TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.
Technical and Test Institute for Construction Prague
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L 1018.3

Testing Laboratory No. 1018.3
accredited by ČIA pursuant to ČSN EN ISO/IEC 17025:2018

TEST REPORT

No. 060-062160

on
determination of flexular strength of masonry

Manufacturer:	Kelteks d.o.o.
Address:	Dr. Slavka Rozgaja 3, 47000 Karlovac, Croatia
Plant:	Kelteks d.o.o.
Address:	Dr. Slavka Rozgaja 3, 47000 Karlovac, Croatia
Ordering party:	Authorized Body No 204, TZÚS Prague, SOE
Address:	Prosecká 811/76a, Prosek, 190 00 Prague 9, Czech Republic
Test sample:	Reinforced masonry units – Porotherm 14 Profi + solidian Briksy 100 (HYB-R222/28-HY-661(860)-AGS2-6x30)
Order No.:	Z060260026

Number of pages of the test report incl. title page: 10 Pages of annexes: 0

Prepared by:

Ing. Václav Šebela
Test technician - specialist

Approved by:

TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p. Akreditovaná zkušební laboratoř č. 1018.3 Zkušebna Brno Centrální laboratoř

Ing. Martin Zadělák
Head of the Testing Department

Copy No.: 1
Number of copies: 2

Brno, July 2, 2026

Declaration: 1) The test results in this Report relate only to the tested article and they do not substitute any other documents.
2) The test report must be copied as a whole only otherwise a written consent of the testing laboratory is needed.
3) The laboratory is not responsible for the result if it could be influenced by the information provided by the customer.

1 Sample data

Evidence number:	VZ060260198/3
	solidian Briksy 100 (HYB-R222/28-HY-661(860)-AGS2-6x30)
Sample:	Wienerberger Porotherm 14 Profi blocks
	masonry mortar Baumit 5 MPa (by PRO-DOMA)
Order:	Z060260026
Took over:	Ing. Marek Sopko
Date of sample delivery:	10. 4. 2026

The test results apply to the sample as received.
The tests were performed for Authorized Body No 204, TZÚS Prague, SOE.

evidence no.	identification	date of production	date of test	spacing of inner/outer bearings [mm]
VZ060260198/3/1	OK 1	20. 5. 2026	18. 6. 2026	420/840
VZ060260198/3/2	OK 2	20. 5. 2026	18. 6. 2026	420/840
VZ060260198/3/3	OK 3	20. 5. 2026	18. 6. 2026	420/840
VZ060260198/3/4	OK 4	20. 5. 2026	19. 6. 2026	420/840
VZ060260198/3/5	OK 5	20. 5. 2026	19. 6. 2026	420/840

2 Test methods

identification of test method		title of test method
ČSN EN 1052-2:2016	Methods of test for masonry – Part 2: Determination of flexural strength	Determination of flexural strength
ČSN 73 0212-5:1995	Geometric accuracy in building industry. Accuracy control. Accuracy control of building components.	Accuracy control
ČSN EN 1015-3	Methods of test for mortar for masonry	Part 3: Determination of consistence of fresh mortar by flow table
ČSN EN 1015-7		Part 7: Determination of air content of fresh mortar
ČSN EN 1015-11		Part 11: Determination of flexural and compressive strength of hardened mortar
ČSN EN 772-1 + A1	Methods of test for masonry units	Part 1: Determination of compressive strength

3 Test results

The specimens were assembled on:	20. 5. 2026
The test were carried out on:	18. – 19. 6. 2026
Place of testing:	Testing department Brno
The test were performed by:	Ing. Václav Šebela, Zdena Fryčarová, Mgr. Olga Otrusinová

Data on the test conditions and equipment used, are listed in the Test Minutes. Apparatuses and measuring instruments that were used have been calibrated and verified pursuant to the valid plan of Testing Department Brno.

3.1 Test according to ČSN EN 1015-3 and ČSN EN 1015-7

test	mean value
consistency by flow table	190 mm
air content of fresh mortar	8,8 % vol.

