



Industrie Service

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EVALUATION

for

heating boilers regarding the requirements of ANNEX B - RHI Emissions Certificates

Customer: HDG Bavaria GmbH, Siemensstraße 22, 84323 Massing

Subject of Test: Heating boilers for compressed wood (wood pellets) or
chipped wood B1,
automatically stoked, with combustion air fan

Type: HDG Compact

Sizes: HDG Compact 99 Pellet, HDG Compact 99 Hackgut,
HDG Compact 100 Pellet, HDG Compact 100 Hackgut,
HDG Compact 105 Pellet, HDG Compact 105 Hackgut,
HDG Compact 150 Pellet, HDG Compact 150 Hackgut,
HDG Compact 194 Pellet, HDG Compact 199 Hackgut,
HDG Compact 200 Pellet, HDG Compact 200 Hackgut

Basis of Test: Renewable Heat Incentive: Providing certainty, improving
performance, dated 20 July 2012,
ANNEX B - RHI Emissions Certificates

Test Laboratory: TÜV SÜD Industrie Service GmbH
Abteilung Feuerungs- und Wärmetechnik
Prüfbereich Wärmetechnik

Test Reports: H-C5 1232-00 12 dated 2012-11-13,
H-C6 1232-00 12 dated 2012-11-13,
H-C1 1232-00/07 dated 2007-09-26,
H-C2 1232-01/11 dated 2011-10-31,
H-A 1232-04 08 dated 2008-11-06,
H-C7 1232-00 12 dated 2012-11-13,
H-C8 1232-00 12 dated 2012-11-13,
H-C3 1232-00/07 dated 2007-09-26 and
H-C4 1232-00/07 dated 2007-09-26

The tests for the sizes HDG Compact 99 Pellet, HDG Compact 99 Hackgut,
HDG Compact 100 Pellet, HDG Compact 100 Hackgut, HDG Compact 105 Pellet,
HDG Compact 105 Hackgut, HDG Compact 194 Pellet,
HDG Compact 199 Hackgut, HDG Compact 200 Pellet,
HDG Compact 200 Hackgut were performed with positive results.

The heating boiler sizes HDG Compact 150 Pellet and
HDG Compact 150 Hackgut are not tested intermediate sizes according to
DIN EN 303-5:1999-06, clause 5.1.3. The data is given by the manufacturer.

Date: 2012-11-13

Our reference:
IS-TAF-MUC/si

Report no. H2 1232-00/12
Order no.1872012

Document:
H2 1232 00 12RHC100.doc

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This document includes
2 pages and 12 annexes

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The test results refer exclusively
to the units under test.



Headquarters: Munich
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Supervisory Board:
Karsten Xander (Chairman)
Board of Management:
Ferdinand Neuwieser (CEO),
Dr. Ulrich Klotz, Thomas Kainz

Telefon: +49 89 51 90 - 1027
Telefax: +49 89 51 90 - 3307
E-mail Feuerung@tuev-sued.de
www.tuev-sued.de/is
TÜV®

TÜV SÜD Industrie Service GmbH
Feuerungs- u. Wärmetechnik
Ridlerstrasse 65
80339 Munich
Germany



Industrie Service

The correspondent forms of ANNEX B - RHI Emissions Certificates¹ are enclosed to this document.

Notes to the filled in forms ANNEX B - RHI Emissions Certificates:

Note 1: name of test house, see above Test Laboratory

Note 2: official logo of test house, see head line

Note 3: general accreditation for appliances firing gaseous, liquid and solid fuel due to German accreditation law by ZLS, Zentralstelle der Länder für Sicherheitstechnik,
the accreditation is updated nowadays; new accreditation office DAkkS,
new accreditation number D-PL-14153-04-00

Note 4: test performed according to DIN EN 303-5:1999-06

Note 5: (page 2 note 5),

HDG Compact 99 Pellet, HDG Compact 100 Pellet, HDG Compact 105 Pellet, HDG Compact 194 Pellet and HDG Compact 200 Pellet used fuel wood pellets C, spruce with a water content 7.0 %, Hu 17460 kJ/kg,

HDG Compact 99 Hackgut, HDG Compact 100 Hackgut and HDG Compact 105 Hackgut used fuel chipped wood B1, spruce with water content 25.7 %, Hu 13428 kJ/kg and with a water content 21.8 %, Hu 14292 kJ/kg,

HDG Compact 199 Hackgut used fuel chipped wood B1, spruce with a water content 19,8 %, Hu 14832 kJ/kg, with a water content 22,5 %, Hu 14256 kJ/kg and with a water content 24,0 %, Hu 13932 kJ/kg,

HDG Compact 200 Hackgut used fuel chipped wood B1, spruce with a water content 10.1 %, Hu 16812 kJ/kg

Note 6: (page 2 note 6),

all heating boilers HDG Compact .. Pellet useable fuel wood pellets C,
all heating boilers HDG Compact .. Hackgut useable fuel chipped wood B1
according to DIN EN 303-5:1999-06, clause 1

Note 7: The heating boiler of size/models HDG Compact 150 Pellet and HDG Compact 150 Hackgut are not tested intermediate size/models according to DIN EN 303-5:1999-06, clause 5.1.3. The data is given by the manufacturer.

