



**Termoplam Ltd.
Testing laboratory**

**Page number: 1
Number of pages: 12**

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Test Report

**№ 251
05.09.2022**

I. NAME AND SIGNATURE OF THE TESTED SAMPLE:

Production model: MEGAL-M17

II. NAME AND DESCRIPTION OF THE TESTED SAMPLE:

Wood heating boiler with a rated thermal output of 17 kW, one unit per test.

III. LEGAL DOCUMENT: EN 303-5:2021, EN 304:2017, EN 45001 and EN ISO/IEC 17025:2018.



Picture of the sample

IV. QUANTITY OF THE TESTED SAMPLES: One test sample;

V. MANUFACTURER: "MEGAL" A.D, 17520 Bujanovac, Lopardinski put b.b, Serbia.

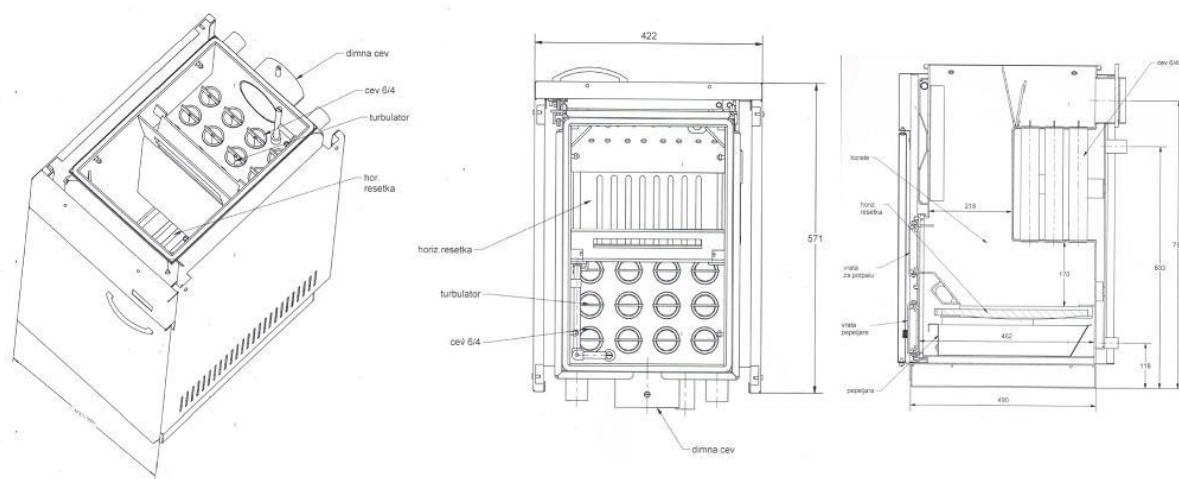
VI TEST APPLICANT: "MEGAL" A.D, 17520 Bujanovac, Lopardinski put b.b, Serbia.

VII. PURPOSE AND OBJECT OF THE TEST:

Heating boiler thermal test for defining of:

- 7.1. Nominal heat output;
- 7.2. Test for determining heating boiler efficiency.
- 7.3. Determining emissions from the heating boiler.
- 7.4. Pressure test of the boiler plumbing parts.
- 7.5. Calculation of the seasonal space heating emissions.
- 7.6. Calculation of the seasonal space heating energy efficiency.
- 7.7. Calculation of the energy efficiency index (EEI).

VIII. TECHNICAL FEATURES:



Scheme (drawing of the boiler)

- 8.1. Heat input Q_B - according to section 3.13 from EN 303-5:2021;
- 8.2. Thermal capacity P - according to section 3.6 from EN 303-5:2021;
- 8.3. Efficiency $\eta_k = P/Q_B$ - according to section 4.4.2 and 5.9.3 from EN 303-5:2021.
- 8.4. Boiler weight – without water/ volume of the water jacket:
 - 8.4.1. MEGAL-M17 kW – 138 kg./ 32 l.;

IX. TEST CONDITIONS:

- 9.1. Executor: Termoplam Ltd. Sofia
- 9.2. Weather conditions: Ambient temperature t_L : $\leq 19/19^\circ\text{C}$
(from 15°C to 30°C according to section 5.6.1 or EN 303-5:2021).
- 9.3. Starting Date: 03.09.2022 y. Date of completion: 05.09.2022 y.
- 9.4. Weight of the pilot fuel:
 - 9.4.1. $B_n = 4.01$ kg/h (wood at rated heating output for two semi periods of 2 hour with continuous combustion according according to 5.6.4.1 and 4.4.5 from EN 303-5:2021).
 - 9.4.2. $B_{red} = 1,33$ kg/h (wood at reduced heating output for two semi periods of 2 hour with continuous combustion according according to 5.6.4.1 and 4.4.5 from EN 303-5:2021).
- 9.5. Draft (low pressure in the flue pipe) $\leq 0,15 \div 0,28$ mbar (see section 4.4.4 from EN 303-5:2021).
- 9.6. Fuel type:
 - 9.6.1. Wood with calorific value $H_u = 18320 \pm 60$ kJ/kg according to test report № 9298/30.05.2022 issued by the EUROTTEST - Control SA (see section 5.3 and table 9 from EN 303-5:2021 and specified in the maintenance book).
- 9.7. Temperature of outgoing water $84.3/84.0^\circ\text{C}$ $^\circ\text{C}$ (see section 5.7.2 from EN 303-5:2021).
- 9.8. Other conditions :
 - 9.8.1. The test is made under the conditions quoted above and observing the following additional ones:
 - 9.8.1.1. Complied with the safety measures according to EN 303-5:2021 and EN 304;

