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Agrément Certificate

23/6907

Product Sheet 1 Issue 1

SLUTA GRAV GROUNDSCREW

STOPDIGGING GROUNDSCREWS AND ADAPTERS

This Agrément Certificate Product Sheet⁽¹⁾ relates to StopDigging Groundscrews and Adapters, coated steel screws with variable heads, for use as foundation or ground anchors. The products are designed for tensile, compressive and lateral loading, where no rotation or lateral movement of the soil mass is expected.

(1) Hereinafter referred to as 'Certificate'.

The assessment includes

Product factors:

- compliance with Building Regulations
- compliance with additional regulatory or non-regulatory information where applicable
- evaluation against technical specifications
- assessment criteria and technical investigations
- uses and design considerations

Process factors:

- compliance with Scheme requirements
- installation, delivery, handling and storage
- production and quality controls
- maintenance and repair

Ongoing contractual Scheme elements†:

- regular assessment of production
- formal 3-yearly review



KEY FACTORS ASSESSED

- Section 1. Mechanical resistance and stability
- Section 2. Safety in case of fire
- Section 3. Hygiene, health and the environment
- Section 4. Safety and accessibility in use
- Section 5. Protection against noise
- Section 6. Energy economy and heat retention
- Section 7. Sustainable use of natural resources
- Section 8. Durability

The BBA has awarded this Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of issue: 16 June 2023

Hardy Giesler
Chief Executive Officer

Certificate amended on 2 September 2024 to update Tables 7 and 17.

This BBA Agrément Certificate is issued under the BBA's Inspection Body accreditation to ISO/IEC 17020. Sections marked with † are not issued under accreditation.

The BBA is a UKAS accredited Inspection Body (No. 4345), Certification Body (No. 0113) and Testing Laboratory (No. 0357).

Readers MUST check that this is the latest issue of this Agrément Certificate by either referring to the BBA website or contacting the BBA directly.

The Certificate should be read in full as it may be misleading to read clauses in isolation.

Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.

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SUMMARY OF ASSESSMENT AND COMPLIANCE

This section provides a summary of the assessment conclusions; readers should refer to the later sections of this Certificate for information about the assessments carried out.

Compliance with Regulations

Having assessed the key factors, the opinion of the BBA is that StopDigging Groundscrews and Adapters, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations:



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	A1	Loading
Comment:		The products can contribute to satisfying this Requirement. See sections 1 and 9 of this Certificate.
Requirement:	A2	Ground movement
Comment:		The products can contribute to satisfying this Requirement. See sections 1 and 9 of this Certificate.
Requirement:	A3	Disproportionate collapse
Comment:		The products can contribute to satisfying this Requirement. See sections 1, 6 and 9 of this Certificate.
Regulation:	7(1)	Materials and Workmanship
Comment:		The products are acceptable. See sections 8, 9 and the Annex part of this Certificate.



The Building (Scotland) Regulations 2004 (as amended)

Regulation:	8(1)(2)	Fitness and durability of materials and workmanship
Comment:		The products can contribute to a structure satisfying this Regulation. See section 8 and the Annex part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	1.1(a)(b)(c)	Structure
Standard:	1.2	Disproportionate Collapse
Comment:		The products can contribute to a structure satisfying these Standards, with reference to clauses 1.1.1 ⁽¹⁾⁽²⁾ and 1.2.1 ⁽¹⁾⁽²⁾ . See sections 1, 6 and 9 of this Certificate.
		(1) Technical Handbook (Domestic).
		(2) Technical Handbook (Non-Domestic).



The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation:	23(a)(i)	Fitness of materials and workmanship
Comment:	(iii)(b)(i)	The products are acceptable. See section 8 and the Annex part of this Certificate.
Regulation:	30	Stability
Regulation:	31	Disproportionate collapse
Comment:		The products, when incorporated into a suitable structure, can contribute to satisfying these Regulations. See sections 1, 6 and 9 of this Certificate.

Additional Information

NHBC Standards 2023

In the opinion of the BBA, StopDigging Groundscrews and Adapters, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapters 4.1 *Land quality-managing ground conditions* and 4.5 *Raft, pile, pier and beam foundations*.

Fulfilment of Requirements

The BBA has judged StopDigging Groundscrews and Adapters to be satisfactory for use as described in this Certificate. The products have been assessed for use as foundation or ground anchors. The products are designed for compressive loading, where no rotation or lateral movement of the soil mass is expected.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the product under assessment. StopDigging Groundscrews and Adapters consist of:

