ESDU Website Guide
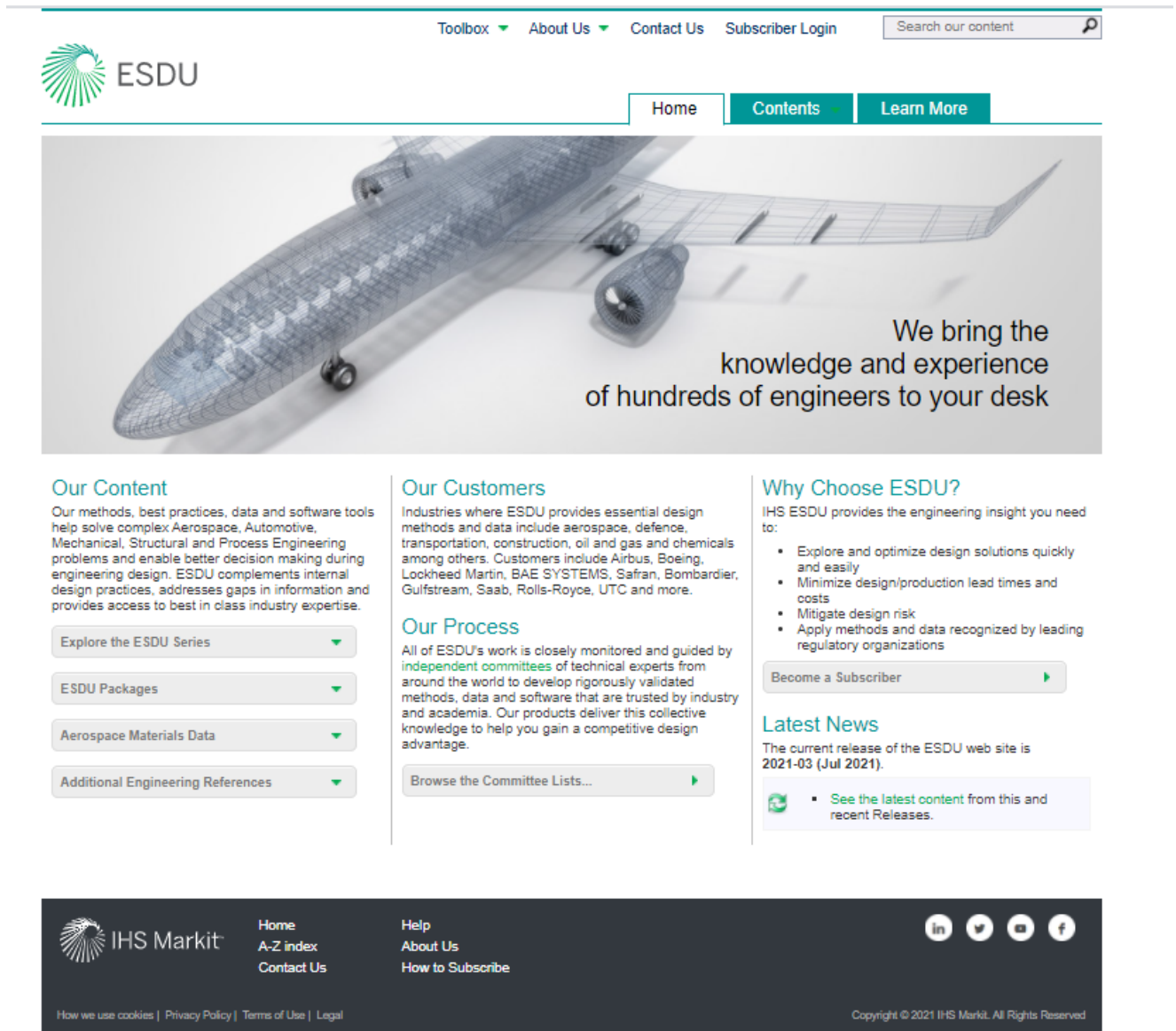
This guide will provide you with useful information on the navigation of the ESDU Website

Table of Contents

1. Browsing ESDU Website

You will not need a username or password if you are browsing the ESDU Website. You can almost find what you are looking for in exactly the same way as if you were a subscriber, the only difference is that you will not have access to download ESDU Data Items or run the software.

