TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.
Technical and Test Institute for Construction Prague
Akreditovaná zkušební laboratoř, Autorizovaná osoba, Notifikovaná osoba, Oznámený subjekt, Subjekt pro technické posuzování, Certifikační orgán, Inspekční orgán / Accredited Testing Laboratory, Authorised Body, Notified Body, Technical Assessment Body, Certification Body, Inspection Body.
Central laboratory – Testing Department Brno
Hněvkovského 77, 617 00 Brno
tel.: +420 734 432 093, e-mail: zadelak@tzus.cz, www.tzus.eu
L 1018.3

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

TEST REPORT

No. 060-062161

on
determination of flexural resistance and shear resistance of lintels

EN846-9

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 lintels – Porotherm 19 AKU + solidian Briksy 100 (HYB-R222/28-HY-661(860)-AGS2-6x30)
Order No.:	Z060260026

Number of pages of the test report incl. title page: 13 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 ZÚS 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:	VZ060260198/4
	solidian Briksy 100 (HYB-R222/28-HY-661(860)-AGS2-6x30)
Sample:	Wienerberger Porotherm 19 AKU 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	test
VZ060260198/3/1	S 1	20. 5. 2026	22. 6. 2026	shear resistance
VZ060260198/3/2	S 2	20. 5. 2026	22. 6. 2026	shear resistance
VZ060260198/3/3	S 3	20. 5. 2026	22. 6. 2026	shear resistance
VZ060260198/3/4	F 4	20. 5. 2026	23. 6. 2026	flexural resistance
VZ060260198/3/5	F 5	20. 5. 2026	23. 6. 2026	flexural resistance
VZ060260198/3/6	F 6	20. 5. 2026	23. 6. 2026	flexural resistance

2 Test methods

identification of test method		title of test method
ČSN EN 1052-2:2016	Methods of test for ancillary components for masonry - Part 9: Determination of flexural resistance and shear resistance of lintels	Determination of flexural resistance
		Determination of shear resistance
ČSN 73 0212-5:1995	Geometric accuracy in building industry. Accuracy control. Accuracy control of building components.	Accuracy control
ČSN EN 846-11:2001	Methods of test for ancillary components for masonry - Part 11: Determination of dimensions and bow of lintels	Determination of dimensions and bow of lintels
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: 22. – 23. 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 & 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.8 a cl.9

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

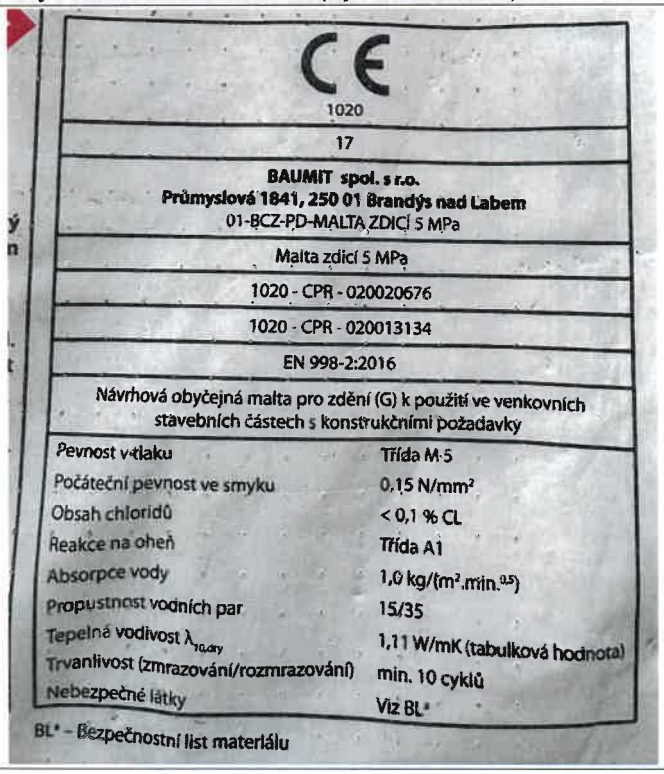
3.3 Test according to ČSN EN 772-1 + A1

test	value
dimension of the bricks (A × B × H)	37.2 x 19.0 x 23.8 cm
average weight	18.2 kg
compressive strength	mean value 15.0 MPa

