



# **Renewable Heat Incentive**

## **Emission Limits for Particular Matter and Oxides of Nitrogen**

### **TEST CERTIFICATE**

#### **ISSUED**

Engineering Test Institute, Public Enterprise  
Hudcova 424/56b, 621 00 Brno, Czech Republic  
Authorised personnel : Milan Holomek  
Position in Laboratory: Head of Heat and Environment –  
Friendly Equipment Test Station

#### **CERTIFICATE NUMBER**

RHI 39-9971

#### **TEST REPORT NUMBER**

30-10830/T, 30-10668/T, 30-11623/T, 39-9971

#### **HEATING BOILER MODELS**

SMART 150, 180, 199, 220, 250  
SMART 300, 350, 400, 450, 500

#### **MANUFACTURER**

Smart Heating Technology s.r.o.  
U Statku 653/24, Ostrava Bartovice 717 00 Czech Republic

#### **DECLARATION**

Engineering Test Institute, Public Enterprise, through its legal representative, declares that the Solid Fuel Boiler(s) detailed above meet (s) the emission limits of 30g/GJ for particulate matter and 150g/GJ for NO<sub>x</sub> as stated by DEFRA, and as such the emissions are within the acceptable limit for the appliance to be used in installations wishing to claim the Renewable Heat Incentive (RHI).

Details of the testing procedure and appliance are contained in the appendix of this certificate.

Signed on behalf of Engineering Test Institute

Milan Holomek – Authorised Signatory

23. September 2013







## Appendix No1 to Certificate

**Standard:** ČSN EN 303.5:2000, ČSN EN 303.5:2013

**Test Fuel:** Wood pellets – C1

Wood chips – B1

### Summary of Results:

Measure value tab.1: test Fuel Wood Pellets – C1

Model	Nominal Hot Water Output		Measured Emissions			
			mg/m3 at 10%O2		g/GJ	
			NOx	PM	NOx	PM
SMART150	150 kW	Nominal	143	24,0	74	12,3
		Minimal	126	23,0	65	11,8
SMART180	180 kW	Nominal				
		Minimal				
SMART199	199 kW	Nominal				
		Minimal				
SMART220	220 kW	Nominal				
		Minimal				
SMART250	250 kW	Nominal				
		Minimal				
SMART300	300 kW	Nominal	130	27,0	67	13,9
		Minimal	129	35,0	66	18,0
SMART350	350 kW	Nominal				
		Minimal				
SMART400	400 kW	Nominal				
		Minimal				
SMART450	450 kW	Nominal				
		Minimal				
SMART500	500 kW	Nominal	105	13,0	54	6,7
		Minimal	130	22,0	67	11,3







Measure value tab.2: test Fuel Wood Chips – B1

Model	Nominal Hot Water Output		Measured Emissions			
			mg/m3 at 10%O2		g/GJ	
			NOx	PM	NOx	PM
SMART150	150 kW	Nominal	144	44,0	71	21,5
		Minimal	130	47,0	64	23,0
SMART180	180 kW	Nominal				
		Minimal				
SMART199	199 kW	Nominal				
		Minimal				
SMART220	220 kW	Nominal				
		Minimal				
SMART250	250 kW	Nominal				
		Minimal				
SMART300	300 kW	Nominal	142	20,0	70	9,8
		Minimal	116	48,0	57	23,4
SMART350	350 kW	Nominal				
		Minimal				
SMART400	400 kW	Nominal				
		Minimal				
SMART450	450 kW	Nominal				
		Minimal				
SMART500	500 kW	Nominal	185	39,0	91	19,1
		Minimal	162	48,0	79	23,4

#### 1. TEST HOUSE DETAILS

Was the testing done before 1st October 2012?	YES
Was the test house accredited to ISO 17025 at the time of testing?	YES
If no, which organisation was the house accredited to at the time of testing	N/A
If not accredited to ISO 17025	
Lab.Accreditation number	No.347/2013
Lab.Accreditation date	2013-06-24





## 2. WORK UNDERTAKEN

Name of the appliance tested	SMART
Models of the appliance tested	150,180,199,220,250 300,350,400,450,500
Manufacturer of the plant tested	See page.1
Is the appliance a manually stocked, natural draught boiler (that is without a fan providing forced or induced draught)	NO automatic boiler

## 3. FUELS

Test fuel - wood pellets D6, M10, A1.5, DU90.0 - wood chips P45,M30,A3.0,	Wood pellets – C1 Wood chips – B1
Fuel classification relevant from EN 14961	YES

## 4. TESTS

If the plant is 500kW or Lower, and BS-EN 303.5:1999 or BS EN 303.5:2012 applies to it, please confirm:	ČSN EN 303.5:2000 YES ČSN EN 303.5:2013 YES
Test were conducted to whichever standard was current at the time testing	
If the plant is 500kW or Lower, and BS-EN 303.5:1999 or BS EN 303.5:2012 Do not apply to it, please confirm:	
-Emissions of PM represent the average of at least three measurements, each of at last 30 minutes duration and;	Not applicable
-the value for NOx emissions is derived from the mean of measurements made throughout the PM test	Not applicable
If the plant is 500kW or higher, please confirm:	
-emissions of PM represent the average of at least three measurements, each of at 30 minutes duration and;	Not applicable
-the value for NOx emissions is derived from the mean of PM measurements made throughout the PM tests	Not applicable
Please confirm the tests were conducted to:	
-EN 14792:2005 in respect of NOx, and;	YES
-EN 13284-1:2002 or ISO 9096:2003 in respect of PM	YES
Please confirm was the appliance tested at ≥85% of its rated output?	YES
Please confirm the tests show that emissions were no greater than 30g/GJ PM and 150g/GJ NOx	YES

The Smart 180, 199, 220, 250, 350, 400, 450 are of the same generic design as the Smart 150, 300 and 500 models and are therefore considered to be a family of appliances within the provision of ČSN EN 303-5. The ratio of the nominal heat output of the tested appliances being less than or equal to 2:1.

- End of the Test Certificate -