

**Report No. K 1793 2019 E5**

**Residential space heating appliances fired by wood pellets**  
**Supplement to Initial type testing**  
in accordance with DIN EN 14785

Types:

**AP004N\_2\_06**

**AP004N\_2\_07**

**AP004N\_2\_08**

Trademark:

**PALAZZETTI**

Company:

**PALAZZETTI LELIO S.p.A.**



This accreditation is valid only for the listed standards as stated in the accreditation annex of D-PL-11120-04-00

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**Publication of page 2 is permitted.**

**The test results presented in this report refer solely to the test object stated as described on page 2. The report does not represent a general statement about the serial production of the test object and gives not an authorization for use of a TÜV Rheinland test- / certification mark.**

**3<sup>rd</sup> Supplement to initial type testing**  
**Residential space heating appliances fired by wood pellets**  
**DIN EN 14785: September 2006**  
**Correction 1 DIN EN 14785: October 2007**

Applicant/contractor: **PALAZZETTI LELIO S.p.A.**  
Via Roveredo, 103  
33080 Porcia (PN) - Italy

Trademark: **PALAZZETTI**

Type of construction: Residential room heating appliances fired by wood pellets without water heat exchanger, with fan assisted flue discharge and with internal fuel hopper

Type designation:	<b>AP004N_2_06</b>	<b>AP004N_2_07</b>	<b>AP004N_2_08</b>
Total heat input:	3,1 - 6,6 kW	3,1 – 7,8 kW	3,1 - 9,3 kW
Nominal heat output:	2,9 - 6,0 kW	2,9 – 7,0 kW	2,9 - 8,2 kW
Water heat output:	Not applicable		
Type of fuel:	wood pellets, class A1 acc. to EN17225-2; Ø: 6 mm, L <sub>max</sub> : 30 mm, maximum humidity: 7,0%, Firestixx		
Type of loading:	automatic load		
Max. water temperature:	Not applicable		
Max. water pressure:	Not applicable		
Date of test:	27 <sup>th</sup> June 2019		

**Remarks:**

The data of the nominal heat output of the stove **AP004N\_2\_07** are achieved by linear interpolation between the nominal heat output of the stove **AP004N\_2\_06** and the nominal heat output of the stove **AP004N\_2\_08**.

**Test results:**

The technical requirements cl. 4-8 of the above mentioned standard are fulfilled. The local applicable installation conditions are to be observed.

The electrical safety cl. 5.9. of the standard, is not a part of this assessment.

The presumption of conformity with the relevant European Directives respectively Regulations could only be confirmed by full compliance with Annex ZA.

Additional details are documented on the Initial Type Testing report K17932016T1 and on the supplement testing reports K17932018E3 / K17932019E4.


Dated in Cologne, 2019-12-13  
432 / mc

TÜV Rheinland Energy GmbH  
Test Centre according to Construction  
Product Regulation 305/2011 (CPR)  
Notified Body: 2456

Assessor:

Report released after review:

  
Dipl.-Ing. M. Ciccarelli

  
Dipl.-Ing. A. Pomp

Residential space heating appliances fired by wood pellets, Initial Type Test in accordance with the regulation 305/2011 conformity certification system no. 3

## **1. Task**

### **History of the testing report K 1793 2016 T1**

The Test Centre for Energy Appliances was instructed to execute the initial type testing on the appliances **AP004N\_1\_08** and **AP004N\_1\_06** for the operation with wood pellets according to DIN EN 14785:2006, clauses 4-8.

The electrical safety, cl. 5.9. of the standard, was not a part of this initial type testing. The data at nominal heat output of the stove **AP004N\_1\_07** have been achieved by linear interpolation between the nominal heat output of the stove **AP004N\_1\_08** and the nominal heat output of the stove **AP004N\_1\_06**.

The practical tests were carried out in the laboratory in Thiene (Italy) on the 18<sup>th</sup>, on the 19<sup>th</sup> and on the 25<sup>th</sup> of February 2016.

The (FPC) Factory Production Control was not performed.

### **History of 1<sup>st</sup> supplement testing report K 1793 2018 E3**

The manufacturer decided to execute a retesting at reduced heat output on the appliances **AP004N\_1\_06**, **AP004N\_1\_07** and **AP004N\_1\_08**, in order to improve the combustion gases emissions.

Furthermore, the type designations of all stoves changed as follow:

- AP004N\_1\_06 → AP004N\_2\_06
- AP004N\_1\_07 → AP004N\_2\_07
- AP004N\_1\_08 → AP004N\_2\_08

Only the new types **AP004N\_2\_06**, **AP004N\_2\_07** and **AP004N\_2\_08** are in production now.

The only difference between the old and the new appliances is the different software settings at reduced heat output.

The practical tests were carried out in the laboratory in Thiene (Italy) on the 14<sup>th</sup> of March 2018.

All other test results of the test report K17932016T1 are still valid.

### **History of the 2<sup>nd</sup> supplement testing report K 1793 2019 E4**

The manufacturer made a new version of the stoves. The following features have been implemented:

- vertical flue gas connection
- different auger motor

These new stoves are placed in the market with the following new type designations:

- AP004N\_3\_06
- AP004N\_3\_07
- AP004N\_3\_08

The Test Centre for Energy Appliances has been instructed to carry out a comparison test at nominal heat output on the stove **AP004N\_3\_08**, chosen as representative model of the whole family. The practical test has been carried out in the laboratory in Thiene (Italy) on the 21<sup>st</sup> of March 2019.

**New supplement testing report K 1793 2019 E5**

The manufacturer has introduced a new version of these appliances, which are now fitted with refractory materials on the combustion chamber.

The Test Centre for Energy Appliances has been instructed to carry out a comparison test at nominal heat output on the stove **AP004N\_2\_08**, chosen as representative model of the whole family.

The practical test has been carried out in the laboratory in Thiene (Italy) on the 27<sup>th</sup> of June 2019.