3.4 Masonry unit assemblage

3.4.1 Component details

blocks	Wienerberger Porotherm 19 AKU
dimensions *l / w / h [mm]*	372 / 190 / 238
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 (lowest) bed joint
width [mm]	100

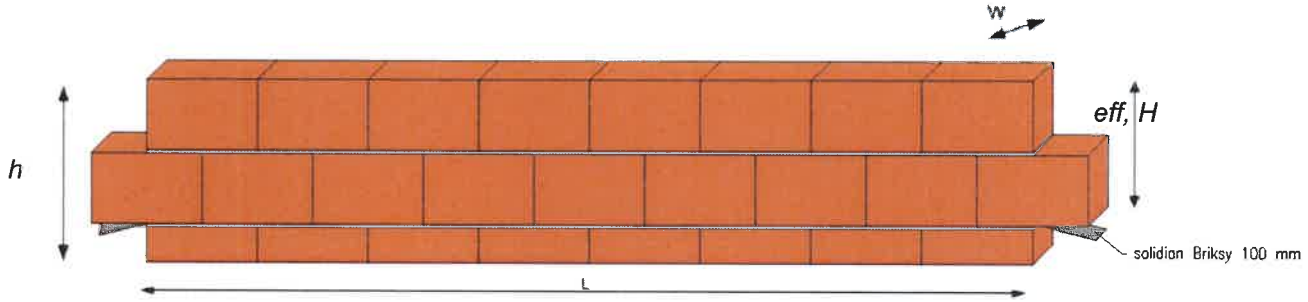
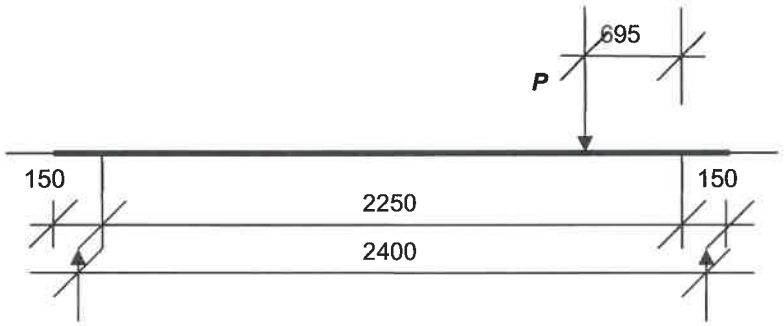


Figure 1 - *Scheme of masonry reinforcement embedded in test specimen*

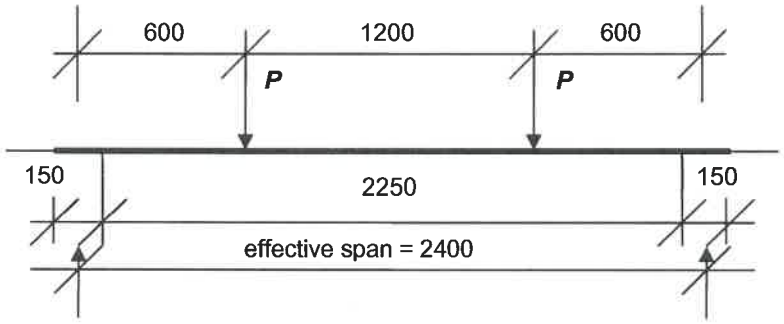
3.5 Test scheme of masonry lintels specimens

Tests were performed in accordance with the EN mentioned above. The specimens were carefully checked, there were found no imperfections that could affect test results. The static scheme of flexural and shear test is shown on lower figure (dimensions in mm).

