

## Experimental Study of Flag Flutter in Uniform Flow

**Authors :** A. Sadeghi, M. Sedghi, M. R. Emami Azadi, R. Gharraei Khosroshahi

**Abstract :** Flags are objects with very low bending stiffness and under wind forces start to vibrate and finally to flutter. Even in lower velocities of wind their flutter can be seen. In this research physical property of fabric is determined by performing tensile tests. Then with performing laboratory experiments in wind tunnel, determination of initial flapping speed and also study of displacement amplitude at leech and calculation of their frequency would be targeted. Laboratory tests are performed in a wind tunnel and with different velocities of wind flow for specimens with different dimensions. The results show that extension of specimens' width increase flutter initiation velocity and increase of specimen length decreases it. Also by increasing wind velocity displacement amplitude at leech of specimens are decreased. This displacement has a straight relation with specimens' length and width.

**Keywords :** flag, flutter, wind velocity, flutter amplitudes, wind tunnel

**Conference Title :** ICCESE 2015 : International Conference on Civil, Environmental and Structural Engineering

**Conference Location :** Berlin, Germany

**Conference Dates :** May 21-22, 2015