2. Subscriber Login Procedure

In August 2020, there was a new login experience for users accessing products within the Engineering Resource Center. With this new process, you can expect:

- Improved security of IHS Markit solutions, providing a more robust security control to protect data and intellectual property
- A modern and streamlined user experience
- Easy, self-service user creation

Users are required to complete a one-time registration process to resume using products within the Engineering Resource Center. This will synchronize with user profiles within the products, preserving any previous account settings and saved content.

For assistance, please view this short registration video, or contact our Customer Care team for assistance.

Registration Process

Step 1: From the Login screen, click **Create a New Account**.

Step 2: Enter your organizational email, select the **I'm not a robot** check box, and click **Continue**.

Step 3: An email will be sent providing an **Activation code**. Copy and paste this code in the **Activation code** box and **Continue**.

Step 4: Enter your **First name** and **Last name**, then click **Create Account**. Enter in a password that meets the password criteria, re-enter, and click Create Password.

Step 5: Create a password that meets the password criteria, **Re-enter password**, and click **Create Password**.

Step 6: Log in by entering your **Password**, click **Continue**, and access the Engineering Resource Center Main Menu.

3. Your Subscription

a. Subscription Content

- This section provides details of the content included in the licence
- Your user name
- Subscription expiration date and
- A link to the relevant license keys
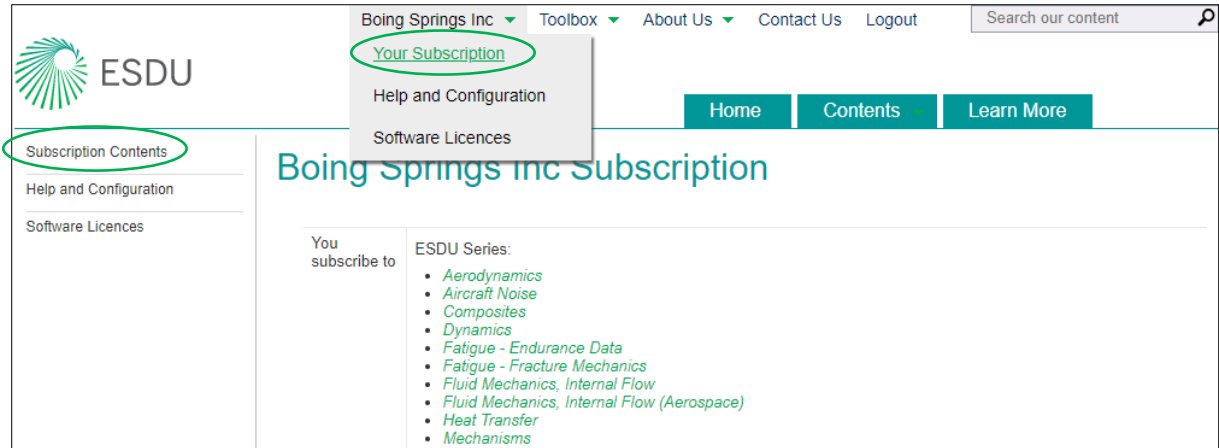
b. Help and Configuration

The ESDU website is a mix of HTML, Adobe Acrobat PDF's, Executable programs and ESDUpacs online. This section explains the technical configuration requirements.
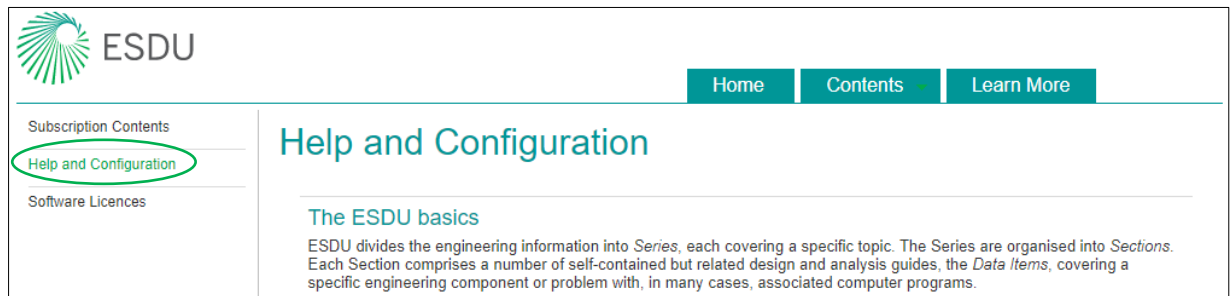
c. Software License

If your subscription permits, this section enables you to request a licence key access to EXPRESS, EXPRESSplus or the INTEGRITY program.