9.8.1.2. The tested sample meets the instruction for installation and operation according to EN 303-5:2021 and EN 304.

9.9. Used equipment - according to section 5.2 from EN 303-5:2021.

9.10. Recording devices:

9.10.1. Auxiliary devices: PC with software application package.

X. RESULTS FROM THE TEST:

10. Parametres.

10.1. Rated heating output of the boiler P_N according to section 3.7 from EN 303-5:2021.

10.2. Duration of the test rated heating output (two semi periods):

10.2.1. Wood duration of the test ≥ 2 h according to section 5.6.4.1 and 4.4.5 from EN 303-5:2021.

10.3. Maximum temperatures of the elements:

10.3.1 For heating boiler service:

10.3.1.1. Handle of the door ≤ 55.9 °C – according to 4.3.7 from EN 303-5:2021;

10.4. Real values of the thickness measurement, etc. with additional certificates enclosed.

10.5. After the test of the plumbing parts at pressure $p_{outg}=2 \times PS=2 \times 2.5=5$ [bar] there are no leaks and visible deformations (elastic and plastic) in accordance with section 5.4.1 from EN 303-5:2021.

10.6. Temperature control and limiting devices according to section 4.3.9 from EN 303-5:2021:

The operating instructions on page 9 state that a safety valve (outside the boiler) must be installed.

On page 8 picture 1 of the installation and operating instructions there is a description of how to connect a boiler to the open system using a safety valve. A connection diagram and the necessary elements are shown.

In page 9 picture 2 of the installation and operating instructions, a description is provided on how to connect the boiler to the closed system using a safety valve. The scheme shown is for connection to these elements.

10.7. For calculation of the values of Q_B , P and η_K are used formulas from items 5.9.1, item 5.9.2 and item 5.9.3.2 from EN 303-5:2021.

* Values before the slash refer to the test at nominal power, and after it are for minimum power.

Table 1

Measurement	MEGAL-M17		Limit
Regime	nom	min	-
t_A °C	192	182	
t_L °C	≤19	≤19	15÷30
t_1 upper surface (average value)	≤50.3	≤45.6	≤60+ t_L *= 83
t_2 left wall (average value)	≤52.8	≤47.9	≤60+ t_L *= 83
t_3 right wall (average value)	≤56.7	≤48.5	≤60+ t_L *= 83
$t_{floor\ max}$	≤36.0	≤35.3	≤ 80 *
t upper handle	≤55.9	≤54.0	≤60+ t_L *= 83
t lower handle	-	-	≤60+ t_L *= 83
$P_{outg.}$ =2xPS bar	5	5	= 5 bar
W_1 m ³ /h	772	252	-
t_v °C	84.3	84.0	-
t_R °C	65.4	65.0	70 ÷ 90
B_n kg/h	4.01	1.33	-
P kW	17.02	5.59	
Q_B kW	20.41	6.77	
$\eta_K = P/Q_B$ [%]	83.33	82.35	class 4
CO mg/m ³ ** at 10% O ₂	538.3	251.2	≤700
CO ₂ % vol. part.	8.41	7.73	-
OGC mg/m ³ at 10% O ₂ ***	24.7	21.8	≤ 30
Dust mg/m ³ at 10% O ₂ ****	53.8	45.8	≤60
W % *****	≤30	≤30	-
O ₂ % vol. part.	12.3	13.0	10
NOx mg/m ³ at 10% O ₂	174.3	140.9	
PN kW	17	-	-

* According to section 4.3.7 from EN 303-5:2021.

** Emission class 5 of the boiler at rated heating output ≤50 kW according to section 4.4.7 and table 7 from EN 303-5:2021.

*** Emission class 5 of the boiler at rated heating output ≤50 kW according to section 4.4.7 and table 7 from EN 303-5:2021.

**** Fuel – wood according to section 5.3, table 9 from EN 303-5:2021.

***** Emission class 5 of the boiler at rated heating output ≤50 kW according to section 4.4.7 and table 7 from EN 303-5:2021.

