODUCTION

This test report contains the results of tests carried out by laboratory of FIRES, s.r.o. in Batizovce, accredited by SNAS for testing. Certificate of accreditation No.: S-159. The purpose of the tests was acquirement of information for product classification.

test carried out by Slavomír Fico

## 2. MEASURING EQUIPMENT

Identification number	Measuring equipment
F 90 015	Combustion chamber for single-flame source test
F 69 003	Logger ALMEMO 2290-8
F 60 001 - F 60 009	Temperature and relative air humidity sensors
F 69 009	PLC system for data acquisition and climatic condition control TECOMAT TC 604
F 54 027	Digital calliper (0 – 200) mm
F 94 001	Specimen holder
F 94 002	Vertical rack
F 94 003	Gauge for flame height adjustment
F 94 004	Distance gauge for flame fall at side surface
F 94 005	Distance gauge for flame fall at main surface
F 59 001	Anemometer
F 69 007	Logger Commeter
F 57 002	Digital stop-watch
F 54 019	Goniometer
F 53 001	Load-cell platform scale (0 - 5) kg

## 3. PREPARATION OF THE TESTS

### 3.1 DESCRIPTION OF THE SPECIMENS STRUCTURE

Specimens polymethylmethacrylate – PMMA, type Akrylon XT with dimensions of (90 x 250 x 1,8) mm (width x length x thickness) and with bulk density 1190 kg.m<sup>-3</sup> were made from PMMA granulate, which contains from 4,5 % up to 6 % MA.

All the information about technical specifications of used materials and semi-products, information about their type sign were delivered by sponsor. This information was not subject of the inspection of specimen / specimens. Parameters which were checked are quoted in paragraph 3.2.

### 3.2 INSPECTION OF SPECIMENS

Specimens inspection was carried out before commencement of tests, which consisted of visual observation of specimens and verification of specimens size.

### 3.3 CLIMATIC CONDITIONING OF SPECIMENS

Test specimens were stored in conditioning chamber from 22. 10. 2004 to 29. 10. 2004 and were conditioned under the following climatic conditions:

Ambient air temperature [°C]

mean	22,2
standard deviation	0,6

Relative air humidity [%]

mean	47,6
standard deviation	3,0



## 4. CARRYING OUT OF THE TESTS

### 4.1 CONDITIONS OF THE TESTS

Values characterizing environment in the testing room directly before the tests:

Date of the test	Relative air humidity [%]	Ambient air temperature [°C]
29. 10. 2004	48,2	19,2

### 4.2 TESTS PROCEDURE

The tests were carried out according to EN ISO 11925-2:

- test specimens were fixed into the frame;
- the flame of the burner was set to 20 mm ± 0,1 mm, it was tilted at an angle 45° against vertical axis and it was moved horizontally until the flame achieved pre-set point of contact on the main surface and on the bottom side surface of the test specimen;
- specimens were exposed by flame for 15 seconds, then the burner was moved off;

### 4.3 RESULTS OF THE TESTS

Exposure to the main surface with exposure time of 15 seconds.

Specimen number	1	2	3	4	5	6
occurrence of fire	no	no	no	no	no	no
achievement of 150 mm height of flame above the point of flame application	no	no	no	no	no	no
ignition of the filter paper	no	no	no	no	no	no
behaviour of the test specimen	Softening of surface of specimens in place of flame exposure.					

Exposure to the main surface with exposure time of 15 seconds.

Specimen number	7	8	9	10	11	12
occurrence of fire	yes	yes	yes	yes	yes	yes
achievement of 150 mm height of flame above the point of flame application	no	no	no	no	no	no
ignition of the filter paper	no	no	no	no	no	no
behaviour of the test specimen	Melting and dropping of burning droplets. Burning of specimens after removing of flame. The test continued till 20 seconds. Ignition occurred between 5 - 7 seconds from the start of the test.					

## 5. EVALUATION OF THE TESTS

Main surface (from steel sheet face)

Specimen number	1	2	3	4	5	6	Result
$F_s \leq 150$ mm during 20 s	yes	yes	yes	yes	yes	yes	yes
Ignition of the filter paper	no	no	no	no	no	no	no

Bottom edge (from steel sheet face)

Specimen number	7	8	9	10	11	12	Result
$F_s \leq 150$ mm during 20 s	yes	yes	yes	yes	yes	yes	yes
Ignition of the filter paper	no	no	no	no	no	no	no



## 6. FINAL PROVISION

The test results refer only to the tested subjects. This test report is not an approval of the tested product by the test laboratory or the accreditation body overseeing the laboratory's activities. The tests were carried out on testing equipment that is the property of FIRES Ltd. Without the written permission of the test laboratory this test report may be copied and/or distributed only as the whole. Any modifications of the test report can be made only by the fire resistance test laboratory FIRES Ltd. Batizovce.

The tests results relate to the behaviour of the test specimens of a product under the particular conditions of the tests; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

Approved by:

Ing. Štefan Rástocký  
leader of the testing laboratory



Prepared by:

Ing. Samuel Skokan  
technician of the testing laboratory

## 7. NORMATIVE REFERENCES

EN ISO 11925-2: 2002

Reaction to fire tests. Ignitability of building products subjected to direct impingement of flame. Part 2: Single-flame source test.

**THE END OF THE TEST REPORT**