4. Contents Menu

The contents tab lists the ESDU Series, packages and additional content available on our website.
Italic text will indicate content included in your subscription as shown in the example below.
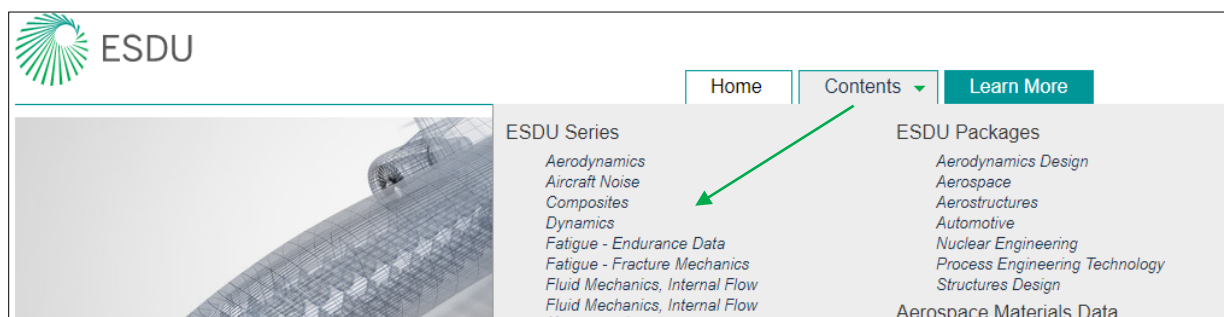
5. Learn More Menu

This tab provides further information on our products - brochures, user guides, white papers, case studies
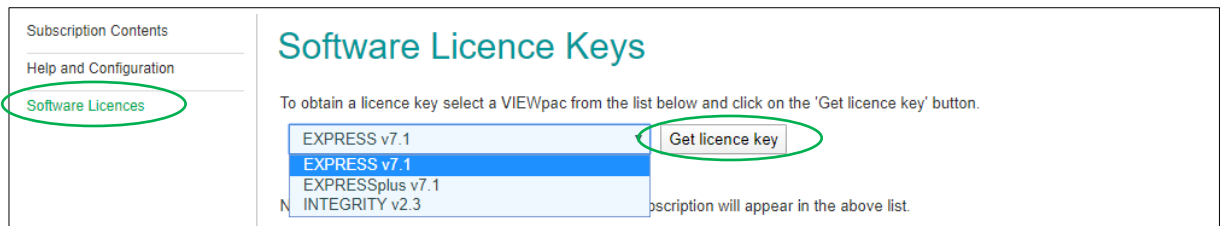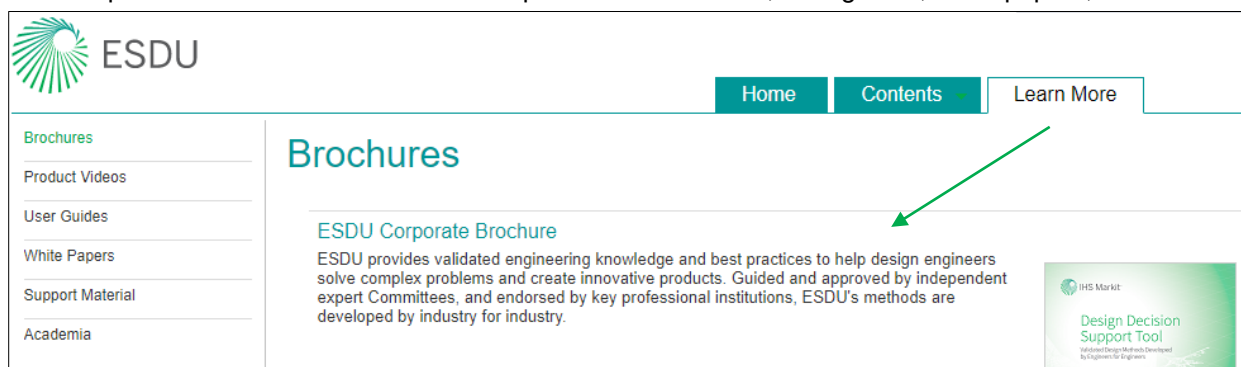

6. Search Facility

There are different ways of searching data dependent upon the information you already have or you require.
Search by Data Item Number of Keyword; Browse the Series, or using the A-Z Index.

