



PROCESS
INDUSTRY
PRACTICES

COMPLETE REVISION

January 2017

Structural

PIP STS02380
Application of ACI 336.1-01,
Specification for the Construction of
Drilled Piers

PURPOSE AND USE OF PROCESS INDUSTRY PRACTICES

In an effort to minimize the cost of process industry facilities, this Practice has been prepared from the technical requirements in the existing standards of major industrial users, contractors, or standards organizations. By harmonizing these technical requirements into a single set of Practices, administrative, application, and engineering costs to both the purchaser and the manufacturer should be reduced. While this Practice is expected to incorporate the majority of requirements of most users, individual applications may involve requirements that will be appended to and take precedence over this Practice. Determinations concerning fitness for purpose and particular matters or application of the Practice to particular project or engineering situations should not be made solely on information contained in these materials. The use of trade names from time to time should not be viewed as an expression of preference but rather recognized as normal usage in the trade. Other brands having the same specifications are equally correct and may be substituted for those named. All Practices or guidelines are intended to be consistent with applicable laws and regulations including OSHA requirements. To the extent these Practices or guidelines should conflict with OSHA or other applicable laws or regulations, such laws or regulations must be followed. Consult an appropriate professional before applying or acting on any material contained in or suggested by the Practice.

This Practice is subject to revision at any time.

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PUBLISHING HISTORY

<i>August 1996</i>	<i>Issued</i>
<i>June 2002</i>	<i>Complete Revision</i>
<i>February 2009</i>	<i>Complete Revision</i>
<i>January 2017</i>	<i>Complete Revision</i>

Not printed with State funds



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Scope

This Practice supplements *ACI 336.1-01, Specification for the Construction of Drilled Piers*. Together, this Practice and *ACI 336.1-01* provide requirements for drilled pier construction.

The requirements of *ACI 336.1-01*, as modified and supplemented by this Practice, are adopted by this Practice for the construction of drilled piers. Common industry terminology may also refer to drilled piers as caissons or drilled shafts.

References

Applicable parts of the following Practice and industry standard shall be considered an integral part of this Practice. The edition in effect on the date of contract award shall be used, except as otherwise noted. Short titles are used herein where appropriate.

Process Industry Practices (PIP)

- PIP STS03001 - *Plain and Reinforced Concrete Specification*

Industry Codes and Standards

- American Concrete Institute (ACI)
 - *ACI 336.1-01 - Specification for the Construction of Drilled Piers*
- ASTM International (ASTM)
 - *ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement*
 - *ASTM A706/A706M - Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcements*

Definitions

Terminology used in the additions and modifications to the requirements of *ACI 336.1-01* presented in the Requirements section of this Practice is the same as terminology used in *ACI 336.1-01* with the exception of the PIP terms “purchaser” and “owner” which are presented in one term in *ACI 336.01* as “Owner”. PIP terminology and definitions that are considered equivalent to terminology used in *ACI 336.1-01* are provided for reference below:

constructor: Party responsible for supplying materials, equipment, tools, supervision, and labor for installation of drilled piers in accordance with contract documents. The term constructor shall apply also to constructor’s subcontractor(s) and vendor(s). *Referred to as “Contractor” in ACI 336.1-01.*

contract documents: Any and all documents, including codes, studies, design drawings, specifications, sketches, practices, and data sheets, that purchaser or engineer of record has transmitted or otherwise communicated, either by incorporation or reference, and made part of the legal contract agreement or purchase order between purchaser and constructor. *Referred to as “Contract Documents” in ACI 336.1-01.*

engineer of record: Purchaser’s authorized representative with overall authority and responsibility for engineering design, quality, and performance of civil works, structures, foundations, materials, and

appurtenances described in contract documents. Engineer of record shall be licensed as defined by laws of the locality in which the work is to be constructed, and be qualified to practice in the specialty discipline required for the work described in contract documents. *Referred to as "Owner's Representative" in ACI 336.1-01.*

geotechnical engineer: Professional engineer responsible for performing geotechnical investigation and/or geotechnical consulting during design and installation of drilled piers. *Referred to as "Owner's Representative-Geotechnical Engineer" in ACI 336.1-01.*

owner: Party who has authority through ownership, lease, or other legal agreement over site, facility, structure or project wherein drilled piers will be installed. *Referred to as "Owner" in ACI 336.1-01.*

professional engineer: An engineer, other than engineer of record, licensed as defined by laws of the locality in which drilled piers are to be installed, and qualified to practice in the specialty discipline required for the work described in contract documents. *Term is not specifically used in ACI 336.01-01 but is interpreted by PIP to be a required qualification of "Owner's Representative-Geotechnical Engineer" in ACI 336.1-01.*

purchaser: Party who awards contract to constructor. Purchaser may be owner or owner's authorized agent. *Referred to as "Owner" in ACI 336.1-01.*

inspector: Party responsible for verifying quality of all materials, installations, and workmanship furnished by constructor and any subcontractors or vendors. Inspector shall be qualified by training and experience and hold certifications or documentation of their qualifications. Unless otherwise specified in contract documents, inspector shall be an independent party retained by purchaser. *Referred to as "Owner's Representative-Geotechnical Engineer" and "Testing agency" in ACI 336.1-01.*

Requirements

This Requirements section describes the additions and modifications to the requirements of *ACI 336.1-01*. The numbering of headings and paragraphs in this section correspond to the numbering of *ACI 336.1-01*. Only the sections and paragraph, and corresponding numbering, of the revised requirements are included in this section. All provisions of *ACI 336.1-01* that are not revised by this Practice shall remain in force for this Practice.

SECTION 1 - GENERAL REQUIREMENTS

1.1 Scope

1.1.1 Addition. Supplement as Follows:

These specifications also apply to drilled piers of diameters as small as 24 inches (600 mm). Drilled piers may be constructed using cased or uncased holes or slurry stabilized holes. The ability of the soils to maintain an open and essentially dry hole is the determining factor.