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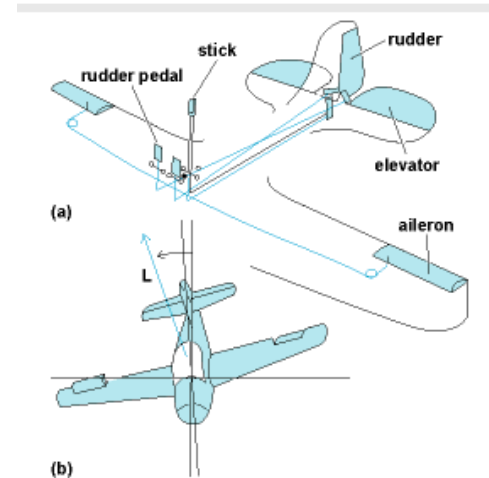
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### Browse Subjects



### Tools & Media





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# Search & Browse

# Basic & Advanced Search



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Basic Search



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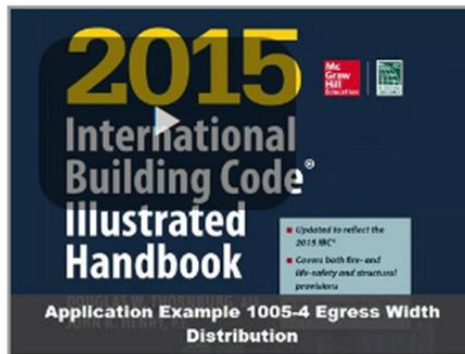
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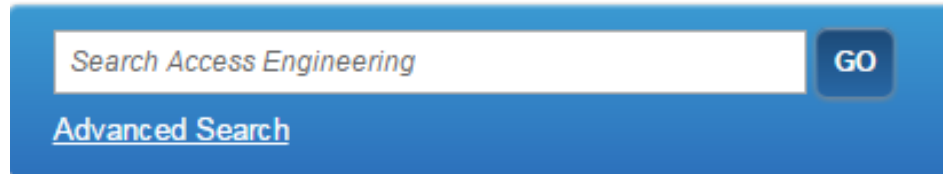
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# Conduct A Basic Search

Enter a keyword or phrase into the search bar on the top of the homepage and click [GO](#)



Search Access Engineering [GO](#)

[Advanced Search](#)

*Hint:* The search engine supports advanced search techniques

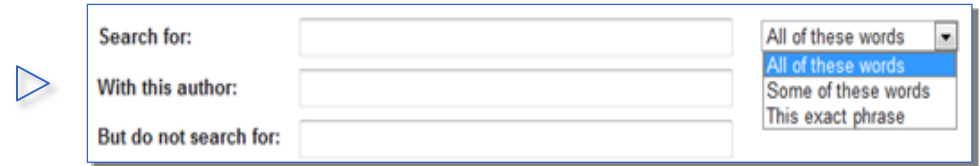
- Boolean AND, OR, and NOT (e.g., mechanical AND engineering)
- Quotation marks (“ ”) to find an exact phrase (e.g., “mechanical engineering”)
- Asterisks (\*) to match partial words (e.g., thermo\*)

# Conduct An Advanced Search

1. Click **ADVANCED SEARCH** underneath the search bar



2. Enter keywords or phrases in the text boxes and select search operators



3. Refine your results by content type, subject, and/or title, and click **SEARCH**



# Filter your Search

vibration isolation   
[Advanced Search](#)

**Narrow your search** ⓘ

Filter by Subject

- Mechanical engineering (315)
- Electrical & electronics engineering (254)
- Civil engineering (199)
- Industrial engineering (102)
- Environmental & sustainable engineering (89)
- [Show more...](#)

Filter by Title

- ▶ Harris' Shock and Vibration Handbook, Sixth Edition (47)
- ▶ Piping Handbook, Seventh Edition (29)
- ▶ Vibration and Acoustics: Measurement and Signal Analysis (23)
- ▶ Semiconductor Manufacturing Handbook (23)
- ▶ HVAC Equations, Data, and Rules of Thumb, Third Edition (22)
- [Show more...](#)

Filter by Type

- ▶ Text (880)
- ▶ Book (30)

[Home](#)

## Search Results

Your search for **vibration isolation** returned **930** results.

[View dictionary definition for vibration isolation](#)

### Vibration Isolation

The topic of **vibration isolation** is considered in this video. Figures 3.4.5, 3.4.6, and 3.4.7 are used to investigate the **vibration isolation** requirements of a system. ...