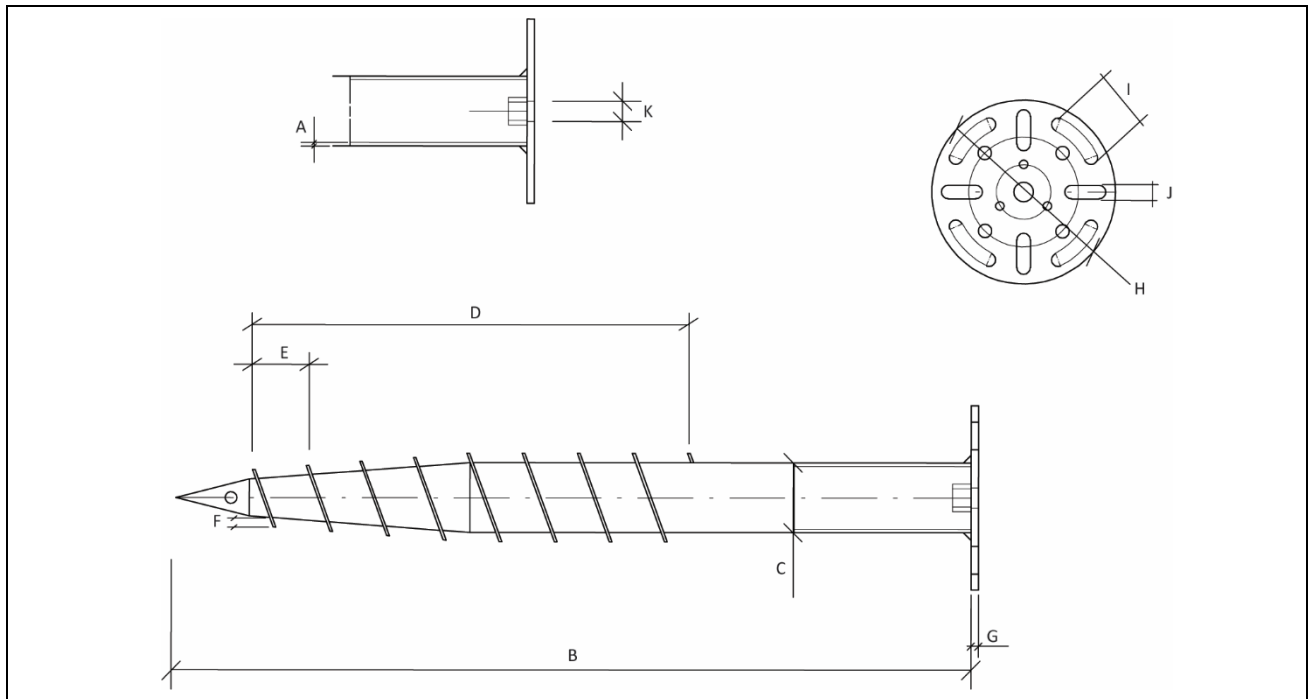
- single-piece steel screw body — welded body of the screw composed of S235JR steel
- attachable steel heads — for some screws the head can be swapped out to allow for different forms of connection
- coating — coating is hot dipped galvanization in accordance with DIN EN ISO 1461 : 2022 to 125 or 85 µm (refer to section 8 of this Certificate).

There are 6 families of products of StopDigging Groundscrews and Adapter:

- SGC — which has a flat plate for fixing to foundations and also comes in three screw diameters (76, 89, 114mm)
- SG EX — an extendable groundscrew with a screw section, plain extender section and a flat head similar to SGC
- SGP — a screw with a flat head with a single hole for pinning to
- SGU — a screw with an open flange in which cross beams can be placed and fixed
- SGN — which has an open head in which circular posts can be fitted and pinned in place
- SGS — which has an open flange in which posts can be placed and fixed.

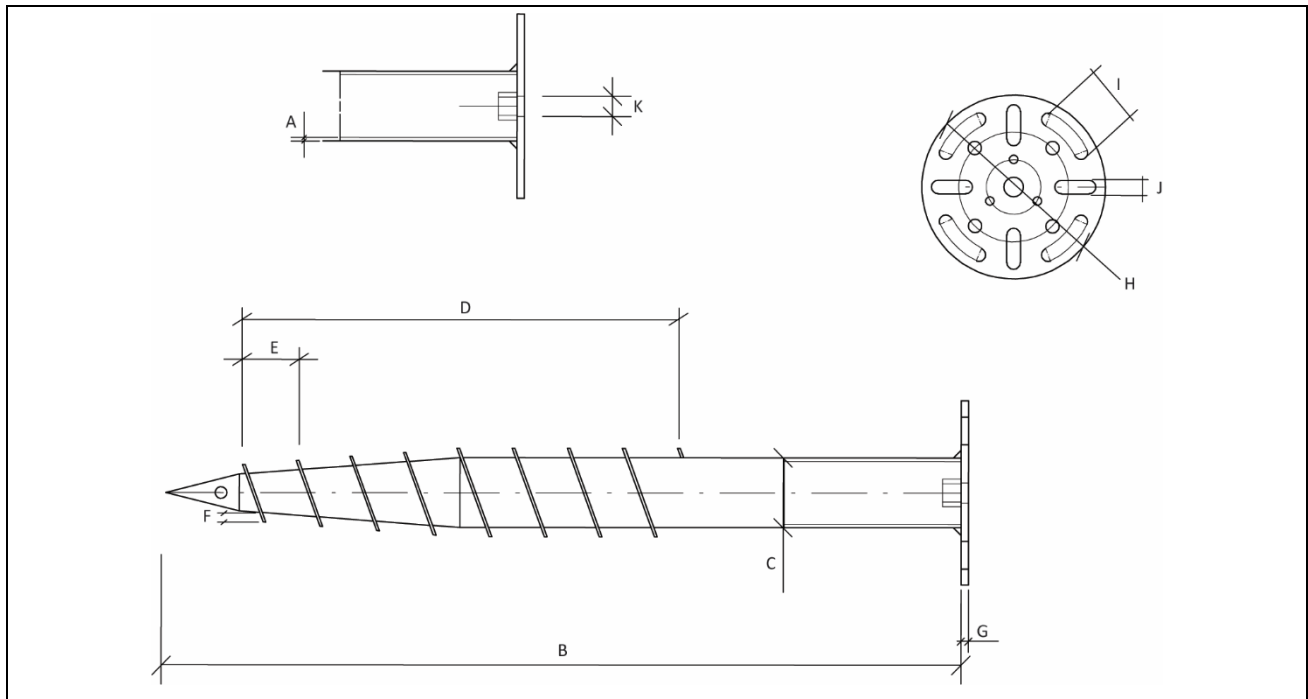
The products have the nominal characteristics given in Tables 1 to 8.