A comparison of the essential results is listed on the table below:

	Input (kW)	Output (kW)	Efficiency (%)	CO* (mg/m <sup>3</sup> )	NOx* (mg/m <sup>3</sup> )	CnHm* (mg/m <sup>3</sup> )	Dust* (mg/m <sup>3</sup> )
AP004N_2_08 (report K17932018E3)	9,3	8,2	87,7	26	134	1	8
AP004N_2_08 (report K17932019E5)	9,5	8,3	88,1	41	132	2	14

\*) Concentration at 13% O<sub>2</sub>

## 2. Brief description of the appliances

Residential space heating appliances fired by wood pellets without water heat exchanger. The flue discharge for pellet operation is fan assisted. The stoves are equipped with an automatic ignition.

The data of the nominal heat output of the stove **AP004N\_2\_07** are achieved by linear interpolation between the nominal heat output of the stove **AP004N\_2\_06** and the nominal heat output of the stove **AP004N\_2\_08**.

### 2.1 General technical data of the test specimen

Type designation:	AP004N_2_08
Nominal heat output:	8,2 kW
Test fuel:	wood pellets, class A1 acc. to EN17225-2. Ø: 6 mm, L <sub>max</sub> : 30 mm, maximum humidity: 7,0%, Firestixx
Total dimension [mm]: Height x Width x Depth	1107 x 475 x 547
Flue spigot:	80 mm
Weight:	112 kg
Distance of adjacent combustible materials	100 mm (Backside) distance from test wall 100 mm (Side) distance from test wall 800 mm (Front) distance from test wall

## 2.2 Photographs of the appliance (AP004N\_2\_08)



## 2.2 Resume of test results

AP004N_2_06*		Nominal	Partial	Requirement (EN14785)
Mass of the test fuel fired hourly	kg/h	1,36	0,63	-
Flue gas mass flow	g/s	4,1	3,47	-
Flue gas temperature	°C	167,9	85,8	-
Flue draught	mbar	0,12	0,10	0,12/0,10 +/-0,02
CO <sub>2</sub> -concentration	Vol.-%	11,4	6,0	-
O <sub>2</sub> -concentration	Vol.-%	9,0	14,7	-
CO-concentration	ppm	32	94	-
CO-emission (at 13%-O <sub>2</sub> )	mg/m <sup>3</sup>	26	151	500/750
CO-emission	mg/kWh	63	348	-
CO-emission	mg/MJ	17	97	-
NO <sub>x</sub> -concentration	ppm	94	51	-
NO <sub>x</sub> -emission (at 13%-O <sub>2</sub> )	mg/m <sup>3</sup>	128	133	-
NO <sub>x</sub> -emission	mg/kWh	305	308	-
NO <sub>x</sub> -emission	mg/MJ	85	86	-
CnHm-concentration measured acc. CEN/TS 15883	ppm	1	3	-
CnHm-emission (at 13%-O <sub>2</sub> )	mg/m <sup>3</sup>	1	6	-
CnHm-emission	mg/kWh	3	14	-
CnHm-emission	mg/MJ	1	4	-
Dust emission (at 13%-O <sub>2</sub> )	mg/m <sup>3</sup>	10	15	-
Dust emission	mg/kWh	24	35	-
Dust emission	mg/MJ	7	10	-
Total heat input	kW	6,6	3,1	-
Total heat output	kW	6,0	2,9	-
Water heat output	kW	-	-	-
Space heat output	kW	6,0	2,9	-
Efficiency	%	90,0	92,3	75/70

\*) The results are taken from the report n. K17932018E3.

<b>AP004N_2_07*</b>		<b>Nominal**</b>	<b>Partial</b>	<b>Requirement (EN14785)</b>
Mass of the test fuel fired hourly	kg/h	1,62	0,63	-
Flue gas mass flow	g/s	4,6	3,47	-
Flue gas temperature	°C	193,7	85,8	-
CO <sub>2</sub> -concentration	Vol.-%	12,1	6,0	-
O <sub>2</sub> -concentration	Vol.-%	8,3	14,7	-
CO-concentration	ppm	33	94	-
CO-emission (at 13%-O <sub>2</sub> )	mg/m <sup>3</sup>	26	151	500/750
CO-emission	mg/kWh	62	348	-
CO-emission	mg/MJ	17	97	-
NO <sub>x</sub> -concentration	ppm	102	51	-
NO <sub>x</sub> -emission (at 13%-O <sub>2</sub> )	mg/m <sup>3</sup>	131	133	-
NO <sub>x</sub> -emission	mg/kWh	311	308	-
NO <sub>x</sub> -emission	mg/MJ	86	86	-
CnHm-emission (at 13%-O <sub>2</sub> )	mg/m <sup>3</sup>	1	6	-
CnHm-emission	mg/kWh	2	14	-
CnHm-emission	mg/MJ	1	4	-
Dust emission (at 13%-O <sub>2</sub> )	mg/m <sup>3</sup>	9	15	-
Dust emission	mg/kWh	22	35	-
Dust emission	mg/MJ	6	10	-
Total heat input	kW	7,8	3,1	-
Total heat output	kW	7,0	2,9	-
Water heat output	kW	-	-	-
Space heat output	kW	7,0	2,9	-
Efficiency	%	89,0	92,3	75/70

\*) The results are taken from the report n. K17932018E3.

\*\*) The data are achieved by linear interpolation between the nominal heat output of the stove **AP004N\_2\_06** and the nominal heat output of the stove **AP004N\_2\_08**.