3.2 Test according to ČSN EN 1015-11. cl.9

amount of used water	4.5 l / 25 kg of masonry mortar
sample age	28 days
mean compressive strength	4.9 MPa

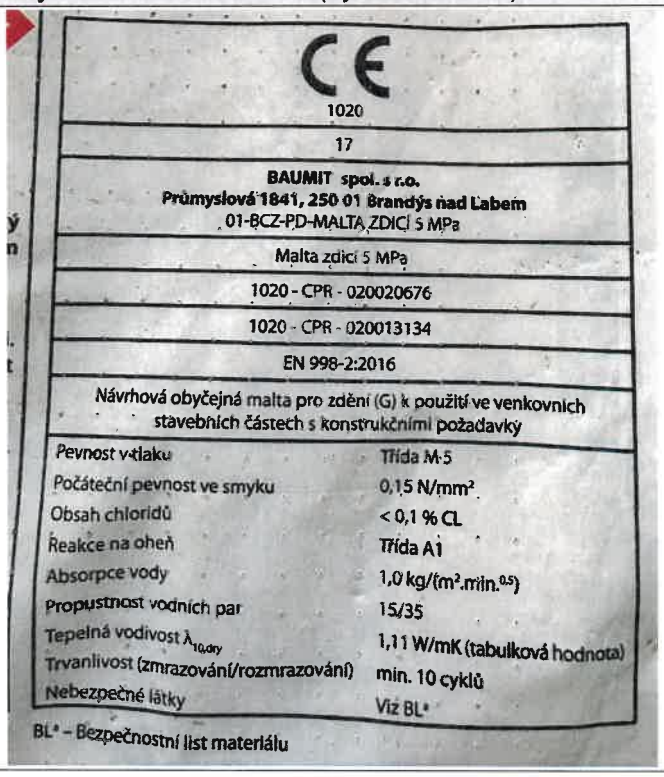
3.3 Test according to ČSN EN 772-1 + A1

test	value
dimension of the bricks (A × B × H)	49.9 × 13.9 × 24.9 cm
average weight	13.5 kg
compressive strength	mean value 13.3 MPa

3.4 Masonry unit assemblage

3.4.1 Component details

blocks	Porotherm 14 Profi
dimensions *l / w / h [mm]*	497 / 140 / 249
category	EN 771-4, Cat. 1
details	

mortar	masonry mortar Baumit 5 MPa (by PRO-DOMA)
details	

reinforcement	solidian Briksy
description	solidian Briksy is a high-tech, non-corrosive glass or carbon fiber mesh used as bed joint reinforcement in masonry. It is placed directly in the mortar between masonry units and helps to reduce the formation and propagation of cracks in walls, especially around window and door openings and in zones of stress concentration.
number of layers	1 layer in first and 1 layer in third bed joint
width [mm]	100

