Vibro-Acoustics®

Product: Axial Fan Silencers
Project: Major Tunnel Artery Project
Application: Tunnel Jet Fans

PROJECT SOLUTIONS

Special aero-acoustic design achieves critical fan thrust and acoustic criteria for major tunnel ventilation project.

PROBLEM:
Large jet fans (from 50,000 to 80,000cfm) were installed every 200 ft. in close proximity over a major roadway. Jet fans were a key component to a tunnel smoke and emissions management system. Environmental noise criteria required 85 dBA maximum levels anywhere in the tunnel, when under full-thrust conditions. Silencers had to ensure that the noise criteria were met while maintaining the jet fan's thrust ratings.

SOLUTION:
Vibro-Acoustics designed CD-I and CD-D silencer systems to be cantilevered from large jet fans. The 85 dBA requirement was achieved at all locations 5 ft above the roadway, with the centerbody and inlet design ensuring that the thrust delivered to the tunnel met the critical ventilation standards.

PROBLEM:
Project commissioning requirements included laboratory validation of the fan-silencer system per industry standards.

SOLUTION:
Vibro-Acoustics conducted sound power testing in a large 20,000 cu.ft. reverberation room, to determine the total system noise, in accordance with the project specifications.

Vast tunnel project uses Vibro-Acoustics silencers on jet fans as a key part of the emergency ventilation system.

Vibro-Acoustics' conducted full-scale laboratory tests to ensure that the aero-acoustic performance of the large jet fan silencers was achieved.

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