Table 1 SGC 76 Adapter screw dimensions



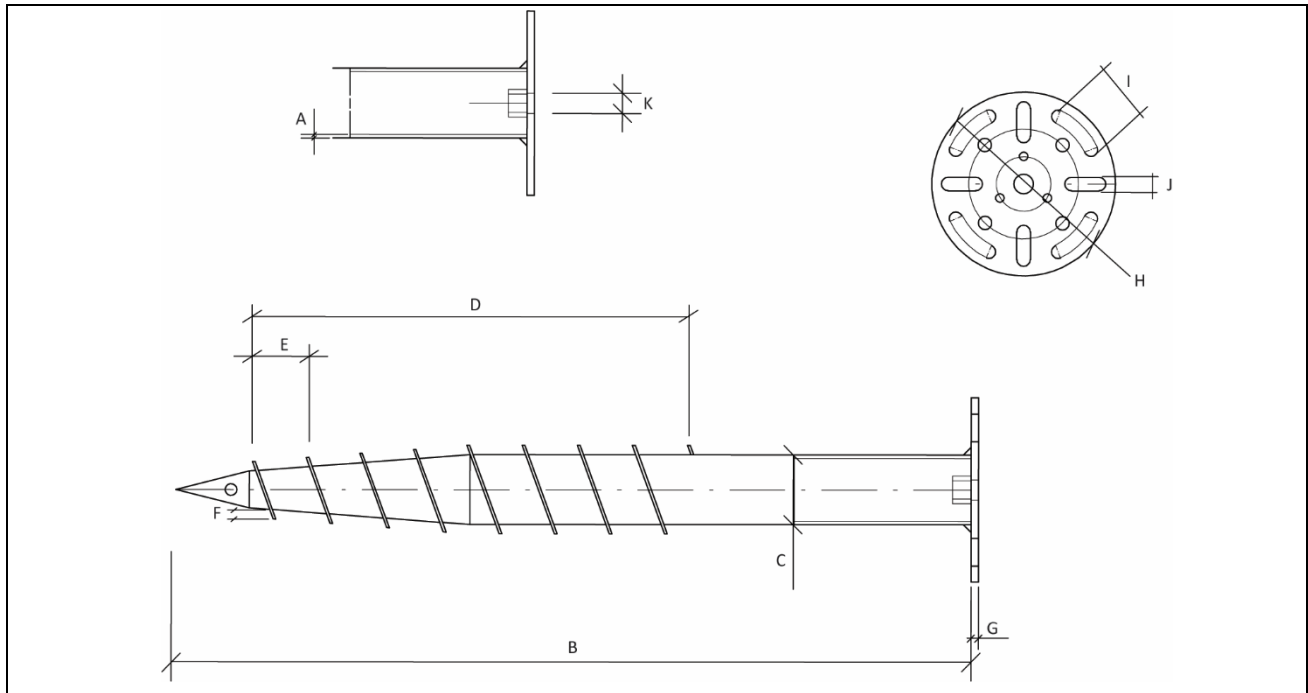
Identifier	SGC76 - 865	SGC76 - 1200	SGC76 - 1600	SGC76 - 2000	SGC76 - 2500
A Screw thickness (mm)	4	4	4	3.5	3.5
B Screw Length (mm)	865	1200	1600	2000	2500
C Outer diameter (mm)	76	76	76	76	76
D Helix length (mm)	480	840	900	900	900
E Helix spacing (mm)	60	60	60	60	60
F Helix height (mm)	10	10	10	10	10
G Thickness (mm)	8	8	8	8	8
H Plate diameter (mm)	200	200	200	200	200
I Fixing hole width (mm)	15	15	15	15	15
J Fixing hole length (mm)	60	60	60	60	60
K Thread, fixing holes	M20	M20	M20	M20	M20
Galvanization (μm)	125	125	125	125	125

Table 2 SGC 89 Adapter screw dimensions



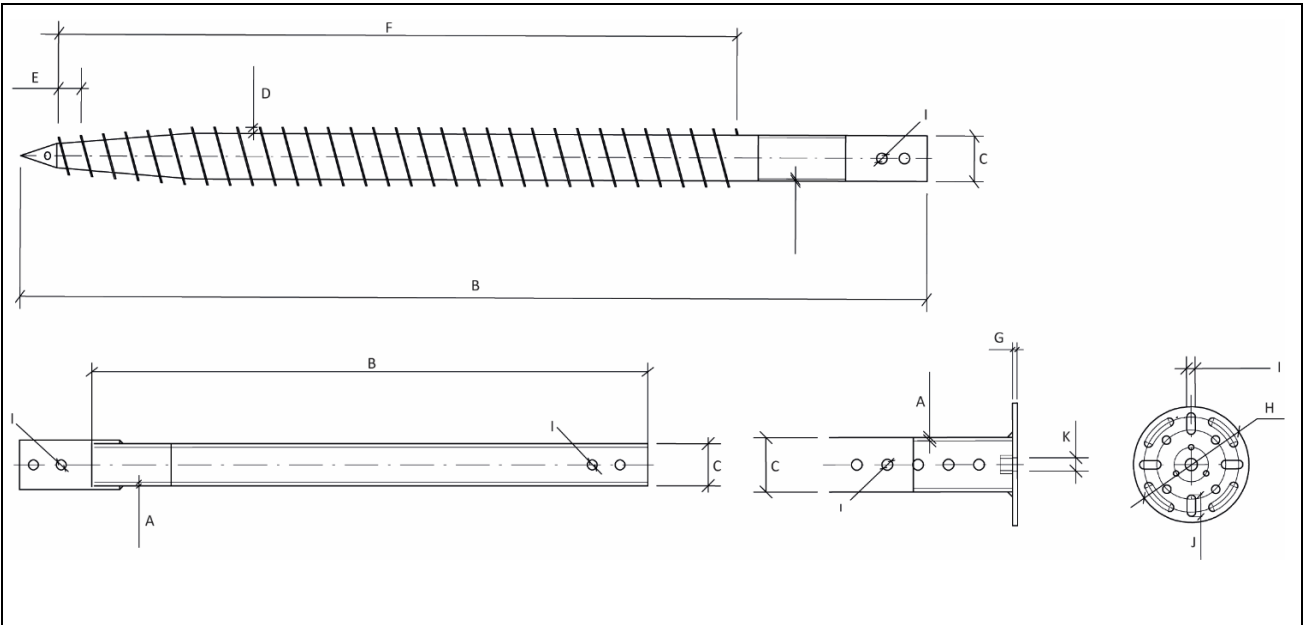
Identifier	SGC89 – 1200	SGC89 – 1600	SGC89 – 2000	SGC89 – 2500	SGC89 – 3000
A Screw thickness (mm)	4	4	5	5	4
B Screw Length (mm)	1200	1600	2000	2500	3000
C Outer diameter (mm)	89	89	89	89	89
D Helix length (mm)	900	1200	1500	1500	1500
E Helix spacing (mm)	60	60	60	60	60
F Helix height (mm)	10	10	10	10	10
G Thickness (mm)	8	8	8	8	8
H Plate diameter (mm)	200	200	200	200	200
I Fixing hole length (mm)	60	60	60	60	60
J Fixing hole width (mm)	15	15	15	15	15
K Thread, fixing holes	M20	M20	M20	M20	M20
Galvanization (μm)	125	125	125	125	125

