

CERTIFICATE

Internal manufacturing checks with monitoring of the final assessment - Module A1

Certificate No: 2.3.12/A1/016

Name of manufacturer:	Eko Air, SIA
Legal address:	11A Ūnijas Street, Rīga, LV-1039, Latvia
Address of manufacturing plant:	30D Miera Street, Salaspils, LV-2169, Latvia
Description of pressure equipment:	Stainless steel brazed plate heat exchangers
Type:	NB23H; NB32H; NB46H; NB46L; NB133H; NB133L; NB533H; NB533M; NB533L
Category:	I; II
Maximum allowable pressure, bar:	31.0
Maximum allowable temperature, °C:	-200...+200
Fluid group:	II
Drawing No:	NB000.000.00
Test report No:	2.3.12/A1/016-PZ; 2.3.12/A1/016-PZ-2012

We hereby certify, that the pressure equipment mentioned above are manufactured in accordance with the essential safety requirements of the Pressure Equipment Directive 97/23/EC and Regulations of the Cabinet of Ministers of the Republic of Latvia No 165 of 2 May 2000 „Regulations regarding Pressure Equipment and Assemblies thereof”.

Standards applied: EN13445-3; EN13445-5; EN10028-7

On the basis of tests the manufacturer has to affix CE marking to each item of pressure equipment within the framework of this module as follows:

CE 1407

Test report and the conditions for the use of the certificate are integral part of the certificate.

Date of issue: **17 December 2012**

Engineer: Aleksandrs Braslis

Union of Technical Safety Experts of
Manufacturers of Latvia
TUV Rheinland Group, Ltd
3/C2 Ierikņu Street, Riga, Latvia



Phone: +37167568610
Fax: +37167568605

www.tuv.lv
E-mail: tuv@tuv.lv

Test report

Internal production control with monitoring of the final assessment							
Module:	A1	B	B1	C1	F	G	Test report No: 2.3.12/A1/016-PZ-2012
Manufacturer: "Eko Air" SIA				Address of manufacturing plant: 30D Miera Street, Salaspils, LV-2169, Latvia			

TECHNICAL DATA – ALL MENTIONED TYPES OF HEAT EXCHANGERS ARE UNITED IN A SINGLE CERTIFICATION GROUP

Type of heat exchanger	NB23H	NB32H	NB46H; NB46L	NB133H; NB133L	NB533H; NB533M; NB533L
Maximum number of plates	50	50	60	140	140
Maximum volume, L	1.9	2.7	4,56	11.62	16.38
Maximum allowable pressure, bar	31.0	31.0	31.0	31.0	31.0
Maximum/minimum allowable temperature, °C:	+200/-200	+200/-200	+200/-200	+200/-200	+200/-200
Fluid group (features)	II (liquids, gases)	II (liquids, gases)	II (liquids, gases)	II (liquids, gases)	II (liquids, gases)

MANUFACTURED ACCORDING TO THE FOLLOWING DIRECTIVE AND STANDARDS:

Directive 97/23/EC (Pressure equipment)

Regulations of the Cabinet of Ministers of the Republic of Latvia No 165 of 2 May 2000 „Regulations regarding Pressure Equipment and Assemblies thereof”

EN 13445-3:2009 Unfired pressure vessels - Part 3: Design

EN 13445-5:2009 Unfired pressure vessels - Part 5: Inspection and testing

EN 10028-7:2008 Flat products made of steels for pressure purposes - Part 7: Stainless steels

INTERNAL PRODUCTION CONTROL WITH MONITORING OF THE FINAL ASSESSMENT:

Conformity of the documentation with laws and regulations:	Acceptable	Not acceptable
Conformity of the pressure equipment with the design No: NB000.000.00	Acceptable	Not acceptable
Traceability of the materials used (certificates)	Acceptable	Not acceptable
Marking of equipment	Acceptable	Not acceptable
Draft declaration of conformity	Acceptable	Not acceptable
Heat exchanger: NB533H60, fact. No 1212120014	1st channel	2nd channel
Visual inspection	Acceptable	Acceptable
Dimensional check	Acceptable	Acceptable
Test pressure, bar	55.0	55.0
Test medium	air	air
Date of testing	14.12.2012	14.12.2012
Visual inspection after pressure test	Acceptable	Acceptable

06.04/107-PZ-A1

Lappuse 1 no 2

Conclusion: The mentioned tests were performed in accordance with the regulatory requirements. Requirements of Directive 97/23/EC and Regulations of the Cabinet of Ministers No 165 of 2 May 2000 "Regulations regarding Pressure Equipment and Assemblies thereof" have been met.

After the award of the certificate each pressure equipment shall be marked with the CE marking accompanied by the identification number of the notified body "LRTDEA" TUV Rheinland Group 1407.

Notes:

1. The test results relate exclusively to the described test object. Partial reproduction of and extraction from the test report without a written authorization are not permitted.
2. The final assessment of the pressure equipment shall be made by the manufacturer, who, by the use of the method of unexpected visits (at least once a year) shall be supervised by the notified body selected by the manufacturer.

Appendices: -----

Place: Riga

Date: 17/12/2012

"LRTDEA" TUV Rheinland Group
Centre of Production Certification

The test has been performed and
the report has been drawn up by:



Jānis Gurtiņš

Notified body No1407

The certification data will be stored in the archive of the Centre of Product Certification of "LRTDEA" TUV Rheinland Group.
Data protection guaranteed.

