




PRODUCT CERTIFICATE

Katana Piles 80kN, 100kN & 150kN Series



CERTIFICATE: CMNZ 30097
Version No: RevE

3	DESCRIPTION OF BUILDING METHOD OR PRODUCT
Katana Piles 80kN, 100kN & 150kN Series (Katana piles) are steel screw piles with capacities of 80kN, 100 kN and 150 kN utilising a proprietary designed screw thread and cutting comb. KATANA piles are available in lengths of 1 to 4 metres, with extension, connector and capping accessories available.	
4	INTENDED USE OF BUILDING METHOD OR PRODUCT
Katana piles are used to transfer the building loads from the building structure down to a suitable bearing stratum below ground surface. Katana piles are often used to support concrete slabs on ground. Common reasons for specifying screw piles are very large design loads, poor soil conditions at shallow depth, or site constraints like property lines. The placement and size of piles is dependent of the engineering design and geotechnical information for each site.	
5	NEW ZEALAND BUILDING CODE PROVISIONS
The Katana piles if designed and installed in accordance with this Certificate, will meet the following provisions of the NZBC: Clause B1 STRUCTURE: Performance B1.3.1, B1.3.2, B1.3.4 for the relevant physical conditions of B1.3.3 (a), (b), (c), (d), (e), (f), (g), (h), (l), (m), (n) and (q), Clause B2 DURABILITY: Performance B2.3.1 (a).	

6				CONDITIONS AND LIMITATIONS OF USE			
1		CERTIFICATE HOLDER DETAILS		2		PRODUCT CERTIFICATION BODY	
Patented Foundations Pty Ltd, Trading as Katana Piles 37 Gravel Pit Road, Darra QLD 4076 Tel: +61 (0)412 422 758E		ORIGINAL ISSUE DATE	VERSION DATE	RECERTIFICATION		Global-Mark Pty Ltd 57 Willis Street, Wellington, 6011 customer.service@global-mark.co.nz +64 9 889 0622 www.global-mark.co.nz	
		18/09/2019	01/02/2023	01/02/2026		The complaints process for this certificate can be found here:	
		8		SIGNATURE		https://www.global-mark.com.au/?s=complaint	
		 Herve Michoux, Global Mark Managing Director					



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- 1) Katana piles are certified for use:
 - a) with slab-on-ground floors with occupancy loading up to 3kPa with a maximum dimension of 24m either way between free joints, or between free joints and slab edges. or
 - b) in foundations subject to specific engineering design (SED).
- 2) The Katana piles shall not to be used:
 - a) in soils that have an exposure classification “Very severe” as defined by AS2159:2009 including amendment 1 and Supplement 1-1996 (R2018) ; or
 - b) in saturated sands subjected to liquefaction during earthquake loading and sensitive clays that have a rapid decrease in undrained shear strength once peak strength has been reached.
- 3) When used in soils that have an exposure classification “Moderate” or “Severe” as defined by AS2159:2009 including amendment 1 and Supplement 1-1996 (R2018), the wall thickness and sealing of the Katana piles must be in accordance with Katana Screw Pile Corrosion Review on Void Slab System - RLH:VLK:213306 –(8 May 2013)
- 4) This certification excludes:
 - a) materials not identified in the Katana Foundations Detailed Product Statement (Version 5.3 dated 01/06/2019). Substitutions are not allowed.
 - b) piles filled with concrete
- 5) Product specification into the building design shall:
 - a) be undertaken by a chartered professional engineer (CPENG), for the applicable loads defined in accordance to AS/NZS1170 series of standard (referenced as AS/NZS1170 set) including all amendments published at the time of issuance of this certificate, and
 - b) specify the location, diameter, thickness, depth of the piles and on-site rapid test requirements (number of pile and load) , based on a site-specific geotechnical study carried out by a chartered geotechnical engineer to the depth of piles establishing as a base the minimum:
 - i) Soil type and strength parameters (i.e., undrained shear strength, bearing capacity (cohesive or granular))
 - ii) Soil pH levels
 - iii) Chloride concentrations (in soil and in groundwater)
 - iv) Resistivity
 - v) Permeability of soils, and
 - c) be in accordance with the following set of documents referenced as the Applicable Technical Documentation:
 - i) AS2159:2009 including amendment 1 and Supplement 1-1996 (R2018); and
 - ii) AS 2870 -2011; and
 - iii) IPENZ Practice Note 28: Screw Piles: Guidelines for Design, Construction an Installation ISSN 1176-0907, dated October 2015, and
 - iv) Earthquake geotechnical engineering practice: Module 4: Earthquake resistant foundation design November 2021 revision 1, and
 - v) Katana Foundations Detailed Product Statement (Version 5.3 dated 01/06/2019), and
 - vi) Katana Foundations Product Guide (Version 2.0 dated 15/10/2018), and
 - vii) Katana Foundations Installation Manual (Version 4 dated 07/02/2019), and
 - viii) Katana Screw Piles- Guidelines for Design Flood Loads (Version 2.0 dated 19/10/2018), and
 - ix) Either
 - (1) Basic Helical Screw Pile Design dated 21/02/2005, or
 - (2) STA Consulting Engineers - Screw pile calculation Version 3 dated 28/11/2018