Shear resistance:



Flexural resistance:



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

The flexural two-point load (2P=P+P) was distributed all over the width of each tested lintel. Loading was carried out in few equivalent steps up to the failure. Load increments of the force 2P in relation with number of step are shown in lower table. The mid-span deflection, setting of supports and horizontal lateral deflection were monitored during the flexural test progress.

load increments of *2P* [kN]								
step	0	1	2	3	4	5	6	7
load *2P* [kN]	0.00	0.63	1.25	1.88	2.50	3.13	3.75	4.38
step	8	9	10	11	12	13	14	15
load *2P* [kN]	5.00	5.63	6.25	6.88	7.50	8.13	8.75	9.38
step	16	17	18	19	20	21	22	23
load *2P* [kN]	10.00	10.63	11.25	11.88	12.50	13.13	13.75	14.38
step	24	25	26	27	28	29	30	31
load *2P* [kN]	15.00	15.63	16.25	16.88	17.50	18.13	18.75	19.38
step	32	33	34	35	36	37	38	39
load *2P* [kN]	20.00	20.63	21.25	21.88	22.50	23.13	23.75	24.38

Temperatures during assembling, curing and testing were 22 – 29 °C and relative humidity 32 – 48%

identification	production date	test date	temperature / and relative humidity [°C / %]	load *2P* rate [kN/min]
S 1	20. 5. 2026	22. 6. 2026	28.0 / 46	1,0 – 2,0
S 2	20. 5. 2026	22. 6. 2026	28.0 / 46	
S 3	20. 5. 2026	22. 6. 2026	28.0 / 46	
F 4	20. 5. 2026	23. 6. 2026	29.0 / 48	
F 5	20. 5. 2026	23. 6. 2026	29.0 / 48	
F 6	20. 5. 2026	23. 6. 2026	29.0 / 48	

Neither action of load (230 N) of device used during flexural test nor dead load of the test specimen are involved and calculated in test results.

Neither action of load (80 N) of device used during shear test nor dead load of the test specimen is involved and calculated in test results.

4 Test results

4.1 Average dimensions and weight

identification	average dimensions [mm]			weight [kg]
	length *L*	width *w*	height *h*	
S 1	3000	190	615	410
S 2	3003	190	615	402
S 3	2997	189	621	415
F 4	2996	190	620	413
F 5	3002	190	619	407
F 6	3004	189	622	412

4.2 Shear resistance

4.2.1 Tabular values

identification	flexural resistance [kN/m]		
	first crack load *P* [kN]	maximum load *P* [kN]	failure mode at max. load
S 1	6.25	14.25	complex shear lintel failure, tension failure in reinforcement
S 2	6.88	11.38	complex shear lintel failure, tension failure in reinforcement
S 3	4.00	17.63	complex shear lintel failure, tension failure in reinforcement

4.2.2 Photo documentation

Figure 2 - *Test set up – S1*

Figure 3 - *First crack – S1*

Figure 4 - *Failure mode – S1*

Figure 5 - *First crack – S2*

Figure 6 - *Failure mode – S2*

Figure 7 - *First crack – S3*

Figure 8 - *Failure mode – S3*

4.3 Flexural resistance

4.3.1 Detailed load-deflection tabular values

identification	flexural resistance		
	first crack load *2P* [kN]	maximum load *2P* [kN]	failure mode at max. load
F 4	5.63	22.75	complex shear lintel failure (both ends), tension failure in reinforcement
F 5	3.75	21.37	complex shear lintel failure (both ends), tension failure in reinforcement
F 6	3.75	17.50	complex shear lintel failure (both ends), tension failure in reinforcement