Type: Video

Source: [Marks' Standard Handbook for Mechanical Engineers, Eleventh Edition](#)

### VIBRATION ISOLATION

**VIBRATION ISOLATION** Often machines and components which exhibit vibrations have to be mounted in locations where vibrations may not be desirable. Then the machine has to be isolated properly so that it does not transmit vibrations. Transmissibility Active **Isolation** and Transmissibility. From Eq. (31.38 ...

Type: Text

Source: [Standard Handbook of Machine Design, Third Edition](#)

### CONCEPT OF VIBRATION ISOLATION

**CONCEPT OF VIBRATION ISOLATION** The concept of **vibration isolation** is illustrated by consideration of the 1-DOF systems shown in Figs. 2.20 and 2.12 (also depicted in columns 1 and 2 of Table 38.1 ). The performance of the isolator may be evaluated by the following characteristics of the response of the system to steady-state sinusoidal **vibration** ...



# Apply & Remove Search Filters

Easily target the most relevant material by filtering search results by subject, title, content type, and process type. Multiple filters can be applied to a search.

1. Narrow your search results by clicking an applicable filter on the left-hand side of your search results page

**Narrow your search**

Filter by Subject

- Bio engineering (22)
- Chemical engineering (493)
- Civil engineering (38)

Filter by Title

- Perry's Chemical Engineers' Handbook, Eighth Edition (218)
- Handbook of Petroleum Refining Processes, Third Edition (75)

Filter by Type

- text (1,027)
- graph (21)

Filter by Process

- ▶ Calculations (73)
- ▶ Design (28)

Each Of These Is A Filter

2. Remove a filter by clicking the name of the filter, e.g., "All Subjects"

**Narrow your search**

- < All Subjects
- Heat transfer (3)

---

- < All Titles
- Heat Transfer Calculations (3)

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## Browse by Industry

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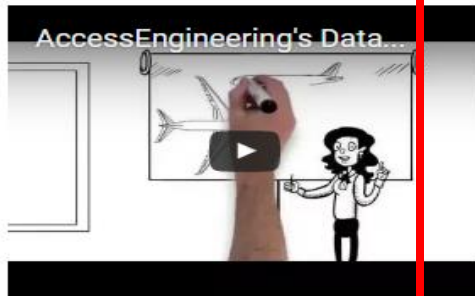
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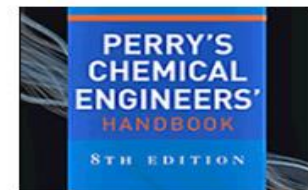
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### Featured Content



### Browse Subjects



### Tools & Media



# Browse By Subject

Either hover over **SUBJECTS** on  
The top navigation bar...



...or **BROWSE SUBJECTS** from the  
Center of the homepage



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CHEMICAL		
CIVIL		
COMMUNICATIONS		
ELECTRICAL / ELECTRONICS		
ENERGY / PETROLEUM		
ENVIRONMENTAL / SUSTAINABLE		
INDUSTRIAL		
MAKERSPACE		
MATERIALS		
MECHANICAL		
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SCHAUM'S OUTLINES		
SOFTWARE		

## Browse Subjects



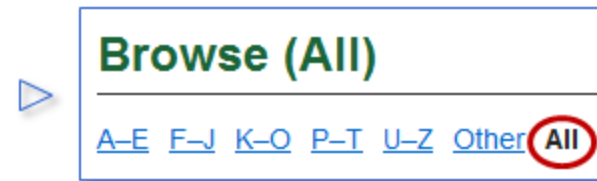
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- ▶ [Business Skills](#)
- ▶ [Chemical](#)
- ▶ [Civil](#)
- ▶ [Communications](#)
- ▶ [Electrical/Electronics](#)
- ▶ [Energy/Petroleum](#)
- ▶ [Environmental/Sustainable](#)
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- ▶ [Operations Management](#)
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# Browse By Title

1. Click **TITLES (A-Z)** on the navigation bar



2. Either browse **ALL** titles in alphabetical order...



3. ...or click the alphabetical range within which the first letter of the title appears




# Browse Videos

1. On the homepage, scroll down to the **TOOLS & MEDIA** box in the center of the page



2. Click **VIDEOS** to be taken to a search results page showing a list of all videos on the site



▶ The  icon on the search results page indicates that a search result is a video

# Browse Graphs

1. On the homepage, scroll down to the **TOOLS & MEDIA** box in the center of the page



2. Click **GRAPHS** to be taken to a search results page showing a list of all graphs on the site



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## Personal Accounts

Personal accounts allow you to save searches and receive search alerts, as well as organize, label, annotate, and highlight material of particular interest. Personal accounts are free for all users at the subscribing institution, and they take only a few seconds to create.