Search Facility (cont'd)

The results appear in order of relevance. The ranking is based on the number of requested words or item numbers found and where it was found for example a hint in the title ranks highest followed by a keyword hit and lastly, a hit within the item summary.
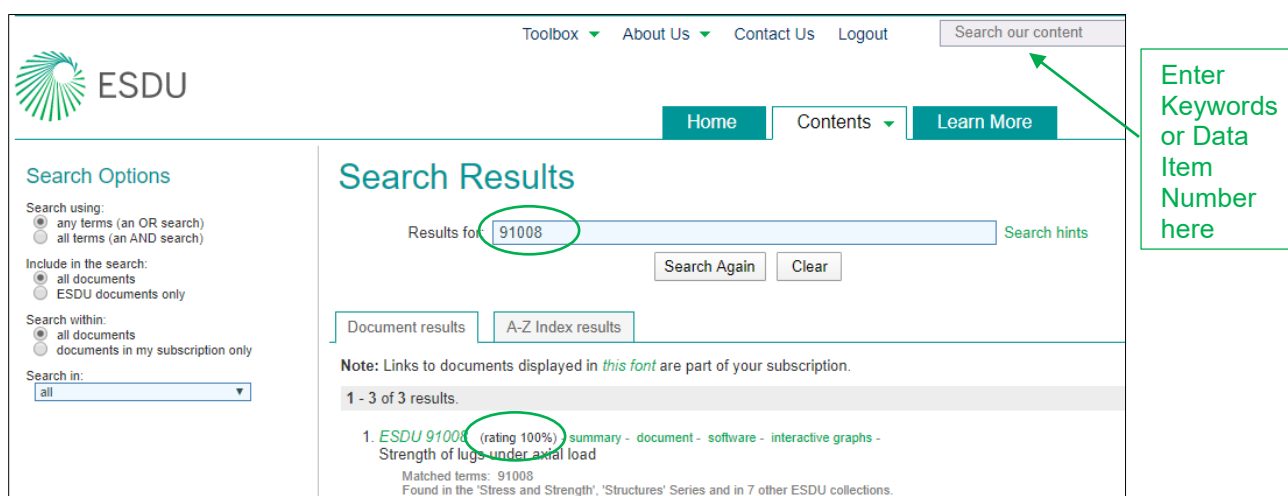

The "Search Hints" link further explains these options

The search can be narrowed by using the Search Options such as "any" and "all" terms when using keywords. You can also narrow your search to items published by ESDU only or only items included in your subscription.

7. Toolbox "apps"

These apps perform various engineering calculations.

Click onto 'Run app' a screen will appear - the input for your coordinates.

Below is an example

Cavity geometry definitions

Summary

[ESDU 74036](#) is based on correlations of experimental results obtained on a plate at zero incidence, for predicting the increment in drag for Mach numbers less than 3. The methods apply to a cavity with sharp edges, walls normal to the plate, flat bottom and no through-flow; no information is available on rounding or chamfering of the corners, but such edge modifications should not be assumed to be beneficial. The depth/diameter ratio varied from 0.04 to 1.5 but a method of dealing with a cavity in which the ratio is less than 0.04 and based on the method of [ESDU 75031](#) is presented. The data apply strictly in zero pressure gradient flows, but guidance on their use where there is a pressure gradient is given in the Data Item.

[ESDU 73017](#) and [77021](#) provide atmospheric data, if required. These Items are complemented by a [Toolbox App](#).

[ESDU 68020](#) provides data for a turbulent boundary layer on a flat plate, if required. Estimates for local and mean skin friction coefficients may be obtained from the [Toolbox App](#).