Table 3 SGC 114 Adapter screw dimensions



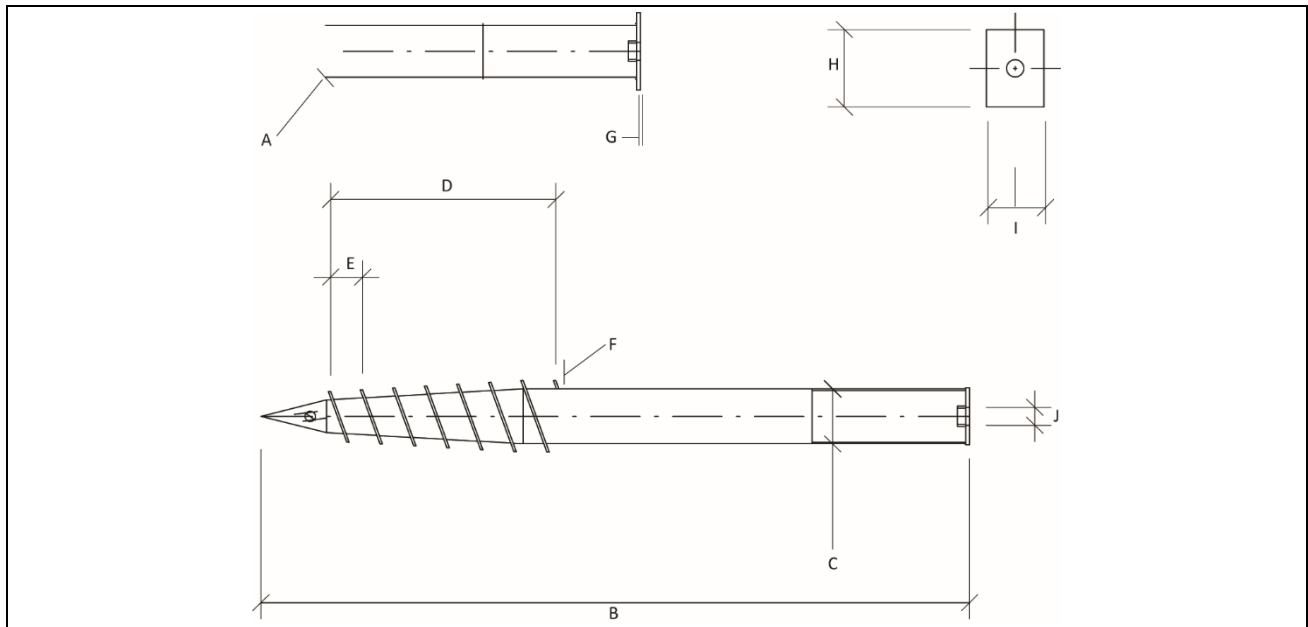
Screw Identifier		SGC114 – 1600	SGC114 – 2000
A	Screw thickness (mm)	4	4
B	Screw Length (mm)	1600	2000
C	Outer diameter (mm)	114	114
D	Helix length (mm)	1200	1500
E	Helix spacing (mm)	50	50
F	Helix height (mm)	10	10
G	Thickness (mm)	8	8
H	Plate diameter (mm)	230	230
I	Fixing hole length (mm)	60	60
J	Fixing hole width (mm)	15	15
K	Thread, fixing holes	M20	M20
	Galvanization (μm)	125	125

Table 4 SG EX Adapter Screw Dimensions



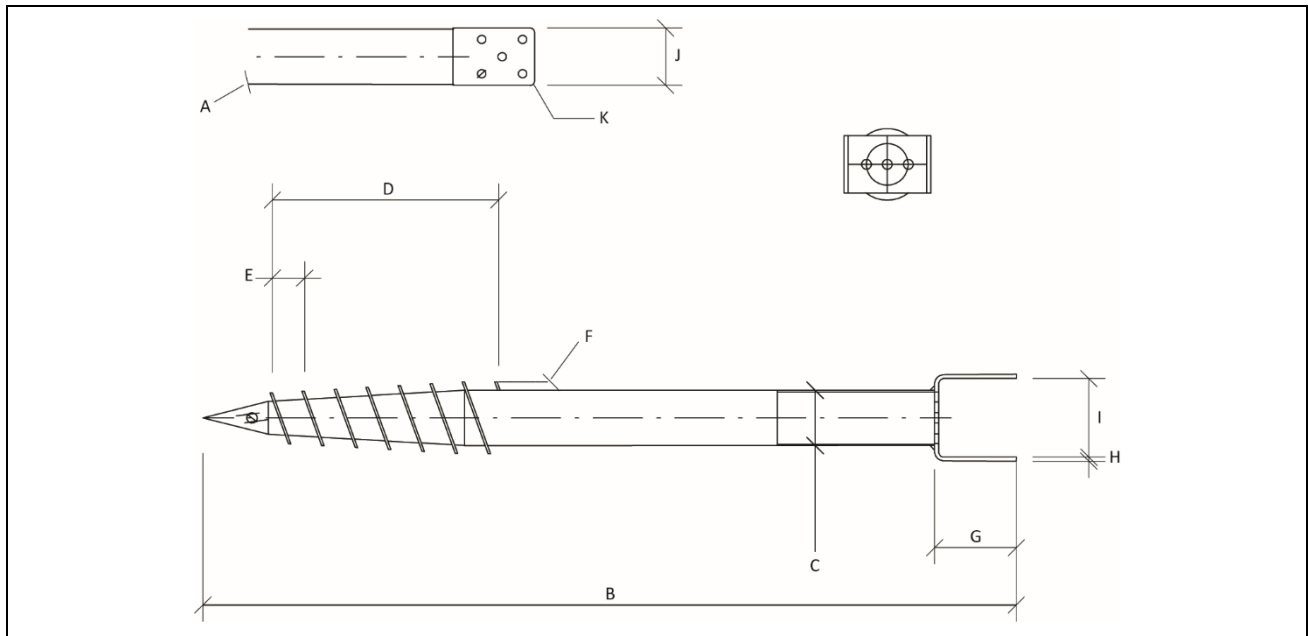
		EX S	EX B	EX H C v2
A	Screw thickness (mm)	3.7	3.7	5.0
B	Screw length (mm)	2000	1000	—
C	Outer diameter (mm)	76	76	89
D	Helix height (mm)	10	—	—
E	Helix spacing (mm)	50	—	—
F	Helix length (mm)	1500	—	—
G	Thickness (mm)	—	—	8
H	Plate diameter (mm)	—	—	200
I	Fixing hole width (mm)	18	18	15
J	Fixing hole length (mm)	—	—	60
K	Thread, fixing holes	—	—	M20
	Galvanization (μm)	125	125	125

