



IHS Markit™

ESDU Aerostructures Engineering Package

Tech Spec

Product Code Number: T37PC

ESDU Aerostructures Engineering package.

ESDU Databases

ESDU databases provide validated engineering design data, methods and software that form part of the design process for industry professionals and are a vital resource for engineers within the aerospace/aeronautics industry, research establishments and academic institutions throughout the world. ESDU Data Items are presented in over 1,500 design guides with supporting software.

The ESDU product allows end-users to explore and optimize design solutions to validate the final design more quickly and easily. Guided and approved by industry experts and endorsed by key professional institutions, ESDU's methods are developed by engineers for engineers.

Recognised and Accepted by Aircraft Certification Authorities around the world

- ESDU methodologies/software/data are recognised and accepted by FAA, CAA, EASA certification authorities and supported by the Royal Aeronautical Society.
- In safety critical industries such as aerospace engineering the drive to innovate must be balanced with the need to validate.
- ESDU methods provide numbers/data that can be used for preliminary design before any testing of models or prototypes is carried out and the continued advances in modelling techniques have allowed engineers to explore many design options before any manufacturing is considered.
- However, great care must be taken to ensure the models are accurate before any expensive testing or prototype projects are begun.

ESDU Aerostructures Engineering Package

The Aerostructures Engineering package is applicable and relevant to:-

- elastic or inelastic stresses, strains, displacements or buckling loads under static loading
- analysis of specific components in metallic, compound (sandwich) or composite structures
- The fatigue data are for many low and high alloy and stainless steels made to US, UK, European and other specifications
- strength analysis problems met in the design of fibre-reinforced laminated composite structures, including failure criteria
- analysis of bonded joints, and stress concentrations
- 'safe-life design', that is, the structure or component is required to be crack-free for the specified design life
- To assess acoustic fatigue life
- methods of analysis and materials data

What the Aerostructures Engineering package contains

The ESDU Aerostructures package (with associated software) contains the series listed below as well as the relevant NASA/NACA Reports and MMDH

- Stress and Strength
- Structures,
- Composites,
- Fatigue Endurance
- Fracture Mechanics
- Vibration and Acoustic Fatigue

Unique ESDU Features and Tools

ESDU includes several unique tools and features to help facilitate and validate engineering designs to support better compliance and airworthiness.

- These programs perform specific engineering calculations associated with a specific Data Item. Programs include calculations on items such wing, fin, or nacelle geometry, contribution to rolling moment derivative, and more.
- **MMDH** – The Metallic Materials Data Handbook (MMDH) contains materials specifications information in over 2500 datasheets. It covers such topics as: creep rupture, aging data and fatigue and fracture information, standard static behaviors, and more.
- **Reference Materials** – ESDU also contains valuable reference tools such as the Bruhn: Analysis and Design of Flight Vehicle Structures, a National Advisory Committee for Aeronautics (NACA) Collection of documents, a National Aeronautics and Space Administration (NASA) Collection, a sub-set of SAE Technical Papers, and the United States Air Force (USAF) Data Compendium (DATCOM).
- **Unique Graphs** – ESDU includes interactive graphs that are web-based versions of graphs providing users with the capability to zoom in on areas and pin point coordinates, click anywhere to populate and coordinate fields with calculated values, and save or print for inclusion in reports.
- **Refined Searching** – Ability to refine searches by Series/Collections and documents within a user's subscription.

Format

Online

Product Updates

Updates of ESDU data occur on a quarterly basis. Any new and amended content, as well as software, are included in the updates.

Requirements

Listed below are the minimal requirements for viewing ESDU Data Items and running the executable programs:

JavaScript

You must enable JavaScript and permit cookies from esdu.com and ihs.com for the ESDU site to function correctly.

Web Browsers

A modern standards - Compliant Web Browser is required. Older versions of Microsoft Internet Explorer (V10 and previous) will be unable to access some of the more advanced features.

Technical Committees

ESDU Data Items are the result of a consensus of committee member submissions from individuals volunteering their time and expertise to best qualify and validate the Data. Each Committee, led by an ESDU group head, is made up of members outside IHS who have industrial, research or academic backgrounds.

For more information www.esdu.com

CUSTOMER CARE AMERICAS

T +1 800 447 2273
+1 303 858 6187 (Outside US/Canada)

CUSTOMER CARE EUROPE, MIDDLE EAST, AFRICA

T +44 1344 328 300

CUSTOMER CARE ASIA PACIFIC

T +604 291 3600

E CustomerCare@ihsmarkit.com

About IHS Markit

IHS Markit (Nasdaq: INFO) is a world leader in critical information, analytics and solutions for the major industries and markets that drive economies worldwide. The company delivers next-generation information, analytics and solutions to customers in business, finance and government, improving their operational efficiency and providing deep insights that lead to well-informed, confident decisions. IHS Markit has more than 50,000 key business and government customers, including 85 percent of the Fortune Global 500 and the world's leading financial institutions. Headquartered in London, IHS Markit is committed to sustainable, profitable growth.