NATIONAL DECLARATION OF PERFORMANCE NO:

KDWU-2018-0679 CS

Version: V-2.2023 EN

1. Name and trade name of construction product:

Screws GTRW GTRW FH are for fixing metal sheets to concrete and wood

2. Type of the construction product:

GTRW x L, GTRW FH x L

3. Intended uses or uses:

Fasteners GTRW and GTRW FH are intended for fixing sheets and metal elements to substrates made of:

- normal, cracked and non-cracked concrete, strength class C20 / 25 + C50 / 60 according to PN-EN 206+A1:2016,
- wood with a strength class not lower than C24 according to PN-EN 338:2016.

Due to the corrosive aggressiveness of the environment, GTRW fasteners with stainless steel or aluminum washers and GTRW FH fasteners can be used in environments with atmospheric corrosivity category and durability period C1, C2 VH, C3 VH and C4 H according to PN-EN ISO 12944-1:2018 and PN-EN ISO 12944-2:2018.

GTRW and GTRW FH fasteners are classified as non-flammable and meet the requirements of A1 reaction to fire class, in accordance with the PN-EN 13501-1+A1:2010 standard and the European Commission Decision 96/603/EC (as amended).

The characteristic resistance to pull out from substrate and shear resistance of fasteners is given in attachment C.

In order to determine the design resistance of the fasteners used to fasten metal sheets and metal elements in the wooden substrate, the value of the characteristic resistance, given in Annex C, table C1 + C3, should be divided by the safety factor $Y_m = 1.33$ and the obtained value additionally multiplied by the k_{mod} factor according to with Table 3.1 of PN-EN 1995-1-1:2004. If the nature of the destruction indicates that the steel plate has been damaged or the fastener was pulled through the plate, then the factor $k_{mod} = 1.0$ should be assumed.

In order to determine the design resistance of the fasteners used to fasten metal sheets and metal elements in the concrete base, divide the values of the characteristic resistance, given in Annex C, table C1 + C3, by the safety factor $Y_m = 2.52$ - if the fastener was pulled out of the base and $Y_m = 1.13$ - in the case when the steel plate is damaged or the fastener is pulled through the plate.

The parameters for the installation and positioning of the GTRW and GTRW FH screws in the substrate are given in attachment B.

The anchor is anchored in the wooden substrate by screwing the anchor into the substrate until the required anchoring depth is obtained. In order to install the connectors in the concrete base, drill a hole perpendicular to the substrate, and then screw the connector into the substrate to obtain the required anchorage depth.

The GTRW and GTRW FH fasteners should be used in accordance with the technical design, developed taking into account Polish standards and construction regulations, the provisions of this National Technical Assessment, and in accordance with the manufacturer's instructions regarding the conditions of fastening using the above-mentioned connectors.

4. Name and address of the manufacturer and place of manufacture of the product:

Simpson Strong-Tie Etanco P.S.A., Al. Jana Pawła II 1, 81-345 Gdynia,

Address of production plant: ul. Olsztyńska 30, 11-130 Orneta

5. Name and address of the authorized representative, if established:

N/A

6. National system used for assessment and verification of constancy of performance:

System 2+

7. National technical specification:

7a. Polish Product standard : **N/A**

Name of accredited certification body, accreditation number and national certificate number or name of accredited laboratory / laboratory and accreditation number: **N/A**

7b. National technical assessment : **ITB-KOT-2018/0679 Edition 2 + Anex 1**

Technical Assessment Unit / National Technical Assessment Unit: **Instytut Techniki Budowlanej**

Name of accredited certification body and certificate number:

Certification Department ITB Warszawa AC 020

Certificate of Factory Production Control nr: 020-UWB-0896/Z

8. Declared performance properties

Essential characteristics of the construction product for the intended use or uses	Declared usable features	Comments
Characteristic load capacity of fasteners: - pull-out $N_{R,k}$ [kN] - shear $V_{R,k}$ [kN]	According to annex C of assessment	KOT-2018-0679 Ed 2 A 1
Shape and dimensions	According to annex A of assessment	KOT-2018-0679 Ed 2 A 1
Installing parameters	According to annex B of assessment	KOT-2018-0679 Ed 2 A 1
Protective coating / Corrosion protection	According to point 2 assessment	KOT-2018-0679 Ed 2 A 1 PN-EN ISO 2081:2011 PN-EN ISO 12944 -2

Table B1.

