

Agenda

Presented by Daniel P. Messmer, P.E., D. GE

Science of Structures and Soils

- Building site evaluation
- Site exploration
- Geologic hazards
- Environmental impacts
- Typical loads on foundations
 - Gravity loads
 - Lateral loads
- Typical loads on basement walls
 - Gravity loads
 - Soil loads
- Typical loads on slabs
- Soil mechanics and effects on structures
 - Soil properties
 - Bearing capacity
 - Effects on basement walls and retaining walls
 - Soil settlement
 - Effects of water, frost and freeze/thaw cycle

Foundation Design and Construction

- Design and construction foundations
 - Continuous wall footings, column footings
- Design and construction of basement walls
- Design and construction of specialty features:
walk-outs, partially-exposed foundations

Diagnosing Foundation and Slab Damage and Evaluating Repair Methods

- Identifying damage
 - Settlement
 - Frost heave
 - Expansive soils
 - Shrinkage
- Repair methods
 - Piers
 - Soil tiebacks
 - Underpinning
 - Rebuilding

Diagnosing Basement Wall Damage and Evaluating Repair Methods

- Identifying damage
 - Settlement
 - Frost heave
 - Expansive soils
 - Shrinkage
- Cracking
 - Failure of connections to supporting diaphragms
- Repair methods
 - Piers
 - Soil tiebacks
 - Carbon fibers
 - Soldier beams
 - Crack repair methods

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Foundation Damage and Repair: Science, Materials and Techniques

Live, Interactive Webinar - Wednesday, June 22, 2022

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Altoona, WI 54720-0278



Learning Objectives

You'll be able to:

Identify and **calculate** the loads that act on foundations.

Describe the impact of soil types on bearing capacity, and identify the impacts of water, frost and the freeze/thaw cycle on foundation integrity.

Examine the design and construction of foundations, basements walls, walk-outs and partially-exposed foundations.

Identify foundation and slab damage caused by settlement, expansive soils, shrinking and frost heave.

Evaluate repair techniques, including the use of piers, underpinning, soil tiebacks and rebuilding.



HalfMoon Education Live Webinars

Foundation Damage and Repair: Science, Materials and Techniques

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Review typical loads on foundations, basement walls and slabs

Identify foundation and slab damage and evaluate repair methods

Examine the effects of water, frost and the freeze/thaw cycle

Explore basement wall damage and repair options including crack repair methods

Discuss design and construction of basement walls

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6.5 PDHs

International Code Council
.65 CEUs (Building)

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Faculty

Daniel P. Messmer, P.E., D. GE
Project Manager with The Gateway Engineers, Inc., in Pittsburgh
Mr. Messmer has over 30 years of engineering experience in analysis, design, plan/ specification development, and project management/personnel supervision for geotechnical, foundation and structural engineering projects in the transportation, industrial, municipal and commercial fields of civil engineering. Throughout his career he has placed an emphasis on quality control and staff training. Mr. Messmer is a member of the American Society of Civil Engineers, the American Concrete Institute, the American Society of Highway Engineers and the Society of American Military Engineers. He earned his B.S. degree in Civil Engineering from the University of Pittsburgh. Mr. Messmer was accepted into the Academy of Geo-Professionals in 2013.

Webinar Information

Log into Webinar 8:00 - 8:30 am CDT	Break 11:45 am - 12:45 pm CDT
Morning Session 8:30 - 11:45 am CDT	Afternoon Session 12:45 - 4:30 pm CDT

Tuition
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Additional Learning

Site Design: Grading and Drainage - Fri, May 20, 2022 8:30 am - 4:30 pm CDT	Universal Residential Design - Wed, May 25, 2022 8:30 am - 4:30 pm CDT
Designing a Smarter Home - Mon, May 23, 2022 8:00 am - 4:00 pm CDT	Residential and Small Commercial Timber Frame Design and Construction - Thurs, May 26, 2022 8:30 am - 4:30 pm CDT
How to Design a Stormwater Management System for Residential Sites - Tues, May 24, 2022 2:00 - 4:00 pm CDT	2021 International Residential Code: Residential Building Planning - Wed, June 1, 2022 11:00 am - 3:30 pm CDT
Passive House: Planning, Design and Construction - Tues, May 24, 2022 8:30 am - 4:30 pm CDT	National Electrical Code 2020: Grounding and Bonding - Tues, June 7, 2022 8:30 am - 5:00 pm CDT
Flood-Resistant Design and Construction - Wed, May 25, 2022 11:00 am - 2:00 pm CDT - Thurs, May 26, 2022 11:00 am - 3:00 pm CDT	Deep Foundations and Excavations - Wed, June 8, 2022 8:30 am - 4:30 pm CDT
Soil Mechanics, Bearing Capacity and Slope Stabilization - Wed, May 25, 2022 8:30 am - 4:30 pm CDT	Complying with the Residential Provisions of the IECC 2021 - Thurs, June 9, 2022 8:30 am - 4:30 pm CDT
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Attendance will be monitored, and attendance certificates will be available after the webinar for those who attend the entire course and score a minimum 80% on the quiz that follows the course (multiple attempts allowed).

Added Value:
Enhance your learning - a recording of this webinar will be available for attendees to stream online for two weeks after the program date.
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Registration

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Live, Interactive Webinar - Wednesday, June 22, 2022

How to Register Online: www.halfmoonseminars.org Phone: 715-835-5900 Fax: 715-835-6066 Code: Mail: HalfMoon Education Inc., PO Box 278, Altoona, WI 54720-0278 Complete the entire form. Attach duplicates if necessary.	Registrant Information Name: _____ Company/Firm: _____ Address: _____ City: _____ State: _____ Zip: _____ Occupation: _____ Email: _____ Phone: _____ Additional Registrants: Name: _____ Occupation: _____ Email: _____ Phone: _____ Name: _____ Occupation: _____ Email: _____ Phone: _____ Email address is required for credit card receipt, program changes, and notification of upcoming seminars and products. Your email will not be sold or transferred. () I need special accommodations. Please contact me.
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