Table 5 SGP Adapter screw dimensions



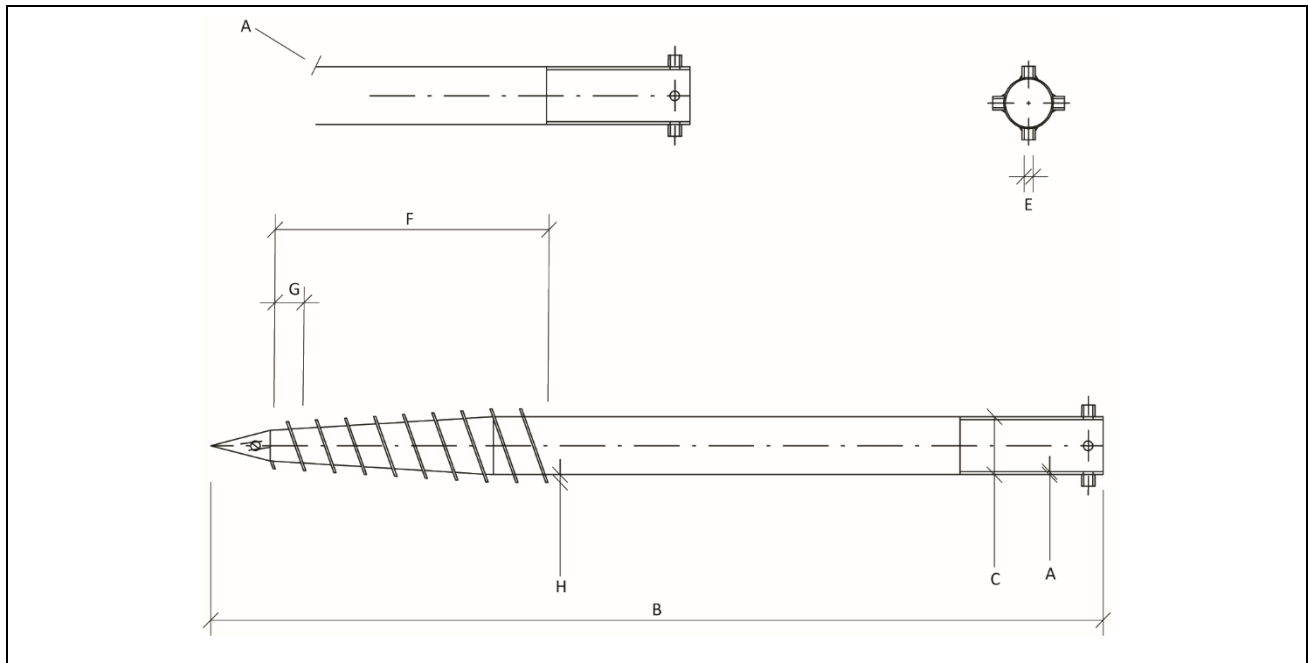
B	Screw Length (mm)	580	865	1200	1600	2000
A	Screw thickness (mm)	2	2	2	3	3.5
C	Outer diameter (mm)	67	67	67	67	67
D	Helix length (mm)	280	280	480	820	820
E	Helix spacing (mm)	40	40	40	40	40
F	Helix height (mm)	10	10	10	10	10
G	Thickness (mm)	5	5	5	5	5
H	Fixing hole length (mm)	95	95	95	95	95
I	Fixing hole width (mm)	70	70	70	70	70
J	Thread, fixing holes	M20	M20	M20	M20	M20
	Galvanization (µm)	85	85	85	85	85