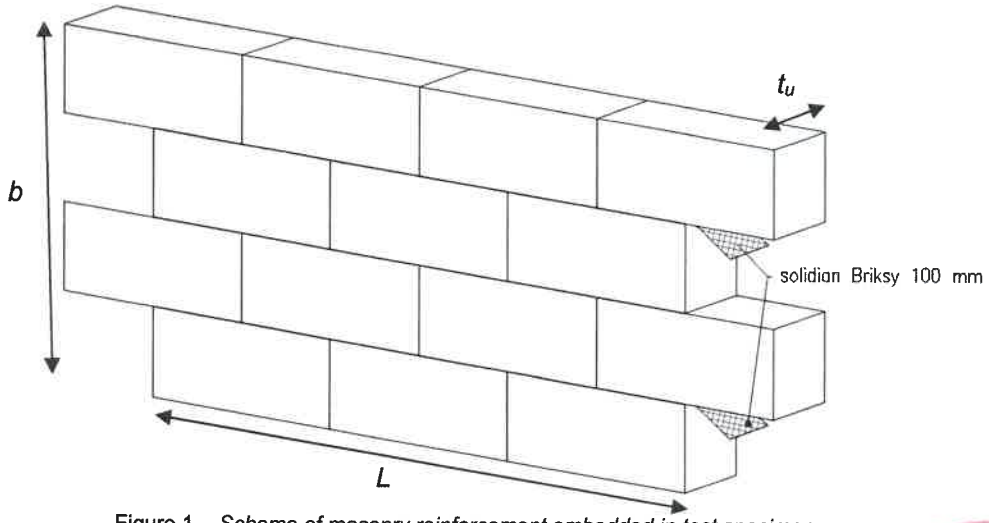


Figure 1 - *Scheme of masonry reinforcement embedded in test specimen*

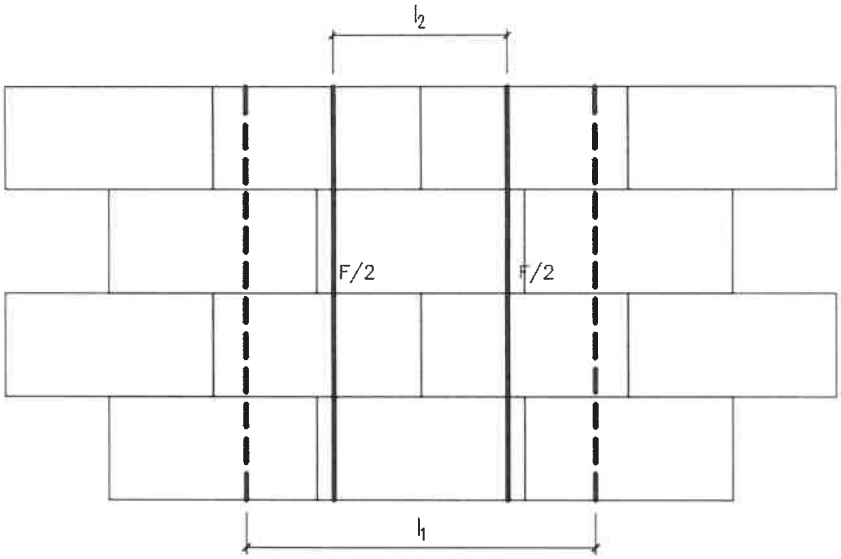


Figure 2 - *Flexural strength test scheme for a plane of failure perpendicular to the bed joints*

3.5 Details of test process and specimen dimensions crucial for flexural resistance evaluation

The flexural strength of masonry was derived from the strength of a small specimens tested to destruction under four-point loading. The maximum load achieved was recorded. Pure bending of the tested specimen assumed a linear stress distribution of internal stresses. The base of each masonry specimen was free from frictional restraint by setting it on two layers of polyethylene with grease between them.

Temperatures during assembling, curing and testing were 22 – 28 °C and relative humidity 32 – 48%

identification	date of production	date of test	temperature / and relative humidity [°C / %]	flexural strength rate [N/mm²/min]
OK 1	20. 5. 2026	18. 6. 2026	24 / 48	0,03
OK 2	20. 5. 2026	18. 6. 2026	24 / 48	
OK 3	20. 5. 2026	18. 6. 2026	24 / 48	
OK 4	20. 5. 2026	19. 6. 2026	28 / 46	
OK 5	20. 5. 2026	19. 6. 2026	28 / 46	

identification	sectional area dimensions [mm]		spacing of the outer bearings l_1 [mm]	spacing of the inner bearings l_2 [mm]
	b	t_u		
OK 1	1020	140	840	420
OK 2	1020	140	840	420
OK 3	1020	140	840	420
OK 4	1020	140	840	420
OK 5	1020	140	840	420

3.6 Test results

3.6.1 Flexural strength for a plane of failure perpendicular to the bed joints

identification	first crack load F [kN]	maximum load F_{max} [kN]	failure mode
OK 1	9.38	15.38	2 failure cracks between inner bearings
OK 2	8.75	18.63	2 failure cracks between inner bearings
OK 3	8.13	15.75	1 failure crack between inner bearings
OK 4	8.13	16.63	3 failure cracks between inner bearings
OK 5	6.88	14.75	3 failure cracks between inner bearings

3.6.2 Detailed load-deflection tabular values and graphs

step	load F [kN]	Mid-span deflection [mm]				
		OK1	OK 2	OK 3	OK 4	OK 5
0	0.000	0.00	0.00	0.00	0.00	0.00
1	0.625	0.09	-0.07	0.02	0.05	0.05
2	1.250	0.10	-0.13	0.03	0.07	0.06
3	1.875	0.11	-0.12	0.04	0.09	0.08
4	2.500	0.12	-0.12	0.05	0.20	0.11
5	3.125	0.15	-0.09	0.07	0.24	0.13
6	3.750	0.17	-0.06	0.09	0.28	0.17
7	4.375	0.19	-0.04	0.14	0.34	0.20
8	5.000	0.22	-0.02	0.17	0.39	0.25
9	5.625	0.25	0.01	0.22	0.44	0.29
10	6.250	0.28	0.04	0.27	0.49	0.33
11	6.875	0.31	0.07	0.32	0.55	0.38
12	7.500	0.38	0.10	0.51	0.96	0.49
13	8.125	0.43	0.13	0.74	1.27	0.76
14	8.750	0.90	0.22	2.08	2.86	1.01
15	9.375	2.05	1.86	4.57	3.68	1.42
16	10.000	2.34	2.33	5.41	4.81	5.48
17	10.625	3.87	3.06	6.49	5.39	7.63
18	11.250	4.72	3.66	7.35	5.98	8.01
19	11.875	5.36	4.38	8.40	6.68	8.40
20	12.500	6.03	4.92	9.44	7.46	8.97
21	13.125	6.86	5.57	10.23	8.32	9.45
22	13.750	8.44	6.20	10.90	10.14	10.42
23	14.375	11.21	6.80	11.61	11.09	11.55
24	15.000	12.69	7.44	13.18	12.27	39.54
25	15.625	-	8.54	16.38	13.21	-
26	16.250	-	9.41	-	13.95	-
27	16.875	-	10.51	-	-	-
28	17.500	-	13.30	-	-	-
29	18.125	-	13.80	-	-	-