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2. Complete the form that pops up, and then click SIGN UP



\* Indicates required field

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Confirm Email \*

Full Name \*

Password \*

Confirm Password \*

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1. On the right-hand side of the homepage, enter the email and password you used when registering for a personal account, and click **SUBMIT**



**SIGN OUT**

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[Forgot password](#)

Email

Password

**Submit**

2. After logging in successfully, you will see your email address on the right-hand side of the page, and the upper-most box on the homepage will show your account activity



**Your Account** →

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Welcome User Services

Your recent **AccessEngineering** account activity:

- ▶ [Starred items \(7\)](#)
- ▶ [Annotations & Pins \(17\)](#)
- ▶ [Manage labels \(4\)](#)
- ▶ [Saved searches \(2\)](#)
- ▶ [Search history \(9\)](#)

**MY ACCOUNT** **SIGN OUT**

[user.services@mhprofessional.com](mailto:user.services@mhprofessional.com)

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**Instructive Videos**

[All Videos](#)

**Email Address** ←




## Personalized Tools

*Note:* These features are only available to users who are signed into their personal account.

## Starred Items

A starred item acts much like the “bookmark” or “favorite” function within most web browsers by storing links to pages of content for easy retrieval at a later time.

1. Navigate to any content page

2. Click on the  next to the name of the chapter


Home > Back to book details

THERMODYNAMICS 


4.1. THERMODYNAMICS

by Peter E. Liley

NOTE: References are placed throughout the text for the reader's convenience. (No material is presented relating to the calibration of thermometers at fixed points, etc. Specific details of the measurement of temperature, pressure, etc. are found in Benedict, "Fundamentals of Temperature, Pressure and Flow Measurements," 3d ed.

3. When the  becomes filled, the page gets stored in your list of starred items in your personal account

Home > Back to book details

THERMODYNAMICS 

4.1. THERMODYNAMICS

by Peter E. Liley

NOTE: References are placed throughout the text for the reader's convenience. (No material is presented relating to the calibration of thermometers at fixed points, etc. Specific details of the measurement of temperature, pressure, etc. are found in Benedict, "Fundamentals of Temperature, Pressure and Flow Measurements," 3d ed.

▶ A star can be removed by either re-clicking the star or deleting it from your **MY ACCOUNT** page

# Labels

Labels are used to sort and classify content.

1. From any content page, hover over **APPLY LABEL**



Home > Back to book details

**SDH and SONET Analyzers** ? **Apply Label** Annotations ON Share Print

☆

**30. SDH and SONET Analyzers**

**30.1. Introduction**

The increasing bandwidth capacity available in modern optical fiber transmission lines has led to the development of standards for a synchronous digital transport network. The ITU-T countries have defined two standards:

2. Either click the box next to the applicable label, or click **ADD LABEL** if there's no applicable label



Home > Back to book details

**SDH and SONET Analyzers** ? **Apply Label** Annotations ON Share Print

☆

**30. SDH and SONET Analyzers**

**30.1. Introduction**

- Coal
- Important content for the test
- Motor problem

[Add Label](#)

[Manage Labels](#)

3. To create a new label, type the name of the label, click **ADD**, and then click **RETURN TO PREVIOUS PAGE TO APPLY LABEL(S)**



**Manage Labels**

Label

<a href="#">Coal (1)</a>	<a href="#">rename</a>	<a href="#">remove</a>
<a href="#">Motor problem (1)</a>	<a href="#">rename</a>	<a href="#">remove</a>