General

Notes: Section 7 Example

Flow conditions at edge of boundary layer

Local Mach number, M_1 — 2.2

Unit Reynolds number, R_1 — 5200000 — 1/m

Circular Cavity Excrescence

Cavity depth, h — 20 — mm

Cavity diameter, d — 100 — mm

Surface

Local skin friction coefficient, C_f — 0.00145

Run calculation

Enter your values and run calculation

Here are your calculation results

Results

General

For this case $0.04 \leq h/d \leq 1.5$

Drag coefficient based on cavity planform area, C_D	0.0055628
Cavity planform area, $\pi d^2/4$	7853.982 mm²
Reynolds number based on cavity diameter, R_d	520000
Cavity depth to diameter ratio, h/d	0.2

Intermediate results

Function in ESDU 74036 Table A2.1, A	0.059930
Function in ESDU 74036 Table A2.2, B	0.47592

8. About Us – including 'What's New' feature

This section includes information on ESDU, who we are what we do, the benefits of ESDU as well as information on Projects, Committees, Partners and Endorsements
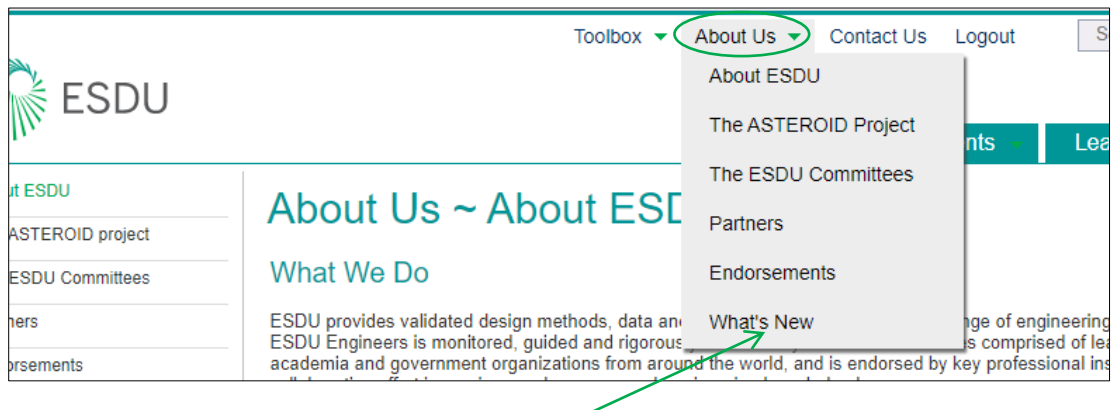
Another important feature is the '**What's New**' feature.

'What's New' is a good way of finding out new and amended content that has been added to the database. This content is available to view and is updated on a quarterly basis.

9. Data Item and Results

Data Items that are included within your subscription will appear in italic text.

Click onto the Data Item number to be taken to the 'Abstract' of that particular document.

Below are all the icons associated with this Data Item, as you will note with this document there is software asociated to it. However, if there is no software associated with a particular document you will not see the 'software' icon.

Here you will note that ESDU 91008 belongs in the ESDU Structures as well as Stress and Strength Series.

Important information on this Data Item is shown here including any previous releases.