Table 6 SGU Adapter screw dimensions



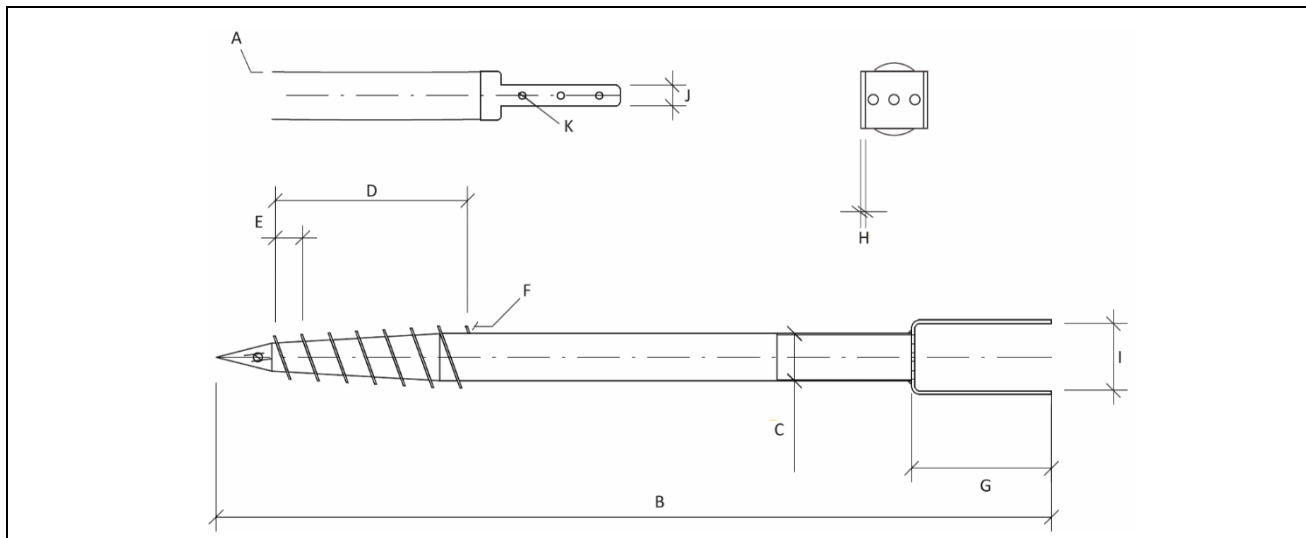
	95 x 580	95 x 865	95 x 1000	95 x 1200	95 x 1600
A Screw thickness (mm)	2	2	2	2	2
B Screw length (mm)	580	865	1000	1200	1600
C Outer diameter (mm)	40	67	67	67	67
D Helix length (mm)	280	280	280	280	600
E Helix spacing (mm)	40	40	40	40	40
F Helix height (mm)	10	10	10	10	10
G Flange height (mm)	100	100	100	100	100
H Flange Thickness (mm)	5	5	5	5	5
I Fixing gap width (mm)	95	95	95	95	95
J Fixing gap length (mm)	70	70	70	70	70
K Fixing hole diameter (mm)	11	11	11	11	11
Galvanization (μm)	85	85	85	85	85

Table 7 SGN Adapter screw dimensions



		67 x 865	76 x 865	89 x 865	89 x 865	76 x 1200	76 x 1600	114 x 900	89 x 2500
A	Screw thickness (mm)	2	4	2	3.5	4	4	4	4
B	Screw length (mm)	865	865	865	865	1200	1600	900	2500
C	Outer diameter (mm)	67	76	89	89	76	76	114	89
D	Inner diameter (mm)	64	68	85	82	68	68	106	81
E	Thread mixing holes	M12	M12	M12	M12	M12	M12	M16	M12
F	Helix length (mm)	280	400	280	280	400	820	400	900
G	Helix spacing (mm)	40	40	40	40	40	40	40	60
H	Helix height (mm)	10	10	10	10	10	10	10	10
	Galvanization (µm)	85	85	85	85	85	85	85	85

Table 8 SGS Adapter screw dimensions



	70 x 935	95 x 935	70 x 1200	95 x 1200
A Screw thickness (mm)	2	2	2	2
B Screw length (mm)	935	935	1200	1200
C Outer diameter (mm)	67	67	67	67
D Helix length (mm)	280	280	280	280
E Helix spacing (mm)	40	40	40	40
F Helix height (mm)	10	10	10	10
G Fixing flange height (mm)	200	200	200	200
H Fixing flange thickness (mm)	5	5	5	5
I Flange Opening (mm)	70	95	70	95
J Width of flange (mm)	30	30	30	30
K Hole diameter (mm)	11	11	11	11
Galvanization (µm)	85	85	85	85

Ancillary Items

The Certificate holder recommends the following ancillary items for use with the products, but these materials have not been assessed by the BBA and are outside the scope of this Certificate:

- SGM range of hand-held installation devices
- SGM petrol-driven hydraulic auger
- SGM 2000 self-propelled
- beam attachments for screws
- post brackets (attachments)
- square plate attachment
- circular plate attachment
- bolts and nuts
- SGC EL
- flagpole mount
- modular building mount
- construction fencing bracket
- fencing
- special mounts.

Applications

The products are intended for use in the following substrates:

- clays
- silts
- sand
- fine gravel
- medium gravel — subject to on-site confirmation
- coarse gravel — subject to on-site confirmation.

The products are intended as foundations for the following types of structures:

- decking
- fencing
- sheds
- garden room
- extension
- new build.

Product assessment – key factors

The product was assessed for the following key factors, and the outcome of the assessments is shown below. Conclusions relating to the Building Regulations apply to the whole of the UK unless otherwise stated.

1 Mechanical resistance and stability

Data were assessed for the following characteristics.

1.1 Load bearing

1.1.1 Design resistance (in tension, compression and lateral) of the steel was determined by testing and calculation in accordance with BS EN 1993-1 : 2004.