Add Label

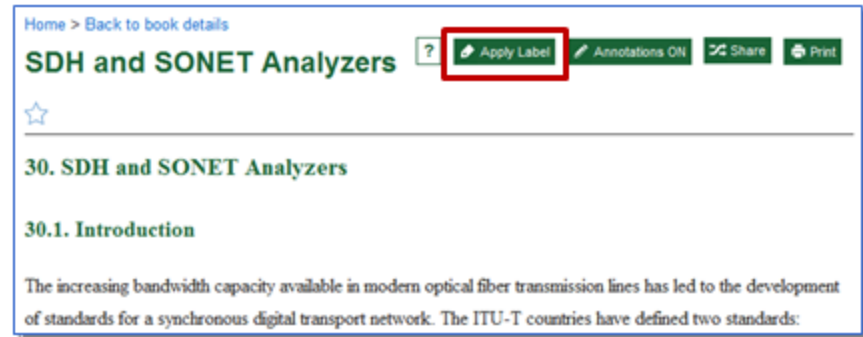
**Add**

[Return to previous page to apply label\(s\)](#)

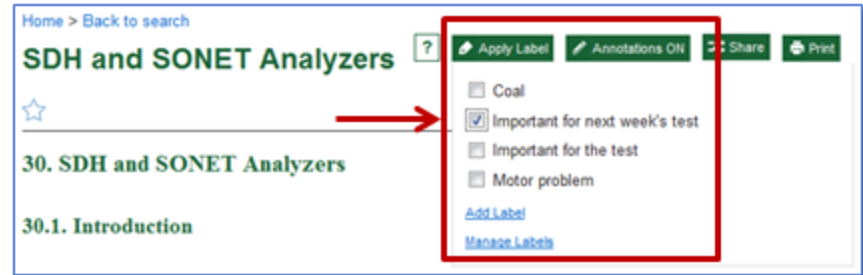
Continued on next slide...

# Labels

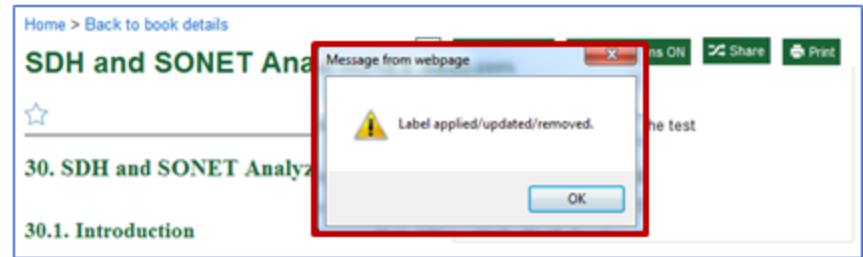
4. When you've returned to the content page, hover over **APPLY LABEL** again



5. Click the box next to the new label

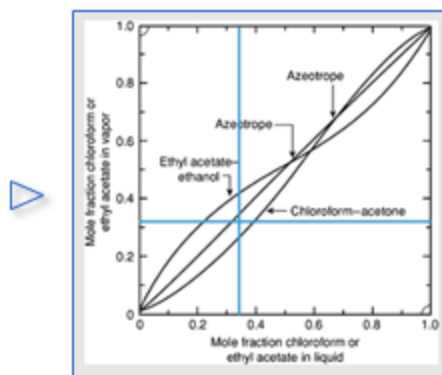


6. A dialog box will appear after you click the box to confirm the page has been saved to the applicable label



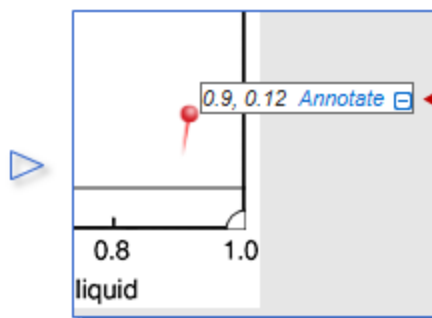
# Place And Save Push Pins On Data Points On Interactive Graphs

1. Drag the blue crosshairs around the graph to the desired data point



2. Click **DROP PIN** below the graph to place a push pin on the desired data point and automatically save it to your personal account

3. You can annotate a pin by hovering over the pin and clicking **ANNOTATE** on the text box that appears



Delete A Pin By Clicking The Subtraction Symbol

▶ Pins are saved to **MY ACCOUNT** and can be deleted from your **MY ACCOUNT** page

## Annotate Text

1. Highlight a block of text of particular interest on any content page

Following the subject of diaphragm-to-shearwall anchorage, the subdiaphragm concept is introduced. This design technique was developed to ensure the integrity of a wood structural panel diaphragm that supports seismic forces generated by concrete or masonry walls. Its purpose is to satisfy the code requirement that "continuous ties" be provided to distribute these larger seismic forces into the diaphragm. ASCE 7 Sec. 12.11.2.2.1 includes subdiaphragm requirements for Seismic Design Categories (SDCs) C and higher. This is also an anchorage problem, but it is unique to buildings with concrete or masonry walls.

