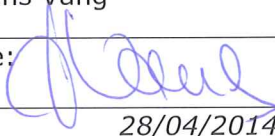




This certificate provides evidence that the tested boiler meets the air quality requirements of the non-domestic Renewable Heat Incentive (RHI) – Reg 5A(3) and Schedule A1. It must be issued by a testing laboratory. Applicants applying for the RHI with biomass boilers must submit a certificate with their application, or alternatively, an environmental permit.

<b>1. TEST HOUSE</b>	
a) name and address of testing laboratory	Eurofins Miljø A/S Smedeskovvej 38, DK-8464 Galten
b) name and signature of the person authorised by the testing laboratory to issue the certificate	Name: Jens Vang
	Signature: 
c) date of issue of this certificate together with certificate reference number *Please see Note A	Date: 28/04/2014
	Ref: 222100-151-122
d) if testing laboratory is accredited to BS EN ISO/IEC 17025:2005, date of accreditation and accreditation number <i>(note: if testing conducted after 24 September 2013, the testing laboratory <b>must</b> be BS EN ISO/IEC 17025:2005 accredited)</i>	Date: 27/08/2013
	Accreditation number: DS/EN ISO/IEC 17025:2005, No. 168

<b>2. PLANT</b> <i>Please see Note B</i>	
a) name of the plant tested	Johnson Controls ApS Axel Gruhnsvej 20, DK-8270 Højbjerg
b) model of the plant tested	Argusflex 19
c) manufacturer of the plant tested	Justsen Energiteknik A/S Grimhøjvej 11, DK-8220 Brabrand
d) installation capacity* of the tested plant in kilowatts (kW) *defined in the RHI Regulations as the total installed peak heat output capacity of the plant	1750 kW
e) is the plant a manually stoked, natural draught plant? (that is, without a fan providing forced or induced draught)	no
f) (i) the date the plant was tested* (ii) please confirm that NOx and PM have been tested on the same occasion	03/04/2014 yes

*This is in reference to the emissions testing for PM and NOx, not any wider range of tests. A specific date is required.											
g) list of all the plants in the type-testing range* of plants to which the certificate applies, if any <sup>1</sup> Please include the <b>installation capacity</b> of each model. <i>*This must follow the ratio rules: If the smallest plant in the range is 500kW or less, the largest plant in the range can't be more than double the smallest. If the smallest plant in the range is over 500kW, the largest plant in the range can't be more than 500kW greater than the smallest.</i>	<table border="0"> <tr> <td>Argusflex 19 Ceramic</td> <td>1500 – 2000 kW</td> </tr> <tr> <td>Argusflex 19-5 Ceramic</td> <td>1500 – 2000 kW</td> </tr> <tr> <td>Argusflex 19 Pure</td> <td>1700 - 2200 kW</td> </tr> <tr> <td>Argusflex 19-5 Pure</td> <td>1700 – 2200 kW</td> </tr> <tr> <td>Argusflex 19 Straw</td> <td>1500 – 2000 kW</td> </tr> </table> <p>The Argusflex system consists of Feeding system, water cooled step grate, Multimiser 19 or 19-5 boiler, multicyclone flue gas filter and flue gas fan.</p>	Argusflex 19 Ceramic	1500 – 2000 kW	Argusflex 19-5 Ceramic	1500 – 2000 kW	Argusflex 19 Pure	1700 - 2200 kW	Argusflex 19-5 Pure	1700 – 2200 kW	Argusflex 19 Straw	1500 – 2000 kW
Argusflex 19 Ceramic	1500 – 2000 kW										
Argusflex 19-5 Ceramic	1500 – 2000 kW										
Argusflex 19 Pure	1700 - 2200 kW										
Argusflex 19-5 Pure	1700 – 2200 kW										
Argusflex 19 Straw	1500 – 2000 kW										

<b>3. FUELS</b>	
a) types of fuels used when testing	Wood chips
b) based on the testing, list the range of fuels that can be used in compliance with the emission limits of 30 grams per gigajoule (g/GJ) net heat input for particulate matter (PM), and 150 g/GJ net heat input for oxides of nitrogen (NOx) <i>(based if relevant on classifications from EN14961 or EN303-5)</i>	Pellets Dry wood chips 0 – 30 % moisture Wet wood chips 30 – 55 % moisture Straw
c) moisture content of the fuel used during testing	33,5%
d) maximum moisture content*of the fuel which can be used with the certified plant(s) so as to ensure that the RHI emission limits are not exceeded. <i>*This value may be obtained from ranges specified in EN 303-5 based on the fuel type(s) tested</i>	55%