<b>AP004N_2_08*</b>		<b>Nominal</b>	<b>Partial</b>	<b>Requirement (EN14785)</b>
Mass of the test fuel fired hourly	kg/h	1,92	0,63	-
Flue gas mass flow	g/s	5,1	3,47	-
Flue gas temperature	°C	224,5	85,8	-
Flue draught	mbar	0,12	0,10	0,12/0,10 +/-0,02
CO <sub>2</sub> -concentration	Vol.-%	13,0	6,0	-
O <sub>2</sub> -concentration	Vol.-%	7,3	14,7	-
CO-concentration	ppm	35	94	-
CO-emission (at 13%-O <sub>2</sub> )	mg/m <sup>3</sup>	26	151	500/750
CO-emission	mg/kWh	61	348	-
CO-emission	mg/MJ	17	97	-
NO <sub>x</sub> -concentration	ppm	111	51	-
NO <sub>x</sub> -emission (at 13%-O <sub>2</sub> )	mg/m <sup>3</sup>	134	133	-
NO <sub>x</sub> -emission	mg/kWh	318	308	-
NO <sub>x</sub> -emission	mg/MJ	88	86	-
CnHm-concentration measured acc. CEN/TS 15883	ppm	1	3	-
CnHm-emission (at 13%-O <sub>2</sub> )	mg/m <sup>3</sup>	1	6	-
CnHm-emission	mg/kWh	3	14	-
CnHm-emission	mg/MJ	1	4	-
Dust emission (at 13%-O <sub>2</sub> )	mg/m <sup>3</sup>	8	15	-
Dust emission	mg/kWh	20	35	-
Dust emission	mg/MJ	6	10	-
Total heat input	kW	9,3	3,1	-
Total heat output	kW	8,2	2,9	-
Water heat output	kW	-	-	-
Space heat output	kW	8,2	2,9	-
Efficiency	%	87,7	92,3	75/70

\*) The results are taken from the report n. K17932018E3.

### **3. Statement of the test results**

The appliances:

**AP004N\_2\_06**  
**AP004N\_2\_07**  
**AP004N\_2\_08**

of the company:

**PALAZZETTI LELIO S.p.A.**

comply for the operation with wood pellets with the requirements acc. to  
EN 14785: September 2006, clauses 4-8.

The local applicable installation conditions are to be observed.

The electrical safety, cl. 5.9. of the standard, is not a part of this assessment.

The presumption of conformity with the relevant European Directives respectively Regulations could only be confirmed by full compliance with Annex ZA.

Additional details are documented on the initial type testing report K17932016T1 and on the supplement testing reports K17932018E3 / K17932019E4.

The test results presented in this report refer solely to the test object stated as described on page 2. The report does not represent a general statement about the serial production of the test object and gives not an authorization for use of a TÜV Rheinland test- / certification mark.

## 4 Test documents

Appendix A 01 Fuel Data

Appendix A 02 Results of comparison at nominal heat output

Appendix A 03 Measurement Instruments

Appendix	Subject	Reference
A 04	Drawings of internal panels of the combustion chamber (magnofix)	161230055 161130123
A 05	Installation instructions	004724154

## Appendix A 01

### Fuel data AP004N\_2\_08

<b>Test at nominal load</b> <b>Verbrennungsrechnung aus der Elementaranalyse</b> nach DIN EN 304 Teil 2, Ausgabe 01/2004 nach DIN 4702 Teil 2, Ausgabe 3/1990											
Analysis from: Fuel:				26/03/2019 wood pellets				Analysis No. 1903438-001		Fuel sampling date: 11/03/19	
Bestandteil im Brennstoff	Stoffanteil	Sauerstoffbedarf		Abgasbestandteile aus Brennstoff in Nm³/kg Brennstoff							
		in Nm³ je kg Bestandteil	in Nm³ je kg Brennstoff	CO₂		SO₂		H₂O		N₂	
	Gew. %	Stoffanteil x	Sauerstoff- Bedarf	in Nm³ je kg Bestandteil	in Nm³ je kg Brennstoff	in Nm³ je kg Bestandteil	in Nm³ je kg Brennstoff	in Nm³ je kg Bestandteil	in Nm³ je kg Brennstoff	in Nm³ je kg Bestandteil	in Nm³ je kg Brennstoff
C	48,400	1,860	0,900	1,850	0,8954	-	-	-	-	-	-
S	0,047	0,700	0,000	-	-	0,680	0,0003	-	-	-	-
H	6,770	5,550	0,376	-	-	-	-	11,100	0,7515	-	-
N	0,010	-	-	-	-	-	-	-	-	0,80	0,0001
O	37,400	-0,700	-0,262	-	-	-	-	-	-	-	-
Wasser	7,000	-	-	-	-	-	-	1,240	0,0868	-	-
Asche	0,300	-	-	-	-	-	-	-	-	-	-
Summe	99,927	O min =	1,015	V CO₂ =	0,8954	V SO₂ =	0,0003	V W =	0,8383	V N₂ =	0,0001
Luftbedarf trockene stöchiometrische Abgasmenge Max. Kohlenstoffdioxid-Anteil Wasserdampfmenge  Heizwert, wf				L min = 4,8310 Nm³/kg Brennstoff V A tr min = 4,7122 Nm³/kg Brennstoff CO₂ max = 19,0018 Vol.-% V w = 0,8383 Nm³/kg Brennstoff V A tr min/ L min = 0,9754  Hu = 18904 kJ/kg 5,251 kWh/kg							
<b>Berechnungen zum Versuchszeitpunkt</b>											
Wasser	zum Versuchszeitpunkt	w =		7,000 Gew. %							
Heizwert, roh	zum Versuchszeitpunkt	Hu		17410 kJ/kg							