2. Click the pencil icon

Following the subject of diaphragm-to-shearwall anchorage, the subdiaphragm concept is introduced. This design technique was developed to ensure the integrity of a wood structural panel diaphragm that supports seismic forces generated by concrete or masonry walls. Its purpose is to satisfy the code requirement that "continuous ties" be provided to distribute these larger seismic forces into the diaphragm. ASCE 7 Sec. 12.11.2.2.1 includes subdiaphragm requirements for Seismic Design Categories (SDCs) C and higher. This is also an anchorage problem, but it is unique to buildings with concrete or masonry walls.

3. Type your note in the text box that appears, and click **SAVE**

Following the subject of diaphragm-to-shearwall anchorage and overturning are addressed in Chapter 12.11.2.2.1, including the following: This is important. This design technique was developed to ensure the integrity of a wood structural panel diaphragm that supports seismic forces generated by concrete or masonry walls. Its purpose is to satisfy the code requirement that "continuous ties" be provided to distribute these larger seismic forces into the diaphragm. ASCE 7 Sec. 12.11.2.2.1 includes subdiaphragm requirements for Seismic Design Categories (SDCs) C and higher. This is also an anchorage problem, but it is unique to buildings with concrete or masonry walls.

4. Your annotated text is now highlighted, and your notes will appear when you hover over the text

Following the subject of diaphragm-to-shearwall anchorage and overturning are addressed in Chapter 12.11.2.2.1, including the following: This is important. This design technique was developed to ensure the integrity of a wood structural panel diaphragm that supports seismic forces generated by concrete or masonry walls. Its purpose is to satisfy the code requirement that "continuous ties" be provided to distribute these larger seismic forces into the diaphragm. ASCE 7 Sec. 12.11.2.2.1 includes subdiaphragm requirements for Seismic Design Categories (SDCs) C and higher. This is also an anchorage problem, but it is unique to buildings with concrete or masonry walls.

▶ Annotations are saved to **MY ACCOUNT** and can be downloaded into a .csv file





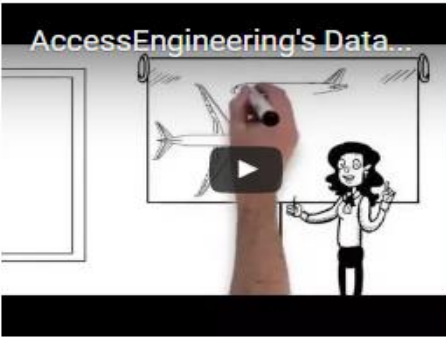
## Curriculum Maps

Curriculum Maps are organized sets of resources that include textbook sections, tables, videos, and examples to help teach core concepts in engineering. These Maps make it easy for faculty to decide which resources to assign their students within core courses.

# Search Curriculum Maps

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**Curriculum Maps Dropdown Menu:**

- CIRCUIT ANALYSIS (DC AND AC)
- CONTROL SYSTEMS
- ELECTRONICS
- ENGINEERING ECONOMICS
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- HEAT TRANSFER
- MACHINE DESIGN
- MASS TRANSFER
- MATERIALS SCIENCE AND ENGINEERING (MSE)
- QUALITY CONTROL
- REACTION KINETICS
- SEPARATIONS
- STRENGTH OF MATERIALS
- THERMODYNAMICS
- VIBRATION AND CONTROL
- WASTEWATER TREATMENT / PLANT DESIGN
- WATER TREATMENT / PLANT DESIGN

**Annotations:**

- Red arrow pointing to "Search Curriculum maps" text.
- Red arrow pointing to "Curriculum Maps" in the dropdown menu.
- Red arrow pointing to "Curriculum Maps" in the "Browse Subjects" list.



