



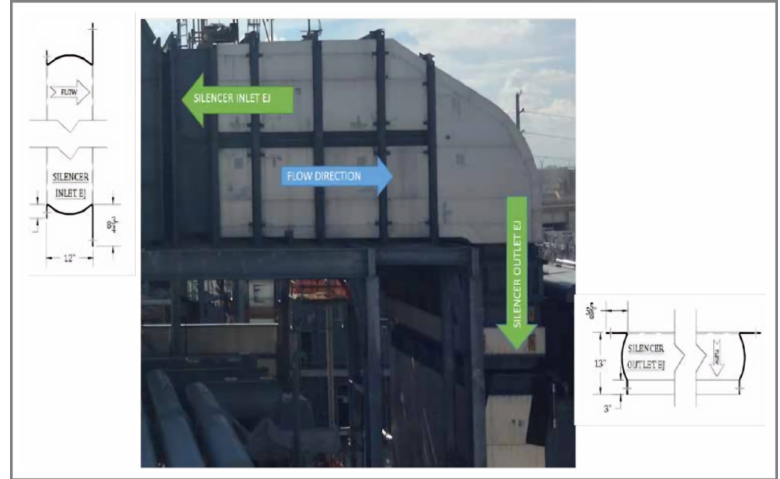
Hurricane-Resistant Gas Turbine Air Inlet Expansion Joints for Power Generation Facilities

Application:

Holz Rubber Company supplied custom-engineered air inlet expansion joints for the air inlet systems of two new gas turbine power generation projects in South Florida.

Gas turbine air inlet systems are critical components in modern power plants. Before air reaches the turbine, it passes through a series of filtration and silencing systems designed to remove contaminants and reduce operating noise. Expansion joints within these systems must accommodate thermal movement, vibration, equipment settlement, and structural displacement while maintaining system integrity.

In coastal regions such as South Florida, expansion joints must also withstand extreme weather events, including hurricanes and high-wind conditions that can create substantial lateral movement throughout the air inlet structure.



Problem:

Gas turbines require a continuous supply of clean intake air to operate efficiently and maintain power output. Within a typical turbine inlet system, ambient air passes through:

- Filter houses
- Air filtration equipment
- Silencer sections
- Turbine inlet ducting

As these large structures experience thermal expansion, vibration, and environmental loading, expansion joints must absorb movement without compromising airflow or equipment performance. For this project, engineers identified a unique challenge: the expansion joints needed to accommodate unusually large lateral (shear) movements that could occur during hurricane-force wind events. Traditional expansion joint designs may not provide sufficient flexibility or durability under these conditions, creating the risk of premature failure, air leakage, equipment damage, or costly downtime.

Solution:

Holz Rubber Engineering designed and manufactured custom air inlet expansion joints featuring specialty molded corner construction specifically developed for high lateral movement applications. The engineered design allowed the expansion joints to:

- Absorb significant lateral movement
- Accommodate thermal expansion and contraction
- Isolate vibration between connected equipment
- Maintain air system integrity during extreme weather conditions
- Reduce stress on surrounding ductwork and support structures

The custom molded corners were critical to the success of the project, providing additional flexibility and durability in areas subjected to the greatest movement during hurricane events. By combining proven elastomer technology with application-specific engineering, Holz Rubber delivered a solution capable of meeting the demanding requirements of power generation facilities located in hurricane-prone regions.



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Results:

Designed for Hurricane Conditions

Expansion joints were engineered to withstand substantial lateral movement caused by extreme wind loading and structural deflection.

Improved System Reliability

Custom molded corner construction enhanced durability and reduced stress concentrations within the expansion joint assembly.

Protected Critical Power Generation Equipment

The engineered solution helped safeguard the turbine air inlet system from movement-related damage and potential operational disruptions.

Long-Term Performance

The expansion joints were designed to provide reliable service in a demanding coastal environment where thermal movement, vibration, and severe weather are ongoing

Why Specialty Molded Expansion Joints Matter:

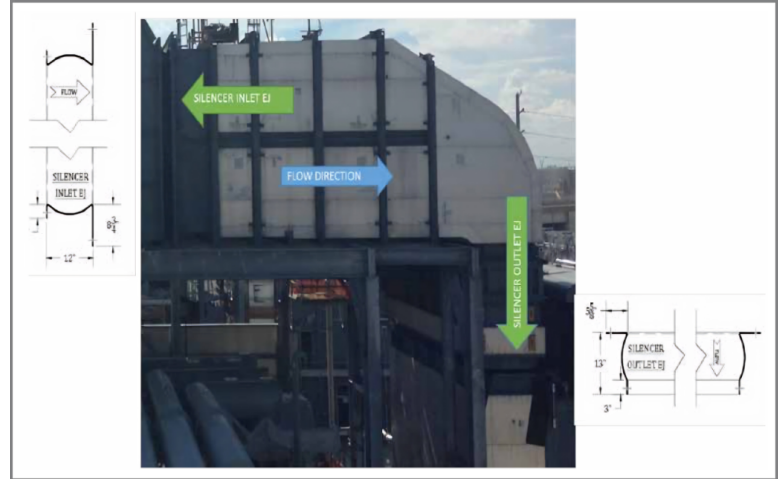
Power plants, utility facilities, and industrial operations located in hurricane-prone or seismic regions often require expansion joints capable of handling more than standard thermal movement.

Specialty molded expansion joints can help accommodate:

- Large lateral displacement
- Equipment vibration
- Thermal expansion and contraction
- Structural movement
- Wind loading
- Seismic activity

Proper expansion joint design can significantly improve equipment reliability while reducing maintenance requirements and unplanned downtime.

Our engineering team works closely with OEMs, contractors, distributors, and facility operators to develop custom-engineered expansion joint solutions for the most demanding operating environments.



Holz Rubber Specializes In:

- Gas turbine expansion joints
- Air inlet expansion joints
- Power generation expansion joints
- Custom molded rubber expansion joints
- Expansion joints for filter houses and silencer systems
- High-movement ducting expansion joints
- Hurricane-resistant expansion joints
- Utility and industrial expansion joint solutions

“Experience the Difference”

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