hiperenergy™

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Precast Hollow Pile

Reducing uncertainty, ensuring quality

→ Redefining sustainable construction

hiperenergy™

Precast Pile

Reducing uncertainty, ensuring quality

Hiperpile redefines large-diameter pile construction using prefabricated structural elements, manufactured in quality-controlled, offsite facilities.

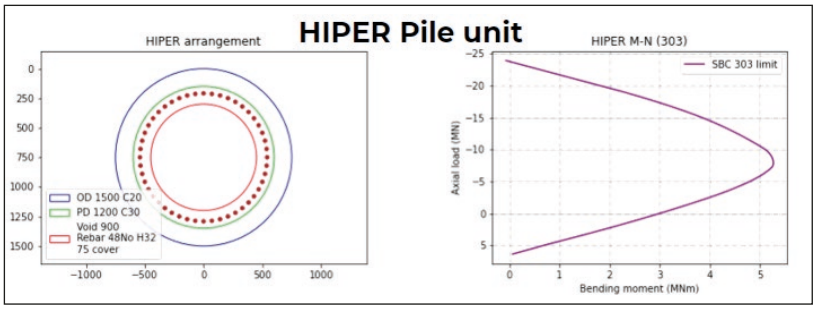
Technical details and benefits

- Precast hollow piles are suitable for very high structural loads and can be installed under “wet” fluid support or “dry” bore conditions
- Available in pile diameters from 900mm to 2400mm with void diameters ranging between 500mm to 1800mm. Precast unit lengths can be defined to suit any project requirements
- Precast units are lowered into a larger diameter pile bore to the design cut-off level, and concrete is placed in-situ to the external face of the precast unit. This enables load transfer from the structure into the ground
- Precast sections are designed in accordance with relevant codes and standards
- Precast units and splice connections can be designed to accommodate and transfer large axial, lateral, tension forces and bending moments between segments
- Precast units can significantly reduce tension reinforcement associated with short term heave conditions
- Inherent ability to de-bond skin friction without the requirement for expensive bitumen coated liners
- Suitable for highly aggressive ground conditions
- The structural design of the precast units considers high strength concrete with tailored reinforcement to satisfy the loading conditions throughout the length of the pile
- Bespoke head connection details can be detailed for pile caps and columns
- Standardised designs prevent avoidable non-conformances, pile trimming works and significantly reduce vehicle movements on site

Hollow precast piles unlock the application of Hiperpile in large diameter, deep rotary bored foundations, enhancing construction quality and guaranteeing delivery certainty, resulting in large embodied carbon savings.

Traditional deep, large diameter, solid piles require large volumes of concrete, resulting in a high number of vehicle movements.

By supplying off-site manufactured precast pile units on a ‘just in time’ basis, we significantly reduce total vehicle movements to your project.



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Tangible benefits

– Reduces embodied carbon compared to solid piles between 20%-30%
– Enables thermal energy storage and generation within the hollow void
– Reduces vehicle movements typically upto 30%
– Increased certainty and quality of construction, extending the design working life and ensuring that piles can be re-used for future generations
– Piles cast to high degrees of tolerance, minimising pile breaking, construction waste and associated H&S risks
– Reduction in overall construction programme from reduced pile-trimming activities
– Benefits from Design for Manufactured Assembly (DfMA), and 'just in time' logistics
– Reduced requirement and associated costs of integrity testing

In summary

High-quality, offsite manufactured precast piles facilitate the transition from 'construction to production' in an industry that has historically been reluctant to change. With improved quality comes the opportunity to provide an enhanced warranty and an improved design life.

Off-site manufacture allows for both standardised production, the opportunity for bespoke detailing to suit specific project requirements, and the carbon benefit of varying the structural design to match the anticipated loadings along the pile length.

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