Installing parameters in the concrete base:

Parameter	GTRW and GTRW FH
Drilled hole diameter d_{nom}, mm	5
Minimal hole depth h_1, mm	40
Effective anchorage depth h_{ef}, mm	30
Min. Substrate thickness h_{min}, mm	80
Minimum spacing of connectors, mm	90
The minimum distance of the connector from the edge of the substrate, mm	45

Table B2.

Installing parameters in wooden substrates:

Parameter	GTRW and GTRW FH
Effective anchorage depth h_{ef}, mm	30
Min. Substrate thickness h_{min}, mm	60
Minimum spacing of connectors, mm	30
The minimum distance of the connector from the edge of the substrate, mm	25

Table 1

Characteristic resistance of GTRW fasteners to be pulled out of a concrete base (NRk) and shear (VRk) - fixing metal sheets and metal elements to concrete and wooden substrates

GTR W without washer								
Substrate				Concrete[1] h_{ef} = 30 mm				Wood[2] class ≥ C24 h_{ef} = 30 mm
				Non-cracked			Cracked	
				Class C20/25	Class C25/30	Class ≥ C30/37	Class ≥ C20/25	
thickness of the attached element [3] [mm]	Characteristic load capacity	shear (VRk) [kN]	0,50	0,75[5]	0,75[5]	0,75[5]	0,75[5]	0,80[4]
			0,63	2,35[4]	2,35[4]	2,35[4]	0,75[5]	2,35[4]
			0,75	2,65[4]	2,65[4]	2,65[4]	0,75[5]	2,65[4]
			0,88	2,96[4]	2,96[4]	2,96[4]	0,75[5]	2,90[4]
			1,00	3,33[4]	3,33[4]	3,33[4]	0,75[5]	3,33[4]
			1,13	4,03[4]	4,03[4]	4,03[4]	0,75[5]	4,03[5]
			1,25	4,03[4]	4,03[4]	4,03[4]	0,75[5]	4,03[5]
			1,50	4,03[4]	4,03[4]	4,03[4]	0,75[5]	4,03[5]
			2,00	4,03[4]	4,03[4]	4,03[4]	0,75[5]	4,03[5]
		pull out (NRk) [kN]	0,50	0,75[5]	0,75[5]	0,75[5]	0,75[5]	0,80[4]
			0,63	2,77[4]	2,77[4]	2,77[4]	0,75[5]	2,77[4]
			0,75	3,52[4]	3,52[4]	3,52[4]	0,75[5]	3,52[4]
			0,88	4,03[4]	4,03[4]	4,06[4]	0,75[5]	3,59[5]
			1,00	4,03[5]	4,41[5]	4,85[5]	0,75[5]	3,59[5]
			1,13	4,03[5]	4,41[5]	4,85[5]	0,75[5]	3,59[5]
			1,25	4,03[5]	4,41[5]	4,85[5]	0,75[5]	3,59[5]
			1,50	4,03[5]	4,41[5]	4,85[5]	0,75[5]	3,59[5]
			2,00	4,03[5]	4,41[5]	4,85[5]	0,75[5]	3,59[5]

[1] concrete according to PN-EN 206+A1:2016
[2] construction timber according to the standard PN-EN 338:2016
[3] steel grade S280GD, S320GD or S350GD, according to PN-EN 10346: 2015
[4] nature of destruction - destruction of the steel sheet or pulling the fastener through the steel sheet
[5] nature of damage - pulling the connector from the ground

Table 2

Characteristic resistance of GTRW fasteners with washers ≥ Ø16 for pulling out of concrete (NRk) and shear (VRk) - fixing metal sheets and metal elements to concrete and wooden substrates