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- 6) The location, diameter, thickness, depth of the piles and on-site rapid test requirements (number of piles and load) is to be specified by a chartered engineer (CPENG) and:
 - a) be based on the site-specific geotechnical study carried out by a chartered geotechnical engineer to the depth of piles, establishing as a base the minimum:
 - b) for the applicable loads defined in accordance to AS/NZS1170 series of standard (referenced as AS/NZS1170 set) including all amendments published at the time of issuance of this certificate in accordance with the following set of documents referenced as the Applicable Technical Documentation.
- 7) Katana Piles shall be installed out in accordance with Applicable Technical Documentation by a Patented Foundation Pty Ltd approved person.
- 8) Site testing:
 - a) Rapid uplift test to be used as described in KATANA Foundations Performance Guide (V 16/08/2022) on a discrete number of piles must be undertaken for each project, unless not suitable due to depth limitations, to validate and verify the performance achieved by the piles.
 - b) when required by the designing engineer, a load test in accordance with AS2159:2009 including amendment 1 and Supplement 1-1996 (R2018) must be undertaken on the number of pile and load defined by the designing engineer to validate and verify the performance achieved by the piles.
- 9) Installation documentation as required by the Applicable Technical Documentation shall be provided to the certifying Engineer including a declaration that the Katana Piles are
 - a) Installed in accordance with the Applicable Technical Specification; and,
 - b) Within the scope, conditions and limitation of this Certificate; and
 - c) achieved the performance level expected as demonstrated by the site test(s).
- 10) The designer shall provide a signed Declaration for submission with the building consent application that the use of this product in the proposed building work falls within the scope of this certificate and that all design conditions of this certificate have been met.
- 11) The installer shall supply a signed Declaration that the product has been installed in accordance with the installation conditions of this certificate, for consideration for issuing a Code Compliance Certificate (CCC).

7 HEALTH AND SAFETY INFORMATION

Health, safety, and well-being declarations associated with installation, maintenance, and use of the building method or product, and their specific editions and dates necessary to ensure the performance requirements of clauses F1 to F9 of the Building Code can be met.

9 BASIS FOR CERTIFICATION

The certification decision is based on independent technical review(s) of test report(s), engineering opinion(s) and other documented evidence(s), factory audit(s) and site review(s)

Code Clause	Compliance pathway	Evidence
B1 STRUCTURE	Alternative solution	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 & 12
B2 DURABILITY	Alternative solution	1, 2, 3, 6, 7, 8 & 10

10 SUPPORTING DOCUMENTATION FOR CERTIFICATION

Ref	Author	Title	Date and/or revision
1	KATANA Foundations	KATANA Pile Installation Manual	V4.0 7 Feb 2019
2	KATANA Foundations	KATANA Screw Pile Detailed Product Statement	V5.3 1 Jun 2019
3	KATANA Foundations	KATANA Screw Pile Performance Guide	16 Aug 2022

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4	STA Consulting Engineers	KATANA Foundations-Pile Product Guide (CODEMARK – Pile Products only)		20 Sep 2022
5	STA Consulting Engineers	KATANA Foundations-Attachment Product Guide (CODEMARK – Attachment Products only)		29 Sep 2022
6	Gilmore Engineers (e3k)	KATANA Screw Pile Corrosion Review on Void Slab System		8 May 2013
7	Gilmore Engineers (e3k)	KATANA Screw Pile Weld Specification		2 Apr 2013
8	KATANA Foundations	KATANA Screw Piles Guidelines for Design Flood Loads	V2.0	19 Oct 2018
9	STA Consulting Engineers	KATANA Screw Pile Capacity Calculation worksheet	V3.0	28 Nov 2018
10	Stoddart Manufacturing	KATANA Screw Pier and Connectors Material Specifications		23 Oct 2018
11	Earth Contact Products	Basic Helical Screw Pile Design		21 Feb 2005
12	IPENZ	Practice Note 28 – Screw Piles: Guidelines for Design Construction & Installation		Oct 2015



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11	SUPPORTING INFORMATION ABOUT DESCRIPTION (OPTIONAL)
Nil	
12	SUPPORTING INFORMATION ABOUT INTENDED USE (OPTIONAL)
Nil	
13	SUPPORTING INFORMATION ABOUT CONDITIONS AND LIMITATIONS OF USE (OPTIONAL)
Nil	

End of document



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CERTIFICATE V2