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Agrément Certificate
18/5477
Product Sheet 1 Issue 3

TECHNO PIEUX PILING SYSTEM

TECHNO METAL POST

This Agrément Certificate Product Sheet(1) relates to Techno Metal Post(2), a prefabricated steel foundation pile system comprising load bearing elements, shaft coupling, protective sleeve and helical blades (helices), designed mainly for compressive loading, to provide a piled foundation where no rotations or lateral movement of the soil mass is expected.

(1) Hereinafter referred to as 'Certificate'.
(2) Techno Metal Post is a registered trademark.

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 system described herein. This system has been assessed by the BBA as being fit for its intended use provided it is installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Third issue: 26 September 2025
Originally certified on 26 January 2018

Hardy Giesler
Chief Executive Officer

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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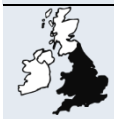
SUMMARY OF ASSESSMENT AND COMPLIANCE

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 Techno Metal Post, 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 system can contribute to satisfying this Requirement. See sections 1 and 9 of this Certificate.
Requirement:	**A2**	**Ground movement**
Comment:		The system can contribute to satisfying this Requirement. See sections 1 and 9 of this Certificate.
Requirement:	**A3**	**Disproportionate collapse**
Comment:		The system can contribute to satisfying this Requirement. See sections 1 and 9 of this Certificate.
Regulation:	**7(1)**	**Materials and workmanship**
Comment:		The system is acceptable. See sections 8 and 9 of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)(2)**	**Fitness and durability of materials and workmanship**
Comment:		The system is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**9**	**Building standards – construction**
Standard:	1.1(a)(b)	Structure
Comment:		The system can contribute to satisfying this Standard, with reference to clauses 1.1.1[(1)(2)] to 1.1.4[(1)(2)]. See sections 1 and 9 of this Certificate.
Standard:	1.2	**Disproportionate collapse**
Comment:		The system can contribute to satisfying this Standard, with reference to clauses 1.1.1[(1)(2)] and 1.2.1[(1)(2)]. See sections 1 and 9 of this Certificate.

(1) Technical Handbook (Domestic).
(2) Technical Handbook (Non-Domestic).

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

Regulation:	**23**	**Fitness of materials and workmanship**
Comment:		The system is acceptable. See sections 8 and 9 of this Certificate.
Regulation:	**30**	**Stability**
Comment:		The system can contribute to satisfying this Regulation. See sections 1 and 9 of this Certificate.
Regulation:	**31**	**Disproportionate collapse**
Comment:		The system can contribute to satisfying this Regulation. See sections 1 and 9 of this Certificate.

Additional Information

NHBC Standards 2025

In the opinion of the BBA, Techno Metal Post, 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 4.4 *Raft, pile, pier and beam foundations.*

The opinion of the BBA does not amount to any endorsement or approval by NHBC and does not in any way guarantee that NHBC will approve such product / system as compliant with the NHBC Technical Requirements and Standards.

Fulfilment of Requirements

The BBA has judged Techno Metal Post to be satisfactory for use as described in this Certificate. The system has been assessed as a prefabricated steel foundation system, designed in accordance with BS EN 1993-5 : 2007 and screwed into the ground to support and transmit foundation loads.

ASSESSMENT

Product description and intended use

The Certificate holder provided the following description for the system under assessment. Techno Metal Post is a prefabricated steel foundation system, designed in accordance with BS EN 1993-5 : 2007 and screwed into the ground to support and transmit foundation loads (see Figure 1). The piles are installed under the combined action of rotational forces and vertical loads using specified machinery (see section 9.2.4 of this Certificate).

Techno Metal Post consists of:

- load bearing elements
- shaft
- shaft couplings
- techno protective sleeve
- helices.

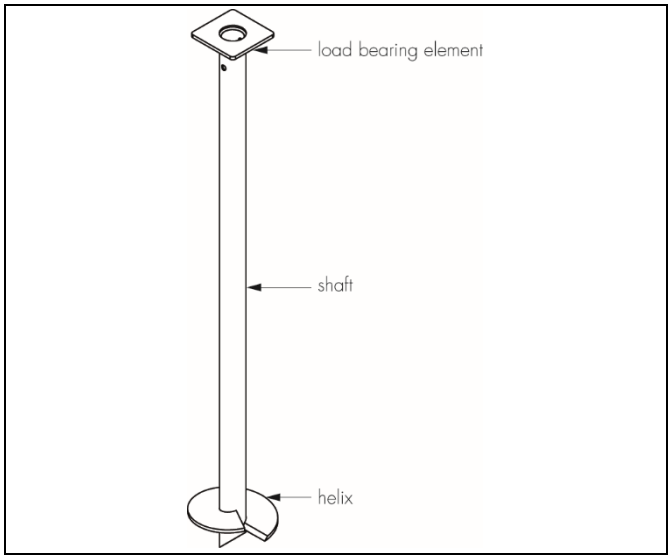
The system has the nominal characteristics given in Table 1.

Table 1 Nominal characteristics – shaft cross-section dimensions(1)

Shaft type	Dimension and thickness		
	Outside diameter (mm)	Inside diameter (mm)	Wall thickness (mm)
P1	48.26	40.89	3.68
P2	60.33	52.50	3.91
P3	88.90	77.93	5.49
P3-HD(2)	88.90	73.66	7.62
P4	101.60	90.12	5.74
P4-HD(2)	101.60	85.70	7.95
P5	141.29	128.18	6.55
P6	168.28	154.05	7.11
Weight of the shafts (kg)	≥ 180	≥ 180	≥ 180

(1) The standard lengths of the shafts are 1500, 2130 and 3200 mm.
(2) Heavy duty.