## Appendix A 02

### Results of comparison at nominal heat output

<b>Report- No.</b>		K17932019E5		
<b>TÜV- order- No.</b>		21247127		
<b>Manufacturer</b>		PALAZZETTI LELIO S.p.A.		
<b>Construction type</b>		Residential room heating appliance fired by wood pellets without water heat exchanger, with combustion air fan and with internal fuel hopper		
<b>max. working temperature</b>	°C	Not applicable		
<b>max. working pressure</b>	bar	Not applicable		
<b>Type of fuel charging</b>		automatic load		
<b>Special properties / Remarks</b>		-		
<b>Special properties</b>		room air dependent		
<b>Type designation</b>		AP004N_2_08		
<b>Model name</b>		-		
Test place		Thiene		
Standard		DIN EN 14785:10.2006, Correction 1: 10.2007		
Type of test		Test at nominal load		
<b>Heat input from manufacturer</b>	kW	9,5		
<b>Heat output from manufacturer</b>	kW	8,3		
		<b>1. test</b>	<b>2. test</b>	<b>Average</b>
Test date		27/06/2019	27/06/2019	
Time		09:30-12:30	12:30-15:30	
<b>Ambient:</b>				
Barometric pressure	mbar	1008	1008	1008
Temperature of combustion air	°C	30,0	31,9	31,0
Ambient rel. humidity	%	64,0	64,0	64,0
Ambient temperature (room)	°C	30,0	31,9	31,0
<b>Type of Fuel</b>		wood pellets		
Properties of Fuel		Ø 6 mm, Lmax 30 mm, max humidity 7,0% Firestixx		
Number of fuel loadings		1	1	
Weight of the stove, start, measurement	kg	183,7	177,7	
Weight of the stove, end, measurement	kg	177,8	171,9	
Fuel consumption, calculated of the difference	kg	5,9	5,8	
Test duration	sec	10800	10800	
Fuel consumption "B"	kg/h	1,98	1,94	1,96
Calculation of losses in the ash (yes = 1, no = 0)	Gew . %	25,0	25,0	25,0
Residue passing through the grate, measurement	kg	0,00	0,00	0,00
Residue passing through the grate "R"	Gew . %	0,000	0,000	0,000
Carbon content of the residue passing through the grate "Cr" depending of 1 kg fuel	Gew . %	0,104	0,104	0,104
<b>Water side, measurement</b>				
Flow , measurement	°C	0,0	0,0	0,0
Return, measurement	°C	0,0	0,0	0,0
Delta T	K	0,0	0,0	0,0
Cold water flow , measurement	kg/h	0,0	0,0	0,0
Additional energy of the pump	kW	0,00	0,00	0,00
<b>Flue, average</b>				
Flue gas temperature, measurement	°C	221,0	219,6	220,3
Flue draught, measurement	Pa	12,0	12,0	12,0
O2 - concentration, calculated	Vol.-%	6,7	6,4	6,5
CO2 - concentration, measurement	Vol.-%	13,0	13,2	13,1
lambda value, l	-	1,456	1,429	1,442

CO - concentration, measurement	ppm	40	80	60
CO - concentration, measurement	Vol.-%	0,004	0,008	0,006
CO - concentration, measurement	mg/m³	50	101	75
CO - concentr. (at 13% - O2)	Vol.-%	0,002	0,004	0,003
CO - concentr. (at 13% - O2)	mg/m³	28	55	41
CO - concentration rel. to fuel input	mg/kWh	71	141	106
CO - concentration rel. to fuel input	mg/MJ	20	39	29
NOx - concentration, measurement	ppm	115	118	117
NOx - concentration, measurement	mg/m³	235	243	239
NOx - concentr. (at 13% - O2)	mg/m³	131	133	132
NOx - concentration rel. to fuel input	mg/kWh	336	341	338
NOx - concentration rel. to fuel input	mg/MJ	93	95	94
CnHm concentration, measurement	ppm	3	2	2
CnHm concentration, measurement	mg/m³	5	3	4
CnHm concentr. (at 13% - O2)	mg/m³	3	1	2
CnHm - concentration (total C) rel. to fuel input	mg/kWh	7	4	6
CnHm - concentration (total C) rel. to fuel input	mg/MJ	2	1	2
Dust, measurement*	mg	7		7
Dust, measurement*	mg/m³	24		24
Dust (at 13% - O2)*	mg/m³	14		14
Dust* rel. to fuel input	mg/kWh	35		35
Dust* rel. to fuel input	mg/MJ	10		10
<b>Electrical consumption</b>				
Rated electrical power (max)	W		330	
Electrical consumption (at nominal heat output) - acc. EN 15456	W		46	
Electrical consumption (at minimum heat output) - acc. EN 15456	W		-	
PSTBY (during stand-by) - acc. IEC 62301	W		1,3	
<b>Calculation</b>				
"Qa" loss free heating flue gas	kJ/kg	2067,5	1999,2	2033,4
"qa" loss flue gas	%	11,9	11,5	11,7
"Qb" loss fix heating in flue gas	kJ/kg	3,5	6,9	5,2
"qb" loss fix heating in flue gas	%	0,020	0,040	0,030
"Qr" losses due to combustible constituents in the residue passing through the grate	kJ/kg	0,0	0,0	0,0
"qr" losses due to combustible constituents in the residue passing through the grate	%	0,200	0,200	0,200
"m" flue gas mass flow	g/s	5,5	5,3	5,4
cpm, acc. DIN 4702-2, version 03.90 for dry flue gas	kJ/(m³K)	1,37	1,37	1,37
cpm-H2O	kJ/(m³K)	1,53	1,53	1,53
"eta" Efficiency (direct), to consider only water heating output Pw	%	not applicable	not applicable	not applicable
"eta" Efficiency (indirect)	%	87,9	88,3	88,1
Heating input	kW	9,6	9,4	9,5
"P" heating output, total	kW	8,4	8,3	8,3
"Pw" water heating output	kW	0,0	0,0	0,0
Space heating output: PSTR = P - Pw	kW	8,4	8,3	8,3
Space heating output, relating to heat input	%	87,9	88,3	88,1
Water heating output, relating to heat input	%	0,0	0,0	0,0
<b>Adjustments</b>				
Flue gas motor	rpm	1770	1770	
Fuel motor	s	3,6 ON / 2,4 OFF	3,6 ON / 2,4 OFF	
Convection air fan	Volts	230	230	
Cleaning time	s / min	off	off	
Firedoor	-	closed	closed	

**The tests were carried out under the conditions of DIN EN 14785:2006**

## Appendix A 03

**The requirements of the measuring instruments are fulfilled.  
 Before each qualified measuring analysers were calibrated with zero gas and  
 calibration gas.**

