NATIONAL DECLARATION OF PERFORMANCE NO:

KDWU-2018-0679 CS

Version: V1.2025 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 tables 1 – 6.

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 tables 1 – 6, should be divided by the safety factor Ym = 1.33 and the obtained value additionally multiplied by the k_{mod} factor according to with Table 3.1 of PN-EN 1995-1-1:2010. If the failure mode indicates that the steel sheet has failed or the fastener was pulled through the metal sheet, 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, divide the values of the characteristic resistance, given in tables 1 – 6, by the safety factor Ym = 2.5 – If the fastener was pulled out of the concrete and Ym = 1.33 - in the case when the steel is failed or the fastener is pulled through the steel sheet.

The parameters for the installation and positioning of the GTRW and GTRW FH screws in the substrate are given in tables B1 and B2.

To install fasteners in a concrete substrate, drill a hole perpendicular to the substrate surface and then screw the fastener into the substrate to the required anchorage depth.

When installing fasteners in a wooden substrate, anchor the screw by screwing the fastener into the substrate to the required anchorage depth, drilling a pilot hole is not required.

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 Issue 3**

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-1238/Z

8. Declared performance properties

Essential characteristics of the construction product for the intended use or uses	Declared usable features	Comments
Fastener dimension	According to annex A of the assessment	KOT-2018-0679 Issue 3
Installing parameters	According to annex B of the assessment	KOT-2018-0679 Issue 3
Characteristic load capacity of fasteners: - pull-out $N_{R,k}$ [kN] - shear $V_{R,k}$ [kN]	According to annex C of the assessment	KOT-2018-0679 Issue 3
Protective coating / Corrosion protection	According to point 2 the assessment	KOT-2018-0679 Issue 3 PN-EN ISO 12944-1 PN-EN ISO 12944-2

Table B1.

Installing parameters in the concrete:

Parameter	GTRW and GTRW FH
Drilled hole diameter d_{nom}, mm	5
Minimal hole depth h_1, mm	40 / 50 / 60
Effective anchorage depth h_{ef}, mm	30 / 40 / 50
Min. Substrate thickness h_{min}, mm	80
Minimum spacing of connectors, mm	90
Minimum distance of the fastener from the edge of the substrate, mm	45

Table B2.

Installing parameters in wood substrate:

Parameter	GTRW and GTRW FH
Effective anchorage depth h_{ef}, mm	30 / 40
Min. Substrate thickness h_{min}, mm	60
Minimum spacing of connectors, mm	30
Minimum distance of the fastener from the edge of the substrate, mm	25

Table 1.

Characteristic pull-out (N_{Rk}) and shear (V_{Rk}) load capacities of GTRW fasteners – fastening of metal sheets and metal elements to concrete and wooden substrates – anchorage depth h_{ef} = 30 mm

GTRW without washer								
Substrate				Concrete[1] h_{ef} = 30 mm				Timber[2] class ≥ C24 h_{ef} = 30 mm
				non-cracked			cracked	
				class C20/25	class C25/30	class C30/37 ÷ C50/60	class C20/25 ÷ C50/60	
Metal sheet thickness[3] [mm]	Characteristic load capacity	shear V_{Rk} [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]	3,31[5]
			1,13	4,03[4]	4,03[4]	4,03[4]	0,75[5]	3,31[5]
			1,25	4,03[4]	4,03[4]	4,03[4]	0,75[5]	3,31[5]
			1,50	4,03[4]	4,03[4]	4,03[4]	0,75[5]	3,31[5]
			2,00	4,03[4]	4,03[4]	4,03[4]	0,75[5]	3,31[5]
		Pull-out N_{Rk} [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]	3,31[5]
			0,88	4,03[4]	4,03[4]	4,06[4]	0,75[5]	3,31[5]
			1,00	4,03[5]	4,41[5]	4,85[5]	0,75[5]	3,31[5]
			1,13	4,03[5]	4,41[5]	4,85[5]	0,75[5]	3,31[5]
			1,25	4,03[5]	4,41[5]	4,85[5]	0,75[5]	3,31[5]
			1,50	4,03[5]	4,41[5]	4,85[5]	0,75[5]	3,31[5]
			2,00	4,03[5]	4,41[5]	4,85[5]	0,75[5]	3,31[5]
Characteristic pull-out load capacity without pull-through [kN]				4,03[5]	4,41[5]	4,85[5]	0,75[5]	3,31[5]

