

# IHS ESDU

Validated Methods and Data for Process Engineering, Power Generation and Mechanical Design



**The Source**  
for Critical Information and Insight™

**Plant operators around the world make major investments to improve efficiency as small incremental gains can lead to significant returns in large-scale operations. Today, environmental issues also present new opportunities for improving system designs to minimize the risks and costs of compliance.**

Every design team - large or small - relies on standards, tools, and in-house practices to develop successful systems. Engineers, also, make every effort to apply their experience and knowledge to explore options and scenarios before determining the optimal design.

Developing a successful design on schedule and under budget can challenge the most experienced engineering teams under the best of circumstances. In many cases, however, they simply over-design or rely on costly prototypes and testing to achieve acceptable performance levels. While these approaches typically meet the immediate requirements, they miss opportunities to most effectively optimize a design, build internal data assets, and advance in-house skills and practices.

Accurate calculations are the key to designing process, power generation, and mechanical systems that meet operating, environmental, and economic objectives

IHS ESDU offers a unique, comprehensive collection of validated design guides and methods that are co-developed by process industry expert committees and ESDU engineers. This collaboration allows industry worldwide to identify knowledge gaps and share best practices and data to develop consensual solutions that can be applied with absolute confidence.

For more than 65 years, operators have relied on ESDU to improve their capabilities and practices with the ideal supplement to their internal design tools.

## **ESDU Process Engineering Technology**

ESDU includes over 100 design guides and 17 programs, covering a wide range of practical heat transfer and fluid flow applications.

Endorsed by professional institutions, ESDU data and software form an important part of the design operations in companies throughout the world.

ESDU contains engineering methods, data, principles, worked examples, programs, and related equations for a number of design areas.

## ESDU Technology Series

### Mechanical

- Fluid Mechanics, Internal Flow
- Heat Transfer
- Mechanisms
- Physical Data – Mechanical Engineering
- Stress and Strength
- Tribology

### Structural

- Engineering Structures
- Wind Engineering
- Construction Engineering
- Stress and Strength

### Process

- Heat Transfer
- Physical Data – Chemical Engineering
- Wind Engineering
- Process Engineering Technology

### Special Modules and Packages

- EXPRESS™ Heat Exchanger Fouling
- Power Generation Technology
- Wind Power Generation

## Solve Process, Mechanical, and Structural Design Challenges in Less Time with Higher Confidence

ESDU offers more than 1,300 validated design tools that use published and unpublished data and methods to minimize the time needed to run complex, costly numerical solutions or replace them entirely.

- Fully developed prediction methods calibrated against qualified data from multiple sources
- Detailed descriptions of the principles on which methods are based
- Best analysis methods described with ranges of accuracy, references, derivation lists, and worked examples
- Stated limits of the method's applicability with guidance for interpreting results in a practical engineering context
- Detailed calculation diagrams to show program data flows.

IHS: the Source for Critical Information and Insight  
From strategy and field development to consumption, international energy companies, governments, financial institutions, and technology providers around the world rely on IHS decision support and consulting services.

- Oil and gas
- Pipelines
- Coal and nuclear
- Electric power
- Renewables
- Capital and operating costs

Cambridge Energy Research Associates®, Inc. (CERA®), an IHS company, is a leading advisor that delivers critical knowledge and independent analysis on energy markets, geopolitics, industry trends, and strategy.

### Benefits

From conceptual designs to system modifications, ESDU increases confidence by supplementing and supporting current methods.

- Quickly evaluate multiple concepts and effects on parameters in “what if?” scenarios
- Increase confidence in calculations using methods based on history of actual development rather than estimates
- Improve agreement between predictions and results to ensure successful testing and regulatory approvals
- Enable cooperation on joint development projects with competitors/partners without disclosing proprietary tools and methods
- Provide a standardized context to capture design expertise and train new engineers
- Reduce the requirement for costly prototypes.

IHS ESDU is a unique resource for improving fundamental designs that helps process engineers meet performance requirements and aggressive development schedules. To learn more, please visit [www.ihsesdu.com](http://www.ihsesdu.com).



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