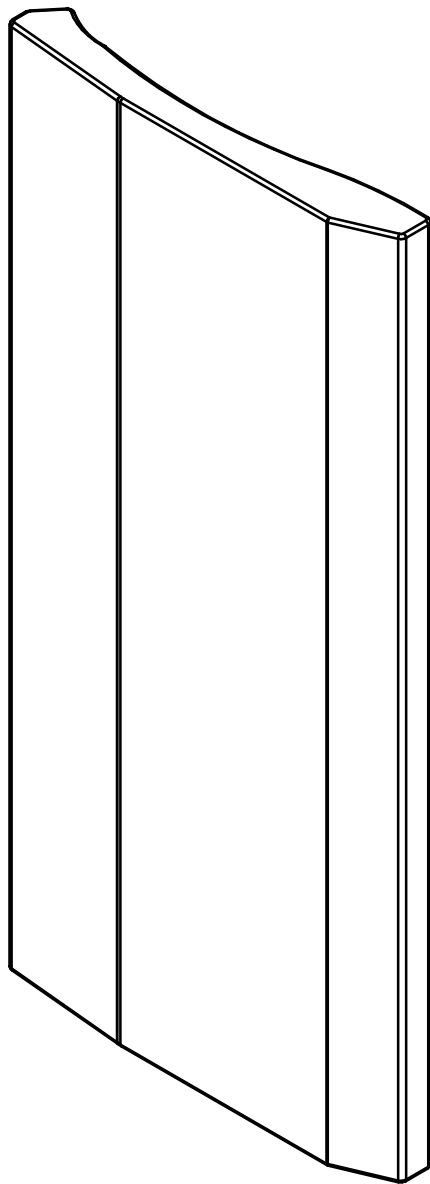
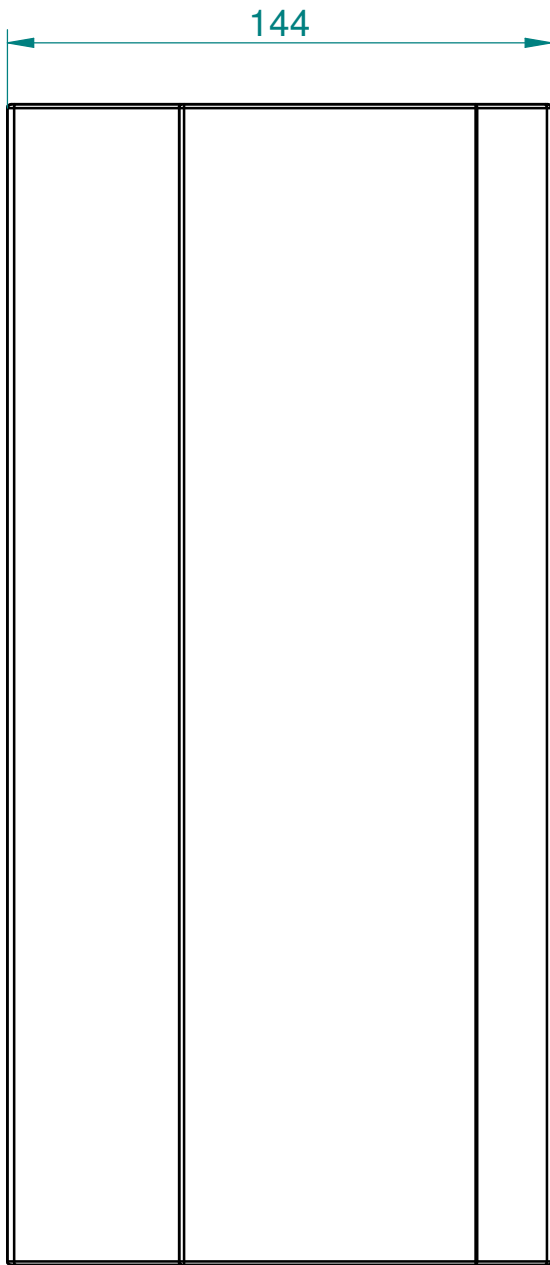
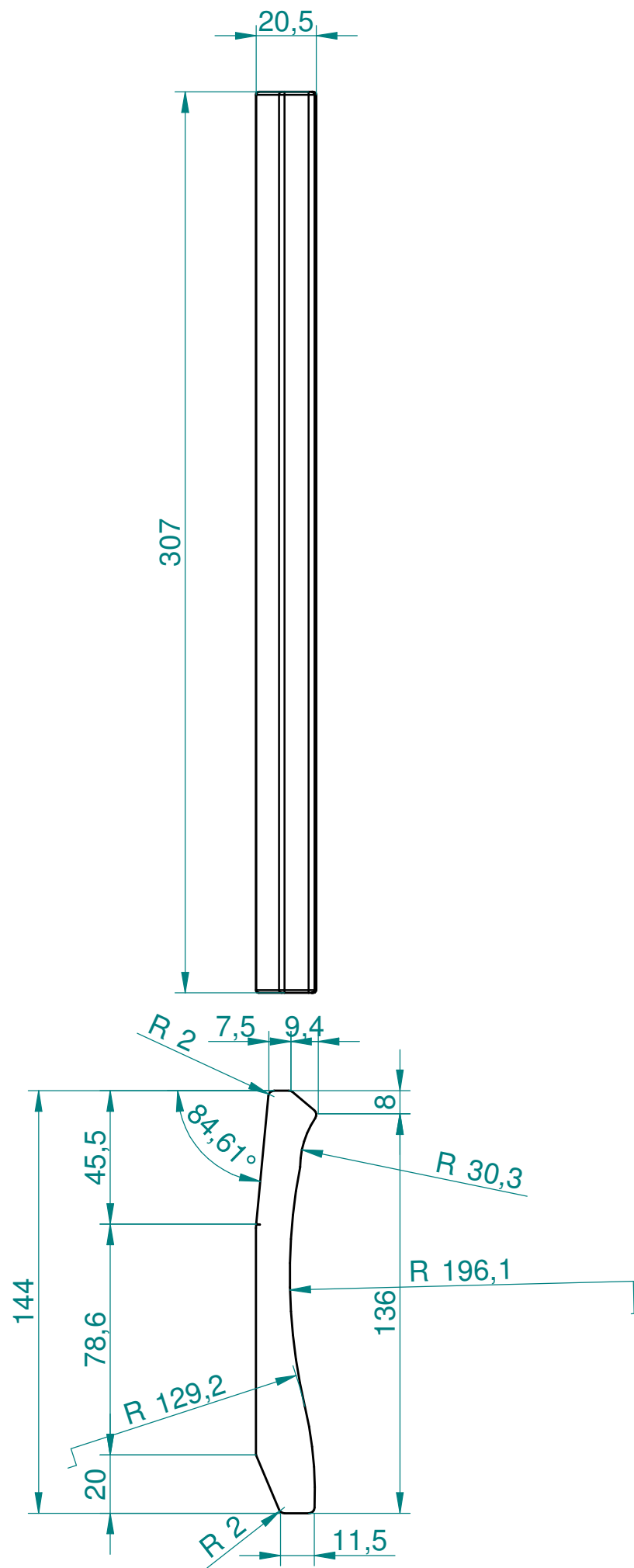
Index	Measure	Principle	Company	Range	Instrument specification	Reference
B030	Water pressure	Manometer	Cewal DN 150	0 – 25 bar	± 0,6%	Reference manometer
B062	Temperature	PT 100 K-type thermocouples	Agilent 34970 A	0 – 300 °C	Up to 0,5 °C	Reference thermometer
B066	Gas pressure	Manometer	Testo 510	0 – 100 hPa	± 3% related to final value	Reference manometer
B068	Temperature	IR emission	Fluke Ti20	-10 – 350 °C	---	---
B070	Fuel consumption	Gravimetric	Dini Angeo DFWK	0 – 600 kg	± 10 g	Reference load
B079	Water flow	Magnetic	ABB Copa-XE DE43FI	0 – 2000 kg/h	± 1% related to the range	Reference flow meter
B084	Temperature	PT 100 K-type thermocouples	Agilent 34970 A	0 – 300 °C	Up to 0,5 °C	Reference thermometer
B090	Dust content	Gravimetric	Sartorius CPA 224 S	0,1 mg – 220 g	± 0,1 mg	Reference load
B092	Fuel consumption	Gravimetric	Dini Angeo DFWK	0 – 1200 kg	± 10 g	Reference load
B094	CO <sub>2</sub>	Infrared-absorption	Siemens Ultramat 6E	0 – 3 % 0 – 30 %	± 1% related to the range	Reference gas: 19,93 %
	CO	Infrared-absorption	Siemens Ultramat 6E	0 – 300 ppm 0 – 3000 ppm	± 1% related to the range	Reference gas: 201,1 ppm
B095	CO	Infrared-absorption	Siemens Ultramat 23	0 – 1 % 0 – 5 %	± 1% related to the range	Reference gas: 4,876 %
B096 + B123	CO <sub>2</sub>	Infrared-absorption	Siemens Ultramat 23	0 – 5 % 0 – 25 %	± 1% related to the range	Reference gas: 19,93 %
	CO	Infrared-absorption	Siemens Ultramat 23	0 – 1000 ppm 0 – 5000 ppm	± 1% related to the range	Reference gas: 201,1 ppm
	NO <sub>x</sub>	Infrared-absorption	Siemens Ultramat 23 + Bühler Bünox MV	0 – 1000 ppm 0 – 5000 ppm	± 1% related to the range	Reference gas: 196,9 ppm
B097	OGC	FID	Siemens Fidamat 6	0 – 3,33 ppm C3 0 – 33,3 ppm C3 0 – 333 ppm C3 0 – 3333 ppm C3	± 1% related to the range	Reference gas: 29,51 ppm propane
B098	Temperature	K-type thermocouple	Testo 925	0 – 200 °C	± 2 °C	Reference thermometer
B109	Air flow	Flow measurement	CMC / ASA 132826 P13-2800	400 - 4000 l/h	± (2 % FS)	Reference flow meter
B118	Gas volume	Diaphragm	CMC	0,016 – 2,5 m³/h	± 5 %	Air flow
B121	OGC	FID	Siemens Fidamat 6	0 – 3,33 ppm C3 0 – 33,3 ppm C3 0 – 333 ppm C3 0 – 3333 ppm C3	± 1% related to the range	Reference gas: 29,51 ppm propane
B122	CO <sub>2</sub>	Infrared-absorption	Siemens Ultramat 23	0 – 5 % 0 – 25 %	± 1% related to the range	Reference gas: 20,0 %
	CO	Infrared-absorption	Siemens Ultramat 23	0 – 1000 ppm 0 – 5000 ppm	± 1% related to the range	Reference gas: 206,0 ppm
	NO	Infrared-absorption	Siemens Ultramat 23	0 – 1000 ppm 0 – 5000 ppm	± 1% related to the range	Reference gas: 196,9 ppm
B140	Gas pressure	Inclined liquid column manometer	Kimo HP series	0 – 15 Pa	± 10% related to final value	Reference manometer
B141	Gas pressure	Inclined liquid column manometer	Kimo HP series	0 – 15 Pa	± 10% related to final value	Reference manometer

