


	DEPARTMENT LABORATORY FIRE EXTINGUISHING AGENTS AND EQUIPMENT (BU)	
	SCIENTIFIC AND RESEARCH CENTRE FOR FIRE PROTECTION named Józef Tuliszkowski – National Research Institute	
	Nadwiślańska 213 street, 05-420 Józefów near Otwock, Poland Phone No: operator: +48 22 769 32 00 office:+48 22 769 33 00 FAX :+48 22 769 33 73 <a href="http://www.cnbop.pl">www.cnbop.pl</a> e-mail: <a href="mailto:cnbop@cnbop.pl">cnbop@cnbop.pl</a>	

### Research work

**TEST REPORT No. 313/BU/22      Number of pages: 5**

**Second edition**

**This report completely replaces Test Report No. 313/BU/22 of March 31<sup>st</sup>, 2023**

<b>CUSTOMER</b> Name and contact information	Zenova Ltd, The Hermitage, 15a Shenfield Road, Brentwood, Essex, CM15 8AG
<b>DESCRIPTION AND IDENTIFICATION OF TESTED PRODUCT SAMPLE</b>	Fire extinguisher of aerosol type 500ML ZENOVA FX500 NPD12179

<b>Report copy no.</b>	<b>1</b>
------------------------	----------



**Józefów, April 19<sup>th</sup>, 2023**



This report completely replaces Test Report No. 313/BU/23 of March 31<sup>st</sup>, 2023 which introduces following corrections:

- the wording in point 2.2 has been changed,
- the point 4.2.1 has been deleted.

## 1. FORMAL BASIS FOR TESTING

Agreement No. 313/BU/22, dated on May 19<sup>th</sup>, 2022,  
Internal order No. 313/BU/22 dated on June 17<sup>th</sup>, 2022,  
Annex to the agreement No. 313/BU/22, dated on February 2<sup>nd</sup>, 2023.

## 2. TESTED PRODUCT SAMPLES

### 2.1. Name of product, type, dimensions and other markings

Fire extinguisher of aerosol type 500ML ZENOVA FX500 NPD12179

### 2.2. General technical description of the product

Fire extinguisher of aerosol type 500ML ZENOVA FX500 NPD12179 is a pressurised unit consisting of steel vessel filled with extinguishing liquid, closed by plastic head with discharge nozzle. The extinguishing medium of 500ML ZENOVA FX500 NPD12179 is described as chemical extinguishing foam suitable for extinguishing fires of group A, B and F. Fire extinguisher could be used in any orientation. The outfit of extinguisher is presented in pictures 1-3.

Basic data	
nominal capacity	500 ml
total volume	604 ml
container diameter	66 mm
extinguisher height	218 mm
total mass	700 g
discharge range	2 - 3 m
operation temperature	from -10°C to +50°C
internal pressure	12 bar
testing pressure	18 bar
extinguishing agent	Chemical extinguishing foam



Fot.1. Fire extinguisher of aerosol type 500ML ZENOVA FX500 NPD12179

Fot.2. Fire extinguisher of aerosol type 500ML ZENOVA FX500 NPD12179

Fot.3. Fire extinguisher of aerosol type 500ML ZENOVA FX500 NPD12179

Description has been made basis on information delivered by the manufacturer.



### 2.3. Procedure of sampling/receipt and storage of test items

The test samples were collected and sent by the Customer. The samples were delivered for testing on February 27<sup>th</sup>, 2023. During the acceptance of the samples the "Delivery and acceptance protocol" was made. After the tests, the sample is stored in the archives for 1 year.

The client provided the following items of documentation:

- Safety data sheet for 500ML ZENOVA FX500 NPD12179, version 2.0, revision date 24.11.2022 r.,
- Technical data sheet for Zenova FX500 (without date).

## 3. TEST AND TEST METHODS

### 3.1. Testing methods

No.	Test feature	Test method
1.	Class A fire performance	BS6165 Annex H.4 (not accredited by PCA)
2.	Class B fire performance	BS6165 Annex H.5 (not accredited by PCA)
3.	Class F fire performance	BS6165 Annex H.6 (not accredited by PCA)
4.	Dielectric tests	BS6165 Annex I (not accredited by PCA)

### 3.2. Date of testing

The tests were carried out between 13<sup>th</sup> and 31<sup>st</sup> of March 2023.

### 3.3. Place of testing

The tests were made at the headquarters of CNBOP-PIB.