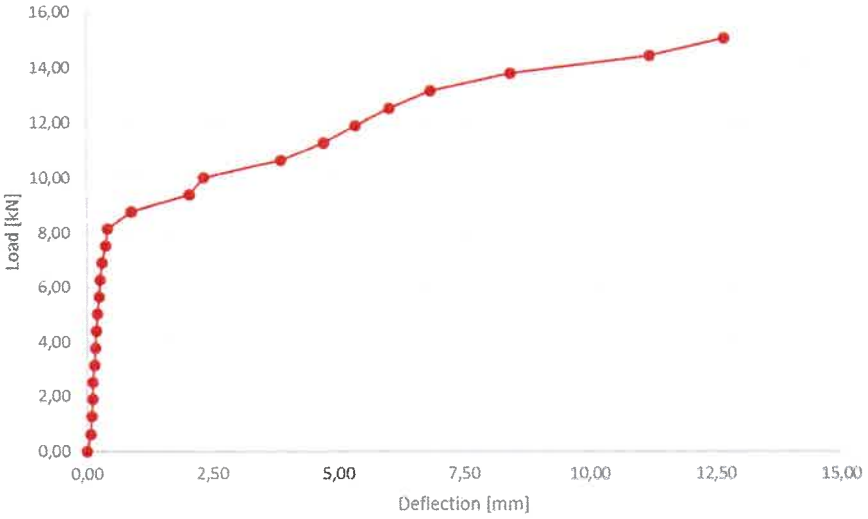


Figure 3 - *OK 1 - Load-deflection graph*

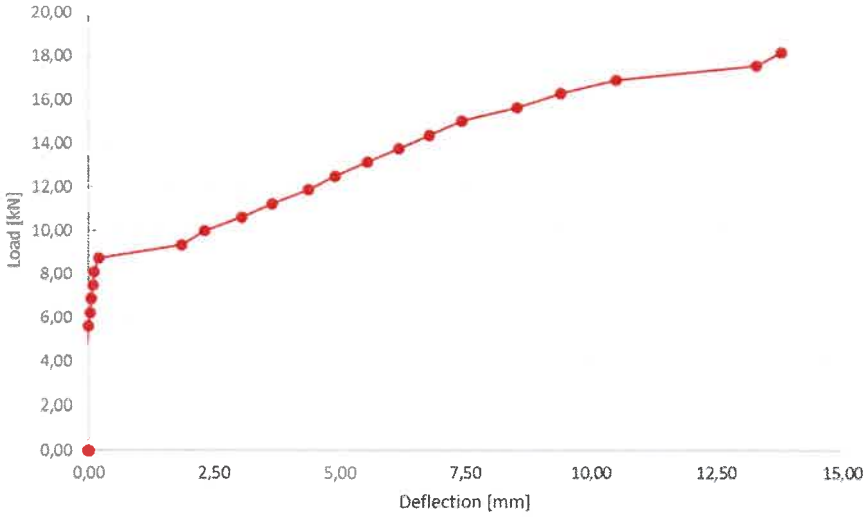


Figure 4 - *OK 2 – Load-deflection graph*

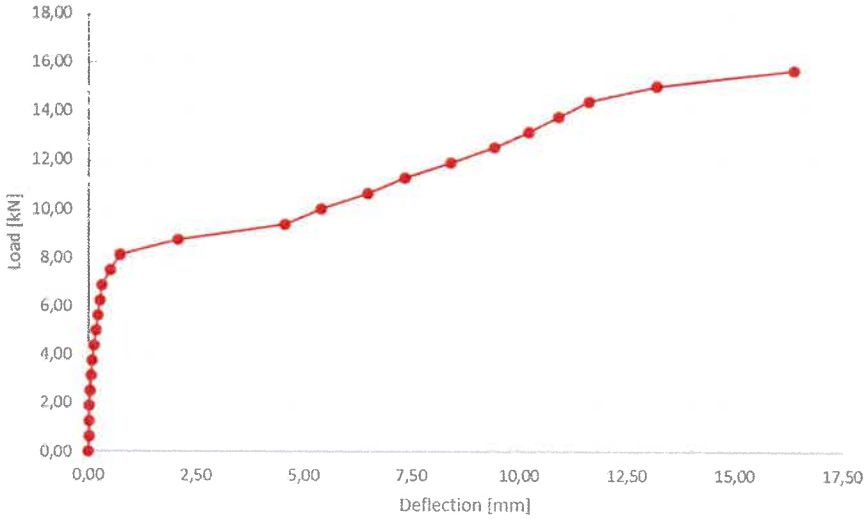


Figure 5 - *OK 3 – Load-deflection graph*

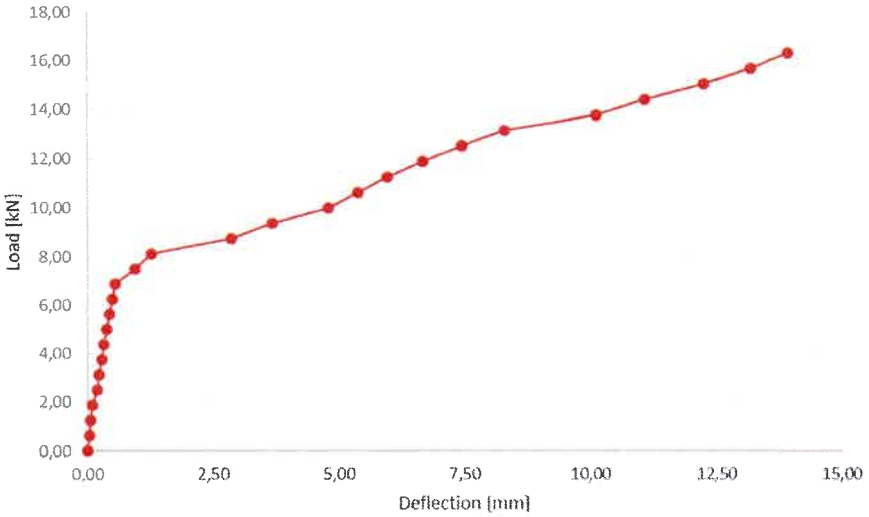


Figure 6 - *OK 4 – Load-deflection graph*

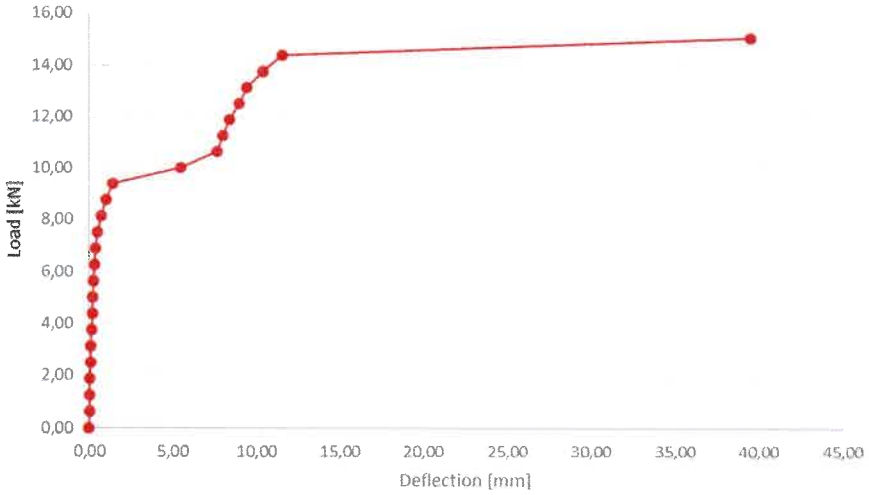


Figure 7 - *OK 5 – Load-deflection graph*

4 Calculations

Flexural strength for each mortar specimen was calculated (at first crack load F) according to the article no. 9 ČSN EN 1052-2. Characteristic flexural strength was calculated according to the article no. 10 ČSN EN 1052-2 for the number of test specimens n = 5 ($f_{xk} = f_{mean} / 1,5$).

4.1 Flexural strength for a plane of failure perpendicular to the bed joints

identification	flexural strength f_x [N/mm²]	mean flexural strength f_{mean} [N/mm²]	characteristic flexural strength f_{xk} [N/mm²]
OK 1	0.30	0.26	0.17
OK 2	0.28		
OK 3	0.26		
OK 4	0.26		
OK 5	0.22		

5 Photo documentation

Figure 8 - *Masonry specimen OK 1 prepared for test*

Figure 9 - *Failure mode – OK 1*

Figure 10 - *Failure mode – OK 2*

Figure 11 - *Failure mode – OK 3*

Figure 12 - *Failure mode – OK 4*

Figure 13 - *Failure mode – OK 5*

Figure 14 - *Detail of failure mode – OK 2*

Figure 15 - *Detail of reinforcement stretching and tearing*

END OF THE TEST REPORT