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Prüflabor für Feuerungsanlagen
am Institut für Verfahrenstechnik,
Umwelttechnik und Technische
Biowissenschaften

Getreidemarkt 9/166
A-1060 Wien

Email: prueflabor@tuwien.ac.at

Tel.: ++43 1 58801 /166888
Fax: ++43 1 58801 /15999

Confirmation Energy Efficiency Index (EEI) of solid fuel boilers

Manufacturer	Thermo FLUX D.O.O. Skela b.b., 70101 Jajce Bosna i Hercegovina
Name of the device	„Pelling 25 ECO“
Testing Fuel	Wood pellets (EN plus A1)
Thermal output total kW	25
Partial load kW	8
Test reports for the evaluation ¹ :	PL-14023-P-Korrektur from 31.06.2015, PL-11160-P from 28.11.2011 and supplement to PL-11160-P from 09.02.2021 of the Test Laboratory for Combustion Plants at the Institute of Chemical, Environmental & Bioscience Engineering of the Vienna University of Technology.
Appendix	Calculation of EEI (Energy Efficiency Index)

Based on the test reports and according to the „ COMMISSION REGULATION (EU) 2015/1189 of 28 April 2015, implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for solid fuel boilers “ following EEI (Energy Efficiency Index) results:

EEI (Energy Efficiency Index)	120
Energy efficiency class	A+

Vienna, 09.02.2021

Person responsible for testing

Dipl.-Ing. S. Diem

Head of Laboratory



INSTITUT FÜR VERFAHRENSTECHNIK,
UMWELTECHNIK UND
TECHNISCHE BIOWISSENSCHAFTEN
A-1060 WIEN, GETREIDEMARKT 9/166

Ing. Dipl.-Ing. Dr. S. Müller

¹ The test results relate only to the test object at the time of testing.

Appendix: Calculation of EEI (Energy Efficiency Index) for the boiler „Pelling 25 ECO“

η_n	84,7	The ratio of the useful heat output and the total energy input of a solid fuel boiler, whereby the total energy input is expressed in terms of GCV (gross calorific value).
η_p	85,6	The ratio of the useful heat output and the partial energy input of a solid fuel boiler, whereby the partial energy input is expressed in terms of GCV (gross calorific value).
e_{lmax}	0,044	Electric power requirement at maximum heat output [kW]
e_{lmin}	0,017	Electric power requirement at minimum heat output [kW]
P_{SB}	0,002	Standby mode power consumption [kW]
P_n	25	Thermal output total [kW]
P_p	8	Partial load [kW]
$F(1)$	3	$F(1)$ accounts for a negative contribution to the energy efficiency index due to adjusted contributions of temperature controls; $F(1) = 3$.
$F(2)$	0,011	$F(2)$ accounts for a negative contribution to the energy efficiency index by auxiliary electricity consumption: $F(2) = 2.5 \times (0.15 \times e_{lmax} + 0.85 \times e_{lmin} + 1.3 \times P_{SB}) / (0.15 \times P_n + 0.85 \times P_p)$
$F(3)$	0	$F(3)$ accounts for a positive contribution to the energy efficiency index by the electrical efficiency of solid fuel cogeneration boilers, not relevant, $F(3) = 0$.
BLF	1,45	BLF is the biomass label factor, which is 1.45 for biomass boilers.
η_{son}	85,5	is the seasonal space heating energy efficiency in active mode $\eta_{son} = 0.85 \times \eta_p + 0.15 \times \eta_n$ [%]
η_s	83	Seasonal space heating energy efficiency, rounded to the nearest integer: $\eta_s = \eta_{son} - F(1) - F(2) + F(3)$
EEI	120	The Energy Efficiency Index (EEI) of solid fuel boilers shall be calculated for the preferred fuel and rounded to the nearest integer as: $EEI = \eta_{son} \times 100 \times BLF - F(1) - F(2) \times 100 + F(3) \times 100$

Energy efficiency class	EEI
A+++	≥ 150
A++	≥ 125
A+	≥ 98
A	≥ 90
B	≥ 82
C	≥ 75
D	≥ 36
E	≥ 34
F	≥ 30
G	< 30