XI. Seasonal space heating emissions: acc. to table 8, Annex F from EN 303-5:2021, Annex II and Annex III of the REGULATION (EU) 2015/1189:

Table 2

Results	Model boiler	In accordance REGULATION (EU) 2015/1189.
	MEGAL-M17	[mg/Nm ³]
Dust [mg/Nm ³]	47	[PM] ¹ ≤ 60
CO [mg/Nm ³]	524	[CO] ² ≤ 700
OGC [mg/Nm ³]	22	[OGC] ³ ≤ 30
NO _x [mg/Nm ³]	146	[NO _x] ⁴ ≤ 200

Dust content of exhaust gases [PM] ¹ ≤ 60 mg/Nm³ for manual stoked boilers in accordance with point 1 (c), of Annex II of the REGULATION (EU) 2015/1189.

CO of exhaust gases [CO] ² ≤ 700 mg/Nm³ for manual stoked boilers in accordance with point 1 (e), of Annex II of the REGULATION (EU) 2015/1189.

OGC of exhaust gases [OGC] ³ ≤ 30 mg/Nm³ for manual stoked boilers in accordance with point 1 (d), of Annex II of the REGULATION (EU) 2015/1189.

NO_x of exhaust gases [NO_x] ⁴ ≤ 200 mg/Nm³ for biomass boilers in accordance with point 1 (f), of Annex II of the REGULATION (EU) 2015/1189.

XII. Seasonal space heating energy efficiency: acc. to Annex F from EN 303-5:2021, Annex II and Annex III of the REGULATION (EU) 2015/1189:

Table 3

Model boiler	Seasonal space heating energy efficiency η_s %	In accordance REGULATION (EU) 2015/1189 [η_s] [%]
MEGAL-M17	80	[η_s] ¹ ≥ 75

Where:

- η_s % - the seasonal space heating energy efficiency:

[η_s] ¹ ≥ 75 % for boilers with a rated heat output of 20 kW or less in accordance with point 1 (a), of Annex II of the REGULATION (EU) 2015/1189.

XII. Energy efficiency index (EEI): acc. to Annex F from EN 303-5:2021, Annex II and Annex VIII of the REGULATION (EU) 2015/1187:

Table 3

Model boiler	Energy efficiency index EEI	Energy efficiency class
MEGAL-M17	117	A+

The energy efficiency index is calculated according to:

- 12.1. The requirements and the formulas of ANNEX VIII of REGULATION (EU) 2015/1187;
- 12.2. The energy efficiency index is calculated on the database provided by manufacturer for boiler burning wood;
- 12.3. The energy efficiency index is set for preferred fuel: wood according section 5.6.4.1 and section 5.3 from EN 303-5:2021.
- 12.4. Energy efficiency class is determined based on the energy efficiency index EEI according to Table 1 of ANNEX II of REGULATION (EU) 2015/1187.

XIII. ENCLOSURES:

- 13.1. Prints of the results from page 5.
- 13.2. Instruction for installation and operation - Yes.
- 13.3. Assembly drawing of the sample - 1.
- 13.4. Certificates (annexs A, B, C, D, and E): 5.



MANAGER:
(eng. Pl. Iliev)

NOTE:

The test results relate only to the tested samples.
Extracts from the test report can't be reproduced without written agreement of the testing laboratory.
This document is only informative.

Annex A
Certificate of steel sheet with a thickness of 5 mm

HRB GROUP Serbia Iron & Steel Bz Belgrade, Bulvar Mihajlo Pupin 6,
Belgrade-Stari Belgrade,
11000 Belgrade, Republic of Serbia



13
0048-098-001

INSPECTION CERTIFICATE: 3.1 EN 10204:2004
-uverenja o ispitivanju-

PAGE No: 1
(strana br):

PURCHASER: ATENIC COMMERCE D.O.O.
(kupac) CACAK
BULEVAR OSLOBODILACA CACKA 91
TRADING CO: ATENIC COMMERCE D.O.O.
(izvoznik) CACAK
(primalac) BULEVAR OSLOBODILACA CACKA 91
PRODUCT: HOT ROLLED COILS
(proizvod)
DIMENSIONS: 5,000 X 1500 X
(dimenzije, mm) EN 10051/2010
QUALITY: S215JR+AR
(kvalitet) EN 10025-2/2019
Net weight(kg): 43260
DELIVERY CONDITIONS : AR
(STANJE ISPORUKE)
Transport: 347446685070

CERTIFICATE No 54137
(uverenja broj)
PURCHASE ORDER
ITEM:
CONTRACT No. ATEN1071RS
(ugovor broj)
T: HR+CE
DATE OF ISSUE 31/07/2021
(dat. izdavanja)

MECHANICAL PROPERTIES - MEH.TEH.OSOBINE
COIL No, Heat No:
PACK No, Impact test
(kotur br. / šarta / Re / Rm / RA / KV2
(pakat br) / Rm (Elco) (Zilavost)
Ing. / Sr. Vr. 1 2 3 S
MPa / MPa
% J T°C J J J 180° HRB HV10

