



FLUENT WITH RYAN

Engineering Jargon

Term	Part of Speech	Definition	Pronunciation	Example Sentence	Synonym	Antonym
Blueprint	Noun	A detailed plan or drawing that outlines the design and specifications of a project.	/ˈbluːprɪnt/	"The architect provided a blueprint for the new bridge."	Design plan, schematic	-
Prototype	Noun	An early sample, model, or release of a product built to test a concept or process.	/ˈprəʊtətaɪp/	"The engineers created a prototype to test the design before mass production."	Model, mock-up	Final product
Load-Bearing	Adjective	Describing a structure or component that supports weight or pressure.	/ləʊd ˈbeəriŋ/	"The load-bearing walls must be reinforced to ensure structural integrity."	Structural	Non-structural
Tensile Strength	Noun	The resistance of a material to breaking under tension.	/ˈtensəl streŋθ/	"Steel is chosen for its high tensile strength in construction projects."	Stretch resistance	Brittleness
Compliance	Noun	Adherence to regulations, standards, or specifications in engineering projects.	/kəmˈplaɪəns/	"Ensuring compliance with safety standards is critical in engineering."	Adherence	Non-compliance
CAD (Computer-Aided Design)	Noun	The use of computers to assist in the creation, modification, analysis, or optimization of a design.	/kæd/	"The engineers used CAD software to develop the project's design."	Digital drafting	Manual drafting
Shear Force	Noun	A force that causes parts of a material to slide past one another in opposite directions.	/ʃɛr fɔːs/	"The beam failed due to excessive shear force applied at the midpoint."	Shearing stress	-

Term	Part of Speech	Definition	Pronunciation	Example Sentence	Synonym	Antonym
Fatigue	Noun	The weakening of a material caused by repeatedly applied loads, leading to fracture or failure.	/fə'ti:g/	"The bridge collapsed due to material fatigue over years of heavy use."	Material weakening	Durability
Tolerance	Noun	The permissible limit of variation in a physical dimension or measured value.	/'tɒlərəns/	"The machine parts were manufactured within a tolerance of 0.01 mm."	Allowance	Rigidity
Torque	Noun	A force that causes rotation or twisting in an object.	/'tɔ:rk/	"The wrench was designed to apply sufficient torque to tighten the bolts securely."	Rotational force	-
Stress Test	Noun	A test that determines the robustness of materials or systems under extreme conditions.	/stres test/	"The material underwent a stress test to ensure it could withstand high pressure."	Endurance test	-
Retrofitting	Noun	The process of adding new technology or features to older systems or structures.	/'retroʊfɪtɪŋ/	"The old building was improved by retrofitting it with modern insulation and wiring."	Upgrading	-
Kinematics	Noun	The study of motion without considering the forces that cause it.	/'kɪnɪ'mætiks/	"The engineer studied kinematics to understand the motion of mechanical systems."	Motion study	Dynamics

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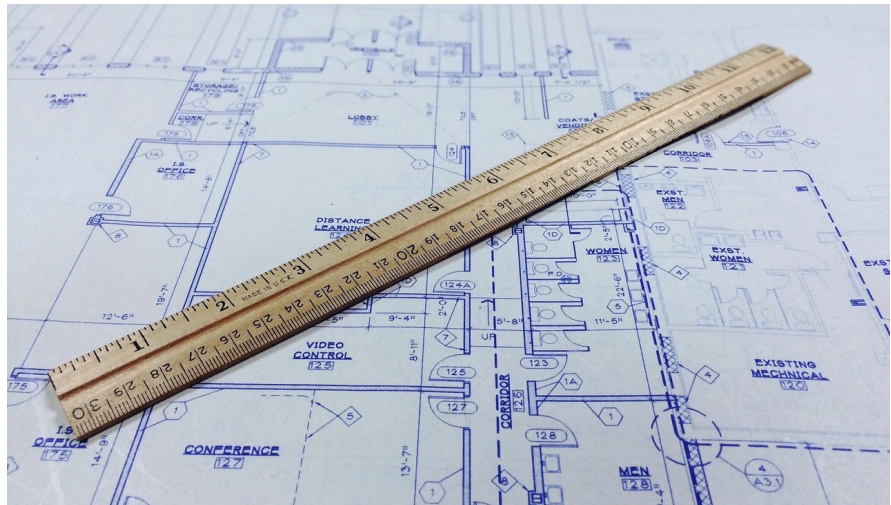
Mnemonic Devices

Blueprint: "A blueprint is a plan printed in blue ink – easy to remember for designs."

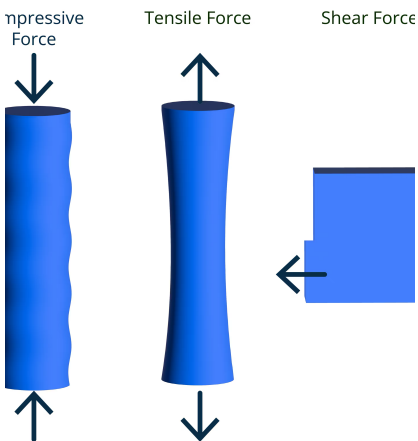
Tensile Strength: "Tensile relates to tension – think of how much tension a material can 'tens' before breaking."

Visual Aids

Blueprint

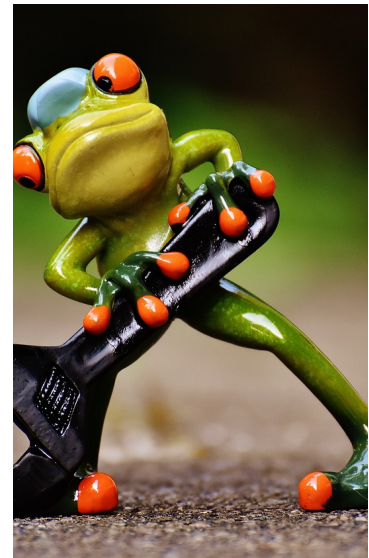


Tensile Strength



Tensile Strength

Torque



READING COMPREHENSION

Engineering projects rely on precise planning and testing to ensure the safety and functionality of structures and systems. The initial stage often involves creating detailed blueprints and CAD designs, which outline the specifications and dimensions of the project. Before full-scale production, a prototype is usually developed to test the design's feasibility and identify any potential issues. In structural engineering, understanding forces like shear force and torque is essential for maintaining stability and integrity. Engineers must also consider material properties, such as tensile strength and fatigue, to ensure that the components can withstand operational stresses over time. Compliance with safety standards is non-negotiable, as is adhering to specified tolerances to ensure that parts fit together correctly. Stress tests are conducted to push materials to their limits, ensuring they can endure extreme conditions. Retrofitting older buildings or systems with modern technologies can extend their lifespan and improve performance, while the study of kinematics helps engineers understand the motion of mechanical systems, contributing to more efficient designs.

Questions:

1. What is the purpose of a blueprint in engineering projects?
2. How does a prototype help in the design process?
3. Why is understanding shear force important in structural engineering?
4. What is tensile strength, and why is it crucial in material selection?
5. How does retrofitting benefit older buildings or systems?