



NATIONAL DECLARATION OF PERFORMANCE NO:

KDWU-18/0748 MA

Version: V-1.2019 EN

1. Name and trade name of construction product:

Metal expansion sleeves of types GD, GD-B and GCA

2. Type of the construction product:

GD, GD-B, GCA

3. Intended uses or uses:

The GD and GD-L type sleeves are designed for making static loaded fixtures with structural or non-obliging elements in comparison with C20/25 according to PN-EN 206-1: 2003 standard. Fastenings of the GD and GD-L type expansion sleeves can be in cracked or non-cracked concrete. GD-B type expansion sleeves are designed to perform operations statically loaded with structural elements in substrates with:

- ceramic bricks, full bricks with compressive strength not lower than 7.5 MPa (not lower than 7.5MPa grade) according to PN-EN 771-1: 2011.
- reinforced or unreinforced normal concrete, a grade not lower than C20/25 in accordance with PN-EN 206-1: 2003; fastenings can be made in uncracked concrete.

Due to the aggressiveness of the environment, GD and GD-L types sleeves should be used in accordance with the requirements specified in the PN-EN ISO 12944-2: 2001 standard, and GD-B type expansion sleeves - PN-EN 12500: 2002. Expansion sleeves of GCA types are designed for making multi-point non-structural fastenings, in reinforced or unreinforced ordinary concrete, cracked or non-cracked. They can be used in concrete or substrate with solid plates and corrugated trough (floor elements).

The GD and GCA expansion sleeves should be made of ordinary carbon steel, SAE 1008 or SAE 1010 according to ASTM A 510, and the conical mandrel of ordinary carbon steel SAE 1006 or SAE 1008 according to ASTM A 510 or SWRM8K according to JIS G3505, with a tensile strength of not less than 300MPa. The GD and GCA types should be covered with electrolytic zinc coating with a thickness of not less than 5µm, meeting the requirements of the PN-EN ISO 4042: 2001 standard. GD-B type should be made of brass of CH2 type according to PN-EN 12164: 2001

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

Etanco Sp. z o. o., 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-2018/0748 wydanie 2 z dnia 28.03.2019

Technical Assessment Unit / National Technical Assessment Unit:

Instytut Techniki Budowlanej w Warszawie

Name of accredited certification body and certificate number:

1488

Instytut Techniki Budowlanej AC 020

Certificate of Factory Production Control no: 020-UWB-0936/Z

8. Declared performance properties

Table 1.

Characteristic load of GD fasteners with a steel rod or screw of a class not lower than 4.8 according to PN-EN ISO 898-1:2013 for pulling out of concrete (N_{RK}) and shear (V_{RK})

Type	The depth of the drilled hole h_1 , [mm]	Effective anchorage depth h_{ef} , [mm]	Characteristic load for pull out from the ground and shear, $N_{RK} = V_{RK}$ [kN]
			Normal concrete ¹⁾
GD M6	25	25	0,40
GD M8	30	30	1,20
GD M10	35	40	1,70
GD M12	40	50	3,50

¹⁾ normal concrete, cracked or uncracked, grades C20/25 to C50/60 according to norm PN-EN 206+A1:2016

Table 2.

Characteristic load of GCA fasteners for pulling out concrete (N_{RK}) and shear (V_{RK})

Type	The depth of the drilled hole h_1 , [mm]	Effective anchorage depth h_{ef} , [mm]	Characteristic load for pull out from the ground and shear, $N_{RK} = V_{RK}$ [kN]
			Normal concrete ¹⁾
GCA	38	32	2,00

¹⁾ normal concrete, cracked or uncracked, grades C20/25 to C50/60 according to norm PN-EN 206+A1:2016

Table 3.

Characteristic load for pulling GCA fasteners through steel sheet

Type	Characteristic load for pulling through steel sheet ¹⁾ , [kN]
GCA	0,55

¹⁾ steel sheet with a thickness of 0.5 mm, grade S280GD according to norm PN-EN 10346:2015

Table 4.

Characteristic load of GD-B fasteners with steel rod or bolt class not lower than 4.8 according to PN-EN ISO 898-1: 2013 standard for pulling out of concrete substrate (N_{RK}) and shear (V_{RK})

Type	The depth of the drilled hole h_d , [mm]	Effective anchorage depth h_{ef} , [mm]	Characteristic load for pull out from the ground (N_{RK}) and shear (V_{RK}), [kN]		
			normal concrete ¹⁾	ceramic brick ²⁾	structural timber ³⁾
M6	25	23	0,85	0,40	0,15
M8	30	28	1,20	0,90	0,55
M10	35	33	2,40	2,00	0,80
M12	40	38	3,50	2,50	1,00

¹⁾ normal non-cracked concrete, class C20/C25 to C50/60 according to PN-EN 206+A1:2016
²⁾ ceramic brick class 20 according to PN-EN 771-1+A1:2015
³⁾ structural timber C24 according to PN-EN 338: 2016

Table 5.

Characteristic load of GD fasteners fasteners (with a steel rod or a grade not lower than 4.8 in accordance with PN-EN ISO 898-1: 2013) and GCA for pulling out of the ground and shear in case of fire, according to TR020, in concrete C20/25 to C50/60 according to PN-EN 206+A1: 2016

Fire resistance class	Characteristic load for pull out from the ground and shear, [kN]				
	GD M6	GD M8	GD M10	GD M12	GCA
R30	0,10	0,30	0,43	0,88	0,50
R60	0,10	0,30	0,43	0,88	0,50
R90	0,10	0,30	0,43	0,88	0,50
R120	0,10	0,24	0,34	0,70	0,40

In the case of fire exposure from more than one side, the distance between fasteners and the edge of the ground should be not less than 300 mm.
Distance between connectors from the edge of the substrate $c_{cr,fi} = 2 \times h_{ef}$
Spacing of connectors $s_{cr,fi} = 4 \times h_{ef}$

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

Orneta 11.07.2019

On behalf of the manufacturer, he signed
(name and position)

Product Manager:

Mariusz Jurkiewicz
Product Manager
Etanco Sp. z o.o.

