



**Termoplam Ltd.
Testing laboratory**

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TEST REPORT №120/30.09.2019

on the compliance of boilers TOBY 33, TOBY 44 and TOBY 55 with the requirements of COMMISSION REGULATION (EU) 2015/1189 of 28 April 2015.

I. NAME AND SIGNATURE OF THE TESTED SAMPLE:

Boiler fired by solid fuel - wood pellets models TOBY 33, TOBY 44 and TOBY 55 with total heat output respectively 33, 44 and 55 kW.

II. NAME AND DESCRIPTION OF THE TESTED SAMPLE:

Boiler models TOBY 33, TOBY 44 and TOBY 55 made of steel sheet metal by welding.

III. LEGAL DOCUMENT: COMMISSION REGULATION (EU) 2015/1189 of April 2015.



Picture of boiler

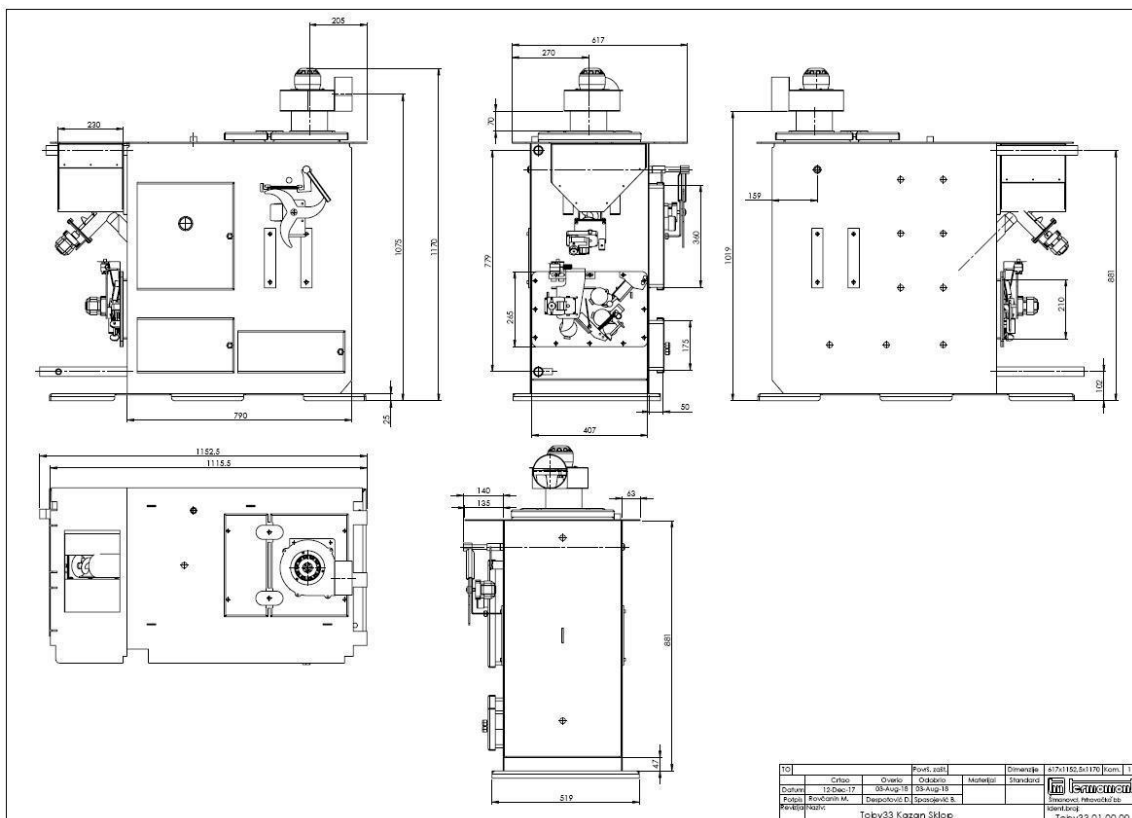
IV. QUANTITY OF THE TESTED SAMPLES: Boilers TOBY 33, TOBY 44 and TOBY 55 are randomly selected units of regular production of 1 each.

V. CUSTOMER:

"TERMOMONT" d.o.o , Serbia; City: Prhovacka bb, 22310 Simanovci.

VI. PURPOSE AND OBJECT OF THE TASK: Conformity assessment of the boilers TOBY 33, TOBY 44 and TOBY 55 with the requirements of COMMISSION REGULATION (EU) 2015/1189 of 28 April 2015.

VII. TECHNICAL FEATURES:



Scheme (drawing of the boiler)

VIII. TEST CONDITIONS:

- 8.1. Working condition of the combustion device - according to the requirements for tests at nominal output according to EN 303-5:2012.
- 8.2. Processing of results – calculate according to normal physical conditions and at 10 % O₂.
- 8.3. Used results from the Test Report № 113-1/10.08.2018 of Laboratory Termoplam, Sofia.

IX. RESULTS FROM AND OBSERVATIONS :

9.1. Emissions:

Results	Model boiler			In accordance REGULATION (EU) 2015/1189. [mg/Nm ³]
	TOBY 33	TOBY 44	TOBY 55	
Dust [mg/Nm ³]	27.8	27.4	27.6	[PM] ¹ ≤ 40
CO [mg/Nm ³]	444.7	475.5	470.4	[CO] ² ≤ 500
OGC [mg/Nm ³]	16.5	16.7	27.6	[OGC] ³ ≤ 20
NO _x [mg/Nm ³]	147.2	176.1	179.5	[NO _x] ⁴ ≤ 200

Dust content of exhaust gases [PM] ¹ ≤ 40 mg/Nm³ for automatically stoked boilers in accordance with point 1 (c), of Annex II of the REGULATION (EU) 2015/1189.

CO of exhaust gases [CO] ² ≤ 500 mg/Nm³ for automatically stoked boilers in accordance with point 1 (e), of Annex II of the REGULATION (EU) 2015/1189.

OGC of exhaust gases [OGC] ³ ≤ 20 mg/Nm³ for automatically stoked boilers in accordance with point 1 (d), of Annex II of the REGULATION (EU) 2015/1189.

NO_x of exhaust gases [NO_x] ⁴ ≤ 200 mg/Nm³ for biomass boilers in accordance with point 1 (f), of Annex II of the REGULATION (EU) 2015/1189.

9.2. Seasonal space heating energy efficiency:

Model boiler	Results η_s %	In accordance REGULATION (EU) 2015/1189. [%]
TOBY 33	86	$[\eta_s]^1 \geq 77$
TOBY 44	86	$[\eta_s]^1 \geq 77$
TOBY 55	86	$[\eta_s]^1 \geq 77$

Where:

- η_s % - the seasonal space heating energy efficiency:

$[\eta_s]^1 \geq 77$ % for boilers with a rated heat output of more than 20 kW in accordance with point 1 (b), of Annex II of the REGULATION (EU) 2015/1189.

X. CONCLUSION:

Boiler models TOBY 33, TOBY 44 and TOBY 55 is satisfying and fulfilling the requirements of REGULATION (EU) 2015/1189.

XI. ENCLOSURES:

- 10.1. Picture of boiler;
- 10.2. Assembly drawing of the sample.



MANAGER:

(eng. Pl. Iliev)

30.09.2019.

NOTE:

The test results and conclusions relate only to the tested samples.
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This document is only informative.