



Sworn Translator of English Izabela Śnigurska
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No. TP/1852/06

CERTIFIED TRANSLATION FROM POLISH

[logo:] IEN

INSTITUTE OF POWER ENGINEERING
Research Institute
Notified Body no 1452

01-330 Warszawa, ul. Mory 8
e-mail: instytut.energetyki@ien.com.pl
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NIP: 525-00-08-761
KRS: 0000088963

BOILERS AND HEATING EQUIPMENT RESEARCH LABORATORY (LG)

[logo:] CUE
93-231 Łódź, ul. Dostawcza 1
Accredited Laboratory no AB 087

tel. (042) 64 00 821
fax. (042)64 00 828

ENVIRONMENTALLY-FRIENDLY
EQUIPMENT

CERTIFICATE
No OS/338/CUE/16

confirming that:

**water boilers, Maxi Bio NE type,
with automatic fuel feeder**

nominal thermal power: 50, 75, 100, 150, 200, 285, fired with pellet type pressed wood granule
Symbols: PKWiU [Polish Classification of Goods and Services] 25.21.1 PN-EN 303-5: 2012

manufactured by:
P.P.H. KOSTRZEWA sp. j.
11-500 Giżycko, ul. Suwalska 32 A

comply with the requirements for class 5, standard PN-EN 303-5:2012

The Certificate is issued based on the manufacturer's declaration dated 22.08.2016 and results of laboratory tests carried out by: Boilers and Heating Equipment Research Laboratory in Łódź, ul. Dostawcza 1 - mentioned in test reports no: 29/13LG "Tests of MaxiBio 50 type boiler with automatic fuel feeder", 115/14-LG "Tests of MaxiBio 100 type boiler with automatic fuel feeder", 30/13-LG "Tests of MaxiBio 200 type boiler with automatic fuel feeder", 86/14-LG "Tests of MaxiBio 285 type boiler with automatic fuel feeder".



Not tested boilers - MaxiBio 75 and MaxiBio 150 comply with the environmental protection requirements since pursuant to par. 5.14 of standard no "PN-EN 303-5:2012 in case of boilers of one series of type of the same construction and relation of minimal thermal power of the largest and smallest boiler totalling 2:1, type tests are carried out on the largest and smallest boiler. Not tested boilers fall within these ranges."

The Certificate shall be valid, unless the manufacturer makes any technical changes in the produced equipment in relation to the devices undergoing tests, without prior agreement with the Laboratory which issued the certificate.

**Certificate validity:
from 09.2016 to 10.2019**

Head of the Laboratory
Boilers and Heating Equipment Research Laboratory (LG)
(-) [illegible signature]
(signature)

Facility Director
CUE – Power Engineering Equipment Research Department
(-) [illegible signature]
(signature)

Łódź; dated 29.09.2016

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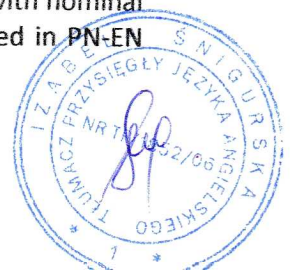
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The range of thermal and emission parameters of the series of Maxi Bio NE type boilers with nominal thermal power of 50, 75, 100, 150, 200, 280 meets the requirements of class 5 included in PN-EN 303-5: 2012 standard.



Parameter	Unit	Value achieved								Requirements of standards and regulations	
		Maxi Bio NE 50		Maxi Bio NE 100		Maxi Bio NE 200		Maxi Bio NE 285			
Pellet type pressed wood granule											
Fuel	Q^R_I	MJ/kg	19.37	19.01	19.43	19.08					≥ 17.0
	A^R	%	0.3	0.2	0.4	0.3					≤ 0.5
	W^R	%	5.5	4.5	5.8	5.0					≤ 12
Thermal power ^{xxx}	KW	50.8	14.9 ^{xx}	95.6	28.0	200.7	54.5 ^{xx}	270.1	70.5 ^{xx}	$\geq Q_N$	
Energy conversion efficiency (η) ^{xxx}	%	88.1	85.7 ^{xx}	92.3	89.3 ^{xx}	88.4	91.1 ^{xx}	90.1	85.7 ^{xx}	$\geq 88.7 - 50$ KW ≥ 89.0 for ≥ 100 kW	
Emission ^x	CO	mg/m ³	123	164 ^{xx}	208	636 ^{xx}	95	148 ^{xx}	161	165	≤ 500
	NO _x		-	-	183	167 ^{xx}	264	262 ^{xx}	159	195	No requirements
	OGC		3	3 ^{xx}	6	19 ^{xx}	3	13 ^{xx}	5	6 ^{xx}	≤ 20
	Dust ^{xxx}		16	-	23	-	19	-	34	-	≤ 40
Waste fuel average temperature	°C	161.0	108.8 ^{xx}	128.2	85.5 ^{xx}	159.3	86.4 ^{xx}	149.6	96 ^{xx}	No requirements	
Waste fuel mass flow rate	g/s	32.6	16.9 ^{xx}	59.6	42.1 ^{xx}	116.0	48.7 ^{xx}	147.9	87.1 ^{xx}	No requirements	

- x) calculated into 10% of share of oxygen in dry waste fuel
- xx) relates to $\leq 30\%$ derating of the nominal thermal power
- xxx) relates only to nameplate capacity

Łódź; dated 29.09.2016

I, the undersigned Izabela Śnigurska, a sworn translator of English, hereby certify that the above translation is consistent with the attached copy of the document prepared in Polish.
Warsaw, dated 13.02.2019

File No 125/2019

PRZYSIĘGŁY JEZYKA POLSKIEGO
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Izabela Śnigurska