[1] normal concrete acc. to the standard PN-EN 206+A2:2021
[2] structural timber acc. to the standard PN-EN 338:2016
[3] steel grade S280GD, S320GD or S350GD, acc. to the standard PN-EN 10346:2015
[4] failure mode – the metal sheet or pulling the head through the metal sheet
[5] failure mode – pulling the fastener out of the concrete

Table 2.

Characteristic pull-out (N_{Rk}) and shear (V_{Rk}) load capacities of GTRW fasteners – fastening of metal sheets and metal elements to concrete and wooden substrates – anchorage depth h_{ef} = 40 mm and h_{ef} = 50 mm

GTRW without washer									
Substrate				Concrete, class C20/25 ÷ C50/60[1] h_{ef} = 40 mm i 50 mm				Timber[2] class ≥ C24 h_{ef} = 40 mm
				non-cracked		cracked		
				40	50	40	50	
Metal sheet thickness[3] [mm]	Characteristic load capacity	shear V_{Rk} [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]	0,75[5]	0,75[5]	2,35[4]
			0,75	2,65[4]	2,65[4]	0,75[5]	0,75[5]	2,65[4]
			0,88	2,96[4]	2,96[4]	0,75[5]	0,75[5]	2,90[4]
			1,00	3,33[4]	3,33[4]	0,75[5]	0,75[5]	3,33[4]
			1,13	4,03[4]	4,03[4]	0,75[5]	0,75[5]	4,03[4]
			1,25	4,03[4]	4,03[4]	0,75[5]	0,75[5]	4,03[4]
			1,50	4,03[4]	4,03[4]	0,75[5]	0,75[5]	4,03[4]
			2,00	4,03[4]	4,03[4]	0,75[5]	0,75[5]	4,03[4]
		Pull-out N_{Rk} [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]	0,75[5]	2,77[4]	2,77[4]
			0,75	3,52[4]	3,52[4]	0,75[5]	3,52[4]	3,52[4]
			0,88	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
			1,00	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
			1,13	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
			1,25	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
			1,50	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
			2,00	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
Characteristic pull-out load capacity without pull-through [kN]				6,59[5]	9,64[5]	0,75[5]	3,82[5]	4,25[5]

[1] normal concrete acc. to the standard PN-EN 206+A2:2021
[2] structural timber acc. to the standard PN-EN 338:2016
[3] steel grade S280GD, S320GD or S350GD, acc. to the standard PN-EN 10346:2015
[4] failure mode – the metal sheet or pulling the head through the metal sheet
[5] failure mode – pulling the fastener out of the concrete

Table 3.

Characteristic pull-out (N_{Rk}) and shear (V_{Rk}) load capacities of GTRW fasteners with washer ≥ Ø16 – fastening of metal sheets and metal elements to concrete and wooden substrates – anchorage depth h_{ef} = 30 mm

