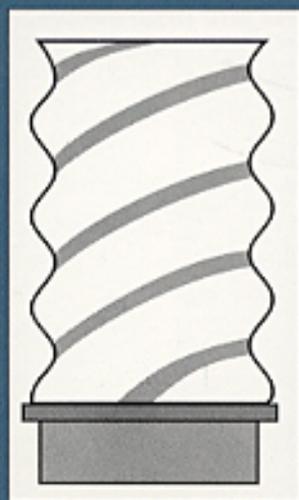


CONTECH

CONSTRUCTION PRODUCTS INC.

HEL-COR COMPOSITE PILE SHELLS



***For Economical Timber and Concrete
Composite Pile Foundations***

HEL-COR Shell/Timber Composite Piles improve many foundation projects

HEL-COR® Shell/Timber Composite Piles

CONTECH® HEL-COR Steel/Timber Composite Piles combine the benefits of timber and cast-in-place concrete. They consist of untreated timber bottoms and a corrugated steel pile shell top joined by a special adapter.

The shell portion is filled with concrete after installation to form economical, efficient piling that is a proven alternate to full-section timber, steel or concrete for many applications. Shell/timber piles are widely used where water tables are relatively high.

Typical Site Conditions

HEL-COR Steel/Timber Composite Piles can provide significant savings when:

- ☑ Existing water table is within 3 to 15 feet below the proposed pile cut-off elevation.
- ☑ The water table elevation is relatively predictable for the design life of the new structure, apart from seasonal fluctuations.
- ☑ The structure will impose light-to-medium loads within the allowable design loads for timber piles.
- ☑ Design uplift loads are within normal design ranges for timber piles.
- ☑ Existing site soil conditions are favorable for either friction or end-bearing timber piles.
- ☑ Anticipated overall pile length exceeds 40 feet.
- ☑ The time interval from design to occupancy of the structure is a prime consideration.
- ☑ Economy is a major factor.

When your planned pile foundation project fits the above conditions, CONTECH HEL-COR Shell/Timber Composite Piles are likely the best combination of economy and performance.

Composite Pile Components

CONTECH HEL-COR Shell/Timber Composite Piles consist of four distinct parts:

1. An untreated timber pile of predetermined length.
2. A section of corrugated steel shell also of predetermined length, which can be easily field cut.
3. A prefabricated steel connector that joins the timber and shell sections.
4. Concrete fill for the corrugated shell portion of the driven pile.

The timber sections and concrete fill are provided by the installer, with CONTECH providing HEL-COR pile shell top sections and approved CONTECH shell/timber connector.

Production

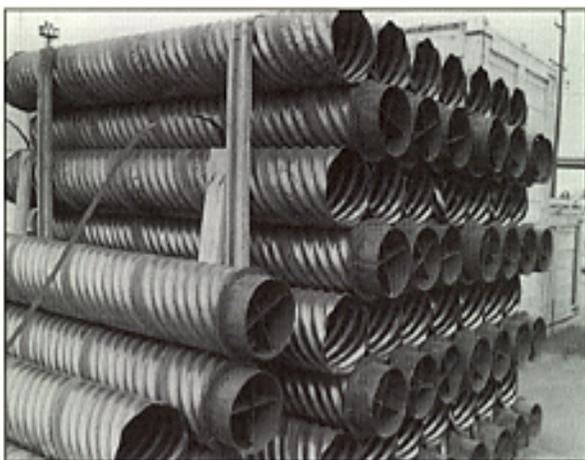
The production of CONTECH HEL-COR Pile Shell begins with coiled steel. During production, the steel is formed to provide 2" x 1/2" corrugations.

The manufacturing process helically rolls the steel to the specified diameter and simultaneously welds all seams, which results in watertight, collapse resistant pipe sections.

The typical steel for shell/timber composite piles is 18 gage, although a heavier gage can be supplied for unique job conditions. Timber-to-shell connector fittings are shop welded to the shell.



