Certified Installers/Exclusive Dealers - CA, NV, AZ

Design and Technical Service Manual

-- Ninth Edition --

By: Donald J. Clayton, PE

From the author:

This manual was written and configured with reader in mind. The goal was to present the technical theories and equations in a simple, understandable way. This manual is not a rigorous text on soil mechanics and engineering theory. The intent was to produce a manual that distilled the theory down to make is easy to understand and to reach an answer or a solution in a timely manner. The technical information provided herein can help the engineer with a basic understanding of foundation support to delve deeper into the subject. Unlike some other technical manuals, there is nothing left out of this *ECP Design and Technical Service Manual* that would prevent the reader from performing an analysis and arriving at a solution without calling to the manufacturer or an engineer for assistance.

Engineers were in mind when the theoretical explanations, the assumptions, and equations to arrive at solution were written. It is the goal to provide sufficient technical data and guidance necessary to design typical foundation support or tieback systems. This book is not intended to be a thorough analysis of the subject area but rather a handbook for solutions to typically encountered situations in the field.

The book also has been written for non-engineers such as project managers, estimators, contractors; and foundation repair company owners, office supervisors and field superintendents in the business of installing foundation support systems. The dry, technical theory is there if the reader is interested in learning the subject matter more thoroughly, but the extensive use of tables and graphs in this edition reduces the need to master the theory and the need to go into difficult equations to get a solution.

New to this edition is our "Quick and Rough" estimating methods. These "Quick and Rough" methods are presented throughout the book. "Quick and Rough" estimating allows the non-engineer to arrive at a solution to a foundation support problem with a minimum of time and only a small amount of mathematics. Most of the design examples presented in this manual are solved using both methods. The results from both methods have shown reasonably comparable results from the same design example.

The manual is divided into three distinct sections; Helical Screw Products, Resistance Piers, and Corrosion Considerations. The divisions can clearly be determined from the tab markings on the right edge of the book. While some topics overlap, an attempt to make each section stand alone so that the reader can concentrate on only the subject of interest at the time.

This manual not intended to replace professional engineering input and judgment. It is highly recommend that you seek professional engineering input on any critical projects. It is also considered good practice to incorporate a minimum factor of safety of 2.0 into each and every preliminary design, to perform a field load test on any heavily loaded foundation element or on any critical projects; and to seek professional engineering input when in doubt or when available information is incomplete or confusing.

Finally, special thanks to a friend and colleague, Mr. Aaron Grayham, for his help, suggestions, constructive criticisms and vision for this manual. His suggestions have helped to transform the previous editions of the *ECP Design and Technical Service Manual* into the more detailed and user friendly book that you hold in your hand.

DJC/September 2013

Certified Installers/Exclusive Dealers - CA, NV, AZ

Table of Contents
-- Ninth Edition --

Section I – Torque Anchors

Section II –Steel Piers

Section III – Corrosion Considerations

Earth Contact Products, LLC reserves the right to change design features, specifications and products without notice, consistent with our efforts toward continuous product improvement. We also make changes and corrections to the technical design text consistent with the state of the art. Please check with Engineering Department, Earth Contact Products to verify that you are using the most recent design information and product specifications.

Technical Design Assistance

Earth Contact Products, LLC. has a knowledgeable staff that stands ready to help you with understanding how to prepare preliminary designs, installation procedures, load testing, and documentation of each placement when using ECP Torque Anchors. If you have questions or require engineering assistance in evaluating, designing, and/or specifying Earth Contact Products, please call us at 913 393-0007, Fax at 913 393-0008.

Index of Tables and Graphs
-- Ninth Edition --

Section II –Torque Anchors

Section II – Steel Piers

Section III – Corrosion Considerations

Technical Design Assistance

Earth Contact Products, LLC. has a knowledgeable staff that stands ready to help you with understanding how to prepare preliminary designs, installation procedures, load testing, and documentation of each placement when using ECP Torque Anchors. If you have questions or require engineering assistance in evaluating, designing, and/or specifying Earth Contact Products, please call us at 913 393-0007, Fax at 913 393-0008.