# Curriculum Maps

## Curriculum Map

---

**Map Name** → Course: Heat Transfer

**Authors of This Map** [ ]

**Authors**  
 Don W. Green, Editor-in-Chief, Perry's Chemical Engineers' Handbook, 8th Edition, and Emeritus Distinguished Professor of Chemical and Petroleum Engineering, University of Kansas  
 Marylee Southard, Associate Professor, Chemical Engineering, University of Kansas  
 Ali Sadegh, Editor, Marks' Standard Handbook for Mechanical Engineers, 11th Edition

**Links To Subtopics** [ ]

**Course Topics**

- ▶ [Conductive Heat Transfer](#)
- ▶ [Convective Heat Transfer](#)
- ▶ [Heat Transfer with Phase Change](#)
- ▶ [Radiative Heat Transfer](#)
- ▶ [Heat Transfer Equipment Design](#)

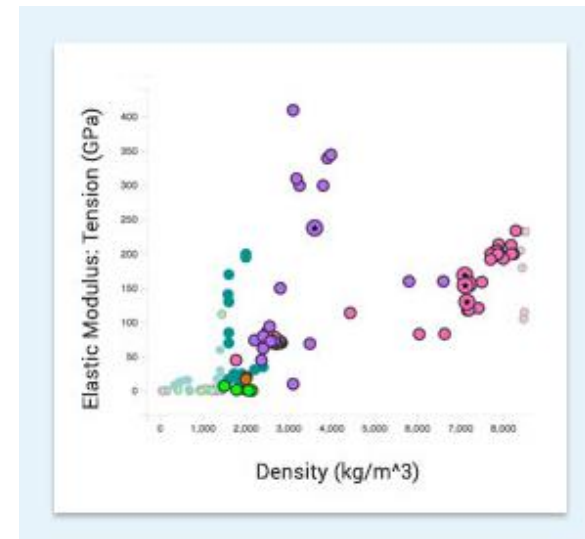
**Subtopic** → [Conductive Heat Transfer](#)

**Relevant Materials Pertaining To The Subtopic** [ ]

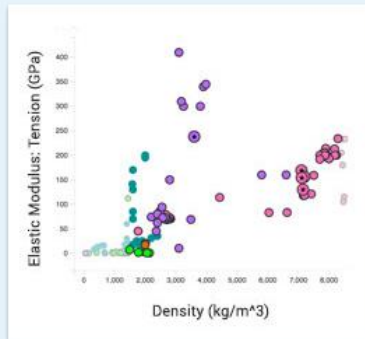
Relevant Material	Type	Description	Source
<a href="#">Heat Transfer by Conduction</a>	Text	Conduction heat-transfer basics	<a href="#">Perry's Chemical Engineers' Handbook</a>
▶ <a href="#">Nomenclature and Units</a>	Table		<a href="#">Perry's Chemical Engineers' Handbook</a>
<a href="#">Thermal Conductivity</a>	Text	Methods of estimation of thermal conductivity	<a href="#">Perry's Chemical Engineers' Handbook</a>

## What is DataVis?

- DataVis is an interactive, web-based data visualization tool that transforms the way students learn about material properties.
- Users can instantly visualize property data in interactive dot-plots and scatterplots across a wide range of materials.
- DataVis includes a curated dataset of 200 materials and 65 properties.



# Begin your DataVis project



Use **DataVis** to visually explore materials and their properties.

Find and compare material property data, then save your interactive visualizations and share with others.



Compare properties across multiple materials



Find a property value for a single material

## Sample DataVis Projects

These active learning projects have been created by faculty to teach material properties using DataVis. You can use them as-is, or copy and customize them for your own courses.

### Exploring Basic Material Properties

This project explores the fundamental material properties of Density, Specific Gravity, Elastic Modulus: Tension and Yield Strength. *Designed by Kathleen Kitto, Western Washington University.*

[Open Project](#)

### Properties for Aerospace Structures

This case study looks at properties for Aerospace applications. *Designed by Kathleen Kitto, Western Washington University.*

[Open Project](#)

### Influence of Material Properties

This project investigates the influence of material properties in basic analysis and design for a first course in Strength of Materials. *Designed by Luke Lee, University of the Pacific.*

[Open Project](#)

# Compare properties across multiple materials

**Choose visualization** Cancel

**One Property**  
Dot plot visualization

**Two Properties**  
Scatter plot visualization

Tabular Data (advanced option)

- Choose to construct a dot plot or scatter plot visualization to compare multiple properties
- Compare up to five visualizations in a slide





# Find a property value for a single material

## Find a property value for a material

Concrete: Steel Reinforced Clear

Density Clear

**2400** kg/m<sup>3</sup> ▾

Source: **Matbase**, [matbase.com](https://matbase.com)

