International Journal of
Civil Engineering (IJCE)
ISSN(P): 2278-9987; ISSN(E): 2278-9995
Vol. 5, Issue 1, Dec – Jan 2016, 11-18

International Academy of Science, Engineering and Technology
Connecting Researchers; Nurturing Innovations

BUCKLING ANALYSIS OF THIN SHELLS

SYAMILI V[1], LAJU KOTTALIL[2] & FATHIMA S THAIKUDIYIL[3]

[1]PG Scholor, Structural Engineering and construction management, Department of Civil Engineering, Mar Athanasius College of Engineering, Kothamangalam, Kerala, India

[2]Associate Professor, Department of Civil Engineering, Mar Athanasius College of Engineering, Kothamangalam, Kerala, India

[3]Assistant Professor, Department of Civil Engineering, KMEA Engineering College, Aluva, Kerala, India

ABSTRACT

A wide range of applications are there for shell structures in engineering field such as storage tanks(silos), missile and aircraft fields etc. Silos are tall structures used to store bulk solids in quantities ranging from a few tones to hundreds or thousands of tones. Although the behavior of shells has been studied extensively for several decades, the influence of thickness variation on its stability has not gained sufficiently attention and remains mysterious. These structures are mostly failing by buckling under external pressure. The buckling load is usually the most used criteria in designing of a long thin shell. This paper represents a study on the influence of thickness of shell on the buckling behavior of a typical steel silo under the influence of earthquake loads.

KEYWORDS: Buckling Analysis, Steel Silo, Stiffeners, Non Linear Analysis