CHEMICAL COMPOSITION OF HEAT - HEMIJSKI SASTAV SARJE (%)
881486 377157
C 0,12 0,12
Mn 0,77 0,78
Si 0,016 0,016
P 0,010 0,016
S 0,009 0,012
Al 0,039 0,047
Cu 0,10 0,07
Cr 0,03 0,04
Ni 0,04 0,03
Mo 0,006 0,006
Ti 0,002 0,002
V 0,002 0,002
Nb 0,003 0,002
N 0,006 0,007
B 0,0001 0,0001
CEV 0,26 0,27

Measured values of alpha and beta/gamma surface contamination of the examined goods are for alpha emitters lower than 4 Bq/100cm², as well as for beta/gamma emitters lower than 40 Bq/100cm²
We hereby declare that above mentioned products were manufactured in accordance with specifications and contract requirements.

Document is valid without signature and stamp. QUALITY ASSURANCE
OBEZBEDJENJE KVALITETA




Annex B
Steel composition certificate

ISD DUNAFERR

INSPECTION CERTIFICATE 3.1

ISO 9001

Page 1 (2)

		A DOKUMENTUM ELEKTRONIKUSAN HITELENTETTT A KÉRDÉSEK VÁLASZOLÁSÁRA Működési rendszert: NETLOCK		THIS DOCUMENT IS DIGITALLY SIGNED AND TIME-STAMPED For validation please click here Location: www.isd.hu	
A07 Purchase contract no. HRC December II		A08.1 Order No./Item: 0004222692/00002		A08.2 Contract No.: 0004222692/000014	
A03 Statement No.: 0027477157/000014		B02 Quality marking: P265GH +H		B02 Quality standard: EN 10028-2:2017	
A01 Product's Plant: ISD DUNAFERR ZRT, 3400 DUNAÚJVÁROS, VASÚT TÉR 1-3.		A02 Type of statement: 3.1-EN 10204-2004		B15 Validity: 2020.03.09	
A06.1 Name of customer: Address of customer:		DAK COMERC DOO Serbia, 21000, NOVI SAD, TEMERINSKI PUT 21.		A10 Delivery date: 2020.03.09	
A04 Metal stamp:		A06.2 Place of destination: DAK COMERC DOO, Serbia, 21000, NOVI SAD, TEMERINSKI PUT 21.		B01.1 Name of product: Hot rolled coil (Plain)	
B05 Supplementary requirements: Surface according to EN 10165-2 standard class B / sub-class 3.		B06 Reference (last treatment of samples):		B01.2 Dimensions standard: EN 10091-2010	
				B01.3 Class: E	
				C05 Place of inspection:	
				B04 Delivery terms of the product: Normalised	

IDENTIFICATION OF THE PRODUCT											
B07.1 Charge No.	C76 Steel prod. Procedure	C00 Sample No.	B07.2 Coil/slide No.	B08 Pieces (pc)	B12 Theoretical mass (t)	B13 Actual mass (t)	C02 Coiling temp.	B09 Width (mm)	B10 Thickness (mm)	B11 Length (mm)	B14 Total mass (t)
663660	LD	90000772731	D48276000			22,870		1500x20	5		45,490
663660	LD	90000772732	D48276000			22,620					
B06 Marking of the product: (Z04)											

DVP 2020.03.09 12:34:41

ISD DUNAFERR

INSPECTION CERTIFICATE 3.1

ISO 9001

Page 2 (2)

