

TEST CERTIFICATE

Nr. O-194000060/3/2019/1

Producer: OPOP s.r.o.
 Zašovská 750
 757 01 Valašské Meziříčí
 Czech Republic

Product: steel hot water boiler BIOPEL with wood pellet burner

Type: BIOPEL 10, 15, 20, 30, 40, 60, 80, 100, 150, 200

Test results:

- EN 303-5: 2012 – wood pellets, automatic stoking

		Boilers BIOPEL									
Nominal heat output											
declared heat output	kW	10	15*	20	30	40	60*	80	100	150*	200
measured power	kW	10,32	14,88	19,43	29,19	42,48	63,46	84,44	107,10	154,25	201,40
CO (10 % O₂)	mg/m³	205	138	119	88	192	226	260	70	43	16
OGC (10 % O₂)	mg/m³	6	7	7	2	15	11	6	3	2	1
dust (10 % O₂)	mg/m³	16	18	19	19	13	18	22	19	23	26
NOx (10 % O₂)	mg/m³	12	42	72	72	91	108	124	165	166	167
CO (13 % O₂)	mg/m³	149	100	87	64	140	164	189	51	31	11
OGC (13 % O₂)	mg/m³	4	5	5	1	11	8	4	2	1	1
dust (13 % O₂)	mg/m³	12	13	14	14	9	13	16	14	16	19
NOx (13 % O₂)	mg/m³	9	31	52	53	66	78	90	120	121	122
efficiency	%	88,58	91,40	92,82	94,23	91,41	90,79	90,16	90,93	93,22	95,50
Minimal heat output											
measured power	kW	2,99	3,85	4,70	8,40	11,40	17,42	23,44	28,70	44,30	59,90
CO (10 % O₂)	mg/m³	397	355	313	406	56	116	175	448	471	497
OGC (10 % O₂)	mg/m³	14	9	3	2	2	2	2	6	5	3
dust (10 % O₂)	mg/m³	19	17	15	23	18	21	23	49	38	27
NOx (10 % O₂)	mg/m³	56	65	74	66	72	67	62	158	155	152
CO (13 % O₂)	mg/m³	289	258	228	295	41	84	127	326	344	361
OGC (13 % O₂)	mg/m³	10	6	2	1	1	1	1	4	3	2
dust (13 % O₂)	mg/m³	14	12	11	16	13	15	17	36	28	20
NOx (13 % O₂)	mg/m³	41	47	54	48	52	49	45	115	113	111
efficiency	%	89,94	89,55	89,15	88,99	90,11	89,53	88,94	91,30	91,30	91,20

**Note : The parameters for boilers BIOPEL 15, BIOPEL 60, BIOPEL 150 are calculated by interpolation from measured results according to EN 303-5, cl 5.1.4 „Type Testing“*

- Commission Regulation (EU) 2015/1189 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for solid fuel boilers

Seasonal space heating emissions Es

		Boilers BIOPEL									
declared heat output	kW	10	15*	20	30	40	60*	80	100	150*	200
CO (10 % O ₂)	mg/m _n ³	368	322	284	358	76	132	188	391	408	425
OGC (10 % O ₂)	mg/m _n ³	13	8	4	2	4	3	3	6	4	3
dust (10 % O ₂)	mg/m _n ³	19	17	16	22	17	20	23	45	36	27
NOx (10 % O ₂)	mg/m _n ³	49	62	74	67	75	73	71	159	157	154

Limits of seasonal space heating emissions Es for automatic stoking boilers and biomass fuel:

- CO (10 % O₂) ≤ 500 mg/m_n³
- OGC (10 % O₂) ≤ 20 mg/m_n³
- dust (10 % O₂) ≤ 40 mg/m_n³
- NOx (10 % O₂) ≤ 200 mg/m_n³

Seasonal space heating efficiency η_s

		Boilers BIOPEL									
declared heat output	kW	10	15*	20	30	40	60*	80	100	150*	200
seasonal space heating efficiency	%	78	78	79	79	80	79	79	80	81	82

Limits of seasonal space heating efficiency η_s :

- minimal 75% for boilers with nominal heat output ≤ 20 kW
- minimal 77% for boilers with nominal heat output > 20 kW

Note: the declared values for seasonal space heating efficiency η_s shall be rounded to the nearest integer according to regulation 2015/1189 Annex III cl. 2b.

- Commission delegated Regulation (EU) 2015/1187 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of solid fuel boilers

Energy efficiency index EEI and energy efficiency class

		Boilers BIOPEL									
declared heat output	kW	10	15*	20	30	40	60*	80	100	150*	200
energy efficiency index EEI	-	114,8	114,9	115,8	116,5	117,2	116,5	116,0	118,0	119,2	119,8
energy efficiency class	-	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+

- Decreto 7. Novembre 2017 N.186 – Italy

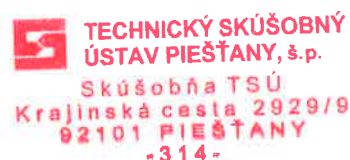
		Boilers BIOPEL									
Nominal heat output											
declared heat output	kW	10	15*	20	30	40	60*	80	100	150*	200
measured power	kW	10,32	14,88	19,43	29,19	42,48	63,46	84,44	107,10	154,25	201,40
CO _(13% O₂)	mg/m _n ³	149	100	87	64	140	164	189	51	31	11
OGC _(13% O₂)	mg/m _n ³	4	5	5	1	11	8	4	2	1	1
dust _(13% O₂)	mg/m _n ³	12	13	14	14	9	13	16	14	16	19
NOx _(13% O₂)	mg/m _n ³	9	31	52	53	66	78	90	120	121	122
efficiency	%	88,58	91,40	92,82	94,23	91,41	90,79	90,16	90,93	93,22	95,50

Limits according to Decreto 7. Novembre 2017 N.186 for automatic pellet boilers

Emission	5 stars	4 stars	3 stars	2 stars
CO _(13% O₂)	25	100	250	300
OGC _(13% O₂)	5	10	15	20
dust _(13% O₂)	10	15	20	40
NOx _(13% O₂)	120	130	145	200
efficiency	92	91	90	90

The test certificate is issued on base of type test of product. The results of particular measurements are listed in the test reports Nr. 135000043/314/1 dated 07.04. 2018, supplement Nr. 1 of test report Nr. 135000043/314/1 dated 14.11. 2014, supplement Nr.1 of test report Nr. 135000043/314/2 dated 14.11. 2014, test report Nr. 174000139/314 dated 18.07. 2017, test report Nr. 194000060/314 dated 10.04. 2019, test report Nr. 135000043/314/3 dated 14.04. 2014, supplement Nr. 1 of test report Nr. 135000043/314/3 dated 14.11. 2014, test report Nr. 135000043/314/4 dated 16.04. 2014, test report Nr. 135000047/314/5 dated 22.04. 2014, test report Nr. 135000043/314/6 dated 28.04. 2014, test report Nr. 194000150/314 dated 04.12.2019. Test reports and supplements were issued by accredited Test Laboratory TSÚ Piešťany, š.p., Slovak Republic – Laboratory of Technical Equipment of Buildings and Constructions. Accreditation certificate Nr. S-047 from 23.07. 2019.

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