<b>4. TESTS</b>	
Confirm which requirements the emissions of NOx and PM have been tested in accordance with. <b><u>Either 4a or 4b should be confirmed, the other should be 'not applicable'</u></b>	
a) <b>if the testing was carried out in accordance with the provisions relevant to emissions of PM and NOx in either BS EN 303-5:1999 or BS EN 303-5:2012<sup>2</sup></b> , please confirm: -the test was conducted to whichever standard was current at the time of testing.	BS EN 303-5:1999: not applicable BS EN 303-5:2012: not applicable
b) <b>if the testing was carried out in accordance with the following requirements</b> , please confirm: (i) testing was carried out in accordance with: - EN 14792:2005 in respect of NOx emissions, and; - EN 13284-1:2002 or ISO 9096:2003 in respect of PM emissions <sup>3</sup> ; and	EN 14792:2005 yes EN 13284-1:2002 yes

<sup>1</sup> The type-testing approach enables testing laboratories to provide assurance that all boilers in a given range meet the air quality requirements, without needing to specifically test each boiler.

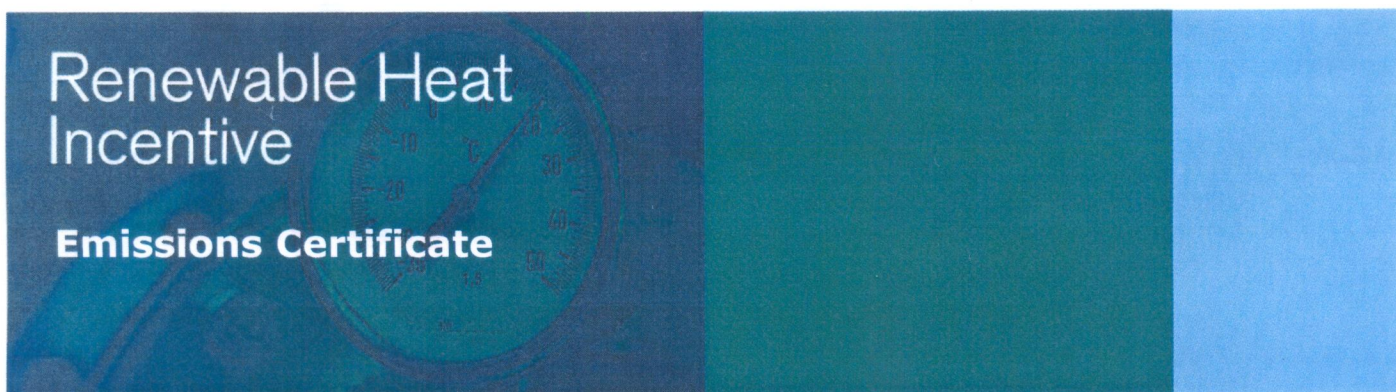
<sup>2</sup> BS EN303-5:1999 and 2012 explain what should be measured and when.

<sup>3</sup> These standards explain how to make the PM and NOx measurements.


(ii) emissions of PM represent the average of at least three measurements of emissions of PM, each of at least 30 minutes duration; and	yes
(iii) the value for NO <sub>x</sub> emissions is derived from the average of measurements made throughout the PM emission tests.	yes
c) please confirm the plant was tested at ≥85% of the installation capacity of the plant	yes
d) please confirm the test shows that emissions from the plant were no greater than 30g/GJ PM and 150g/GJ NO <sub>x</sub>	yes
e) measured* emissions of PM in <b>g/GJ</b> net heat input *this value should be from the test confirmed in 4c. Results from partial load tests are not required. This value must be in the specified units.	1,4 g/GJ
f) measured* emissions of NO <sub>x</sub> in <b>g/GJ</b> net heat input *this value should be from the test confirmed in 4c. Results from partial load tests are not required. This value must be in the specified units.	88 g/GJ

**Note A:** If details from a previously issued certificate are being transferred to this RHI emission certificate template, please note that this document must be **issued by the testing laboratory** as a separate certificate. So the issue date and certificate reference number should be in relation to *this* certificate using the RHI template, not the issue date and reference number of the original certificate.

**Note B:** If you are including multiple tested plants on one certificate, please ensure that all sections are completed for each tested plant, and are laid out such that it is clear which details relate to which tested plant. If a type-testing range is included as well, please show clearly which type-testing range relates to which tested plant(s), following the type-testing range ratio rules outlined in 2g.