HEL-COR Shell/Timber Composite Piles combine economy and reliability



Advantages of HEL-COR Composite Piles

Economy — Composite piles with HEL-COR top sections and untreated timber bottom sections are substantially lower in cost than fully treated timber piles, especially when pile lengths exceed 40 feet.

Strength — Corrugated HEL-COR Pile Shells provide high strength against collapse from soil pressures during adjacent pile installation. The composite pile connectors' cross-wedge design utilizes the high fiber strength of the center of the timber pile. The connector design also provides the friction surface required to minimize tension and bending.

Tightness — Butt-welded or welded lock seam HEL-COR shell construction creates a concrete form that keeps out mud and ground water. The pile connector is fully embedded in the timber pile butt to assure a water-resistant connection between the two portions of the composite pile.

Laboratory Tested — CONTECH HEL-COR Shell/Timber Composite Piles have been independently laboratory tested to confirm connector integrity. Tests conducted at Shilstone Testing Laboratory concluded that "...this splice is satisfactory for direct tension load of 34,000 pounds, and a flexural load of 20,000 foot-pounds, and this splice is satisfactory for a flexure load of 54,600 pounds at the splice while under a 40,000 pound compression load."

HEL-COR SHELL/TIMBER COMPOSITE PILES GUIDE SPECIFICATION

1.00 Scope

- 1.01 This specification covers furnishing of all labor, equipment, materials and performance of all operations required to acceptably install composite timber piles.
- 1.02 Composite piles will consist of an untreated timber bottom section and a cast-in-place concrete top. The concrete portion is cast in a light gage corrugated steel shell that is joined to the timber section with an acceptable connector or fitting prior to the pile being driven to final grade.
- 1.03 Referenced Standards
 - (1) ASTM D25-73 "Standard Specification for Round Timber Piles."
 - (2) Applicable Building Codes

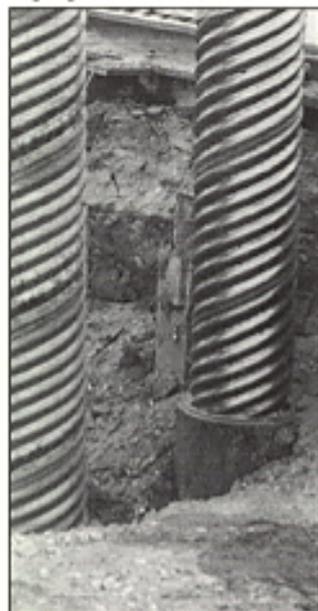
2.00 Materials

- 2.01 Untreated Timber Piles shall conform to the latest ASTM specification and shall be round timber piles, rough peeled, Southern yellow pine with a minimum tip diameter of ___ inches and/or a minimum diameter ___ of inches when measured 3.0' from the butt end.
- 2.02 Steel Casing shall be 18 gage (minimum) corrugated steel shell as manufactured by CONTECH CONSTRUCTION PRODUCTS INC. under the tradename HEL-COR Pile Shell or equal. Shells shall have a minimum diameter of ___ inches and seams shall be continuously welded to develop full strength of the base metal. Corrugated shells have sufficient strength to prevent distortion from driving stresses and ground pressures prior to pouring and setting up of concrete fill.
- 2.03 Pile Connector shall be a 12 gage (minimum) steel ring with a minimum depth of 4 inches. The ring shall be configured to allow the shell portion to be attached with a continuous weld that provides a water-resistant connection. The ring shall contain steel wedges consisting of two steel plates having a minimum thickness of .250 inches and depth of 3 inches, which are welded to the ring. All welds must be capable of resisting normal tearing or separation installation stresses.
- 2.04 Concrete for cast-in-place upper sections shall be in accordance with Section ___ of these specifications. Concrete shall have a minimum 28-day compressive strength of ___ psi.
- 2.05 Reinforcing Steel shall be sized and placed as required by the project drawings and shall conform to Section ___ of these specifications.