Table 9 SGC 76 Adapter screw properties

SGC	Compression resistance (kN)	Tensile resistance (kN)	Lateral resistance (kN)
865	13.5	7.0	3.5
1200	25.0	12.5	6.0
1600	35.0	21.5	8.5
2000	45.0	34.0	11.5
2500	55.0	41.5	14.5

Table 10 SGC 89 Adapter screw properties

SGC89	Compression resistance (kN)	Tensile resistance (kN)	Lateral resistance (kN)
1200	37.5	18.0	9.5
1600	58.0	36.0	13.0
2000	72.0	53.0	17.5
2500	82.0	58.0	22.0
3000	91.5	65.0	24.5

Table 11 SGC 114 Adapter screw properties

SGC114	Compression resistance (kN)	Tensile resistance (kN)	Lateral resistance (kN)
1600	66.5	41.0	15.0
2000	82.5	61.5	20.0

Table 12 SG EX Adapter screw properties

SGEX	Compression resistance (kN)	Tensile resistance (kN)	Lateral resistance (kN)
SG EX S			
SG EX B	Load resistance must be determined on site by pull-test, compression test and lateral-testing		
SG EX H Cv2			

Table 13 SGP Adapter screw properties

SGP	Compression resistance (kN)	Tensile resistance (kN)	Lateral resistance (kN)
580	2.5	1.7	0.5
865	6.0	4.5	2.5
1200	12.5	6.5	4.5
1600	25.5	14.7	6.9
2000	28.5	15.5	8.0

Table 14 SGU Beam screw properties

SGU	Compression resistance (kN)	Tensile resistance (kN)	Lateral resistance (kN)
95 x 580	2.5	1.7	0.5
95 x 865	6.0	4.5	2.5
95 x 1000	10.5	5.5	3.5
95 x 1200	12.5	6.5	4.5
95 x 1600	17.5	8.0	7.0

Table 15 SGN Pipe screw properties

SGN	Compression resistance (kN)	Tensile resistance (kN)	Lateral resistance (kN)
67 x 865	10.5	4.5	3.0
76 x 865	13.5	7.0	3.5
89 x 865	22.5	10.5	3.5
76 x 1200	25.0	12.5	6.0
76 x 1600	35.0	21.5	8.5
114 x 900	20.0	10.5	6.0
89 x 2500	55.0	41.5	14.5

Table 16 SGS Post screw properties

SGS	Compression resistance (kN)	Tensile resistance (kN)	Lateral resistance (kN)
70 x 935	6.0	4.5	3.0
95 x 935	6.0	4.5	3.0
70 x 1200	12.5	6.5	4.5
95 x 1200	12.5	6.5	4.5

1.2 Ground bearing/pile calculations

1.2.1 The ground bearing capacity design is to be calculated in accordance with BS EN 1997-1 : 2004. Example calculations were provided and reviewed for competency and correctness. If designed by a suitably qualified and

competent individual and installed and tested in accordance with the instructions of the Certificate holder, the products can be used to provide satisfactory support to the structure they are incorporated in.

2 Safety in case of fire

Not applicable.

3 Hygiene, health and the environment

Not applicable.

4 Safety and accessibility in use

Not applicable.

5 Protection against noise

Not applicable.

6 Energy economy and heat retention

Not applicable.

7 Sustainable use of natural resources

The products are made of galvanized steel, which can be recycled.

8 Durability

8.1 The potential mechanisms for degradation and the known performance characteristics of the materials in the products were assessed.

Specific test data were assessed for the following.

8.2 Galvanization detail

8.2.1 Results of assessment of galvanisation are given in Table 17

Table 17 Details of screw galvanization to DIN EN ISO 1461 : 2022

Product assessed	Assessment method	Galvanizing thickness (µm)	Result
SGC 76	BS EN ISO 14713-1 : 2017	125	60 years minimum in C3 ground
SGC EL	BS EN ISO 14713-1 : 2017	125	30 years minimum in C4 ground
SGC 89	BS EN ISO 14713-1 : 2017	125	15 years minimum in C5 ground
SGC 114	BS EN ISO 14713-1 : 2017	125	5 years minimum in CX ground
SG EX	BS EN ISO 14713-1 : 2017	125	
SGP	BS EN ISO 14713-1 : 2017	85	40 years minimum in C3 ground
SGU	BS EN ISO 14713-1 : 2017	85	20 years minimum in C4 ground
SGN	BS EN ISO 14713-1 : 2017	85	10 years minimum in C5 ground
SGS	BS EN ISO 14713-1 : 2017	85	3 years minimum in CX ground

8.2.2 Installation damage has not been considered in durability assessment, therefore, instructions in BS EN ISO 14713-1 : 2017 and the Certificate holder's installation manual must be taken into account to minimize the damage to the coating.

8.3 Service life

Under normal service conditions, the products will have a life as per Table 17, provided they are designed, installed and maintained in accordance with this Certificate and the Certificate holder's instructions.

PROCESS ASSESSMENT

Information provided by the Certificate holder was assessed for the following factors:

9 Design, installation, workmanship and maintenance

9.1 Design

9.1.1 The design process was assessed by the BBA, and the following requirements apply in order to satisfy the performance assessed in this Certificate.

9.1.2 Design must be in accordance with the Certificate Holder's Design Specification Manual, BS EN 1993-5 : 2007, BS EN 1997-1 : 2004 and BS 8081 : 2015. A summary of requirements is shown below detailing the basic requirements relating to design.

9.1.3 The pile layout design must be designed by a chartered civil or structural engineer on behalf of the Certificate holder or end user. This will show the position of the piles and the required load capacity of that pile.

9.1.4 Pre-installation testing should be carried out by the Authorised Installer, to confirm if the specified piles are suitable, or whether alternative sized piles should be used. If the specified pile has not met the design load, then by selecting a longer pile or wider diameter pile the desired result can be achieved. Selection of the correct pile will be based on specific site testing. Piles which have met, or exceeded, the required design loads specified by the design engineer, including any load factors (safe working load), will be recommended for use. Depending on the required use and performance of the pile, it is important that the appropriate testing method is used ie, Compression Load Test, Tensile Load Test or Lateral Load Test. Descriptions of the testing protocol can be found in the Certificate holder's Design Specification Manual, section 4.4.5.

9.1.5 As stated, in most circumstances if the required load capacity cannot be met then selection of a wider diameter or longer pile may enable such capacities to be achieved. In situations where the required capacities cannot be achieved, the test results should be reported back to the engineer, who may consider re-designing the pile layout.

9.1.6 As per the details in the Certificate holder's Design Specification Manual, shallow soil testing may be required to determine the suitability of the products for a particular site. Similarly, soil resistivity and soil pH testing may be required, if soil conditions at the site are not known. Soil pH values and resistivity values are important factors in determining the lifespan of the products in accordance with the Certificate Holder's Design Specification Manual, Section 8.