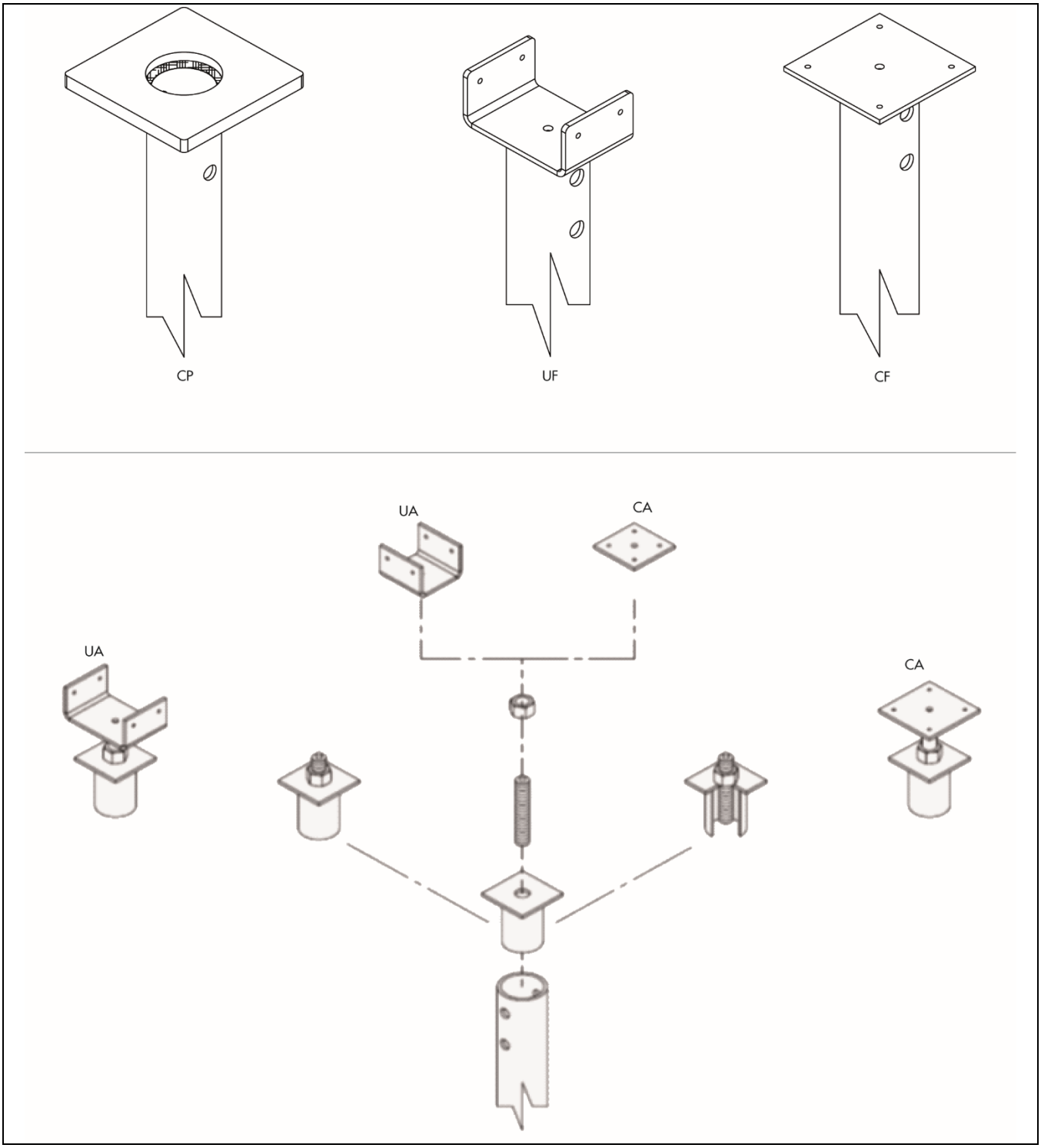
Figure 1 Typical Techno Metal Post arrangement



Load bearing elements

- made of structural steel grade S275 in accordance with BS EN 10025-3 : 2019, for connecting the structure to the supporting shaft
- different load bearing elements (see Figure 2), either adjustable or of fixed height, are used with different shaft types
- for shaft types P1 and P2 only (see Table 1), fixed load bearing elements CP, UF or CF, or adjustable load bearing elements CA or UA, can be used (connected to the shaft and the structure by welding on site)
- for the other shaft types, bespoke load bearing elements can be used (connected to the shaft and structure by welding or bolting on site). These must be designed by a suitably experienced and competent design engineer in accordance with BS EN 1993-1-1 : 2005 and BS EN 1993-1-8 : 2005, and their UK National Annexes.

Figure 2 Load bearing element types



Shaft

- a hollow tube, made of steel grade S355NH in accordance with EN 10219-1 : 2006
- diameter and thickness of the shafts vary (see Table 1 of this Certificate), depending on the loads to be supported
- there are holes in the top of each shaft for attachment to the installation rig.

Shaft couplings

Shaft coupling is needed when the level of bearing layer of the ground requires extensions to be added. The shaft can be extended by using welded connectors (exterior couplings [UE], interior couplings [UI] or expanded shaft welded couplings [ESWC]) or mechanical bolted connections, either down to the desired level in the bearing layer of the ground, or for extended lengths above the ground.

Welded connectors: exterior (UE) and interior (UI) couplings

- the couplings, 76 or 89 mm in length and made from steel grade S355NH, are welded to the top end of the shaft at the factory. Additional shafts are welded to the shaft coupling on site
- during installation on site, each shaft is positioned on top of the shaft already installed, with the help of the coupling to make location easier
- with exterior couplings, each shaft is embedded inside the coupling and welded at the top. With interior couplings, a central collar on the coupling helps to locate and weld it in the installed shaft (see Figures 3a and 3b)
- interior couplings, either with a square tube (UI-1) or circular tube (UI-2), can only be used for shaft types P1 and P2
- the welds have a 6 mm throat dimension and can transfer torsional, compressive, tensile and bending actions between the shafts, in accordance with BS EN 1090-1 : 2009.

