

Approved testing laboratory acc. to the German State building code, No. SAC24
Notified test laboratory acc. to the Construction Products Regulation (CPR), notified body 1721
Approved DIN CERTCO testing laboratory, Register-No. PL 015
Approved testing laboratory of the Association of Canton Fire Insurances (VKF Schweiz)
Approved DVGW-test laboratory



Test report of the initial type test of one heating boiler for solid fuel in accordance with DIN EN 303-5:2012-10 (E)

File no. / DBI F 19/07/0678
Test report no.
Test object Heating boiler for solid fuels DIN EN 303-5
Type & Heat output range PK15 4,4 – 15,0 kW
Version --
The central heating boiler is an insulated steel boiler, working with an integrated pellet burner inside the housing with the possibility to connect the boiler to a closed water vented system. The boiler works as a rapidly disconnectable firing system and has a safety temperature limiter to protect the heating circuit from overheating. The boiler is fed automatically from an internal fuel hopper operating with negative pressure in the combustion chamber.
Client Pelltech OÜ
Sära tee 3
Peetri 75312, Estonia
Manufacturer Like client
Scope of testing (Initial) type test of one heating boiler for solid fuel regarding the general, construction, performance and safety requirements, the marking and the technical documentation without testing of electrical safety and without EMC-testing acc. to DIN EN 303-5
Test basis DIN EN 303-5:2012-10 (E)
Directive "Richtlinie zur Förderung von Maßnahmen zur Nutzung erneuerbarer Energien im Wärmemarkt" dated 11.03.15 (BAFA)*
1st BImSchV (GER) issued on 22.03.2010*

The verification of the conformity to the DIN EN 303-5 and the fulfillment of all further requirements regarding product features for the appliance named above were documented, reviewed and were found to comply with the requirements. The defined supports (see page 12) have to be taken into consideration.

The requirements regarding level 2 of the 1st BImSchV ("Federal Immission Control Ordinance" dated 20.03.2010) Section 2, § 5 and the requirements regarding the directive "Richtlinie zur Förderung von Maßnahmen zur Nutzung erneuerbarer Energien im Wärmemarkt" (11.03.2015) section 2.4 (2) c) of the Bundesamt für Wirtschaft und Ausfuhrkontrolle (BAFA) for solid fuel boilers for the fuel wood pellets are fulfilled.


Dipl.-Ing. Ronald Aßmann

Signature of director of laboratory


Dipl.-Ing. (BA) Rico Eßbach
Signature of test engineer

Freiberg, 12.08.2019

The test report is valid only in connection with the corresponding appliance.

The accreditation is valid only for the scope listed in the annex of the certificate (D-PL-11072-01-00). Remark: Test procedures indicated with star (*) are out of the scope of DAkKS-accreditation.

There is no correction of the measured results with the uncertainty of measurement in case of statement of conformity unless required by indicated test basis.

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Summary

Test period	19.03.2019 – 12.04.2019 Appliance tests 05.06.2019 – 12.08.2019 Test report
Test location	Test laboratory Freiberg
Client	Pelltech OÜ Sära tee 3 Peetri 75312, Estonia
Test object	Heating boiler for solid fuels, DIN EN 303-5
Stoking method	Automatically
Type designation	Type PK15 Version --
Design	Boiler body <u>Insulation:</u> - mineral fiber insulation (non-flammable) <u>Steel parts:</u> - water-air-contact: 3,0 mm / 1.0038 - fire-water-contact: 5,0 mm / 1.0038 - fire-water-contact: 3,2 / 4,0 mm / 1.0345 (round pipes of the convection heating surfaces outside the combustion chamber) - water-water-contact: 3,0 mm / 1.0038 Combustion chamber Pellet combustion chamber with integrated pellet burner inside the housing Burner Integrated pellet burner of manufacturer Pelltech OÜ Sära tee 3 Peetri 75312 (Estonia) Stoking method Automatically, by two internal augers, one from the integrated fuel hopper and one inside the burner into the combustion chamber Water content 50 l Maximum allowable temperature 90 °C Maximum allowable operating pressure 3,0 bar
Fuels	Compressed wood (C1) – wood pellets acc. to EN ISO 17225-2

1.1 Characteristics of the appliance (EN 303-5)

Appliance	--	PK15	
Fuel	--	Compressed wood (C1) – Wood pellets acc. to EN ISO 17225-2	
Heat output range	kW	4,4 – 15,0	
Output level	--	TL	NL
Fuel throughput	kg/h	1,00	3,30
Total heating output	kW	--	--
Space heating output	kW	--	--
Water heating output	kW	4,4	15,0
CO emission based on 10 % O ₂	Vol.-%	0,003	0,009
CO emission based on 10 % O ₂	mg/m ³	45,2	161,1
CO emission – referred to fuel	mg/MJ	21,4	76,0
OGC emission based on 10 % O ₂ (Total C)	mg/m ³	< 1	< 1
OGC emission – referred to fuel (Total C)	mg/MJ	< 1	< 1
NO _x emission based on 10 % O ₂ (indicated as NO ₂)	mg/m ³	188,2	207,9
NO _x emission – referred to fuel (indicated as NO ₂)	mg/MJ	88,9	98,1
PM (Dust) emission based on 10 % O ₂	mg/m ³	24,3	24,8
PM (Dust) emission – referred to fuel	mg/MJ	11,5	11,7
Efficiency (direct) / Boiler efficiency	%	92,8	93,4
CO ₂ -Value of flue gas	Vol.-%	9,15	14,07
Temperature of flue spigot or socket	°C	59,3	111,0
Necessary flue draught as underpressure	Pa	7,6	10,9
Flue gas mass flow	g/s	3,66	7,65
Boiler class	--	5	
Electrical consumption at minimum / nominal heat output	W	12	31
Electrical consumption at Standby	W	3	
Waterside resistance at Δ10K / Δ20K	mbar	4,6 / 1,9	45,1 / 15,3

TL Part load = minimum heat output
NL Nominal load = nominal heat output

1.2 Characteristics of the appliance (1. BImSchV & BAFA)

Results regarding the requirements acc. to 1st BImSchV (“Federal Immission Control Ordinance”), section 2, § 5, Level 2 and regarding the requirements of the BAFA Directive “Richtlinie zur Förderung von Maßnahmen zur Nutzung erneuerbarer Energien im Wärmemarkt”, Section 2.4 (2) c) issued on 11.03.2015			
Appliance	--	PK15	
Fuel	--	Compressed wood (C1) – Wood pellets acc. to EN ISO 17225-2	
Heat output range	kW	26,0 – 90,0	
Output level	--	TL	NL
Water heating output	kW	4,4	15,0
CO emission based on 13% O ₂ ¹⁾	mg/m ³	32,9	117,1
PM (Dust) emission based on 13 % O ₂ ¹⁾	mg/m ³	--	18,1
Efficiency (direct) / Boiler efficiency	%	--	93,4
The requirements acc. to 1 st BImSchV, level 2 are fulfilled. The requirements of the BAFA Directive are fulfilled.			

TL Part load = minimum heat output

NL Nominal load = nominal heat output

¹⁾ Total average value throughout the complete measurement