

AIRFLOW INSIGHTS

Air compressors must comply with energy conservation standards Federal Regulations (CFR) under Title 10, Part 431 beginning January 10, 2025.

Title 10 Chapter II Subchapter D Part 431 Subpart T § 431.345



The U.S. Department of Energy (DOE) has established energy conservation standards for certain compressors, including rotary screw air compressors. The standards are outlined in the Code of Federal Regulations (CFR) under Title 10, Part 431, Subpart U. The specific section related to compressors is 10 CFR 431.97. Which will go into effect January 10, 2025. In some environmentally conscious states such as California, Colorado, Washington, and Vermont has already adopted these standards.

These standards set minimum efficiency levels that these types of compressors must meet to comply with energy conservation requirements. The standards consider factors such as the type of compressor, its capacity, pressure, and its application.

Sullivan-Palatek is a member of the Compressed Air Gas Institute (CAGI) and participates in the 3rd party verification program that is based on rotary screw air compressor testing, ISO Standard 1217:2009(E), Displacement compressors Acceptance tests, which now has been amended through Amendment 1:2016(E), Calculation of isentropic efficiency and relationship with specific energy (incorporated by reference, see 431.343).

Isentropic efficiency is a crucial parameter in the context of energy systems and specifically in the field of rotary screw air compressors. Let's break it down:



Energy Efficiency and Conservation:

Isentropic efficiency is a key indicator of how efficiently the compressor is converting the electrical energy into compressed air. Higher isentropic efficiency implies less energy loss during the compression process, aligning with the DOE's goals of promoting energy-efficient technologies.

Energy Cost Reduction:

Companies using air compressors with higher isentropic efficiency can potentially benefit from lower energy bills, contributing to cost savings.

Environmental Impact:

Improved isentropic efficiency in rotary screw air compressors results in reduced energy consumption. Lower energy consumption translates to a smaller carbon footprint and decreased greenhouse gas emissions.

Technology Standards and Guidelines:

Isentropic efficiency is a key parameter considered when establishing these standards and guidelines. Compressors that adhere to or surpass these benchmarks are likely to receive support and acknowledgment from the DOE.

The Department of Energy and rotary screw air compressors by aligning with energy efficiency and conservation goals, reducing energy costs, minimizing environmental impact, and adhering to technology standards and guidelines set by the DOE.

Sullivan-Palatek is a distinguished leader in the creation of top-tier industrial air compressors, where reliability and dependability take center stage. Our commitment is not just to meet but to exceed standards outlined in the Code of Federal Regulations (CFR) under Title 10, Part 431, Subpart U by the January 2025 deadline.

You can visit the DOE's Appliance and Equipment Standards Program website for the latest information on energy conservation standards and related regulations: DOE - Appliance and Equipment Standards Program.

Regulations for air compressors reside in the Code of Federal Regulations (“CFR”).

Most applicable applications reside in either:

Part 429 of Title 10 (Compliance, Certification, and Enforcement) •
<https://www.ecfr.gov/current/title-10/chapter-II/subchapter-D/part-429?toc=1>

Subpart T of Part 431 of Title 10 (Scope, Definitions, Test Procedure, Energy Conservation Standards) •
<https://www.ecfr.gov/current/title-10/chapter-II/subchapter-D/part-431/subpart-T>