GTR W with washer ≥ Ø16								
Substrate				Concrete[1] h_{ef} = 30 mm				Wood[2] class ≥ C24 h_{ef} = 30 mm
				Non-cracked			Cracked	
				Class C20/25	Class C25/30	Class ≥ C30/37	Class ≥ C20/25	
thickness of the attached element[3] [mm]	Characteristic load capacity	shear (VRk) [kN]	**0,50**	0,75[5]	0,75[5]	0,75[5]	0,75[5]	0,80[4]
			0,63	2,35[4]	2,35[4]	2,35[4]	0,75[5]	2,35[4]
			0,75	2,65[4]	2,65[4]	2,65[4]	0,75[5]	2,65[4]
			0,88	2,96[4]	2,96[4]	2,96[4]	0,75[5]	2,90[4]
			1,00	3,33[4]	3,33[4]	3,33[4]	0,75[5]	3,33[4]
			1,13	4,03[4]	4,03[4]	4,03[4]	0,75[5]	4,03[5]
			1,25	4,03[4]	4,03[4]	4,03[4]	0,75[5]	4,03[5]
			1,50	4,03[4]	4,03[4]	4,03[4]	0,75[5]	4,03[5]
			2,00	4,03[4]	4,03[4]	4,03[4]	0,75[5]	4,03[5]
		pull out (NRk) [kN]	**0,50**	0,75[5]	0,75[5]	0,75[5]	0,75[5]	0,80[4]
			0,63	4,03[4]	4,41[4]	4,90[4]	0,75[5]	3,59[5]
			0,75	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,59[5]
			0,88	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,59[5]
			1,00	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,59[5]
			1,13	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,59[5]
			1,25	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,59[5]
			1,50	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,59[5]
			2,00	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,59[5]

[1] concrete according to PN-EN 206+A1:2016
[2] construction timber according to the standard PN-EN 338:2016
[3] steel grade S280GD, S320GD or S350GD, according to PN-EN 10346: 2015
[4] nature of destruction - destruction of the steel sheet or pulling the fastener through the steel sheet
[5] nature of damage - pulling the connector from the ground

Table 3

Characteristic resistance capacities of GTRW FH fasteners for pulling out of a concrete base (NRk) and shear (VRk) - fixing metal sheets and metal elements to concrete and wooden substrates

GTR W FH								
Substrate				Concrete [1] h_{ef} = 30 mm				Wood [2] class ≥ C24 h_{ef} = 30 mm
				Non-cracked		Cracked		
				Class C20/25	Class C25/30	Class C20/25	Class C25/30	
thickness of the attached element [3] [mm]	Characteristic load capacity	shear (VRk) [kN]	0,50	0,75[5]	0,75[5]	0,75[5]	0,75[5]	0,80[4]
			0,63	2,35[4]	2,35[4]	2,35[4]	0,75[5]	2,35[4]
			0,75	2,65[4]	2,65[4]	2,65[4]	0,75[5]	2,65[4]
			0,88	2,96[4]	2,96[4]	2,96[4]	0,75[5]	2,90[4]
			1,00	3,33[4]	3,33[4]	3,33[4]	0,75[5]	3,33[4]
			1,13	4,03[4]	4,03[4]	4,03[4]	0,75[5]	4,03[5]
			1,25	4,03[4]	4,03[4]	4,03[4]	0,75[5]	4,03[5]
			1,50	4,03[4]	4,03[4]	4,03[4]	0,75[5]	4,03[5]
			2,00	4,03[4]	4,03[4]	4,03[4]	0,75[5]	4,03[5]
		pull out (NRk) [kN]	0,50	0,75[5]	0,75[5]	0,75[5]	0,75[5]	0,80[4]
			0,63	4,03[4]	4,41[4]	4,90[4]	0,75[5]	3,59[5]
			0,75	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,59[5]
			0,88	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,59[5]
			1,00	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,59[5]
			1,13	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,59[5]
			1,25	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,59[5]
			1,50	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,59[5]
			2,00	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,59[5]

[1] concrete according to PN-EN 206+A1:2016
[2] construction timber according to the standard PN-EN 338:2016
[3] steel grade S280GD, S320GD or S350GD, according to PN-EN 10346: 2015
[4] nature of destruction - destruction of the steel sheet or pulling the fastener through the steel sheet
[5] nature of damage - pulling the connector from the ground

9. The performance properties of the product specified above are in accordance with all the declared performance characteristics listed in paragraph 8. This national declaration of performance is issued in accordance with the Act of 16 April 2004 on construction products, under the sole responsibility of the manufacturer.

Place and date of issue

Orneta 30.03.2023

On behalf of the manufacturer signed

Sewer Maleskiski
Product Manager
Simpson Strong-Tie Poland S.A.