



Instytut Techniki Budowlanej (ITB)

Group of Testing Laboratories

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TEST REPORT

LZK02-02844/25/R64NZK

Client:	Trutek Fasteners Polska Sp. z o.o. ul. Wojska Polskiego 3 39-300 Mielec, Poland
Product name: (as specified by the Client)	Steel anchors
Date of issue:	28.08.2025

Construction Elements, Geotechnics and Concrete Laboratory (LZK)
katowice@itb.pl

Instytut Techniki Budowlanej • 00-611 Warszawa • ul. Filtrowa 1 • tel. +48 22 825 04 71 • www.itb.pl • ci@itb.pl
KRS: 0000158785 • Regon: 000063650 • VAT: 525 000 93 58 • BDO: 000021645

1. Information on the tests

Other parties to the agreement: Trutek Fasteners Polska Sp. z o.o.
ul. Wojska Polskiego 3
39-300 Mielec, Poland

Test start date: 01.07.2025

Test completion date: 04.07.2025

Test location:

In the laboratory LZK, in the following location: Al. Korfantego 191, 40-153 Katowice.

2. Product

2.1. Information provided by the Client

Product: Steel anchors TAB FG re-use

Declared range of application: Product performance for static or quasi static actions

Other product information:

Materials (Tab. 1.).

Tab. 1. Materials

Anchor	Materials
TAB 14	Carbon steel, FG – mechanical galvanized

3. Test item, sample

3.1. Information provided by the Client

Sample origin:

Samples provided by the Ordering Party with installation parameters (Tab. 2).

Tab. 2. Installation parameters

Anchor		TAB FG
		14
Nominal diameter of drill bit	d_{nom} [mm]	14
Depth of drilled hole	h_1 [mm]	110
Overall anchor embedment depth in concrete	h_{nom} [mm]	105
Minimum thickness of concrete member	h_{min} [mm]	≥ 210

3.2. Information obtained based on visual inspection in the Laboratory

Acceptance of the test item into the laboratory:

Date: 30.06.2025

Acceptance protocol: LZK00-02844/25/R64NZK

Condition of the test item:

A sample was provided in a condition and quantity suitable for testing.

Description of the test item:

A photo of the anchors supplied is shown in Tab. 3.

Tab. 3. Description of the anchors

Anchors	Number of samples	Photo
TAB FG 14x120	20 pieces Batch: not specified	
Special gauge/ring 40,00x17,50x15,50 mm	2 pieces Batch: not specified	

4. Test results

4.1. Test: tension tests

4.1.1. Test method

EAD 330232-01-0601

The implementation of the test, the accuracy of the measuring devices used is in accordance with the requirements acc. EAD.

4.1.2. Results

The anchors were installed in the base materials, the detailed specification is given in Tab. 4. The test results are given in Tab. 5 with examples of test standing and failure mode.

Tab. 4. Dimensions, compressive strengths and bulk densities of the materials

Material	Min. compressive strength [N/mm ²]
Concrete C08/10	≥ 14 ¹⁾
Concrete C16/20	≥ 22 ¹⁾
Concrete C20/25	≥ 29 ¹⁾
¹⁾ own research	
The RE test - determining the number of times the same screw anchor is used for fixing in concrete. The test consists of drilling a hole, then screwing the screw anchor in and unscrewing it. This operation is carried out until the lower part of the screw anchor, 40 mm long from the end of this screw anchor, passes through a special ring of the same length. The number of reuses of TAB FG 14 is 5.	

Tab. 5. Tension tests acc. EAD 330232-01-0601

Serie	Anchor	F_u [kN]	s [kN]	c_{VF} [%]	U [kN]	$F_{u,m}$ [kN]	$f_{c,t}$ [N/mm ²]	Failure [-]
A1 C08/10	TAB FG 14	35,44 30,40 30,30 35,10 33,00	2,46	8	±0,34	32,85	14,0	5 x pull out
A1 C16/20		37,00 33,40 39,00 35,78 39,50	2,48	7	±0,42	36,94	22,0	5 x pull out
A1 C20/25		44,50 37,60 41,50 42,70 38,00	2,99	7	±0,42	40,86	32,0	5 x pull out

F_u - ultimate load in a test [kN]

s - standard deviation [kN]

c_{VF} - coefficient of variation [%]

U - uncertainty of the measurement is for a confidence level of 95 % and uncertainty factor $k = 2$; uncertainty has been estimated on the basis of available data, including data on the accuracy of the measurement system; the uncertainty value refers to the individual test results; the value of uncertainty can not be assigned directly to the characteristics of a given product, because the laboratory does not have knowledge about the variability of product population, but only about the tested sample [kN]

$F_{u,m}$ - mean ultimate load in a test series in concrete [kN]

$f_{c,t}$ - compressive strength concrete [N/mm²]

Test standing	Examples of failure mode
	

5. Disclaimers

The Testing Laboratory declares that the test results relate only to the sample received.

The Laboratory is responsible for all information presented in this report and for all stages of the tests process, except for information provided by the Client and process stages performed by or under the responsibility of the Client (e.g. sample assembly). These are clearly identified in this report as information provided by the Client or activities performed by the Client.

The Test Report cannot be reproduced in any other form than as a whole without written permission of the Laboratory.

The Test Report does not replace documents required for placing construction products on the market or making them available.

This report has been issued in electronic form, with qualified electronic signatures of persons responsible. A printout of this report is not an original document.

6. Appendix to the report

Damian Suchoń, MSc
Person responsible for tests
 /qualified electronic signature/

Mariusz Wołyniak, MSc
Person authorising the report
 /qualified electronic signature/

Artur Piekarczyk, Assoc. Prof.
Head of the Laboratory LZK
 /qualified electronic signature/

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END OF THE REPORT

Appendix to the report

Tab. 6. Installation parameters

Anchor		TAB FG
		14
Nominal diameter of drill bit	d_{nom} [mm]	14
Depth of drilled hole	h_1 [mm]	110
Overall anchor embedment depth in concrete	h_{nom} [mm]	105
Minimum thickness of concrete member	h_{min} [mm]	≥ 210

Tab. 7. Evaluation of test A1

Serie	Anchor	$F_{u,m}$ [kN]	$f_{c,t}$ [N/mm ²]	$F_{u,m,c}$ [kN]	$N_{u,m}$ [kN]	$N_{Rk,A1}$ [kN]	c_{vf} [%]	Failure [-]
A1 C08/10	TAB FG 14	32,85	14,0	27,76	27,76	20,68	8	5 x pull out
A1 C16/20		36,94	22,0	35,22	35,22	27,17	7	5 x pull out
A1 C20/25		40,86	32,0	36,12	36,12	27,12	7	5 x pull out

Tab. 8. Characteristic parameters

Concrete	Anchor	Ring	Nominal embedment depth	Minimum thickness of slab	Minimum edge distance	Minimum spacing	Design load
		LxDxd [mm] L-length, D-external, d-inner	h_{nom} [mm]	h_{min} [mm]	c [mm]	s [mm]	F [kN]
$f_{ck,cube} \geq 10$ N/mm ²	TAB FG 14	40,00x17,50x15,50 mm	14,0	210	120	240	5,5
$f_{ck,cube} \geq 20$ N/mm ²			22,0	210	120	240	7,5
$f_{ck,cube} \geq 25$ N/mm ²			32,0	210	120	240	7,5

Note nr 1:

The design load "F" of the anchor is valid if the anchor is to be fixed in the concrete no more than 5 times

Note nr 2:

It's recommended to check the ring after "n-5" uses. If the anchor passes through the ring, then no further fastening should be performed