Figure 3a Shaft coupling: UE

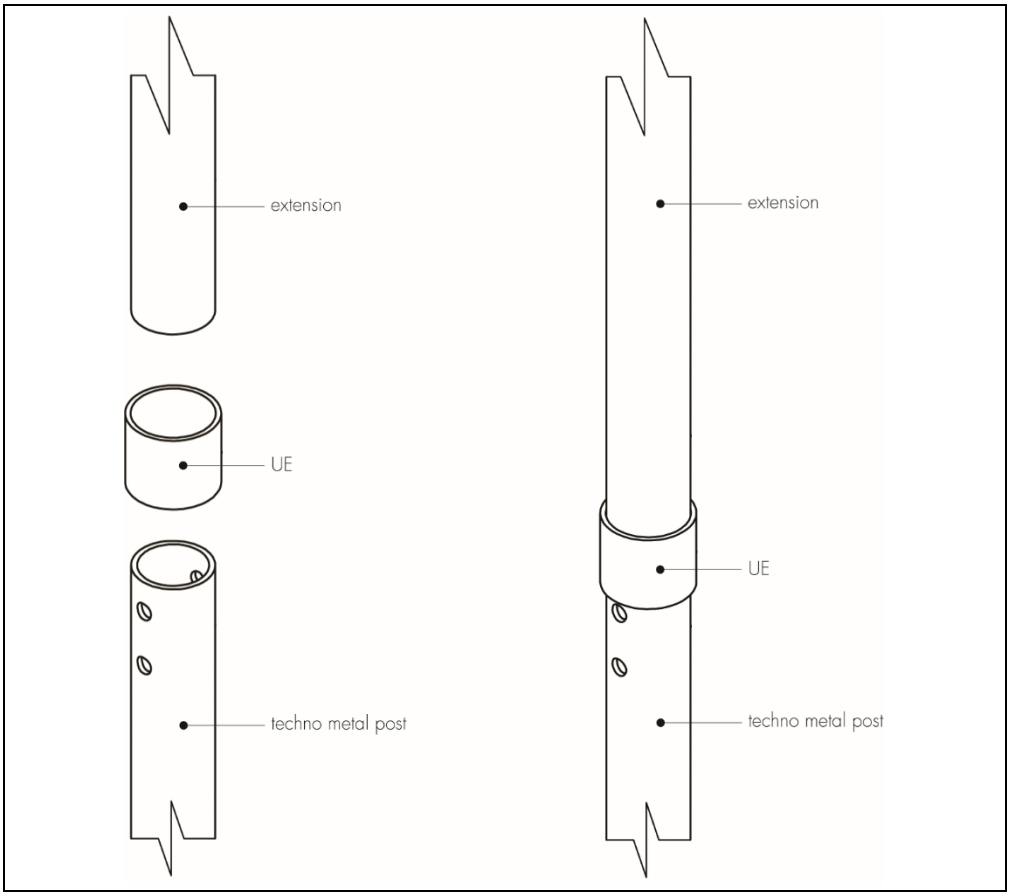
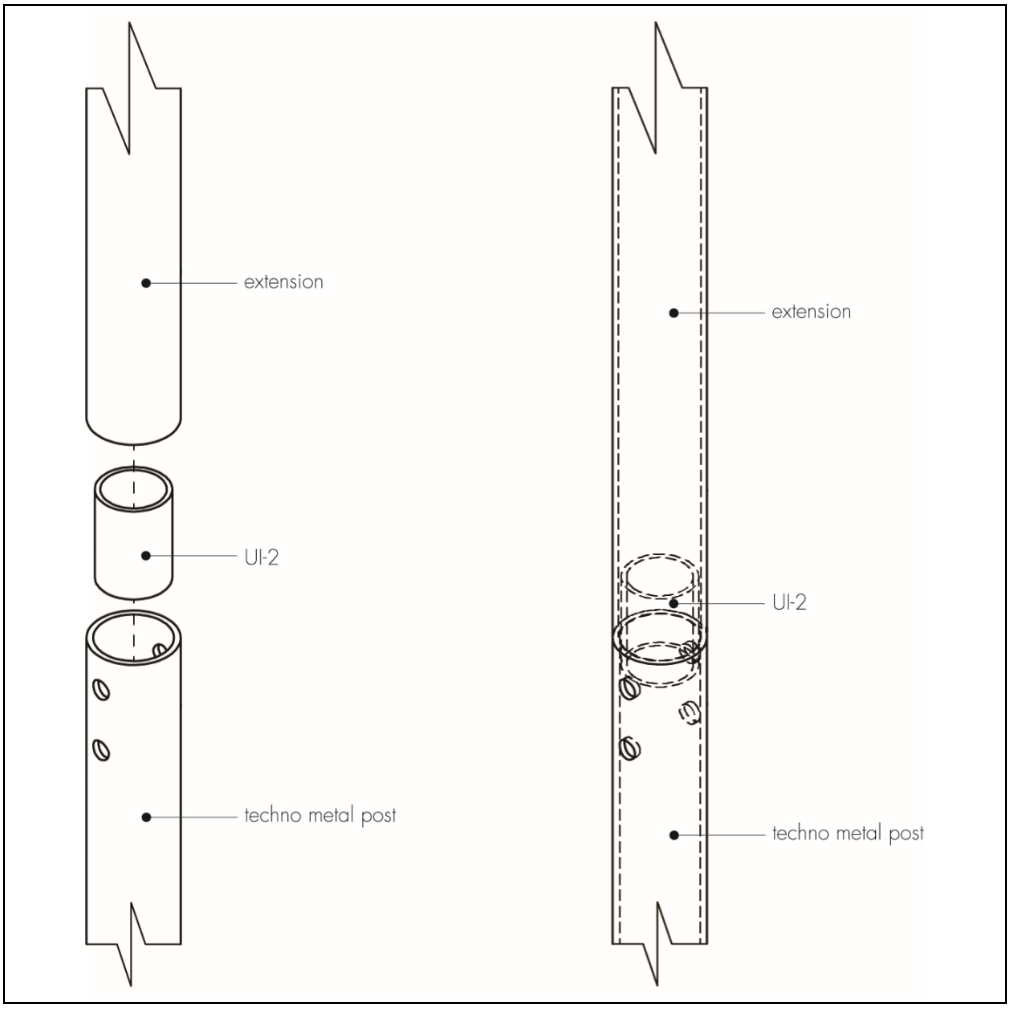