Feuerungs- und Wärmetechnik

A handwritten signature in blue ink, appearing to read 'J. Steiglechner'.

Johannes Steiglechner

¹ Within this confirmation evaluations of results concerning the conformity with the requirements of the Renewable Heat Incentive (RHI) are informative for the client and do not represent a valuation as defined by the procedures of RHI, which is reserved to the Certification office.

ANNEX B - RHI Emissions Certificate

All sections must be completed

1. TEST HOUSE	
a) name of test house	see evaluation page 2, note 1
b) official logo of test house	see evaluation page 2, note 2
c) was testing done before [date of regulation]?	no
d) was the test house accredited to ISO 17025 at the time of testing?	yes, by DAkkS
e) organisation with which the test house was accredited at the time of testing if not accredited to ISO 17025	-
e) accreditation number	D-PL-14153-04-00

2. APPLIANCE	
	Appliance 1
a) name of the appliance tested	HDG Compact
b) model of the appliance tested	HDG Compact 199 Hack
c) manufacturer of the appliance tested	HDG Bavaria GmbH
d) what is the nominal heat output of the appliance in kilowatts (kW)?	199
e) is the appliance a <u>manually stoked, natural draught</u> boiler (that is without a fan providing forced or induced draught)?	no
f) has this appliance been assessed on the basis of family rules (paragraphs 11.1 and 11.2 of the Government emissions methodology)?	no
g) if the answer to 2f) is 'yes', give name and model of the related appliance which has been tested and the RHI emissions certificate number	-
3. FUELS	
a) what were the fuels used when testing? <i>Please describe using the fuels table below</i>	chipped wood B1, spruce
b) based on the testing, what range of fuels can be used in compliance with the emission limits for total particulate matter (PM) and oxides of nitrogen (NOx)? <i>Please describe using the fuels table below</i>	chipped wood B1
4. TESTS	
a) were the tests conducted to EN	

303-5 (<i>applies to appliances • 500kW</i>)?	yes, see eval. p. 2, n. 4
b) was condensable PM measured (<i>applies to appliances • 500kW which are manually stoked, natural draught boilers</i>)?	not applicable, heating boiler operated with combustion air fan
c) were the tests conducted to EN 14792:2005 and either EN 13284-1:2002 or ISO 9096:2003, with the results an average of a minimum of three PM tests each of at least 30-minute duration and the average NO _x measurement determined from continuous measurements undertaken throughout the PM measurement period (<i>applies to >500kW appliances</i>)?	not applicable, nominal heat output < 500 kW
d) was the product tested a production sample which is fully representative of the current production?	yes, according to manufacturer
e) was the appliance tested at • 85% of its rated output?	yes, at 101 %
f) did the tests show that emissions were no greater than 30g/GJ PM and 150g/GJ NO _x ?	yes
g) what were the measured emissions of PM: give figures in grams per GigaJoule (g/GJ) net thermal input?	9 thermal input 231,0 kW 7 thermal input 65,3 kW
h) what were the measured emissions of NO _x : give figures in grams per GigaJoule (g/GJ) net thermal input?	98 thermal input 231,0 kW 78 thermal input 65,3 kW

Fuels Table

All descriptions to use terminology of EN 303-5 or EN 14961 wherever relevant

Category of fuel		Description of test fuel	Description of the range of fuels certified as useable in compliance with the PM and NOx limits, based on the tests				
	Tick all categories of fuel tested	Class/type of fuel + any additional fuel description	Class/type of fuel + any additional fuel description	Size/ dimensions	Moisture content	Ash content	Calorific Value
Wood log							
Wood chip	x	B1, s. p.2 n.5	B1, s. p.2 n.6	length 1 - 10 cm	15 - 35 %		
Wood pellet							
Wood briquette							
Sawdust							
Other fuels listed in EN303-5 or EN 14961							
Other fuels <u>not</u> listed in EN303-5 or EN 14961							

Johannes Steiglechner

name and signature of the person authorised to issue the certificate

2012-11-13

date of issue of the certificate

Annex 12 to document no. H2 1232-00/12

certificate reference number for quoting in any correspondence.