Index	Measure	Principle	Company	Range	Instrument specification	Reference
B149	Mass	Gravimetric	Kern FKB 15K0.5A	0 – 15 kg	± 0,5 g (reproducibility)	Reference load
B154	Gas volume	Diaphragm	Elster BK-G4M	---	Class 1,5	Air flow
B169	Electrical power	---	Yokogawa WT310E	0 – 2000 W	± 0,5 %	External calibration
B179	Stopwatch	---	RS 8111814	0 – 99 h	0,01 s	---
B180	Absolute pressure meter	Absolute pressure meter	Testo 511	0 – 999,0 hPa	±3,0 hPa	External calibration
B183	Water flow	Magnetic	ISOIL Industria MS501-T10- 1A1A1A + ML210- B0A1B3A0	0 – 2000 kg/h	Accuracy: ± 0,2% r.v.	Reference flow meter


The values are continuously recorded. The scan interval is 10s. All related certificates are stored.



A04



DENSITA': 600Kg/m<sup>3</sup>

Nr.	MODIFICATIONS	DATE	DRAWN BY		SCALE
					1:2
				MASS [Kg]	0,433 kg
				DATE	12/11/2018
				DRAWN BY	Daniele Lepore
				PREVIUS No.	1256DL16002
PART NAME FIANCO IN MAGNOFIX					
TREATMENT -			MATERIAL VERMICULITE		
PALAZZETTI			PART No. 161230055		
ACCORDING TO THE APPLICABLE LAW, PALAZZETTI LELIO SpA CONSIDERS THIS DOCUMENT A COMPANY SECRET AND THEREFORE THE TOTAL OR PARTIAL REPRODUCTION AND-OR DIFFUSION THEREOF TO THIRD PARTIES OR TO COMPETITORS, WITHOUT PRIOR WRITTEN AUTORIZ. OF THE PALAZZETTI LELIO SpA MANAGENT, IS STRICTLY FORBIDDEN.					