In order to accredit any biomass boiler or stove applications received for the domestic or non-domestic Renewable Heat Incentive (RHI) schemes, Ofgem must be satisfied that a valid emissions certificate exists for the specific model in the application (or alternatively for the non-domestic RHI, an environmental permit for the site). This template incorporates all information required to demonstrate that the tested plant meets the air quality requirements of the RHI. It must be fully completed and issued by a testing laboratory in order to be a valid certificate.

<b>1. TEST HOUSE</b>	
a) Name and address of the testing laboratory that has carried out the required tests and issued this certificate * <i>*if different, include details of both</i>	KMP AB, Videgrensgatan 3, S - 593 32 Västervik
b) Name and signature of the person authorised by the testing laboratory to issue the certificate	Name: Tomas Ekström
	Signature: 
c) Date of issue of this certificate, together with certificate reference number for this certificate <i>*Please see Note A</i>	Date: 2015-08-05
	Certificate reference number: Projekt nr. 15039
d) If the testing laboratory that has carried out the required tests is accredited to BS EN ISO/IEC 17025:2005, date of accreditation and accreditation number <i>(if testing conducted on or after 24 September 2013, the testing laboratory <b>must be</b> BS EN ISO/IEC 17025:2005 accredited at the time of testing)</i>	Date: 17/02/2014 (renewed)
	Accreditation number: 1653

<b>2. PLANT - Please see Note B</b>	
a) Name of the plant tested	Installed HB, Ranhusvägen 46 S - 196 31 Kungängen
b) Model of the plant tested* <i>*Please ensure this is the same as in the manufacturer's documentation and boiler nameplate</i>	Justsen Argusflex 13C
c) Manufacturer of the plant tested	Justsen Energiteknik A/S, Grimhøjvej 11, 8220 Brabrand, Denmark
d) Installation capacity* of the <b>tested</b> plant in kilowatts (kW) <i>*The total installed peak heat output capacity</i>	500kW
e) Is the plant a <u>manually stoked, natural draught</u> plant? (without a fan providing forced or induced draught)	No

<p>f) (i) Date the plant was tested*</p> <p>(ii) Please confirm that NO<sub>x</sub> and PM have been tested on the same occasion</p> <p><i>*This is in reference to the emissions testing for PM and NO<sub>x</sub>, not any wider range of tests. A specific date is required. Please provide the date of test performed at ≥85% of the installation capacity.</i></p> <p><i>If more than one model has been tested or testing has been conducted on different dates for different fuels, please list each date with details.</i></p>	<p>06/02/2014</p> <p>Yes</p>																		
<p>g) Please list all the plants in the type-testing range* of the tested plants to which the certificate applies, if any.<sup>1</sup> Please include the <b>installation capacity</b> of each model.</p> <p><i>*This must follow the ratio rules:</i></p> <p><i>If the smallest plant in the range is 500kW or less, the largest plant in the range can't be more than double the smallest.</i></p> <p><i>If the smallest plant in the range is over 500kW, the largest plant in the range can't be more than 500kW greater than the smallest.</i></p>	<table border="0"> <tr><td>Argusflex 13 C</td><td>500kW</td></tr> <tr><td>Argusflex 13 Pure</td><td>500kW</td></tr> <tr><td>Argusflex 13 Straw</td><td>500kW</td></tr> <tr><td>Argusflex 15 C</td><td>750kW</td></tr> <tr><td>Argusflex 15 Pure</td><td>750kW</td></tr> <tr><td>Argusflex 15 Straw</td><td>750kW</td></tr> <tr><td>Argusflex 17 C</td><td>995kW</td></tr> <tr><td>Argusflex 17 Pure</td><td>995kW</td></tr> <tr><td>Argusflex 17 Straw</td><td>995kW</td></tr> </table>	Argusflex 13 C	500kW	Argusflex 13 Pure	500kW	Argusflex 13 Straw	500kW	Argusflex 15 C	750kW	Argusflex 15 Pure	750kW	Argusflex 15 Straw	750kW	Argusflex 17 C	995kW	Argusflex 17 Pure	995kW	Argusflex 17 Straw	995kW
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Argusflex 17 Pure	995kW																		
Argusflex 17 Straw	995kW																		