## 4. TEST RESULTS

### 4.1. Class A fire performance according to BS 6165:2019 p.7.6.1, annex H.4

Sample no.	11	4	21	8
Dimension of the Class A test fire according to annex H.4	<b>3A</b>	<b>3A</b>	<b>3A</b>	<b>5A</b>
Moisture content in wood determined before tests (%)	14,8	14,7	14,8	14,9
Permissible moisture content (%)	12,5 to 17,5			
Measured ambient temperature (°C)	12,0	12,0	13,0	13,0
Permissible ambient temperature (°C)	0 do 30			
Measured wind speed (ms <sup>-1</sup> )	0,00	0,00	0,00	0,00
Permissible wind speed (ms <sup>-1</sup> )	≤ 0,2			
The test fire was extinguished (yes/no)	YES	NO	YES	NO
Measured extinguishing time (min-s)	1min 31s	1min 14s	1min 07s	41s
Observation after extinguishing the object for 3 minutes (yes/no)	YES	-	YES	-
During observation period the object has been reignited (yes/no)	NO	-	NO	-
Measured concentration O <sub>2</sub> (vol%)	19,9	19,9	19,9	20,0
Permissible minimal concentration O <sub>2</sub> (vol%)	≥19			
The obtained extinguishing efficiency - the class A test fire	<b>3A</b>			
<b>Compliance with point 7.6.1 (yes/no)</b>	<b>YES</b>			



- 4.2. Class B fire performance – evaluation of test according to BS 6165:2019 p.7.6.2, annex H.5, PN-EN 16856:2020 annex I.4

**The test has been carried out with use of diesel fuel.**

Sample no.	5	7	10
Fuel (heptane / diesel)	diesel		
Dimension of the Class B test fire according to annex H.5	<b>13B</b>	<b>21B</b>	<b>21B</b>
Test fire performed (indoor / outdoor)	indoor		
Measured ambient temperature (°C)	14,0	14,0	15,0
Permissible ambient temperature (°C)	from 0 to 30		
Measured wind speed (ms <sup>-1</sup> )	0,00	0,00	0,00
Permissible wind speed (ms <sup>-1</sup> )	≤3		
The test fire was extinguished (yes/no)	YES	YES	YES
Measured extinguishing time (min-s)	15s	30s	27s
Height of the heptane layer after quenching (mm)	11,0	11,0	11,0
Permissible heptane layer height after quenching (mm)	≥ 5		
The obtained extinguishing efficiency - the class B test fire	<b>21B</b>		
<b>Compliance with point 7.6.2 (yes/no)</b>	<b>YES</b>		

- 4.3. Class F fire performance according to BS 6165:2019 p.7.6.4, annex H.6, PN-EN 16856:2020 annex I.5

Sample no.	6	12	24	17
Dimension of the Class F test fire according to annex H.6	<b>5F</b>	<b>15F</b>	<b>15F</b>	<b>25F</b>
Measured ambient temperature (°C)	18,0	19,0	18,0	19,0
Permissible ambient temperature (°C)	<b>0 do 30</b>			
Measured oil auto-ignition time	2h 34min	2h 54min	2h 9min	2h 36min
Maximum permissible oil auto-ignition time (h-min)	<b>≤ 3h 30min</b>			
Measured auto-ignition temperature (°C)	377,0	377,0	370,0	372,0
Permissible auto-ignition temperature (°C)	<b>330 do 380</b>			
Discharge the entire content of the extinguisher without interruption (yes/no)	YES	YES	YES	YES
The test fire was extinguished (yes/no)	YES	YES	YES	NO
The burning material has been ejected (yes/no)	NO	NO	NO	NO
Oil reignition before 20 minutes after complete discharge of the extinguisher (yes/no)	NO	NO	NO	-
Oil residue after test procedure (yes/no)	YES	YES	YES	-
Flame enlargement is observed (yes/no)	NO	NO	NO	NO
The obtained extinguishing efficiency - the class F test fire	<b>15F</b>			
<b>Compliance with point 7.6.4 (yes/no)</b>	<b>YES</b>			

- 4.4. Dielectric test of extinguisher stream according to BS6165 p. 7.7, annex. I

Sample no.	9	14	15
Distance between discharge nozzle and metallic plate (m)	1,00	1,00	1,00
Permissible distance between discharge nozzle and metallic plate (m)	1,00		
Measured voltage on transformer (kV)	35,0	35,0	35,0
Permissible voltage on transformer (kV)	35,0		
Measured current value between aerosol dispenser and earth as well as between nozzle and earth (mA)	0,09	0,07	0,08
Maximum permissible current value (mA)	0,5		
<b>Compliance with point 7.7 (yes/no)</b>	<b>YES</b>		

CNBOP-  
PIB

**TEST REPORT No. 313/BU/2022 second edition**



*"In case of conformity to a specification or standard, the decision rule presented in the procedure PS/CNBOP/10 Reporting test results (based on Simple Acceptance Rule according to ILAC-G8:09/2019) has been applied."*

**5. REPRESENTATIONS AND RESERVATIONS**

The test results refer only to the product sample of research as received and tested. Without the written permission of the Laboratory Department report must not be reproduced otherwise than in entire document. The test report has been prepared in two copies.

**THE END OF REPORT**

<b>Prepared by</b>	B.Sc. Eng. Piotr Mortka	19.04.2023
	..... Title or equivalent description, name, surname	..... Date and signature
<b>Reviewed and authorised by</b>	M.Sc. Eng. Tomasz Wilczyński	19.04.2023
	..... Title or equivalent description, name, surname	..... Date and signature