Test report

Internal manufacturing check							Burst test	
Module:	A1	B	B1	C1	F	G	Test report No: 2.3.12/A1/016-PZ	
Manufacturer: Eko Air, SIA				Address of manufacturing plant: 30D Miera Street, Salaspils, LV-2169, Latvia				

DESCRIPTION OF STAINLESS STEEL BRAZED PLATE HEAT EXCHANGERS

Type of heat exchanger	NB23H	NB32H	NB46H; NB46L	NB133H; NB133L	NB533H; NB533M; NB533L
Maximum number of plates	50	50	60	140	140
Maximum volume, L	1.9	2.7	4.56	11.62	16.38
Maximum allowable pressure, bar:	31.0	31.0	31.0	31.0	31.0
Maximum/minimum allowable temperature, °C:	+200/-200	+200/-200	+200/-200	+200/-200	+200/-200
Fluid group	II (liquids, gases)	II (liquids, gases)	II (liquids, gases)	II (liquids, gases)	II (liquids, gases)

MANUFACTURED ACCORDING TO THE FOLLOWING DIRECTIVE AND STANDARDS:

Directive 97/23/EC (Pressure equipment)

Regulations of the Cabinet of Ministers of the Republic of Latvia No 165 of 2 May 2000 „Regulations regarding Pressure Equipment and Assemblies thereof”

EN 13445-3:2009 Unfired pressure vessels - Part 3: Design. Annex T. Design by experimental methods

EN 13445-5:2009 Unfired pressure vessels - Part 5: Inspection and testing

EN 10028-7:2008 Flat products made of steels for pressure purposes - Part 7: Stainless steels

INTERNAL MANUFACTURING CHECK AND BURST TEST:

Conformity of manufacturing documentation:	Acceptable	Not acceptable	
Conformity of the pressure equipment with the design No: NB000.000.00	Acceptable	Not acceptable	
Traceability of the materials used	Acceptable	Not acceptable	
Marking of equipment	Acceptable	Not acceptable	Experimental samples were not intended for labeling
Draft Declaration of conformity	Acceptable	Not acceptable	A draft Declaration of conformity will be examined during the monitoring of the final assessment

Heat exchanger:	NB533H60, serial No 1212120018	NB533H60, serial No 1212120019
Visual inspection before burst test	Acceptable	Acceptable
Dimensional check before burst test	Acceptable	Acceptable
Required burst pressure, bar	141.3	141.3
Test medium	oil	oil
Date of burst test	13.12.2012	14.12.2012
Measured burst pressure, bar	142.4	141.9
Visual inspection after burst test	Internal rupture between the flow channels. Visible small deformation against connectors.	Internal rupture between the flow channels. Visible small deformation against connectors.
Procedure of burst test:		

Conclusion: The maximum allowable working pressure of pressure equipment was determined by experimental design method as provided in the Annex T to the standard EN1345-3: 2009. All acceptance criteria were met. Since, the heat exchangers withstood the pressure of 141,3 bar, then their maximum allowable pressure is determined 31. 0 bar.
Requirements of Directive 97/23/EC and Regulations of the Cabinet of Ministers of the Republic of Latvia No 165 of 2 May 2000 "Regulations regarding Pressure Equipment and Assemblies thereof" have been met.

After the award of the certificate each pressure equipment shall be marked with the CE marking accompanied by the identification number of the notified body "LRTDEA" TUV Rheinland Group 1407.

Notes:

1. The test results relate exclusively to the described test object. Partial reproduction of and extraction from the test report without a written authorization are not permitted.
2. Before placing of the heat exchangers on the market, the manufacturer shall perform the final assessment and pressure tests for each produced heat exchanger.
3. The details of the changes shall be submitted to the Centre of Product Certification, if changes are made to the design of the certified heat exchangers, manufacturing technology or material used.

Place: Riga

Date: 17/12/2012

"LRTDEA" TUV Rheinland Group
Centre of Product Certification

The test has been performed
and the report has been drawn up by:

Jānis Gurtiņš

Notified body No 1407

The certification data will be stored in the archive of the Centre of Product Certification of "LRTDEA" TUV Rheinland Group.
Data protection guaranteed.

Confirmation about the change of the heat exchanger type designations

Due to the manufacturer's desire to change the designations of the certified stainless steel brazed-plate heat exchanger type supplementing it with the subtype names, we confirm that the pressure equipment types correspond to:

The original type designation	The new type designation
NB23H	NB238
NB32H	NB328
NB46L	NB464
NB46LH	NB466
NB46H	NB468
NB133L	NB134
NB133LH	NB136
NB133H	NB138
NB533L	NB534
NB533LM	NB535
NB533M	NB536
NB533MH	NB537
NB533H	NB538

Manufacturer of the pressure equipment:

Eco Air Ltd

Legal address:

11A Unijas Street, Riga, LV-1039, Latvia

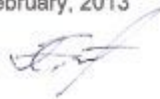
Factory address:

30d Miera Street, Salaspils, LV-2169, Latvia

The confirmation is to be attached to the certificate No: 2.3.12/A1/016 (internal manufacturing check and monitoring of the final assessment - module A1), issued on the 17th December, 2012.

Confirmation issued: on the 28th of February, 2013

Expert of the pressure equipment:



Janis Gurtins

Union of Technical Safety Experts of
Manufacturers of Latvia
TUV RHEINLAND GROUP LTD
3 Ieriku str. build. C2. Riga. Latvia

Phone: + 37167568610
Fax: + 37167568605

www.tuv.lv
E-mail: tuv@tuv.lv