CHEMICAL INSPECTION		A03 Statement No.: 0027477157/000014																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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		C71 C	C72 Mn	C73 Si	C74 S	C75 P	C76 N	C77 Al	C78 Cu	C79 Cr	C80 Ni	C81 V	C82 Nb	C83 Ti	C84 B	C85 Ca	C86 Mo	C87 O	C88 Zr	C89 As	C90 Sn	C91 W	C92 Co	C93 Cev	C94 Cev	C95 Cev	C96 Cev	C97 Cev	C98 Cev	C99 Cev	C100 Cev	C101 Cev	C102 Cev	C103 Cev	C104 Cev	C105 Cev	C106 Cev	C107 Cev	C108 Cev	C109 Cev	C110 Cev	C111 Cev	C112 Cev	C113 Cev	C114 Cev	C115 Cev	C116 Cev	C117 Cev	C118 Cev	C119 Cev	C120 Cev	C121 Cev	C122 Cev	C123 Cev	C124 Cev	C125 Cev	C126 Cev	C127 Cev	C128 Cev	C129 Cev	C130 Cev	C131 Cev	C132 Cev	C133 Cev	C134 Cev	C135 Cev	C136 Cev	C137 Cev	C138 Cev	C139 Cev	C140 Cev	C141 Cev	C142 Cev	C143 Cev	C144 Cev	C145 Cev	C146 Cev	C147 Cev	C148 Cev	C149 Cev	C150 Cev	C151 Cev	C152 Cev	C153 Cev	C154 Cev	C155 Cev	C156 Cev	C157 Cev	C158 Cev	C159 Cev	C160 Cev	C161 Cev	C162 Cev	C163 Cev	C164 Cev	C165 Cev	C166 Cev	C167 Cev	C168 Cev	C169 Cev	C170 Cev	C171 Cev	C172 Cev	C173 Cev	C174 Cev	C175 Cev	C176 Cev	C177 Cev	C178 Cev	C179 Cev	C180 Cev	C181 Cev	C182 Cev	C183 Cev	C184 Cev	C185 Cev	C186 Cev	C187 Cev	C188 Cev	C189 Cev	C190 Cev	C191 Cev	C192 Cev	C193 Cev	C194 Cev	C195 Cev	C196 Cev	C197 Cev	C198 Cev	C199 Cev	C200 Cev	C201 Cev	C202 Cev	C203 Cev	C204 Cev	C205 Cev	C206 Cev	C207 Cev	C208 Cev	C209 Cev	C210 Cev	C211 Cev	C212 Cev	C213 Cev	C214 Cev	C215 Cev	C216 Cev	C217 Cev	C218 Cev	C219 Cev	C220 Cev	C221 Cev	C222 Cev	C223 Cev	C224 Cev	C225 Cev	C226 Cev	C227 Cev	C228 Cev	C229 Cev	C230 Cev	C231 Cev	C232 Cev	C233 Cev	C234 Cev	C235 Cev	C236 Cev	C237 Cev	C238 Cev	C239 Cev	C240 Cev	C241 Cev	C242 Cev	C243 Cev	C244 Cev	C245 Cev	C246 Cev	C247 Cev	C248 Cev	C249 Cev	C250 Cev	C251 Cev	C252 Cev	C253 Cev	C254 Cev	C255 Cev	C256 Cev	C257 Cev	C258 Cev	C259 Cev	C260 Cev	C261 Cev	C262 Cev	C263 Cev	C264 Cev	C265 Cev	C266 Cev	C267 Cev	C268 Cev	C269 Cev	C270 Cev	C271 Cev	C272 Cev	C273 Cev	C274 Cev	C275 Cev	C276 Cev	C277 Cev	C278 Cev	C279 Cev	C280 Cev	C281 Cev	C282 Cev	C283 Cev	C284 Cev	C285 Cev	C286 Cev	C287 Cev	C288 Cev	C289 Cev	C290 Cev	C291 Cev	C292 Cev	C293 Cev	C294 Cev	C295 Cev	C296 Cev	C297 Cev	C298 Cev	C299 Cev	C300 Cev	C301 Cev	C302 Cev	C303 Cev	C304 Cev	C305 Cev	C306 Cev	C307 Cev	C308 Cev	C309 Cev	C310 Cev	C311 Cev	C312 Cev	C313 Cev	C314 Cev	C315 Cev	C316 Cev	C317 Cev	C318 Cev	C319 Cev	C320 Cev	C321 Cev	C322 Cev	C323 Cev	C324 Cev	C325 Cev	C326 Cev	C327 Cev	C328 Cev	C329 Cev	C330 Cev	C331 Cev	C332 Cev	C333 Cev	C334 Cev	C335 Cev	C336 Cev	C337 Cev	C338 Cev	C339 Cev	C340 Cev	C341 Cev	C342 Cev	C343 Cev	C344 Cev	C345 Cev	C346 Cev	C347 Cev	C348 Cev	C349 Cev	C350 Cev	C351 Cev	C352 Cev	C353 Cev	C354 Cev	C355 