numerical interpretation of test monitoring						
load *2P* [kN]	F 4		F 5		F 6	
	mid-span deflection [mm]	lateral deflection [mm]	mid-span deflection [mm]	lateral deflection [mm]	mid-span deflection [mm]	lateral deflection [mm]
0,00	0,00	0.00	0,00	0,00	0,00	0,00
0,63	0,05	0.02	0,00	0,03	0,13	0,02
1,25	0,12	0.03	0,00	0,03	0,30	0,01
1,88	0,19	0.03	0,07	0,03	0,55	0,02
2,50	0,28	0.03	0,26	0,07	2,56	0,39
3,13	0,37	0.04	0,55	0,11	3,25	0,42
3,75	0,44	0.06	2,87	0,14	4,26	0,41
4,38	0,86	0.07	4,85	0,25	8,64	0,27
5,00	1,14	0.17	5,28	0,38	9,00	0,27
5,63	1,44	0.32	5,62	0,50	10,11	0,33
6,25	1,71	0.43	6,01	0,61	10,92	0,44
6,88	1,89	0.50	6,37	0,69	30,29	-1,57
7,50	2,22	0.55	6,75	0,78	30,79	-1,52
8,13	2,87	0.35	11,33	0,62	31,30	-1,43
8,75	3,87	-0.28	11,59	0,61	31,78	-1,35
9,38	4,38	-0.54	12,02	0,69	32,30	-1,18
10,00	11,58	-1.15	12,98	0,94	35,60	-0,65
10,63	12,17	-1.17	13,48	1,04	36,50	-0,57
11,25	12,78	-1.18	23,49	0,42	37,21	-0,44
11,88	13,34	-1.18	24,25	0,43	38,09	-0,23
12,50	18,23	1.04	25,07	0,43	38,74	-0,11
13,13	18,70	1.18	26,09	0,43	39,37	0,01
13,75	19,41	1.32	27,94	0,34	40,11	0,07
14,38	20,12	1.33	34,81	0,59	40,95	0,11
15,00	21,17	1.27	48,64	1,45	54,30	-0,93
15,63	24,78	-0.04	49,04	1,43	54,89	-1,26
16,25	25,22	-0.09	49,72	1,39	56,14	-1,92
16,88	25,70	-0.12	50,71	1,33	57,05	-2,56
17,50	27,15	-0.19	51,45	1,26	-	-
18,13	30,44	-0.55	53,30	0,76	-	-
18,75	31,12	-0.52	53,72	1,21	-	-
19,38	31,66	-0.41	54,52	1,27	-	-
20,00	44,32	0.03	55,51	1,32	-	-
20,63	-	-	-	-	-	-
21,25	-	-	-	-	-	-
21,88	-	-	-	-	-	-
22,50	-	-	-	-	-	-

