

**Department of Structural Engineering
University of California, San Diego
SE 290 Seminar**



Professor Lars Bo Ibsen

Department of Civil Engineering
Aalborg University

**"The Mono Bucket-Next Generation Foundation Structure of Offshore
Wind Turbines"**

Monday, January 9, 2017
12:00 pm - 12:50 pm, Pepper Canyon Hall, Room 122

<http://structures.ucsd.edu/node/2126>

Abstract

The Mono Bucket is the latest generation foundation structure. The Mono Bucket is specifically designed for offshore wind turbine application, combining the key benefits of a gravity base foundation, a monopile and a suction bucket, and building on a legacy of more than 2,000 suction technology-based foundations from the oil and gas industry. The Mono Bucket has proven its ability, having been successfully installed in a wide variety of site conditions, including sand, silt, clay and layered strata.

The Mono Bucket foundation is installed by using suction as the driving force. Lowering the pressure in the cavity between the foundation and the seabed generates water flow, which lowers resistance around the edge of the foundation's skirt. This reduces resistance and allows seabed penetration.

The developed installation control system controls vertical alignment ensuring the foundation is installed well within prescribed tolerances, removing the need for a transition piece to adjust verticality.

Biography

Lars Bo Ibsen has his Ph.D. from Aalborg University where he now is Professor in Soil mechanics and foundation engineering. He is the head of Offshore Foundation an

international research group dealing with innovative foundation solution for offshore wind turbines. He has a strong background in experimental and numerical modeling of civil engineering structures. Since 2000 he has been connected to the offshore wind industry where he has been involved in developments of new innovative foundation concept for offshore wind turbines. This work has been in close cooperation with industrial partners as Universal Foundation, Dong Energy, Vestas, Blads, Risø, Statoil, and Statkraft. He is one of the fathers behind the Mono Bucket and presently non-executive director of Universal Foundation A/S.

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Sponsored by Professor Ahmed Elgamal

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