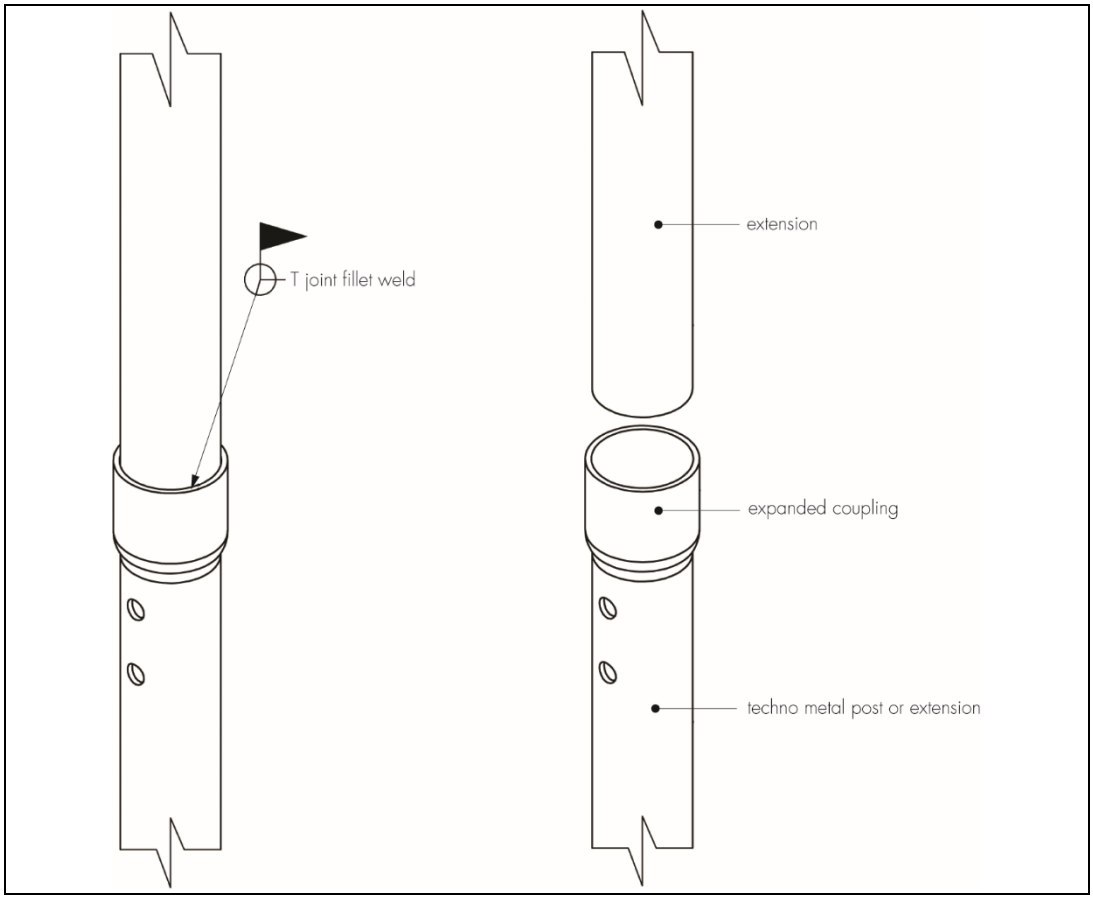
Figure 3b Shaft coupling: UI-2



Welded connectors: expanded shaft welded couplings (ESWC)

- can be used as an alternative to UE and UI couplings, but for shaft types P3, P3-HD, P4 and P4-HD only
- the shaft's top end is positioned in an expander device at the factory. The diameter of the shaft is increased to the required diameter to receive the external shaft diameter of the joining shaft, forming a coupling
- shaft extensions will be welded all around the expanded coupling on site, during the installation of the pile
- the expanded shaft welded coupling technique can transfer torsional, axial torsional, compression, tensile and bending actions between the shafts, in accordance with BS EN 1090-1 : 2009 (see Figure 4 of this Certificate).

