



Building Research Institute

Research Laboratory Team

accredited by the Polish Centre for Accreditation
accreditation certificate No. AB 023

RESEARCH REPORT

LZK00-01903/26/Z00NZK

Contracting authority:

HD Gabion Evert Koorenhof
27 Graniczna Street, 34-120 Targanice

Product Name:

(provided by the Ordering Party)

Welded Steel Mesh For Gabion Baskets With
4.0mm Diameter Wire

Release Date:

17 August 2026

**Laboratory of Building Structures, Geotechnics and Concrete (LZK)1 Filtrowa Street, 00-611
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1. Study Information

Product manufacturer: HD Gabion Evert Koorenhof

27 Graniczna Street, 34-120 Targanice
Production plant:
83D Krakowska Street, 34-120 Andrychów

This test report contains the results of the tests covered by the scope of accreditation and the results of non-accredited tests. The results of tests outside the scope of accreditation have been marked with the annotation "outside the scope of accreditation".

Date of commencement of the research: 05-08-2026

Date of completion of the research: 06-08-2026

Place of testing:

In the LZK laboratory, at the location: ul. Filtrowa 1, 00-611 Warsaw.

2. Product

Welded steel meshes for gabion baskets.

2.1. Information provided by the Ordering Party

Product: Welded Steel Meshes

Declared scope of use: Gabion baskets

3. Test object, sample

3.1. Information provided by the Ordering Party

Origin of the sample:

Samples taken and delivered by the Ordering Party.

Samples of welded steel meshes with dimensions of approx. 500 x 500 mm, made of wires with a diameter of 4.0 mm, were delivered.

3.2. Information obtained from visual inspection in the Laboratory

Acceptance of the test object into the laboratory:

Date: 22-07-2026

Admission Protocol: LZK00-01903/26/Z00NZK

Condition of the test object:

Samples were provided in a condition and quantity suitable for testing.

Description of the test object:

Welded steel meshes made of smooth wires with a diameter of 4.0 mm are shown in Fig. 1.



Photo: 1. View of Samples Provided

Storage of the test object:

Samples of nets in the form of sheets measuring approx. 0.5 m x 0.5 m were stored in the Laboratory hall until the test. Samples for testing were cut out of the sheets provided.

The identification dimensions of the samples are presented in Table 1.

Tab. 1. Identification dimensions of test samples

Specimen marking	Actual Wire Diameter, mm	Dimensions of the mesh of the mesh from which the samples were cut, mm
LZX1903/26/4.0/1	3,99	100x100
LZX1903/26/4.0/2	3,99	100x100
LZX1903/26/4.0/3	4,00	100x100

Specimen marking	Actual Wire Diameter, mm	Dimensions of the mesh of the mesh from which the samples were cut, mm
LZK1903/26/4.0/4	4,00	100x100
LZK1903/26/4.0/5	4,00	100x100
LZK1903/26/4.0/6	3,99	100x100
LZK1903/26/4.0/7	3,99	100x100
LZK1903/26/4.0/8	3,99	100x100
LZK1903/26/4.0/9	3,99	100x100
LZK1903/26/4.0/10	4,00	100x100
LZK1903/26/4.0/11	4,00	100x50
LZK1903/26/4.0/12	4,00	100x50
LZK1903/26/4.0/13	4,00	100x50
LZK1903/26/4.0/14	4,00	100x50
LZK1903/26/4.0/15	4,00	100x50
LZK1903/26/4.0/16	4,00	100x50
LZK1903/26/4.0/17	4,00	100x50
LZK1903/26/4.0/18	3,99	100x50
LZK1903/26/4.0/19	3,99	100x50
LZK1903/26/4.0/20	3,99	100x50
LZK1903/26/4.0/21	4,00	100x50

4. Research results

4.1. Static tensile test

4.1.1. Research method

PN-EN-ISO 6892-1:2020-05, Method B

The implementation of the test, environmental conditions and accuracy of the measuring devices used are in accordance with the requirements of the above-mentioned standard.

The extended uncertainties of the individual measurements given in the results (related to the accuracy of the devices used) were determined with an expansion probability of about 95% and an expansion coefficient of $k=2$.