Compare Density for all materials

**Tabular Data** Export CSV

Select	Range	Star	Material	Classification	Density (kg/m <sup>3</sup> )
<input checked="" type="checkbox"/>	In	☆	Concrete: Steel Reinforced	Composite	2400
<input type="checkbox"/>	In	☆	Acetal Copolymer	Polymer	1420
<input type="checkbox"/>	In	☆	Acrylonitrile Butadiene Styrene (ABS): Molded	Polymer	1060
<input type="checkbox"/>	In	☆	Alloy Cast Iron Overview	Metal	7190
<input type="checkbox"/>	In	☆	Alumina (Al2O3): 96%	Ceramic	3800

# Access customizable sample projects

## Sample DataVis Projects

These active learning projects have been created by faculty to teach material properties using DataVis. You can use them as-is, or copy and customize them for your own courses.

Exploring Basic Material Properties	Properties for Aerospace Structures	Influence of Material Properties
This project explores the fundamental material properties of Density, Specific Gravity, Elastic Modulus: Tension and Yield Strength. <i>Designed by Kathleen Kitto, Western Washington University.</i>	This case study looks at properties for Aerospace applications. <i>Designed by Kathleen Kitto, Western Washington University.</i>	This project investigates the influence of material properties in basic analysis and design for a first course in Strength of Materials. <i>Designed by Luke Lee, University of the Pacific.</i>
<a href="#">Open Project</a>	<a href="#">Open Project</a>	<a href="#">Open Project</a>

**Add Visualization**

**Select Materials** 189 selected

Enter a material or classification

Expand All Deselect all shown

- Metal (96)
- Polymer (32)
- Ceramic (28)
- Composite (31)
- Advanced (2)

**Display Settings**

Show all included

Show selected and in range only

Show starred only

[More Settings](#)

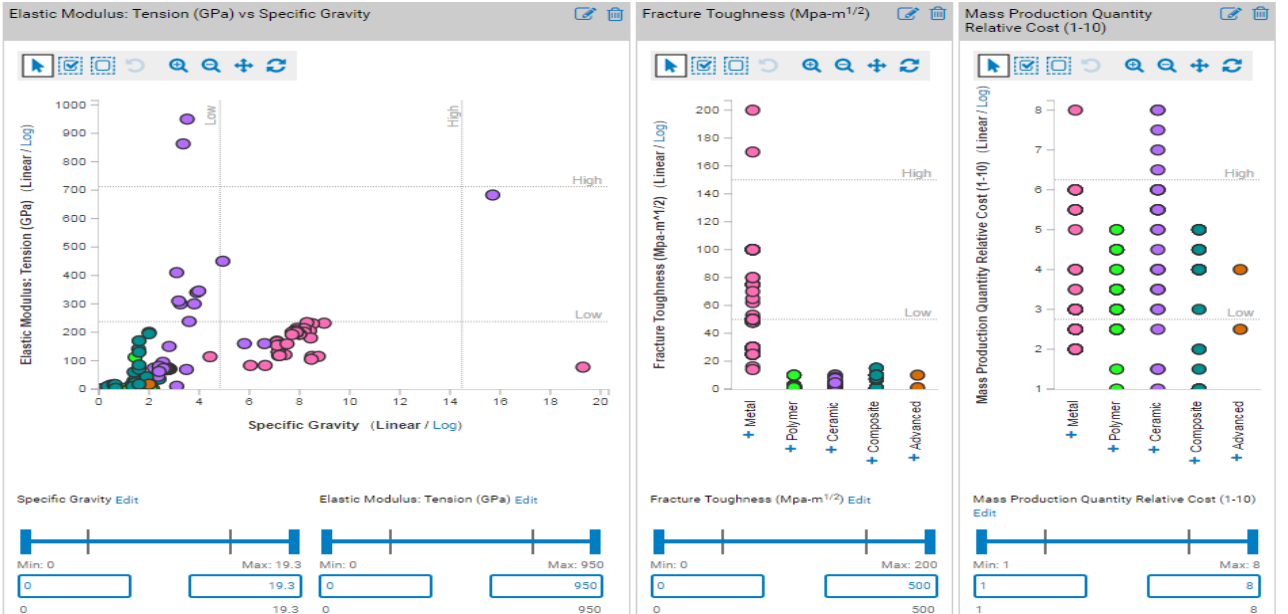
**Related Content** [Add Related Content](#)

**Sum it Up** [View Tabular Data](#)

Explore the Scatter Plot of Specific Stiffness - use Specific Gravity for the X Axis and the Elastic Modulus (T) for the Y Axis. Use the sliders to explore materials that have high values for Elastic Constant in Tension and Low Specific Gravity. What patterns do you notice? Note - you can always switch back and forth between log and linear views.