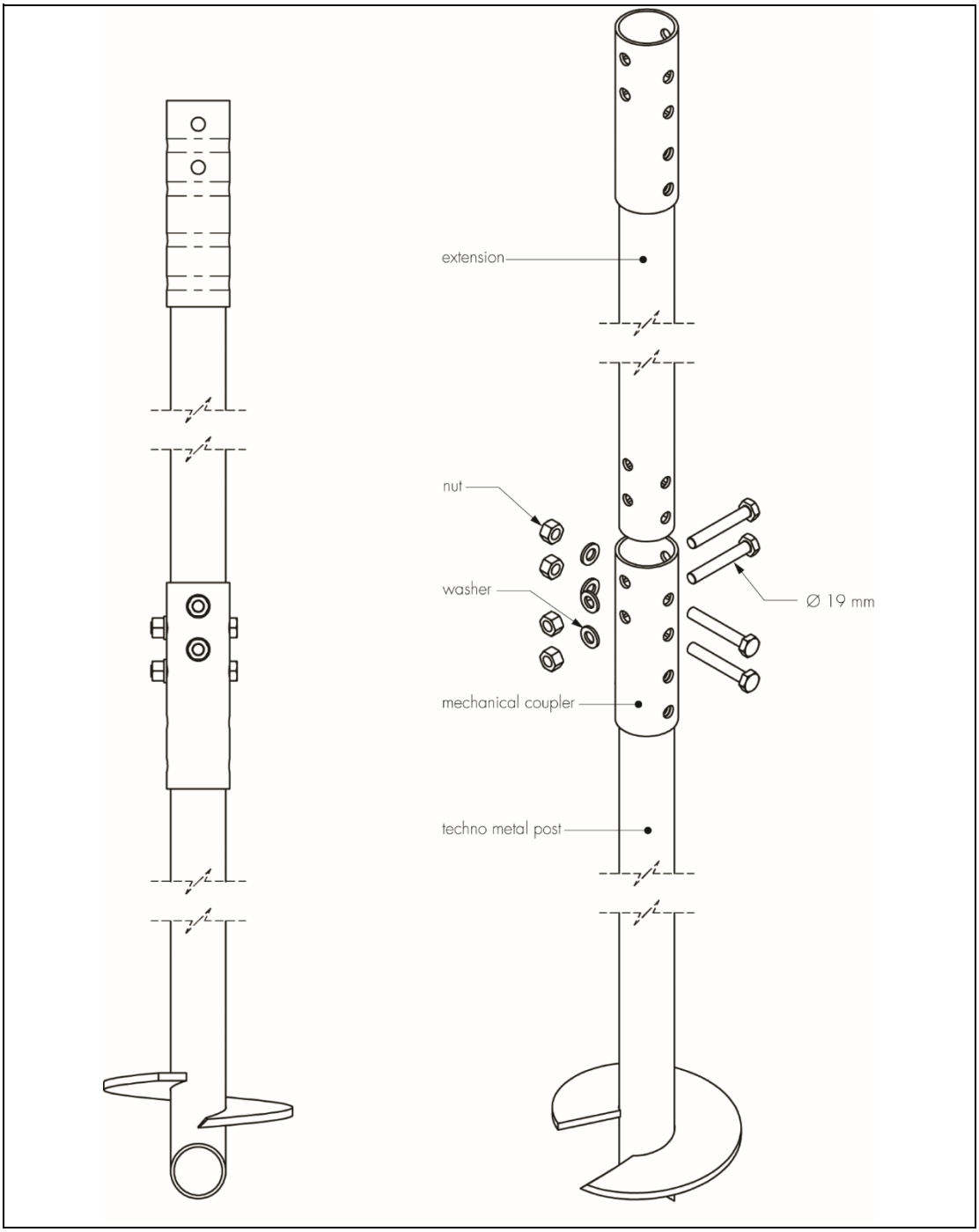
Figure 4 Shaft coupling: ESWC



Mechanical bolted connections

- extension of piles is achieved by using steel bolts, washers and nuts. A shaft mechanical coupler made of steel grade S355NH must be used for extensions
- the mechanical coupler is pre-welded to the initial pile during the manufacturing process at the Certificate holder's manufacturing plant
- holes are drilled at the factory in the shaft, coupler and extensions by plasma cutting. The shaft is extended on site, by passing bolts through the shaft and coupler (see Figure 5)
- the bolt has a 19 mm diameter, with the length according to the diameter of the shaft of the pile
- before assembly, all tubes with pre-drilled holes, and holes drilled in situ, must be checked by the certified installer to make sure the material, surfaces, connections and accessories of the Techno Metal Post are free of dust, moisture, deformations, burrs, metal waste or other corrosion
- once the bolts are inserted, the certified installer must use a calibrated torque wrench to tighten the bolts – for each bolt, the final torque must be 325 N·m
- the mechanical bolted connection can transfer torsional, compressive and tensile action between sections of the shaft, and should be carried out in accordance with BS EN 1090-2 : 2008.

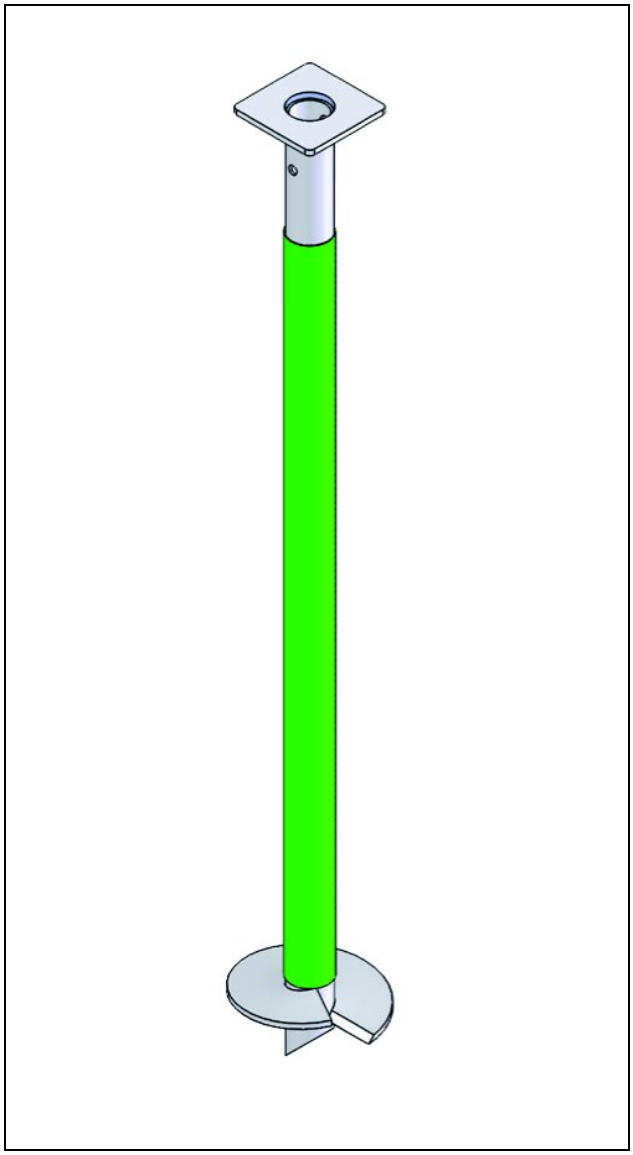
Figure 5 Shaft coupling: mechanical bolted connections



Techno protective sleeve

- polyethylene protective sleeve (see Figure 6), used to ensure the shaft is not in contact with the soil
- generally used on the shaft located in the superficial (0 to 2 m) layers of soil, which may be affected by ground movements (due to, for example, freeze/thaw groundwater movements, clay swelling and shrinking) or any negative friction condition.