Cev	C356 Cev	C357 Cev	C358 Cev	C359 Cev	C360 Cev	C361 Cev	C362 Cev	C363 Cev	C364 Cev	C365 Cev	C366 Cev	C367 Cev	C368 Cev	C369 Cev	C370 Cev	C371 Cev	C372 Cev	C373 Cev	C374 Cev	C375 Cev	C376 Cev	C377 Cev	C378 Cev	C379 Cev	C380 Cev	C381 Cev	C382 Cev	C383 Cev	C384 Cev	C385 Cev	C386 Cev	C387 Cev	C388 Cev	C389 Cev	C390 Cev	C391 Cev	C392 Cev	C393 Cev	C394 Cev	C395 Cev	C396 Cev	C397 Cev	C398 Cev	C399 Cev	C400 Cev	C401 Cev	C402 Cev	C403 Cev	C404 Cev	C405 Cev	C406 Cev	C407 Cev	C408 Cev	C409 Cev	C410 Cev	C411 Cev	C412 Cev	C413 Cev	C414 Cev	C415 Cev	C416 Cev	C417 Cev	C418 Cev	C419 Cev	C420 Cev	C421 Cev	C422 Cev	C423 Cev	C424 Cev	C425 Cev	C426 Cev	C427 Cev	C428 Cev	C429 Cev	C430 Cev	C431 Cev	C432 Cev	C433 Cev	C434 Cev	C435 Cev	C436 Cev	C437 Cev	C438 Cev	C439 Cev	C440 Cev	C441 Cev	C442 Cev	C443 Cev	C444 Cev	C445 Cev	C446 Cev	C447 Cev	C448 Cev	C449 Cev	C450 Cev	C451 Cev	C452 Cev	C453 Cev	C454 Cev	C455 Cev	C456 Cev	C457 Cev	C458 Cev	C459 Cev	C460 Cev	C461 Cev	C462 Cev	C463 Cev	C464 Cev	C465 Cev	C466 Cev	C467 Cev	C468 Cev	C469 Cev	C470 Cev	C471 Cev	C472 Cev	C473 Cev	C474 Cev	C475 Cev	C476 Cev	C477 Cev	C478 Cev	C479 Cev	C480 Cev	C481 Cev	C482 Cev	C483 Cev	C484 Cev	C485 Cev	C486 Cev	C487 Cev	C488 Cev	C489 Cev	C490 Cev	C491 Cev	C492 Cev	C493 Cev	C494 Cev	C495 Cev	C496 Cev	C497 Cev	C498 Cev	C499 Cev	C500 Cev	C501 Cev	C502 Cev	C503 Cev	C504 Cev	C505 Cev	C506 Cev	C507 Cev	C508 Cev	C509 Cev	C510 Cev	C511 Cev	C512 Cev	C513 Cev	C514 Cev	C515 Cev	C516 Cev	C517 Cev	C518 Cev	C519 Cev	C520 Cev	C521 Cev	C522 Cev	C523 Cev	C524 Cev	C525 Cev	C526 Cev	C527 Cev	C528 Cev	C529 Cev	C530 Cev	C531 Cev	C532 Cev	C533 Cev	C534 Cev	C535 Cev	C536 Cev	C537 Cev	C538 Cev	C539 Cev	C540 Cev	C541 Cev	C542 Cev	C543 Cev	C544 Cev	C545 Cev	C546 Cev	C547 Cev	C548 Cev	C549 Cev	C550 Cev	C551 Cev	C552 Cev	C553 Cev	C554 Cev	C555 Cev	C556 Cev	C557 Cev	C558 Cev	C559 Cev	C560 Cev	C561 Cev	C562 Cev	C563 Cev	C564 Cev	C565 Cev	C566 Cev	C567 Cev	C568 Cev	C569 Cev	C570 Cev	C571 Cev	C572 Cev	C573 Cev	C574 Cev	C575 Cev	C576 Cev	C577 Cev	C578 Cev	C579 Cev	C580 Cev	C581 Cev	C582 Cev	C583 Cev	C584 Cev	C585 Cev	C586 Cev	C587 Cev	C588 Cev	C589 Cev	C590 Cev	C591 Cev	C592 Cev	C593 Cev	C594 Cev	C595 Cev	C596 Cev	C597 Cev	C598 Cev	C599 Cev	C600 Cev	C601 Cev	C602 Cev	C603 Cev	C604 Cev	C605 Cev	C606 Cev	C607 Cev	C608 Cev	C609 Cev	C610 Cev	C611 Cev	C612 Cev	C613 Cev	C614 Cev	C615 Cev	C616 Cev	C617 Cev	C618 Cev	C619 Cev	C620 Cev	C621 Cev	C622 Cev	C623 Cev	C624 Cev	C625 Cev	C626 Cev	C627 Cev	C628 Cev	C629 Cev	C630 Cev	C631 Cev	C632 Cev	C633 Cev	C634 Cev	C635 Cev	C636 Cev	C637 Cev	C638 Cev	C639 Cev	C640 Cev	C641 Cev	C642 Cev	C643 Cev	C644 Cev	C645 Cev	C646 Cev	C647 Cev	C648 Cev	C649 Cev	C650 Cev	C651 Cev	C652 Cev	C653 