9.1.7 The project engineer must understand overall site conditions including:

- confirm the depth to each soil stratum, water table and their variation
- indicate the presence of caves, buried works, boulders, rocks/stones larger than 50 mm
- characterise homogeneity or heterogeneity and the mechanical properties of the soil to and beyond the stratum with adequate bearing capacity
- identify any layers of soil with shrinkage, heave or liquefaction potential, hardened sediments, aggressiveness.

The above information should be considered when selecting the appropriate ground screw to be used on site.

9.1.8 Full consideration must be given to the particular ground conditions when assessing the suitability of the products. The following factors apply:

- made-ground containing obstructions — where encountered, obstructions should be removed prior to piling or alternative pile positions determined

- where large boulders or artificial hard obstructions (eg concrete) are present that may cause lateral displacement of the lower part of the pile during installation, they should be removed prior to piling or alternative pile positions must be identified. Where this is not possible, an alternative pile system should be considered
- where steeply sloping hard strata exist that may cause lateral displacement of the lower part of the pile resulting in pile failure, an alternative pile system should be considered
- ground containing voids — where voids are encountered, the piles should be relocated if possible, or an alternative pile system adopted.

9.2 Installation

9.2.1 Installation instructions provided by the Certificate holder were assessed and judged to be appropriate and adequate.

9.2.2 Installation must be carried out in accordance with this Certificate and the Certificate holder's instructions. A summary of instructions and guidance are provided in Annex A of this Certificate.

9.2.3 After installation, a minimum 10% of screws within the foundation must be tested. Testing during installation, as defined in the Certificate holder's instructions, includes:

- compression test
- tension test
- lateral load test.

9.2.4 In the event that the tested resistance loads are less than predicted in calculations, a larger or longer pile is to be installed and tested that meets the capacity requirements.

9.2.5 The customer must be presented with these results and sign off on the work performed.

9.3 Workmanship

Practicability of installation was assessed by the BBA, on the basis of the Certificate holder's information and a site visit to witness an installation in progress. To achieve the performance described in this Certificate, installation of the products must be carried out by installers who have been trained and approved by the Certificate holder.

9.4 Maintenance and repair

As the products are confined within the soil and have suitable durability, maintenance is not required.

10 **Manufacture**

10.1 The production processes for the product have been assessed, and provide assurance that the quality controls are satisfactory according to the following factors:

10.1.1 The manufacturer has provided documented information on the materials, processes, testing and control factors.

10.1.2 The quality control operated over batches of incoming materials has been assessed and deemed appropriate and adequate.

10.1.3 The quality control procedures and product testing to be undertaken have been assessed and deemed appropriate and adequate.

10.1.4 The process for management of non-conformities has been assessed and deemed appropriate and adequate. An audit of each production location was undertaken, and it was confirmed that the production process was in accordance with the documented process, and that equipment has been properly tested and calibrated.

†10.1.5 The BBA has undertaken to review the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

11 Delivery and site handling

11.1 The Certificate holder stated that the products are delivered to site loose. The required products are determined prior to delivery, and specific elements are delivered to site to match the order.

11.2 Delivery and site handling must be performed in accordance with the Certificate holder's instructions and this Certificate, including:

11.2.1 Inspection on site must reveal no rust or deformation. If rust is identified, it must be determined if the rust is penetrating the galvanization layer or only on the exterior surface. If rust has simply rubbed on, this is not a reason for rejection.

11.2.2 The products can be manipulated and moved by hand, but gloves must be worn.

Supporting information in this Annex is relevant to the product but has not formed part of the material assessed for the Certificate.

Construction (Design and Management) Regulations 2015

Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of ISO 9001 : 2015 by Beijing East Allreach Certification Center Co., Ltd (Certificate 11421Q43461R0M).

Additional information on installation

The typical installation procedure, after design is completed as follows:

- A.1 Begin the installation by drilling a pilot hole to a depth approximately 100 mm shallower than the intended depth of the screw in the ground. In locations with services, a cat scanner must be used to ensure no risk of hitting buried services.
- A.2 Once the pilot hole is successfully completed, the intended groundscrew is inserted and installed by hand-turning the screw into the pilot hole, until it can stand by itself.
- A.3 The installation machine, reaction bar and the tool that matches the groundscrew model must be assembled. The reaction bar must be secured with a ground pin, rock bar or other suitable way to resist the machine torque.
- A.4 The groundscrew must be slowly rotated into the ground using the installation machine until it reaches the desired level.
- A.5 A laser level must be used to identify the height of screw, which must then be adjusted accordingly in relation to the datum.
- A.6 The installation equipment is then cleared once all screws are installed. Then primary structure may be constructed.

Bibliography

BS 8081 : 2015 *Code of practice for grouted anchors*

BS EN 1993-1 : 2004 *Eurocode 3 — Design of steel structures*

BS EN 1993-5 : 2007 *Eurocode 3 — Design of steel structures*

BS EN 1997-1 : 2004 *Eurocode 7 – Geotechnical design*

BS EN ISO 14713-1 : 2017 *Zinc coatings – Guidelines and recommendations for the protection against corrosion of iron and steel in structures – Part 1 : General principles of design and corrosion resistance*

BS ISO 10390 : 2005 *Soil quality, determination of Ph*

DIN EN ISO 1461 : 2022 *Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods*

ISO 9001 : 2015 *Quality management systems — Requirements*

Conditions

1 This Certificate:

- relates only to the product that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

3 This Certificate will be displayed on the BBA website, and the Certificate Holder is entitled to use the Certificate and Certificate logo, provided that the product and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

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- the right of the Certificate holder to manufacture, supply, install, maintain or market the product
- actual installations of the product, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to UKCA marking and CE marking.

6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product which is contained or referred to in this Certificate is the minimum required to be met when the product is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.