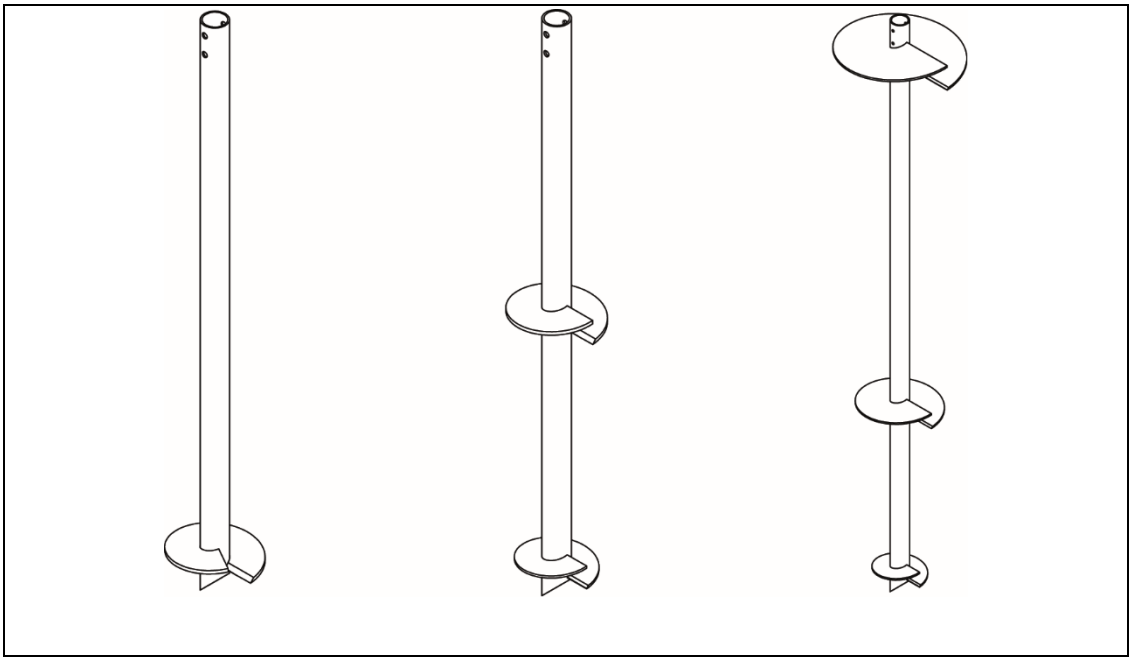
Figure 6 Protective sleeve



Helices

- helical blades of steel grade S275, manufactured in accordance with BS EN 10025-3 : 2019 and factory welded and assembled to the shaft at the factory in accordance with BS EN ISO 3834-3 : 2005
- the helices are available in 152, 203, 254, 305, 356, 406, 457, 508 or 610 mm diameters, with 9 mm thick blades for shaft types P1 and P2, and 12.5 mm thick blades for the other shaft types (see Table 1). The pitch of the helix is 76 mm
- each shaft is generally supplied with one helix, at its base. For specific ground conditions or applications (see section 9), the system can be supplied with two or more helices, distributed along the shaft (see Figure 7). The number and diameter of the helices required depend on the design load and nature of the soil in which the helix is embedded
- When requested, the shafts, helices and couplers are hot-dip galvanized with a minimum coating of 530 g·m².

Figure 7 Examples of helix configurations



Ancillary Items

The Certificate holder recommends specific machines for the installation of Techno Metal Post (see section 9.2), but these have not been assessed by the BBA and are outside the scope of this Certificate.

Product assessment – key factors

The system 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 Structural performance

1.1.1 An assessment of a range of typical loading cases, structural calculations and design of the system was carried out against the requirements of BS EN 1990 : 2023, BS EN 1993-1-1 : 2005 and BS EN 1997-1 : 2004, and their UK National Annexes.

1.1.2 On the basis of data assessed, the system can withstand dynamic loadings and the effect of design actions likely to occur during installation, without undue deterioration in strength or stiffness for the life of a structure, when it is designed in accordance with BS EN 1993-1-1 : 2005 and BS EN 1993-5 : 2007 and their UK National Annexes. See section 9.

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

Data were assessed for the following characteristics.

7.1 Reuse and recyclability

The system comprises steel, which can be recycled.

8 Durability

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

8.3 Service life

Under normal service conditions, the system will have a service life in excess of 50 years, provided it is 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, and the following requirements apply in order to satisfy the performance specified in this Certificate.

9.1.1.1 The Certificate holder must ensure that the design of the system is undertaken by a suitably experienced and competent structural engineer, with reference to BS EN 1997-1 : 2004 and its UK National Annex, on a project-specific basis and appropriate assessments of specific torque requirements and on-site welding are considered.

9.1.1.2 The system must have adequate strength and stiffness to sustain the loads to which it will be subjected during normal handling, transportation and installation.

9.1.1.3 The system must be designed to resist static or dynamic axial actions (compressive and/or tensile), shear and bending moments. The structural resistances of the system must be accurately determined in accordance with BS EN 1993-1-1 : 2005, BS EN 1993-5 : 2007, BS EN 1997-1 : 2004, BS EN 1998-1 : 2004 and BS EN 1998-5 : 2004 and their UK National Annexes, and an adequate range of loading cases, together with relevant load and material factors, must be considered.

9.1.1.4 The design methodology must be appropriate for the ground conditions, and the cross sectional properties of the shaft must be accurately determined based on the reduced cross section (considering the reduced thickness of the shaft). The classification of the cross section and the partial factors must be in accordance with BS EN 1993-1-1 : 2005.

9.1.1.5 The required depth of installation of the system and the designed torque must be specified using specific installation equipment developed by the Certificate holder. When installed to the required depth and designed screwing torque, the pile must be capable of carrying the working loads specified. Where the agreed installation torque is achieved before the design depth, the design must be reviewed by the pile design engineer to establish acceptability of the installation depth.

9.1.1.6 If the structure and foundation are to be designed for seismic actions, the piles must be designed to BS EN 1998-1 : 2004 and BS EN 1998-5 : 2004, and their UK National Annexes.

9.1.1.7 Based on the aggressiveness of the soil and the corrosion-protection method used, a thickness reduction of the shaft wall due to corrosion during the lifetime of the pile must be adequately evaluated. The cross sectional properties of the shaft must be determined based on the reduced cross section (considering the reduced thickness of the shaft). The classification of the cross section must be in accordance with based BS EN 1993-1-1 : 2005 and BS EN 1993-5 : 2007.

9.1.1.8 Vertical deflection, horizontal deflection and dynamic performance, in accordance with BS EN 1993-1-1 : 2005, section 7.2 must be considered, in order to check the serviceability limit state. The acceptance criteria must be determined based on the serviceability limitations of the supported structure.

9.1.1.9 The design engineer must Check against buckling in accordance with BS EN 1997-1: 2005, section 7.8 for 'slender piles passing through water or thick deposit of extremely low strength fine soil'. Where required, a stability check under ultimate limit state must be done in accordance with section 6.3 of BS EN 1993-1-1 : 2005. The buckling length must be determined in accordance with section 5.3.3 of BS EN 1993-5 : 2007 for the zone of the pile not laterally supported by soil with characteristic shear strength (C_u) that exceeds 10 kPa.

