CASE STUDY

Engineering Design Services

Engineering Design & Drafting | CAE Services: CFD & FEA | Reverse Engineering
Rapid Prototyping | Product Design | Value Engineering
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Pressure Drop Analysis of Flow through Louver System

Case Study Highlights

Client Profile:
Louvers Manufacturer, Hong Kong

Objective:
To estimate the pressure drop and visualize flow properties distribution across the louvers

Challenges:
- To develop accurate CAD model of the louver to replicate exact profile
- Identify necessary boundary conditions and turbulence model to capture the flow properties near wall

Solution:
The louver profile developed through CAD tools and suitable physical constraints such as inlet air flow velocity and no slip wall conditions were applied to capture the flow physics. The pressure drop across the specially designed louvers and estimate pressure drop, in order to evaluate the overall design.

Software Used: ANSYS Fluent 15

Benefits
- Pressure drop estimation leading to the reduction in physical test trials required
- Velocity and flow distribution simulation assisted in early design modifications

About Hi-Tech

Hi-Tech CAE is a division of Hi-Tech Outsourcing Services, a pioneer engineering outsourcing company since 1992 based in India & USA. It provides expert Computer Aided Engineering - CAE consulting services for engineering / product design analysis by modeling & simulation.

The primary services extended include Computational Fluid Dynamics (CFD), Finite Element Analysis (FEA), product design optimization and value engineering services to Automotive, Building / Construction, Process industry, Power Generation, Manufacturing & Heavy Engineering industries.