Cev	C654 Cev	C655 Cev	C656 Cev	C657 Cev	C658 Cev	C659 Cev	C660 Cev	C661 Cev	C662 Cev	C663 Cev	C664 Cev	C665 Cev	C666 Cev	C667 Cev	C668 Cev	C669 Cev	C670 Cev	C671 Cev	C672 Cev	C673 Cev	C674 Cev	C675 Cev	C676 Cev	C677 Cev	C678 Cev	C679 Cev	C680 Cev	C681 Cev	C682 Cev	C683 Cev	C684 Cev	C685 Cev	C686 Cev	C687 Cev	C688 Cev	C689 Cev	C690 Cev	C691 Cev	C692 Cev	C693 Cev	C694 Cev	C695 Cev	C696 Cev	C697 Cev	C698 Cev	C699 Cev	C700 Cev	C701 Cev	C702 Cev	C703 Cev	C704 Cev	C705 Cev	C706 Cev	C707 Cev	C708 Cev	C709 Cev	C710 Cev	C711 Cev	C712 Cev	C713 Cev	C714 Cev	C715 Cev	C716 Cev	C717 Cev	C718 Cev	C719 Cev	C720 Cev	C721 Cev	C722 Cev	C723 Cev	C724 Cev	C725 Cev	C726 Cev	C727 Cev	C728 Cev	C729 Cev	C730 Cev	C731 Cev	C732 Cev	C733 Cev	C734 Cev	C735 Cev	C736 Cev	C737 Cev	C738 Cev	C739 Cev	C740 Cev	C741 Cev	C742 Cev	C743 Cev	C744 Cev	C745 Cev	C746 Cev	C747 Cev	C748 Cev	C749 Cev	C750 Cev	C751 Cev	C752 Cev	C753 Cev	C754 Cev	C755 Cev	C756 Cev	C757 Cev	C758 Cev	C759 Cev	C760 Cev	C761 Cev	C762 Cev	C763 Cev	C764 Cev	C765 Cev	C766 Cev	C767 Cev	C768 Cev	C769 Cev	C770 Cev	C771 Cev	C772 Cev	C773 Cev	C774 Cev	C775 Cev	C776 Cev	C777 Cev	C778 Cev	C779 Cev	C780 Cev	C781 Cev	C782 Cev	C783 Cev	C784 Cev	C785 Cev	C786 Cev	C787 Cev	C788 Cev	C789 Cev	C790 Cev	C791 Cev	C792 Cev	C793 Cev	C794 Cev	C795 Cev	C796 Cev	C797 Cev	C798 Cev	C799 Cev	C800 Cev	C801 Cev	C802 Cev	C803 Cev	C804 Cev	C805 Cev	C806 Cev	C807 Cev	C808 Cev	C809 Cev	C810 Cev	C811 Cev	C812 Cev	C813 Cev	C814 Cev	C815 Cev	C816 Cev	C817 Cev	C818 Cev	C819 Cev	C820 Cev	C821 Cev	C822 Cev	C823 Cev	C824 Cev	C825 Cev	C826 Cev	C827 Cev	C828 Cev	C829 Cev	C830 Cev	C831 Cev	C832 Cev	C833 Cev	C834 Cev	C835 Cev	C836 Cev	C837 Cev	C838 Cev	C839 Cev	C840 Cev	C841 Cev	C842 Cev	C843 Cev	C844 Cev	C845 Cev	C846 Cev	C847 Cev	C848 Cev	C849 Cev	C850 Cev	C851 Cev	C852 Cev	C853 Cev	C854 Cev	C855 Cev	C856 Cev	C857 Cev	C858 Cev	C859 Cev	C860 Cev	C861 Cev	C862 Cev	C863 Cev	C864 Cev	C865 Cev	C866 Cev	C867 Cev	C868 Cev	C869 Cev	C870 Cev	C871 Cev	C872 Cev	C873 Cev	C874 Cev	C875 Cev	C876 Cev	C877 Cev	C878 Cev	C879 Cev	C880 Cev	C881 Cev	C882 Cev	C883 Cev	C884 Cev	C885 Cev	C886 Cev	C887 Cev	C888 Cev	C889 Cev	C890 Cev	C891 Cev	C892 Cev	C893 Cev	C894 Cev	C895 Cev	C896 Cev	C897 Cev	C898 Cev	C899 Cev	C900 Cev	C901 Cev	C902 Cev	C903 Cev	C904 Cev	C905 Cev	C906 Cev	C907 Cev	C908 Cev	C909 Cev	C910 Cev	C911 Cev	C912 Cev	C913 Cev	C914 Cev	C915 Cev	C916 Cev	C917 Cev	C918 Cev	C919 Cev	C920 Cev	C921 Cev	C922 Cev	C923 Cev	C924 Cev	C925 Cev	C926 Cev	C927 Cev	C928 Cev	C929 Cev	C930 Cev	C931 Cev	C932 Cev	C933 Cev	C934 Cev	C935 Cev	C936 Cev	C937 Cev	C938 Cev	C939 Cev	C940 Cev	C941 Cev	C942 Cev	C943 Cev	C944 Cev	C945 Cev	C946 Cev	C947 Cev	C948 Cev	C949 Cev	C950 Cev	C95