9.1.2 Assessment of the suitability of the system for use in any particular ground condition must be based on the results of an adequate site investigation. Full consideration must be given to various factors which can affect the assumed performance. The limitations for use of the piles are set out within this Certificate and the user must be aware of these limitations.

9.1.3 The pile layout and design must be in accordance with the requirements of Eurocode 7 (BS EN 1997-1 : 2004 and its UK National Annex), using the safe working loads provided by the Certificate holder. The Certificate holder's *Installation Manual* gives further guidance on the extent of site investigation required and the pile testing regime to be adopted. Site investigations must follow the recommendations given in BS 5930 : 2015. Site investigations must:

- confirm the depth to each soil stratum, water table and their variation
- indicate the presence of caves, buried works, boulders, rocks and 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.

9.1.4 The system can be considered as an end bearing element and the skin friction of the shaft is negligible. The load bearing capacity of the system is principally provided by the helix, in reaction to both compressive and tensile loads. Under tensile loads, the helix anchors the pile in the overburden soil stratum. In order to increase the load bearing capacity with low-bearing-resistance soil conditions to enable the use of comparatively smaller helices, or to reduce the settlement of the system, it is possible to use multiple helices on one shaft. This will distribute the loads transferred to the soil at multiple depths. The distance between the helices must be at least 3 times the largest diameter helix in order to allow the load bearing distribution with minimum stress overlap. However, the overall capacity cannot exceed the structural strength of the pile to pure compressive or tensile loads as given in Table 1, taking into consideration the reduction of the cross-section due to corrosion to BS EN 1993-5 : 2007 and its UK National Annex

9.1.5 When required, static load testing using anchoring piles must be used to validate the bearing capacity of the piles. The responsibility for the number of piles to be tested, correlation factors and the factor of safety to be applied must be determined by the design engineer on behalf of the Certificate holder, in accordance with the relevant standards and national building regulatory requirements.

9.1.6 There is no established relation between the lateral load capacity of the piles and the screwing torque. If lateral load bearing capacity is a design requirement, a site-specific test must be carried out to establish that the pile can resist the design loads.

9.1.7 Full consideration must be given to the requirements of pile design defined in BS EN 1993-1-1 : 2005, BS EN 1993-5 : 2007 and BS EN 1997-1 : 2004, and their UK National Annexes.

9.1.8 The general principles recommended in BS EN 12699 : 2015 must be considered for the execution of screw piles.

9.1.9 Full consideration must be given to the particular ground conditions when assessing the suitability of the system. 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 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 system should be considered
- ground containing voids — where voids are encountered, the piles should be relocated if possible, or an alternative system adopted.

9.1.10 The minimum spacing between the piles must be three times the diameter of the largest helix.

9.1.11 To confirm that the design load capacity is achieved when the design installation depth is reached, the driving torque is measured and, based on the correlation factor explained in section 9.2.4 of this Certificate, the achieved axial load bearing capacity is determined. If this capacity exceeds the design load, the installation is satisfactory.

Durability

9.1.12 For durability greater than or equal to 50 years, the Certificate holder systematically uses an electrochemical technique which is a cathodic protection principle adapted for the Techno Metal Post that may protect simple or more complex installations.

9.1.13 Resistance to the effects of corrosion can be achieved through the specification of appropriate steel sections to ensure that the wall thickness remains adequate for the life of the structure. If additional protection is required, the steel may be hot dip galvanized or provided with cathodic protection.

9.1.14 For mechanical bolted connections, a painted bolt must not be used as it can create pitting corrosions and concentrated hot spot corrosion.

9.1.15 For mechanical shaft couple connections, if a hot-dipped galvanized shaft needs to be drilled on site above ground level then corrosion-protective paint (ZRC Galvilite or equivalent – outside the scope of this Certificate) must be applied on the steel around the drilled spot outside and inside the shaft, and to the edges of the drilled spot/hole. Further information can be requested from Certificate holder.

9.2 Installation

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

9.2.3 The system is installed to the required depth or design torque using specific installation equipment (see Figure 8) developed by the Certificate holder. The characteristics of the installation equipment (outside the scope of this Certificate), which must be used to install the piles, are given in Table 2.

9.2.4 The installation equipment (see Figure 8) continuously records the installation torque required for screwing the piles. This depends on the soil type and strength at the helix depth, and the geometrical specifications of the helix. The torque is directly proportional to the axial load bearing capacity of the pile. The correlation factor for the axial load bearing capacity of the pile to the screwing torque is empirically developed by tests performed by the Certificate holder, and formulas based on test reports publicly available via the Certificate holder's website. In cases where the soil condition does not comply with the range of soils tested previously, or for sensitive installations requiring determination of precise load bearing capacity, a site-specific correlation factor between the installation torque and the load bearing capacity must be developed through testing.

9.2.5 The track pressure for the machinery (outside the scope of this Certificate), must be checked in accordance with BRE Report BR 470, prior to commencing the installation.

9.2.6 The calibration procedure involves installing a certified torque monitor on the driving head of the installation equipment and inserting it onto a dynamic brake anchored to a rigid support. The screwing function is activated, and the braking force is adjusted on the dynamic brake in order to obtain a specific pressure on the manometer. At each of the specified pressures, the screwing torque is measured.

Table 2 Installation equipment (R2D, EM-1, EM-2 and ET-1)

Characteristic	Machinery			
	R2D	EM-1	EM-2	ET-1
Dimensions (mm)	2500, 760, 1500	2362, 1219, 1676	2640, 1230, 1710	4267, 1727, 2133
Mass (kg)	750	2025	2675	4037
Maximum mast height (mm)	3400	3683	4535	4572
Minimum required lateral clearance for installation (mm)	178	203	203	229
Maximum service bearing capacity under compression per pile installed (kN)	115	150	150	225
Ultimate bearing capacity under compression per pile installed (kN)	161	210	210	315

Procedure

9.2.7 The pile elements must be installed in strict accordance with the Certificate holder's *Installation Manual*, BS EN 1997-1 : 2004 and its UK National Annex, and this Certificate. The installation equipment is positioned where the pile is being installed.

