

# Lift And Drag Force Analysis On Cambered Aerofoil For Different Chord Length

## Abstract

In this study conducted in Open foam software. In aerodynamic aspect Cambered aerofoil has the greater static stability. This study includes all the data regarding aerofoil and chord lengths are 500mm, 600mm, 750mm. Maximum thickness is maintained at 12% of chord length. Drag force and lift force are derived for various chord length. The chord lengths are 500mm, 600mm, 750mm and angle of attack is maintained at zero degree.

## Problem Statement

CFD study on Cambered Aerofoil. Estimating drag force and lift force for various chord length and maximum thickness using Open foam software. Also, estimate coefficient of drag and coefficient of lift. That the coefficient of drag and coefficient of lift are calculated analytically. Study of pressure over the aerofoil also performed.

## Initial Data

Angle of attack: 0

Solver Type: Simple Foam

Inlet Velocity: 100m/s

Mach Number: 0.3

Chord Length: 500mm, 600mm, 750mm

Maximum Thickness: 12% of Chord Length

Density of Air:  $1.225\text{kg/m}^3$