Annex C
Safety valve certificate



DECLARATION OF CONFORMITY

According to the Norms:
EN10204-2.1 & UNI EN ISO / IEC 17050-1

The undersigned IVR S.p.A.
Producer of Hydrothermal Systems,
based in Boca (NO) Via Brughiera III no.1, Località Piano Rosa (Italy)

DECLARES

Under its sole responsibility that the product

Safety valve F/F
350 - 351 - 355 - 356 series

Are built in accordance with the technical requirements and with the procedures established by the Company Quality Management System compliant with the UNI EN ISO 9001:2015 standard

Field of application:

- Maximum working pressure: 6 bar
- Calibration range:
 - ☐ ½" : 1,5 – 6,0 bar
 - ☐ ¾" : 1,5 – 6,0 bar
 - ☐ 1" : 1,5 – 6,0 bar
- Operating temperature: +5°C / +110°C
- Standard calibration performed by the manufacturer: 6 bar

IVR S.p.A.

Legal Representative

Piero Giacomini

April 20, 2022



Sede Amministrativa: Via Brughiera III n.1 Località Piano Rosa – 28010 BOCA (NO)

Sede Legale: Via Francesco Melzi d'Eril n.7 – 20154 MILANO (MI)

Codice Fiscale e Partita IVA 06829530960 – Registro Imprese di Milano n. 06829530960 – R.E.A. Milano n. 1918135

Tel. 0322 888811 – Fax 0322 888892-93 website www.ivrvalvole.it e-mail vendite@ivrvalvole.it / sales@ivrvalvole.it

Annex D
Certificate of welding electrode

INSPECTION CERTIFICATE (3.1) - Chemical analysis
TEST REPORT (2.2) - Mechanical properties



Date:	2021-11-15	Certificate number:	EC26619040 rev. 0
Our order:	0100368940	Your order:	13102021
Our reference:	Predrad Boricic (Serbia)	Your reference:	
Customer number:	HUE00050	Your fax number:	
Customer order date:	20211013	Your e-mail:	
<u>Invoice address</u>	<u>Receiver of certificate</u>	<u>Delivery address</u>	
STANISIC METAL DOO NIS		STANISIC METAL DOO NIS	
KUBANSKA, 31		KUBANSKA, 31	
18000 NIS		18000 NIS	
Serbia		Serbia	
DELIVERY	Lot number:	SFV4510265	Quantity: 7524 KGM

PRODUCT

Brand: ESAB
Description: OK 43.33 4.0x450mm
Item number: 4333404400

CLASSIFICATIONS

SFA/AWS A5.1: E6013
EN ISO 2560-A: E 42 0 RR 12

MECHANICAL PROPERTIES

Typical data: acc to EN 10204 - 2.2

Standard:
Auxiliary:
Condition:

CHEMICAL COMPOSITION

Actual results: acc to EN 10204 - 3.1

All weld metal

Auxiliary:
C 0.08%
Si 0.35%
Mn 0.5%
P 0.025%
S 0.009%
Cr < 0.1%
Ni < 0.1%
Mo < 0.1%
Nb 0.01%
Cu < 0.1%
V 0.02%

COMMENTS

Product supplied under a QA Programme fulfilling the EN ISO 9001 standard.
This certificate is produced electronically and is valid without signature.
Please refer any queries to:
ESAB Kft. 1083 Budapest, Bókey János u. 44-46., C6 épület, 7. emelet +36 1 382-12-00

Validation - Chemical Analysis

Pál Dranka

Quality Assurance Manager

Validation - Others

J-P Emoult

Product Manager

Annex E
Certificate of seal

Извештај о испитивању број 612-22-4/14 страна 1 од укупно 3 стране



УНИВЕРЗИТЕТ У НИШУ
МАШИНСКИ ФАКУЛТЕТ
ЗАВОД ЗА МАШИНСКО ИНЖЕЊЕРСТВО
ЛАБОРАТОРИЈА ЗА ИСПИТИВАЊЕ
МАТЕРИЈАЛА И МАШИНА
18000 Ниш, ул. А. Медведева бр. 14, тел/факс 018/588-199
тел. 018/ 500-739, 500-696, 500-701 – руководиоца Завода
e-mail: zavod@masfak.ni.ac.rs

ИЗВЕШТАЈ О ИСПИТИВАЊУ

бр. 612-22-19/14

ИСПИТИВАЊЕ СТАКЛЕНЕ ПЛЕТЕНИЦЕ

Наручилац:

«MILAN PEŠIĆ» D. O. O.

Производња ужади, канапа, плетеница и мрежа
16203 Вучје, с. Брза

ПОДАЦИ О ПРОИЗВОДУ

Назив производа: СТАКЛЕНА ПЛЕТЕНИЦА
Година производње: 2014.
Попречни пресек: квадратни, правоугаони и огругли од 3 mm 90 mm.
Сировински састав: стаклено предиво.


ТЕХНИЧКЕ КАРАКТЕРИСТИКЕ

Радна температура: до 550 °C
Називни статички притисак: 100 daN/cm² (bar)

Резултати испитивања се односе само на испитане узорке.

Ниш, 27. 2. 2014. год.

Руководилац посла


Горан Раденковић, ван. проф.


Руководилац
Завода за машинско инжењерство

Проф. др Драган Милчић