9.2.8 The shaft with the helix is mounted on the installation equipment. The pile toe must be located accurately by the certified installer, and the pile head fixed into the driving head of the equipment. The installation equipment must be precisely located such that the pile toe points to the correct installation location.

9.2.9 Torsion is applied to the pile to screw it into the ground. Once the first pile is screwed, the screwed shaft is dislodged from the driving head of the installation equipment. When the sleeve is required, it is installed on the shaft before it is lodged on the driving head and screwed.

Jointing

9.2.10 If the design length of the pile requires installation of multiple shafts, a shaft coupling is embedded into the first shaft and either welded or bolted. Another shaft element is connected to the driving head and lifted and carefully guided onto the shaft coupling and welded or bolted.

9.2.11 If a pile is to be extended above ground, the shaft elements are connected by UE or UI shaft couplings.

9.2.12 For mechanical bolted connections, extension is possible with the help of a mechanical coupler and bolts.

9.2.13 Screwing of the shafts continues until the design installation depth is reached or the applied torque proves the design load capacity is reached.

9.2.14 The load bearing element (connection with the supported structure) is welded or bolted to the top end of the pile.

9.2.15 All welders must be accredited for the specific type of welding used.

Figure 8 Installation equipment (R2D, EM-1, EM-2 and ET-1) (outside the scope of this Certificate)

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 system must be carried out by installers who have been trained and approved by the Certificate holder.

9.4 Maintenance and repair

9.4.1 Once the system is installed in accordance with this Certificate, maintenance is not required.

9.4.2 The following requirements apply in order to satisfy the performance assessed in this Certificate:

9.4.2.1 It is important that the piles are checked for suitability prior to installation.

9.4.2.2 The guidance provided by the Certificate holder and in this Certificate must be followed.

10 Manufacture

10.1 The production processes for the system 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.

10.1.5 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.

† 10.2 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 system is delivered to site by the Certificate holder's operatives and/or by fully trained transport sub-contractors in accordance with the Certificate holder's instructions.

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

11.2.1 Following delivery, and prior to installation, the piles must be checked by the pile installers for any damage, in accordance with the Certificate holder's instructions.

11.2.2 The shafts must be crated in steel racking systems.

11.2.3 The weight of the shafts is in excess of 180 kg: care must be taken while handling the system.

† ANNEX A – SUPPLEMENTARY INFORMATION

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.

CE marking

The Certificate holder has taken the responsibility of CE marking the system in accordance with harmonised European Standards BS EN 1090-1 : 2009 and BS EN 1090-2 : 2008.

Management Systems Certification for production

The management system of the manufacturer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by CWB (Certificate Q108008) .

Bibliography

BRE Report BR 470 : 2004 *Working platforms for tracked plant — good practice guide to the design, installation, maintenance and repair of ground-supported working platforms*

BS 5930 : 2015 *Code of practice for ground investigations*

BS EN 1090-1 : 2009 + A1 : 2011 *Execution of steel structures and aluminium structures — Requirements for conformity assessment of structural components*
BS EN 1090-2 : 2008 + A1 : 2011 *Execution of steel structures and aluminium structures — Technical requirements for steel structures*

BS EN 1990 : 2023 *Eurocode — Basis of structural and geotechnical design*
NA to BS EN 1990 : 2023 UK National Annex to Eurocode — Basis of structural and geotechnical design

BS EN 1993-1-1 : 2005 + A1 : 2014 *Eurocode 3 — Design of steel structures — General rules and rules for buildings*
NA + A1 : 2014 to BS EN 1993-1-1 : 2004 + A1 : 2014 UK National Annex to *Eurocode 3 — Design of steel structures — General rules and rules for buildings*
BS EN 1993-1-8 : 2005 *Eurocode 3 — Design of steel structures — Design of joints*
NA to BS EN 1993-1-8 : 2005 UK National Annex to *Eurocode 3 — Design of steel structures — Design of joints*
BS EN 1993-5 : 2007 *Eurocode 3 — Design of steel structures — Piling*
NA + A1 : 2012 to BS EN 1993-5 : 2007 UK National Annex to *Eurocode 3 — Design of steel structures — Piling*

BS EN 1997-1 : 2004 + A1 : 2013 *Eurocode 7 : Geotechnical design — General rules*
NA + A1 : 2014 to BS EN 1997-1 : 2004 + A1 : 2013 UK National Annex to *Eurocode 7 : Geotechnical design — General rules*

BS EN 1998-1 : 2004 + A1 : 2013 *Eurocode 8 — Design of structures for earthquake resistance — General rules, seismic actions and rules for buildings*
NA to BS EN 1998-1 : 2004 UK National Annex to *Eurocode 8 — Design of structures for earthquake resistance — General rules, seismic actions and rules for buildings*
BS EN 1998-5 : 2004 *Eurocode 8 — Design of structures for earthquake resistance — Foundations, retaining structures and geotechnical aspects*
NA to BS EN 1998-5 : 2004 UK National Annex to *Eurocode 8 — Design of structures for earthquake resistance — Foundations, retaining structures and geotechnical aspects*

BS EN 10025-3 : 2019 *Hot rolled products of structural steels — Technical delivery conditions for normalized/normalized rolled weldable fine grain structural steels*

BS EN 12699 : 2015 *Execution of special geotechnical work — Displacement piles*

BS EN ISO 3834-3 : 2005 *Quality requirements for fusion welding of metallic materials — Documents with which it is necessary to conform to claim conformity to the quality requirements of ISO 3834-2, ISO 3834-32 or ISO 3834-4*

BS EN ISO 9001 : 2015 *Quality management systems — Requirements*

EN 10219-1 : 2006 *Cold formed welded structural hollow sections of non-alloy and fine grain steels — Technical delivery 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
- 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
- and any matter arising out of or in connection with it or its subject matter (including non-contractual disputes or claims) is governed by and construed in accordance with the law of England and Wales.
- the courts of England and Wales shall have exclusive jurisdiction to settle any matter arising out of or in connection with this Certificate or its subject matter (including non-contractual disputes or claims).

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:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product or any other product
- 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.

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