PROCESS INDUSTRY PRACTICES

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Structural

PIP STE05121
Application of ASCE Anchorage Design for Petrochemical Facilities

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.

PUBLISHING HISTORY

January 2003	*Issued*	*June 2017*	*Complete Revision*
October 2003	*Technical Correction*	*January 2018*	*Editorial Revision*
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1. Scope

This Practice provides guidelines for design engineers involved in design, fabrication, installation, and repair of anchorage for foundations and structures. This Practice supplements the *ASCE Anchorage Design for Petrochemical Facilities*, hereafter referred to as the *ASCE Anchorage Design Report*. The information on fabrication, installation, and repair of anchorages provided in this Practice is to be used by design engineers to develop specifications, drawings, scopes of work, etc. for fabricators, constructors, and maintenance personnel involved in fabrication, installation, and repair activities.

This Practice describes the design of anchorage based on the requirements in *ACI 318-11 / ACI 318M-11* and *ACI 318-14 / ACI 318M-14* including material selection, cast-in-place anchor design, post-installed anchor design, anchor installation and repair.

Comment: The information provided in the *ASCE Anchorage Design Report* is recommended for the design, fabrication, installation and repair of anchorage for foundations and structures. The *ASCE Anchorage Design Report* is in accordance with *ACI 318-08 / ACI 318M-08*. This Practice is in accordance with *ACI 318-11 / ACI 318M-11* and *ACI 318-14 / ACI 318M-14*. Differences with the *ASCE Anchorage Design Report* are noted in this Practice. Many anchor design tables that are not included in the *ASCE Anchorage Design Report* have been included in this Practice for use by engineers and designers.

Comment: The primary differences between *ACI 318-11 / ACI 318M-11* and *ACI 318-14 / ACI 318M-14* are as follows:

a. *ACI 318-14 / ACI 318M-14* have been reorganized so that all of the chapter, section, paragraph, equation, and table numbers have been changed.

b. The anchorage information that was in Appendix D of *ACI 318-11 / ACI 318M-11* is now in Chapter 17 of *ACI 318-14 / ACI 318M-14*.

c. *ACI 318-14 / ACI 318M-14* versions do not recognize the Alternative Load and Strength Reduction Factors shown in Appendix C of *ACI 318-11 / ACI 318M-11* and earlier *ACI 318 / ACI 318M* versions. The only Load Factors and Load Combinations that may now be used are those in what is now Chapter 5 of *ACI 318-14 / ACI 318M-14*.

d. When *ACI 318-14* or *ACI 318M-14* is the project standard, the user of the *ASCE Anchorage Design Report* should interpret "Appendix D" as "Chapter 17". Table 6 in this Practice, shows the new chapter, section, paragraph, equation, and table numbers in the *ASCE Anchorage Design Report* which should be used when using *ACI 318-14* or *ACI 318M-14* as the project standard. Table 6 does not show the change if the only difference is using "Chapter 17" instead of "Appendix D".

There are no other technical differences in regard to anchorage between the 2011 and 2014 versions of *ACI 318* / *ACI 318M*.

2. References

Applicable parts of the following Practices, industry codes and standards, and government regulations shall be considered an integral part of this Practice. The edition in effect on the date of