GTRW with washer ≥ Ø16								
Substrate				Concrete[1] h_{ef} = 30 mm				Timber[2] class ≥ C24 h_{ef} = 30 mm
				non-cracked			cracked	
				class C20/25	class C25/30	class C30/37 ÷ C50/60	class C20/25 ÷ C50/60	
Metal sheet thickness [3] [mm]	Characteristic load capacity	shear V_{Rk} [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]	3,31[5]
			1,13	4,03[4]	4,03[4]	4,03[4]	0,75[5]	3,31[5]
			1,25	4,03[4]	4,03[4]	4,03[4]	0,75[5]	3,31[5]
			1,50	4,03[4]	4,03[4]	4,03[4]	0,75[5]	3,31[5]
			2,00	4,03[4]	4,03[4]	4,03[4]	0,75[5]	3,31[5]
		Pull-out N_{Rk} [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]	3,31[5]
			0,75	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]
			0,88	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]
			1,00	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]
			1,13	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]
			1,25	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]
			1,50	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]
			2,00	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]
Characteristic pull-out load capacity without pull-through [kN]				4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]

[1] normal concrete acc. to the standard PN-EN 206+A2:2021
[2] structural timber acc. to the standard PN-EN 338:2016
[3] steel grade S280GD, S320GD or S350GD, acc. to the standard PN-EN 10346:2015
[4] failure mode – the metal sheet or pulling the head through the metal sheet
[5] failure mode – pulling the fastener out of the concrete

Table 4.

Characteristic pull-out (N_{Rk}) and shear (V_{Rk}) load capacities of GTRW fasteners with washer ≥ Ø16 – fastening of metal sheets and metal elements to concrete and wooden substrates – anchorage depth h_{ef} = 40 mm and h_{ef} = 50 mm

GTRW with washer ≥ Ø16									
Substrate				Concrete, class C20/25 ÷ C50/60[1] h_{ef} = 40 mm i 50 mm				Timber[2] class ≥ C24 h_{ef} = 40 mm
				non-cracked		cracked		
				40	50	40	50	
Metal sheet thickness [3] [mm]	Characteristic load capacity	shear V_{Rk} [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]	0,75[5]	0,75[5]	2,35[4]
			0,75	2,65[4]	2,65[4]	0,75[5]	0,75[5]	2,65[4]
			0,88	2,96[4]	2,96[4]	0,75[5]	0,75[5]	2,90[4]
			1,00	3,33[4]	3,33[4]	0,75[5]	0,75[5]	3,33[4]
			1,13	4,03[4]	4,03[4]	0,75[5]	0,75[5]	4,03[4]
			1,25	4,03[4]	4,03[4]	0,75[5]	0,75[5]	4,03[4]
			1,50	4,03[4]	4,03[4]	0,75[5]	0,75[5]	4,03[4]
			2,00	4,03[4]	4,03[4]	0,75[5]	0,75[5]	4,03[4]
		Pull-out N_{Rk} [kN]	0,50	0,75[5]	0,75[5]	0,75[5]	0,75[5]	0,80[4]
			0,63	4,03[4]	4,03[4]	0,75[5]	2,77[4]	2,77[4]
			0,75	4,03[4]	4,03[4]	0,75[5]	3,52[4]	3,52[4]
			0,88	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
			1,00	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
			1,13	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
			1,25	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
			1,50	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
			2,00	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
Characteristic pull-out load capacity without pull-through [kN]				6,59[5]	9,64[5]	0,75[5]	3,82[5]	4,25[5]

[1] normal concrete acc. to the standard PN-EN 206+A2:2021
[2] structural timber acc. to the standard PN-EN 338:2016
[3] steel grade S280GD, S320GD or S350GD, acc. to the standard PN-EN 10346:2015
[4] failure mode – the metal sheet or pulling the head through the metal sheet
[5] failure mode – pulling the fastener out of the concrete

Table 5.