10. Format of Data Items and accessing available Software and Graphs

a. Data Items

ESDU Data Items are available as PDF documents consisting of Notation and Units, Worked Examples, Figures and Sketches.
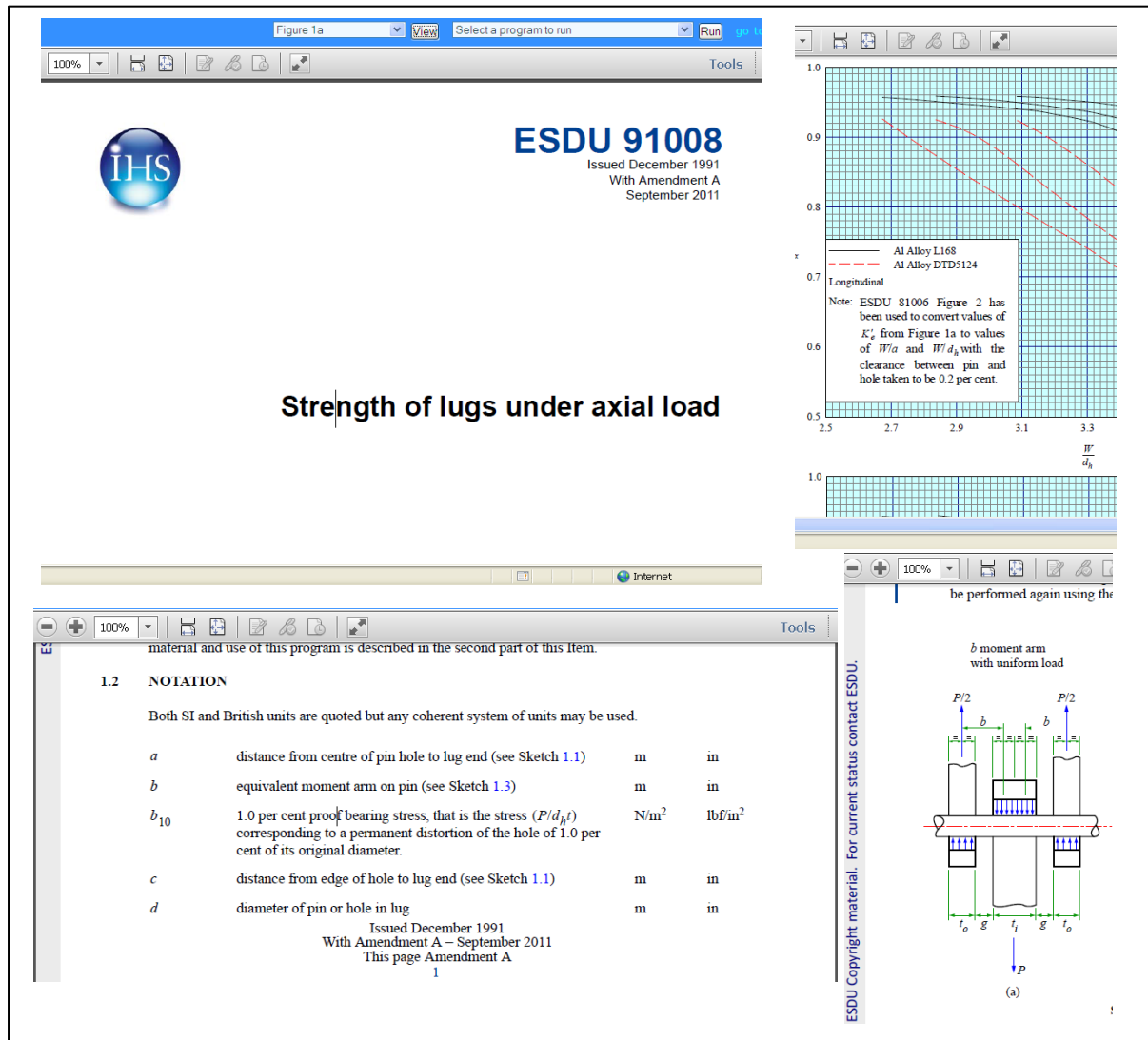
b. ESDUpac online

An ESDUpac is a computer program designed to perform a specific engineering calculation associated to a Data Item. This allows you to run the ESDUpac code without having to download or install onto your computer via online. Where available, click on the "Run" link in the Programs Tab.

A text box is provided to insert your input file, or you can select one of the example data sets from the drop down and click "get example data".

c. **ESDUpac downloadable file**

In very few cases software is available as a downloadable .zip file which contains an executable file (.exe.). Click on the download link to be taken to the zip file. Further instructions on how to run the software are provided through the link "How to run an ESDUpac from the command line".

ESDUpac A9615
from Data Item ESDU 96015

Summary | included in *your subscription*

- Return to Data Item 96015

You can download the zip file ep_a9615v11.zip (215.7 KB) containing:

- a PC specific executable file (.exe),
- any example files,
- any data files

This ZIP file contains a PC executable version (a .exe file) of the ESDUpac which can be immediately used on any Microsoft PC operating system.
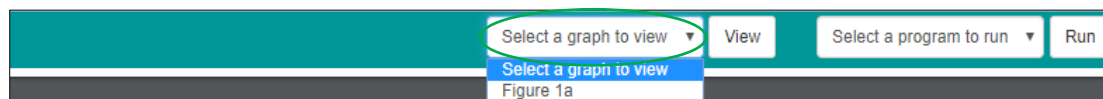
Note that in almost all cases the ESDUpac executable file is a 'file-input/file-output' program with *no* user interface and is run via the command line.