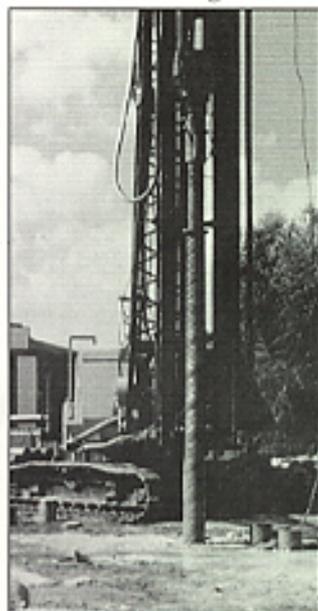
CONTECH HEL-COR Composite Piles blend cast-in-place concrete and timber

Placing HEL-COR Shell/Timber Composite Piles requires no special skills or unique equipment. The mandrel used for driving the

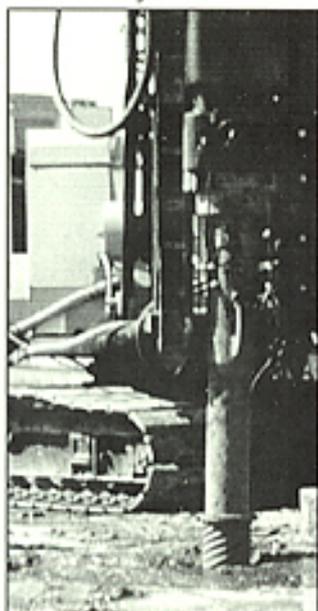
top corrugated steel shell sections is usually constructed from solid wall steel pipe that will fit closely with the inner diameter of the shell.



Shell is placed on top of the previously driven timber pile. Broomed or damaged pile tops should be cut off square.



Pipe mandrel is inserted into shell. Mandrel drives on connector ring and wedges, pulling steel shell into place.

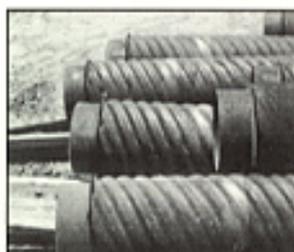
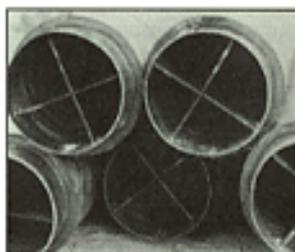


Strong welded seams prevent shell leakage and pull-apart during driving. Corrugations provide collapse resistance.



Mandrel is extracted and interior of shell is inspected. Concrete fill is placed to complete installation.

Rugged welded steel connectors are driven into the untreated timber portion of the composite pile. CONTECH connectors have been laboratory tested for strength and have been field proven through over 40 years of installations.



CONTECH CONSTRUCTION PRODUCTS INC.
P.O. Box 800
Middletown, Ohio 45044

Regional Offices are in the following cities:

Atlanta, GA 30359	P.O. Box 49526
Indianapolis, IN 46250	7164 Graham Road, Suite 120
Memphis, TN 38157	5050 Poplar Avenue, Suite 1028
Oak Brook, IL 60521	1200 Harger Road, Suite 707
Palmer, MA 01069	Fenton Street
Raleigh, NC 27609	4700 Homewood Court, Suite 108
San Bernardino, CA 92408 ..	1845 South Business Center Drive, Suite 130
Topeka, KS 66614	5883 S.W. 29th St.
Wheat Ridge, CO 80033	4891 Independence St., Suite 195

Sales Offices are in principal cities.

CONTECH
CONSTRUCTION PRODUCTS INC.

404/325-0814
317/842-7766
901/761-3446
708/573-1110
413/283-7611
919/781-8540
909/885-8800
913/273-5950
303/431-8999

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