THE OBJECT'S MUST BE IN COMPLIANCE WITH REG. (EC) N.1825/2004 ABOUT MATERIALS IN CONTACT WITH FOOD AND ITS UPDATES AND AMENDMENTS.

☐ YES☐ NO

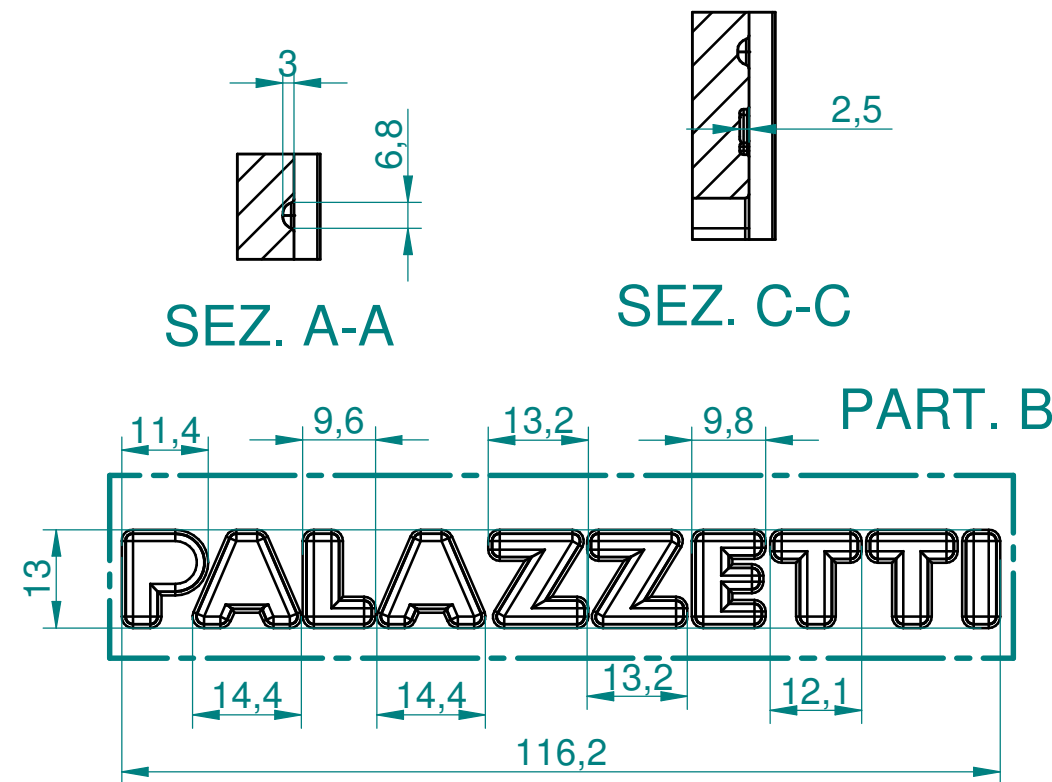
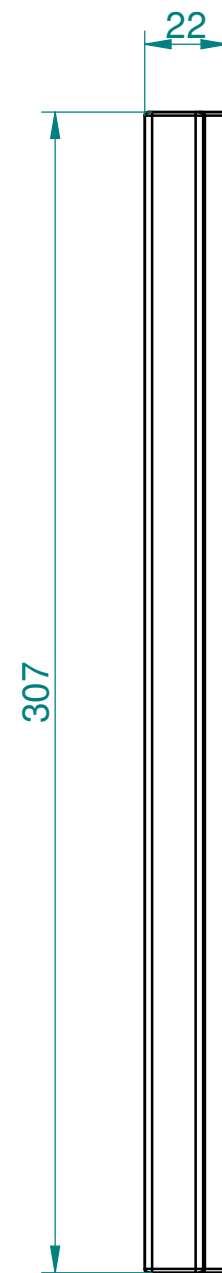
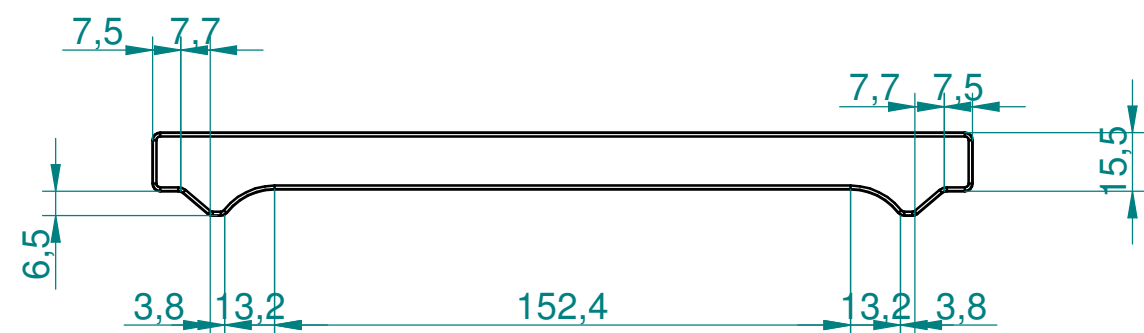
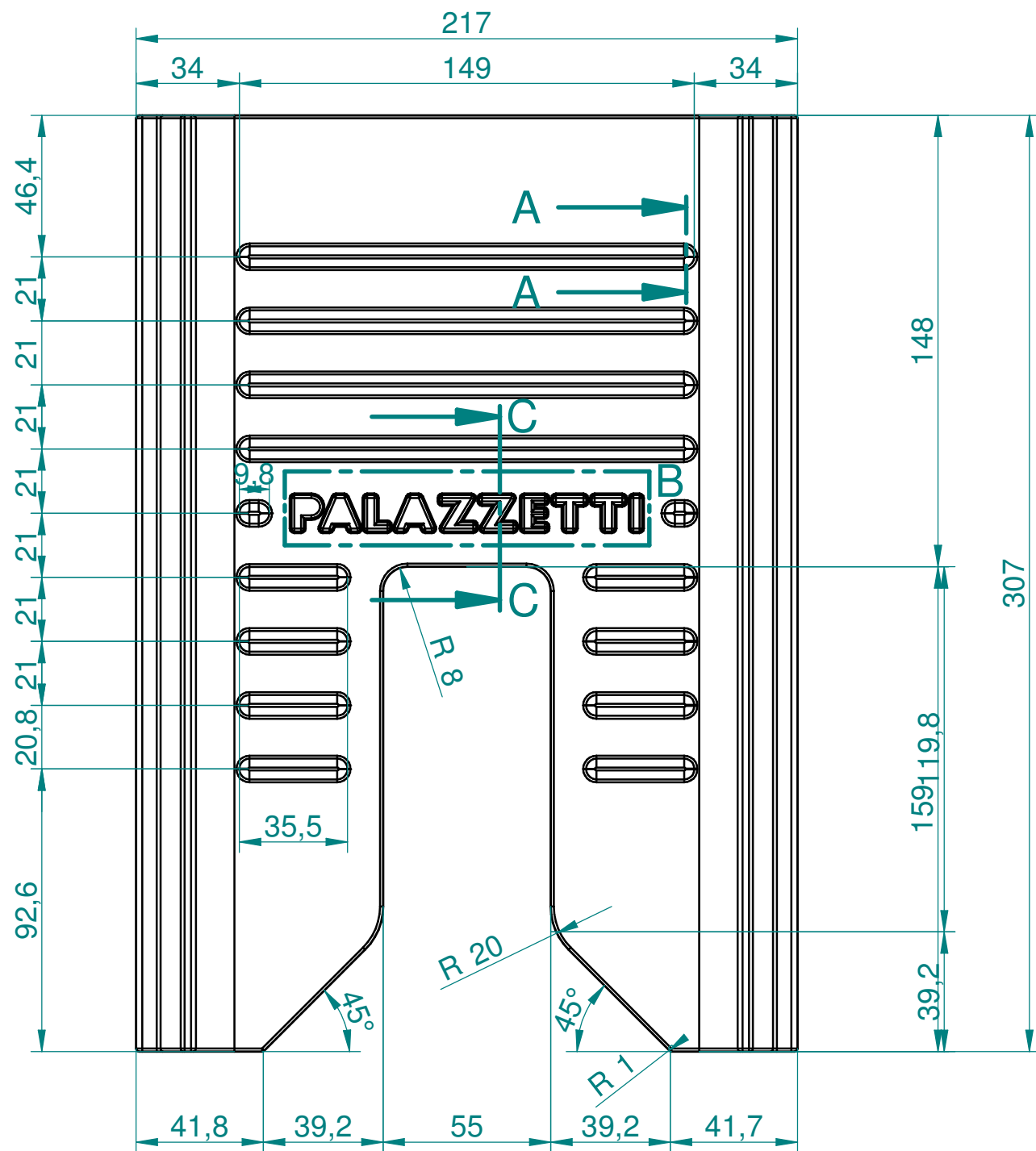
COMPONENTS IN COMPLIANCE WITH DIR. 2017/65/50 (REHS RECAST) AND FURTHER UPDATES AND AMEND