4.3.2 Load-deflection graphs

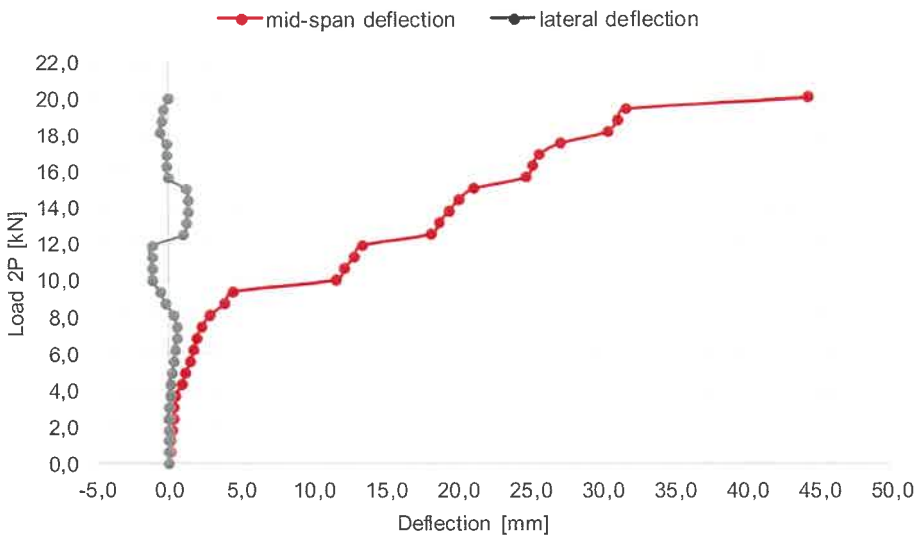


Figure 9 - *F4 load-deflection graph*

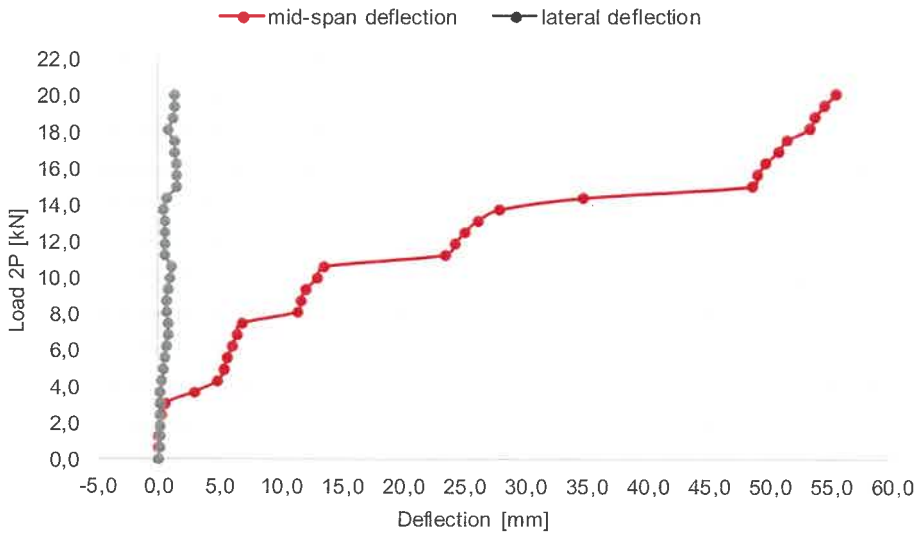


Figure 10 - *F5 load-deflection graph*

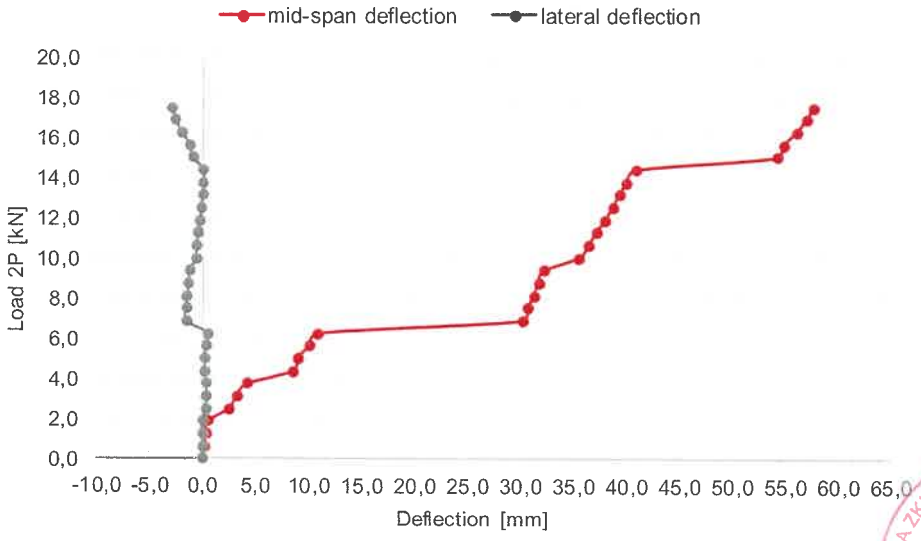


Figure 11 - *F6 load-deflection graph*

4.3.3 Photo documentation

Figure 12 - *Assembly of masonry lintel*

Figure 13 - *Test setup – F 4*

Figure 14 - *First crack – F 4*

Figure 15 - *Crack progress – F 4*

Figure 16 - *Failure mode – F 4*

Figure 17 - *First crack – F 5*

Figure 18 - *Crack progress – F 5*

Figure 19 - *Failure mode – F 5*

Figure 20 - *First crack – F 6*

Figure 21 - *Crack progress – F 6*

Figure 22 - *Failure mode – F 6*

Figure 23 - *Detail of torn reinforcement – F 4*

END OF THE TEST REPORT