

GP 04-07-01	Piles and Sheet Piling	July 2001
-------------	------------------------	-----------

Piles and Sheet Piling

GP 04-07-01

Scope

[I] This Global Practice (GP) covers the material, design, construction, and installation of piling, including foundation piles and sheet piling, for all land and marine construction.

[I] An asterisk (*) indicates that additional information from the Owner, or approval by the Owner, is required.

Downstream, Chemical, Downstream Imperial Oil	For ExxonMobil Use Only	Version 1.0.0
Page 1 of 12	©ExxonMobil Development Company	



Documents

Document Sharing Hub

GP 04-07-01	Piles and Sheet Piling	July 2001
-------------	------------------------	-----------

Table of Contents

1. Required References.....	3
1.1. ACI–American Concrete Institute.....	3
1.2. AISC–American Institute of Steel Construction	3
1.3. API–American Petroleum Institute	3
1.4. ASTM–American Society for Testing and Materials	3
1.5. AWWA–American Wood-Preservers' Association	4
1.6. AWS–American Welding Society.....	4
1.7. SSPC–Society for Protective Coatings	4
2. Materials	4
3. Design.....	5
3.1. General	5
3.2. Wood Piles.....	6
3.3. Concrete Piles.....	6
3.4. Steel Piles	6
3.5. Steel Sheet Piling.....	7
4. Pile Testing.....	8
5. Pile Installation	8
5.1. Foundation Piles	8
5.2. Sheet Piles.....	9
6. Cathodic Protection and Protective Coatings	10
Record of Change.....	11
Attachment: Purpose Codes Definitions	12

DNST, CHEM, DIOL	For ExxonMobil Use Only	Version 1.0.0
Page 2 of 12	©ExxonMobil Development Company	



Documents

Document Sharing Hub

1. Required References

- 1) [I] This Section lists Practices and Standards that are referenced and assumed to be a part of this document. Unless otherwise specified herein, use the latest edition as applicable.
- 2) * [I] Local codes and standards may be substituted for the ones referenced herein provided the following provisions are met:
 - a) The resultant design meets the safety and serviceability criteria attained through this Practice.
 - b) Substitution is accepted by the authorities where the facility is to be located and by the Owner's Engineer.

1.1. ACI–American Concrete Institute

ACI 318/318R	Building Code Requirements for Structural Concrete and Commentary
ACI 543R	Design, Manufacture, and Installation of Concrete Piles

1.2. AISC–American Institute of Steel Construction

AISC Specification	Specification for Structural Steel Buildings Allowable Stress Design and Plastic Design with Commentary
--------------------	---

1.3. API–American Petroleum Institute

API SPEC 5L	Specification for Line Pipe
-------------	-----------------------------

1.4. ASTM–American Society for Testing and Materials

ASTM A 36/A 36M	Standard Specification for Carbon Structural Steel
ASTM A 53/A 53M	Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A 106	Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service
ASTM A 148/A 148M	Standard Specification for Steel Castings, High Strength, for Structural Purposes
ASTM A 252	Standard Specification for Welded and Seamless Steel Pipe Piles
ASTM A 328/A 328M	Standard Specification for Steel Sheet Piling
ASTM A 572/A 572M	Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel
ASTM A 690/A 690M	Standard Specification for High-Strength Low-Alloy Steel H-Piles and



GP 04-07-01	Piles and Sheet Piling	July 2001
-------------	------------------------	-----------

	Sheet Piling for Use in Marine Environments
ASTM A 857/A 857M	Standard Specification for Steel Sheet Piling, Cold Formed, Light Gage
ASTM D 25	Standard Specification for Round Timber Piles
ASTM D 1143	Standard Test Method for Piles under Static Axial Compressive Load
ASTM D 2899	Standard Practice for Establishing Design Stresses for Round Timber Piles
ASTM D 3689	Standard Test Method for Individual Piles under Static Axial Tensile Load
ASTM D 3966	Standard Test Method for Piles under Lateral Loads
ASTM D 4945	Standard Test Method for High-Strain Dynamic Testing of Piles
ASTM D 5882	Standard Test Method for Low Strain Integrity Testing of Piles

1.5. AWWA–American Wood-Preservers' Association

AWPA C3	Piles-Preservative Treatment by Pressure Processes
AWPA M4	Standard for the Care of Preservative-Treated Wood Products

1.6. AWS–American Welding Society

AWS D1.1/D1.1M	Structural Welding Code - Steel
----------------	---------------------------------

1.7. SSPC–Society for Protective Coatings

SSPC SP 5	White Metal Blast Cleaning NACE No. 1-2000 (Steel Structures Painting Manual, Ch 2 - Surface Preparation Specs.)
-----------	--

2. Materials

- 1) [R] Wood piles shall be per ASTM D 25 and the following:
 - a) Piles for land structures shall be pressure treated per AWWA C3 for foundation piles.
 - b) Piles for marine facilities (fresh and salt water) shall be pressure treated per AWWA C3 for marine piles.
 - c) Proposals to use species other than those in AWWA C3 or to use untreated timber piles shall be submitted for approval by the Owner's Engineer.
 - d) Preservative-treated piles shall be protected and surface injuries treated per AWWA M4.
- 2) [R] Steel piles for foundations shall have a specified minimum yield strength of not more than 52 ksi (360 MPa). Higher yield strength steel, and grades of steel other than covered in Section 1, may be acceptable but are subject to approval by the Owner's Engineer.

DNST, CHEM, DIOL	For ExxonMobil Use Only	Version 1.0.0
Page 4 of 12	©ExxonMobil Development Company	



Documents

Document Sharing Hub