THE COMPONENT AND ITS CONSTITUENT MATERIALS MUST COMPLY WITH REG. (EC) N.1907/2006 (REACH) INCLUDING RELATIVE ANNEXES (SPECIALLY XIV AND XVII). UP-DATES AND AMEND THE TOTAL CONTENT OF EACH INDIVIDUAL SVHC SUBSTANCE MUST NOT EXCEED THE REF. VALUE AS DEFINED IN THE LATEST UPDATE OF THE REG.


☒ - DIMENSIONS TO BE KEPT UNDER CONTROL DURING PRODUCTION.

GENERAL TOLERANCES  
UNI EN 22768/1 - m  
UNI EN 22768/2 - mk

VISIBLE SURFACE FINISH



DENSITA': 600Kg/m<sup>3</sup>

Nr.	MODIFICATIONS	DATE	DRAWN BY		SCALE 1:2
				MASS [Kg]	0,616 kg
				DATE	12/11/2018
				DRAWN BY	Daniele Lepore
				PREVIUS No.	1256DL16001-1
PART NAME SCHIENALE IN MAGNOFIX					
TREATMENT -			MATERIAL VERMICULITE		
PALAZZETTI			PART No. 161130123		
ACCORDING TO THE APPLICABLE LAW, PALAZZETTI LELIO SpA CONSIDERS THIS DOCUMENT A COMPANY SECRET AND THEREFORE THE TOTAL OR PARTIAL REPRODUCTION AND-OR DIFFUSION THEREOF TO THIRD PARTIES OR TO COMPETITORS, WITHOUT PRIOR WRITTEN AUTORIZ. OF THE PALAZZETTI LELIO SpA MANAGENT, IS STRICTLY FORBIDDEN.					

THE OBJECTS MUST BE IN COMPLIANCE WITH REG. (EC) N.1831/2003 ABOUT MATERIALS IN CONTACT WITH FOOD AND ITS UPDATES AND AMENDMENTS.	<input type="checkbox"/> YES <input type="checkbox"/> NO
COMPONENTS IN COMPLIANCE WITH DIR. 2011/65/UE (RoHS) UPDATES AND AMEND	
THE COMPONENT AND ITS CONSTITUENT MATERIALS MUST COMPLY WITH REG. (EC) N.1907/2006 (REACH) INCLUDING RELATIVE ANNEXES (SPECIALLY XIV AND XVII). UPDATES AND AMEND THE TOTAL CONTENT OF EACH INDIVIDUAL SVHC SUBSTANCE MUST NOT EXCEED THE REF. VALUE AS DEFINED IN THE LATEST UPDATE OF THE REG.	
DIMENSIONS TO BE KEPT UNDER CONTROL DURING PRODUCTION.	
GENERAL TOLERANCES UNI EN 22768/1 - m UNI EN 22768/2 - mk	
VISIBLE SURFACE FINISH	

A05