4.1.2. Results

Tab. 2. 4.0 mm diameter wires cut from meshes with mesh dimensions 100x100

L.p.	Specimen marking	Nominal Diameter	Nominal Cross-Sectional Area	Yield strength	Maximum tensile force	Conventional yield limit		Tensile strength	
			S0	Fp0.2	Fm	Rp0.2		Rm	
		mm	mm ²	kN	kN	MPa		MPa	
1	LZK1903/26/4.0/1	4,0	12,6	7,41	8,14	588	±7	646	±7

L.p.	Specimen marking	Nominal Diameter	Nominal Cross-Sectional Area	Yield strength	Maximum tensile force	Conventional yield limit		Tensile strength	
			S0	Fp0.2	Fm	Rp0.2		Rm	
		mm	mm ²	kN	kN	MPa		MPa	
2	LZK1903/26/4.0/2	4,0	12,6	7,64	8,41	606	±7	667	±8
3	LZK1903/26/4.0/3	4,0	12,6	7,61	8,46	604	±7	671	±8
4	LZK1903/26/4.0/4	4,0	12,6	7,69	8,34	610	±7	662	±8
5	LZK1903/26/4.0/5	4,0	12,6	7,60	8,42	603	±7	668	±8
6	LZK1903/26/4.0/6	4,0	12,6	7,64	8,24	606	±7	654	±8
7	LZK1903/26/4.0/7	4,0	12,6	7,59	8,36	602	±7	663	±8
8	LZK1903/26/4.0/8	4,0	12,6	7,77	8,38	617	±7	665	±8
9	LZK1903/26/4.0/9	4,0	12,6	7,74	8,42	614	±7	668	±8
10	LZK1903/26/4.0/10	4,0	12,6	7,66	8,38	608	±7	665	±8
Values mean xavg				7,64	8,36	606		663	
Minimum values xmin				7,41	8,14	588		646	
Maximum values xmax				7,77	8,46	617		671	

Table 3. 4.0 mm diameter wires cut from 100x50 mesh mesh

L.p.	Specimen marking	Nominal Diameter	Nominal Cross-Sectional Area	Yield strength	Maximum tensile force	Conventional yield limit		Tensile strength	
			S0	Fp0.2	Fm	Rp0.2		Rm	
		mm	mm ²	kN	kN	MPa		MPa	
1	LZK1903/26/4.0/11	4,0	12,6	7,38	8,20	586	±7	651	±8
2	LZK1903/26/4.0/12	4,0	12,6	7,41	8,22	588	±7	652	±8
3	LZK1903/26/4.0/13	4,0	12,6	7,51	8,34	596	±7	662	±8
Values mean xavg				7,43	8,25	590		655	
Minimum values xmin				7,38	8,20	586		651	
Maximum values xmax				7,51	8,34	596		662	

4.2. Weld shear strength

Testing outside the scope of accreditation.

4.2.1. Research method

EAD 200020-00-0102 "Weldmesh Gabion Boxes and Mattresses" March 2017 PN EN 10223-8: 2013
"Steel wire and wire products for fencing and netting. Part 8: Welded mesh gabion products"

Samples for testing were taken randomly from the nets provided. Four samples were taken from each type of grid (2 longitudinal and 2 transverse samples).

The implementation of the test, environmental conditions and accuracy of the measuring devices used are in accordance with the requirements of the above-mentioned standard.

The extended uncertainties of the individual measurements given in the results (related to the accuracy of the devices used) were determined with an expansion probability of about 95% and an expansion coefficient of k=2.

4.2.2. Results

Tab. 4. Samples cut from meshes with mesh dimensions of 100x100

L.p.	Specimen marking	Nominal Diameter	Weld shear strength
			F _{m,s}
		mm	kN
1	LZK1903/26/4.0/14	4,0	5,62
2	LZK1903/26/4.0/15	4,0	5,02
3	LZK1903/26/4.0/16	4,0	5,79
4	LZK1903/26/4.0/17	4,0	5,24
Average value xaved			5,41
Minimum value xmin			5,02
Maximum value xmax			5,79
$\frac{F_{m,s}}{F_m}$		Average	65 %
		Minimum	60%

Table 5. Samples cut from meshes with mesh dimensions of 100x50

L.p.	Specimen marking	Nominal Diameter	Weld shear strength
			F _{m,s}
		mm	kN
1	LZK1903/26/4.0/18	4,0	5,64
2	LZK1903/26/4.0/19	4,0	5,58
3	LZK1903/26/4.0/20	4,0	5,88
4	LZK1903/26/4.0/21	4,0	5,20
Average value xaved			5,58
Minimum value xmin			5,20
Maximum value xmax			5,88
$\frac{F_{m,s}}{F_m}$		Average	68 %
		Minimum	63%

5. Disclaimers

The Research Laboratory declares that the test results refer only to the sample received.

The Laboratory is responsible for all information presented in this report and for all stages of the testing process, with the exception of information provided by the Ordering Party and the process steps performed by or under the responsibility of the Ordering Party (e.g. assembly of samples). They are

unambiguously identified in this report as information provided by the Ordering Party or activities performed by the Ordering Party.

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Responsible for research

Authorizing reportLZK Laboratory Manager

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END OF REPORT