If you are uncertain how to run a command-line program you may find 'How to run an ESDUpac from the command line' useful. The associated Data Item may also give details on how to use this program.

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d. Interactive Graphs

There are several ways of accessing the Interactive Graphs

From the Data Item:

| Select a graph to view ▾ | View | | Select a program to run ▾ | Run |

Select a graph to view
Figure 1a

From the Search Results.

Results for: 91008 | Search hints

Search Again | Clear

Document results | A-Z Index results

Note: Links to documents displayed in *this font* are part of your subscription.

1 - 3 of 3 results.

1. *ESDU 91008* (rating 100%) - summary - document - software - interactive graphs - Strength of lugs under axial load

Matched terms: 91008
Found in the 'Stress and Strength', 'Structures' Series and in 7 other ESDU collections.

From the Interactive Graphs Tab:

Links to

As an example click onto Figure 1a and a separate window will open and will load the graph.

| Summary | Document | Software | Interactive Graphs | included in *your su* |

This Data Item contains 7 interactive graph(s) as listed below.

Graph	Title
Figure 1a	Axial tensile rupture factor K_{tux} for parallel sided lugs
Figure 1b - Part 1	Axial tensile rupture factor K_{tux} for parallel sided lugs (round end)

Clicking anywhere in the graph will populate the coordinate fields with calculated values.
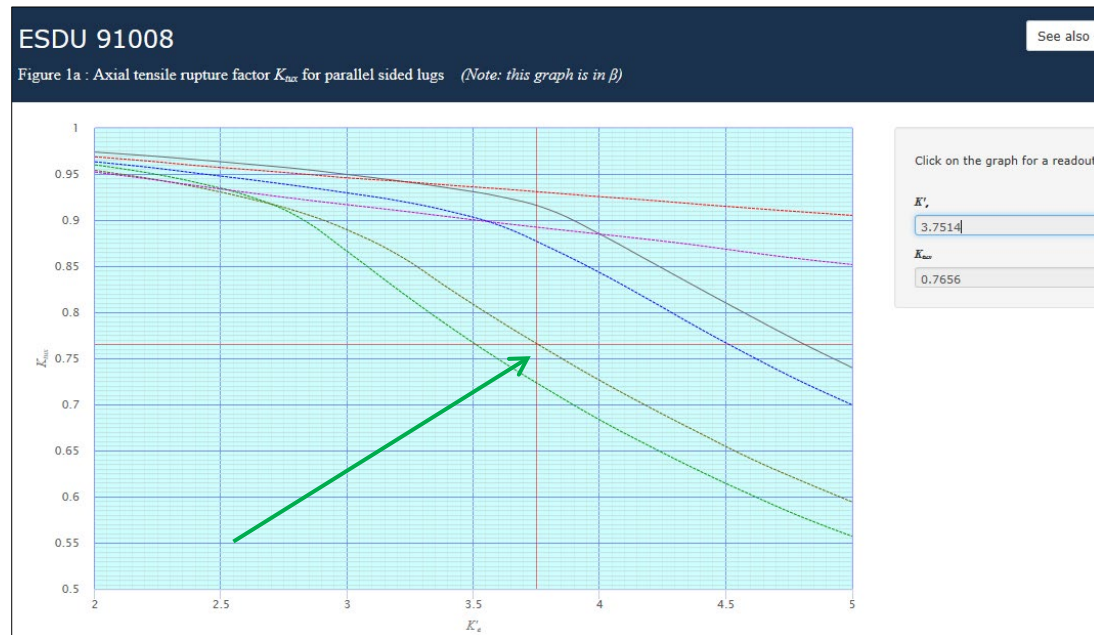
Additional information on graphs can be found on the Learn More tab under Product Videos

11. Additional Navigation Options

a. Browse the series – hover over the contents tab and click on a particular series

The Series pages display an expandable table of contents of topics covered.

b. Explore the A-Z index located in the Contents tab

12. For Additional Support

Click on the 'Contact Us' Link