Next consider the dot plot of Fracture Toughness. Switch to log view. And a dot plot of Mass Production Relative Costs.

Given all properties considered in this project (and cost), select a material for an airplane fuselage, a wing, and a landing gear. You will have to use other pages in this project to answer this question. For bonus points, use your own explorations of other materials to justify your answers.





# Add related content to your projects

## Add Visualization

Select Materials 189 selected

Enter a material or classification

Expand All Deselect all shown

- Metal (96)
- Polymer (32)
- Ceramic (28)
- Composite (31)
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### Display Settings

- Show all included
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More Settings

### Related Content [Edit Related Content](#)

[Density Table - Various Materials](#)

[Matweb - Steels](#)

[Aircraft Materials](#)

[Composite Materials](#)

[Spacecraft Structures](#)

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## Density

[View Tabular Data](#)

The overall weight of any aerospace structure (airplanes, drones, satellites) determines how efficiently it will operate over its lifetime. The weight of its structure determines how much weight can be transported and for how long or far (distance). So thinking about weight brings us to thinking about density, although they are not the same. The weight of a part is a function of engineering design considerations and involves many more considerations than just density.

If you have not done so, review the Exploring Basic Mat Properties project to understand the materials science behind basic material properties.

Explore density values on the Density Table related content link (lower left). Explore densities of steels on the Matweb link. Google 'density of steel' and then 'steel density'. What do you notice? In the Density Tables, cork has a low density. Why would cork be a poor choice for the skin of a satellite or a blade of a jet turbine in an engine?

Composite materials are popular choices for many aerospace applications. Explore the link - Composite Materials in AccessEngineering. Describe at least three reasons why composites are often used in drones/quadcopters.

Review the link for Spacecraft Structures. What's fundamentally different in designing a drone or airplane from designing a spacecraft?

Now, let's explore the density of materials. Consider using it (think about the advantages and disadvantages) for a poor choice for a drone or satellite? When would one

What's the least dense material you can think of? For metals, in general. What accounts for the differences in densities? Carbon fiber and Kevlar are also good choices for a satellite antenna or a quadcopter

What patterns do you see in the density of materials? C and H and other elements are also good choices for a satellite antenna or a quadcopter

Select materials which are good choices for a satellite antenna or a quadcopter blade.

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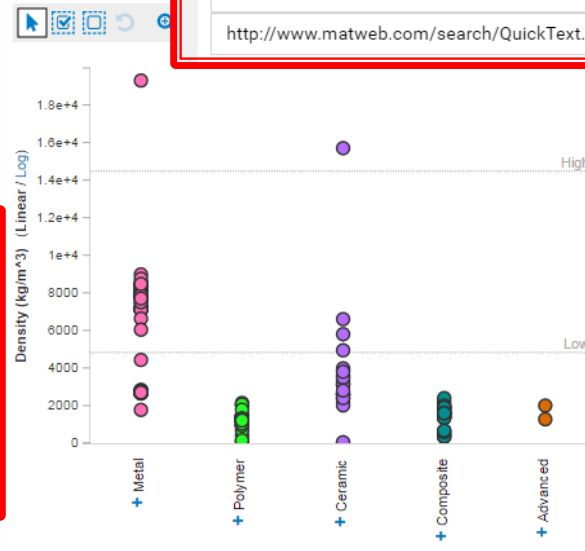
Density Table - Various Materials

<https://accessengineeringlibrary.com/browse/marks-standard-handbook>

Matweb - Steels

<http://www.matweb.com/search/QuickText.aspx?SearchText=steel>

Density (kg/m<sup>3</sup>)



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DataVis  
Material Properties

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## Props for Aerospace Structures View/Edit Description

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Navigation bar with tabs: Density, Density and Specific Gravity, Density, SG, E, Density, SG, E, Frac. T, TS, Flex S, YS T, YS C, R Hard, Costs, Absolute and Relative. Includes navigation arrows and a plus sign.

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**Props for Aerospace Structures**

Properties for Aerospace applications by Kathleen Kitto, Western Washington University

<https://accessengineeringlibrary.com/datavis/material-properties#/document/7d19969d-2a95-48b2-bc3e-d3bb3f471c10?page=1>

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# Questions?

