**Definitions - Structural Strength and Stability**

These are the current definitions that you should be studying.  Updated March 15th.

**This list is now complete.**

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| Force | A push or pull that could cause motion.  Measured in Newtons (N) |
| Mass Structure | A structure that is made by the piling up of materials. |
| Frame Structure | A type of structure in which a skeleton of materials supports the weight of the other parts. |
| Shell Structure | A type of structure that obtains its strength from a thin, carefully shaped outer layer of material that requires no internal frame. |
| Manufactured Structure | An object or a structure that is made by humans. |
| Natural Structure | An object or structure that is not made by humans. |
| Column | A vertical support. |
| Beam | A horizontal support. |
| Laminate | A material made by pressing or gluing layers of materials together. |
| Corrugated | A layered material in which the middle is folded into a series of triangles to provide extra strength. |
| Properties | The characteristics of materials. |
| Composite Material | A material made up of different materials, with different properties, to fulfil a specific purpose. |
| Mobile Joint | A joint that is designed to allow movement. |
| Rigid Joint | A joint designed to hold an object in place. |
| Adhesive | A sticky substance that is used to hold objects or materials together. |
| Mass | The amount of matter in a substance. |
| Weight | The force of gravity exerted on a mass. |
| Structural Efficiency | The mass a structure can hold divided by the mass of the structure. |
| Load | A force or weight on an object or structure. |
| Live Load | The force or forces that act in or on a structure but are not part of the structure. |
| Dead Load | The weight of a structure upon itself. |
| External Force | The forces applied on a structure. |
| Internal Force | The forces present inside the materials of the structure. |
| Tension Force | A force that pulls on a material and stretches it apart. |
| Tensile Strength | A measure of the largest tension force that a material can withstand before changing shape or breaking apart. |
| Compression Force | A force that compacts or squeezes a material. |
| Compressive Strength | A measure of the largest compression force that a material can withstand before changing shape or breaking apart. |
| Torsion Force | A force that acts on a material by twisting its ends in opposite directions. |
| Torsion Strength | A measure of the largest torsion force that a material can withstand and still be able to return to its original shape. |
| Shear Force | A force that bends or tears a material by pushing parts in opposite directions. |
| Shear Strength | A measure of the largest shear force that a material can withstand before tearing apart. |
| Snap | The failure of a material when it elongates under tensile force. |
| Buckle | The failure of a material when it folds under compressive force. |
| Twist | The failure of a material when it changes shape under torsion forces. |
| Fatigue | A weakening of a material due to cycling stress, resulting in small cracks. |
| Stability | The level of a structures ability to maintain its shape and position. |
| Centre of Gravity | The spot where you would apply gravity on an object. The middle of the mass. |
| Thrust Line | The line that runs downward from an object's centre of gravity, through which force is transferred. |
| Aesthetics | The properties of an object that make it pleasing to the senses. |
| Ergonomics | Design Factors intended to maximize productivity by minimizing fatigue and discomfort of the user. |
| Criteria / Specifications | A set of standards or expectations for a design. |