Characteristic pull-out (N_{Rk}) and shear (V_{Rk}) load capacities of GTRW FH fasteners – fastening of metal sheets and metal elements to concrete and wooden substrates – anchorage depth h_{ef} = 30 mm

GTRW FH								
Substrate				Concrete[1] h_{ef} = 30 mm				Timber[2] class ≥ C24 h_{ef} = 30 mm
				non-cracked			cracked	
				class C20/25	class C25/30	class C30/37 ÷ C50/60	class C20/25 ÷ C50/60	
Metal sheet thickness [3] [mm]	Characteristic load capacity	shear V_{Rk} [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]	3,31[5]
			1,13	4,03[4]	4,03[4]	4,03[4]	0,75[5]	3,31[5]
			1,25	4,03[4]	4,03[4]	4,03[4]	0,75[5]	3,31[5]
			1,50	4,03[4]	4,03[4]	4,03[4]	0,75[5]	3,31[5]
			2,00	4,03[4]	4,03[4]	4,03[4]	0,75[5]	3,31[5]
		Pull-out N_{Rk} [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]	3,31[5]
			0,75	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]
			0,88	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]
			1,00	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]
			1,13	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]
			1,25	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]
			1,50	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]
			2,00	4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]
Characteristic pull-out load capacity without pull-through [kN]				4,03[5]	4,41[5]	4,90[5]	0,75[5]	3,31[5]

[1] normal concrete acc. to the standard PN-EN 206+A2:2021
[2] structural timber acc. to the standard PN-EN 338:2016
[3] steel grade S280GD, S320GD or S350GD, acc. to the standard PN-EN 10346:2015
[4] failure mode – the metal sheet or pulling the head through the metal sheet
[5] failure mode – pulling the fastener out of the concrete

Table 6.

Characteristic pull-out (N_{Rk}) and shear (V_{Rk}) load capacities of GTRW FH fasteners – fastening of metal sheets and metal elements to concrete and wooden substrates – anchorage depth h_{ef} = 40 mm and h_{ef} = 50 mm

GTRW FH								
Substrate				Concrete, class C20/25 ÷ C50/60[1] h_{ef} = 40 mm i 50 mm				Timber[2] class ≥ C24 h_{ef} = 40 mm
				non-cracked		cracked		
				40	50	40	50	
Metal sheet thickness[3] [mm]	Characteristic load capacity	shear V_{Rk} [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]	0,75[5]	0,75[5]	2,35[4]
			0,75	2,65[4]	2,65[4]	0,75[5]	0,75[5]	2,65[4]
			0,88	2,96[4]	2,96[4]	0,75[5]	0,75[5]	2,90[4]
			1,00	3,33[4]	3,33[4]	0,75[5]	0,75[5]	3,33[4]
			1,13	4,03[4]	4,03[4]	0,75[5]	0,75[5]	4,03[4]
			1,25	4,03[4]	4,03[4]	0,75[5]	0,75[5]	4,03[4]
			1,50	4,03[4]	4,03[4]	0,75[5]	0,75[5]	4,03[4]
			2,00	4,03[4]	4,03[4]	0,75[5]	0,75[5]	4,03[4]
		Pull-out N_{Rk} [kN]	0,50	0,75[5]	0,75[5]	0,75[5]	0,75[5]	0,80[4]
			0,63	4,03[4]	4,03[4]	0,75[5]	2,77[4]	2,77[4]
			0,75	4,03[4]	4,03[4]	0,75[5]	3,52[4]	3,52[4]
			0,88	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
			1,00	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
			1,13	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
			1,25	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
			1,50	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
			2,00	4,03[4]	4,03[4]	0,75[5]	3,82[5]	4,03[4]
Characteristic pull-out load capacity without pull-through [kN]				6,59[5]	9,64[5]	0,75[5]	3,82[5]	4,25[5]

[1] normal concrete acc. to the standard PN-EN 206+A2:2021
[2] structural timber acc. to the standard PN-EN 338:2016
[3] steel grade S280GD, S320GD or S350GD, acc. to the standard PN-EN 10346:2015
[4] failure mode – the metal sheet or pulling the head through the metal sheet
[5] failure mode – pulling the fastener out of the concrete

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 11.08.2025

On behalf of the manufacturer signed

Sławomir Małeszyński
Product Manager
Simpson Strong-Tie Eliance P.S.A.