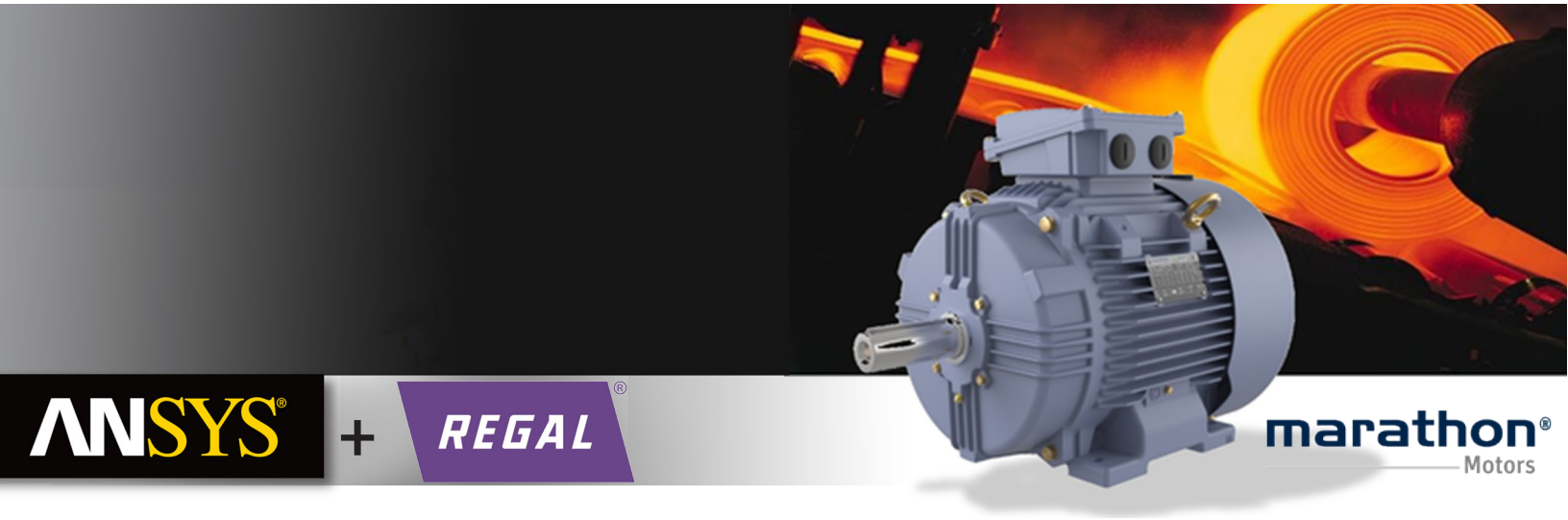
Case Study

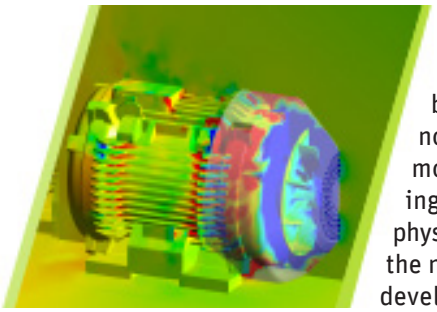


"The ANSYS Mentoring Service helped us to accelerate simulation-based noise estimation for our new cooling fan design to be used on TerraMAX® premium and high efficiency motor platform for our Marathon brand motors"

Shivanand Khot
Director of Technology
Global Technology Center - Hyderabad, India

Case Study

Simulation-based noise estimation for cooling fan designs



Regal Beloit Corporation, India, needed to develop a simulation-based method of estimating noise levels for their electric motors due to changes in cooling fan design. Previously, physical testing was used to predict the noise levels. As part of a new development platform, they decided to use a simulation-based noise prediction method at the preliminary design stage. In order to accelerate the development of the simulation-based noise method, Regal Beloit Corporation engaged with ANSYS Mentor Expert Services.

Challenges

Predicting noise through aeroacoustics simulation was never before attempted with the available software capability in ANSYS Fluent. Hence, Regal Beloit Corporation decided to seek expert mentoring from ANSYS, which helped them to quickly solve existing problems and develop a methodology for future cases.

Technology Used

The ANSYS Mentor Expert service was used for aeroacoustics simulation using ANSYS Fluent.

Engineering Solution

• CFD simulation techniques were used to predict noise from the new fan design for Regal Beloit Corporation's IE2 efficiency motor

• Advice from ANSYS' Mentor Expert Service provided insight into noise prediction, the sources of noise generation and ways to reduce the noise levels

Benefits

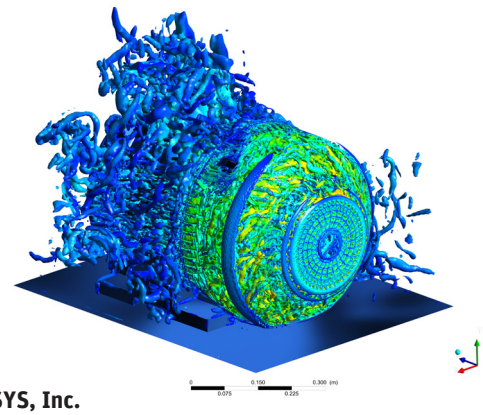
• The ANSYS Mentor Expert Service helped the team to develop an aeroacoustics simulation methodology in ANSYS Fluent and gain in-house expertise in one month

• Mentoring helped Regal Beloit Corporation build confidence in predicting noise at the motor's preliminary design stage

• With limited analytical knowledge on noise prediction within the company, this service helped engineers to explore the acoustic domain through CFD

• ANSYS CFD resulted in a quieter fan for the company's new IE2 efficiency motor

Regal Beloit Corporation (NYSE: RBC) is a leading global manufacturer of air flow, motion control, power transmission and power generation solutions used in commercial, industrial and residential applications. From electric motors and generators to mechanical gear drives, bearings and couplings, to electronic controls, Regal's products and systems convert power into motion and motion into power to help the world run more efficiently.



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