### 3. FUELS

<p>a) Types of fuels used when testing (where relevant, this should include how the fuel has been processed and based if relevant on classifications from EN14961 or EN303-5. eg. wood pellets/compressed wood, wood chip. We don't expect broader categories such as 'beech', 'wood'.)</p>	<p>Wood chips</p>
<p>b) Based on the testing, list the range of fuels that can be used in compliance with the emission limits of 30 grams per gigajoule (g/GJ) net heat input for particulate matter (PM), and 150 g/GJ net heat input for oxides of nitrogen (NO<sub>x</sub>) (where relevant, this should include how the fuel has been processed and based if relevant on classifications from EN14961 or EN303-5. eg. wood pellets/compressed wood, wood chips. We don't expect broader categories such as 'beech', 'wood')</p>	<p>Wood pellets in accordance with EN 14961-2 (EN 303-5:2012 category C1)</p> <p>Wood briquettes in accordance with EN 14961-3 (EN 303-5:2012 category C2)</p> <p>Virgin Woodchip</p> <p>Grade A "Clean" woodchip in accordance to BSI PAS 2012</p> <p>Woodchip A1, A2, B1 &amp; B2 in accordance to EN14961-4, 2011</p> <p>Sawdust with moisture content w≤50% (EN 303-5:2012 category D)</p> <p>Straw and grains according to EN 14961-6 (EN 303-5:2012 category E)</p>
<p>c) Moisture content of the fuel used during testing</p>	<p>43.4%</p>
<p>d) Maximum allowable moisture content* of fuel that can be used with the certified plant(s) that ensures RHI emission limits are not exceeded. <i>*This value may be obtained from ranges specified in</i></p>	<p>55%</p>

<sup>1</sup> The type-testing approach enables testing laboratories to provide assurance that all boilers in a given range meet the air quality requirements, without needing to specifically test each boiler.

<i>EN 303-5 based on the fuel type(s) tested</i>	
<b>4. TESTS</b>	
Confirm which requirements the emissions of NO <sub>x</sub> and PM have been tested in accordance with. <b>Either 4a or 4b must be confirmed to be a valid RHI certificate.</b>	
a) <b>Was the testing carried out in accordance* with all of the provisions relevant to emissions of PM and NO<sub>x</sub> in either BS EN 303-5:1999 or BS EN 303-5:2012?</b> <i>*It is <b>not</b> a requirement that the tested plant must be within the scope of one of these standards, as long as the test lab can confirm that <b>all of the relevant provisions</b> were followed appropriately</i>	BS EN 303-5:1999: not applicable  BS EN 303-5:2012: not applicable
b) <b>Was the testing carried out in accordance with <u>all</u> of the following requirements?</b> (i) - EN 14792:2005 in respect of NO <sub>x</sub> emissions - EN 13284-1:2002 or ISO 9096:2003 in respect of PM emissions <sup>3</sup>  (ii) emissions of PM represent the average of at least three measurements of emissions of PM, each of at least 30 minutes duration  (iii) the value for NO <sub>x</sub> emissions is derived from the average of measurements made throughout the PM emission tests.	Yes  Yes  Yes
c) Please confirm the plant was tested at ≥85% of the installation capacity of the plant.	Yes
d) Please confirm the test shows that emissions from the plant were no greater than 30 g/GJ PM and 150 g/GJ NO <sub>x</sub> .	Yes
e) Measured* emissions of PM in <b>g/GJ</b> net heat input <i>*This average value should be from the test confirmed in 4c Results from partial load tests are not required. This value must be in the specified units.</i>	20 g/GJ
f) Measured* emissions of NO <sub>x</sub> in <b>g/GJ</b> net heat input <i>*This average value should be from the test confirmed confirmed in 4c. Results from partial load tests are not required. This value must be in the specified units.</i>	102 g/GJ

**Note A:** If details from a previously issued certificate or an original test report are being transferred to this RHI emission certificate template, please note that this document must be **issued by the testing laboratory** as a separate certificate. The issue date and certificate reference number should be in relation to *this* certificate produced using the RHI template, not the issue date and reference number of the original certificate or test report.

**Note B:** If you are including multiple tested plants on one certificate, please ensure that all sections are completed for each tested plant, and are laid out such that it is clear which details relate to which tested plant. If a type-testing range is included as well, please show clearly which type-testing range relates to which tested plant(s), following the type-testing range ratio rules outlined in 2g.

<sup>2</sup> BS EN303-5:1999 and 2012 explain what should be measured and when.

<sup>3</sup> These standards explain how to make the PM and NO<sub>x</sub> measurements.