
TECHNOLOGY

Constraints

&

Deformations

Compression

Tension

Torsion

Deflection

Shearing

Elastic

Plastic

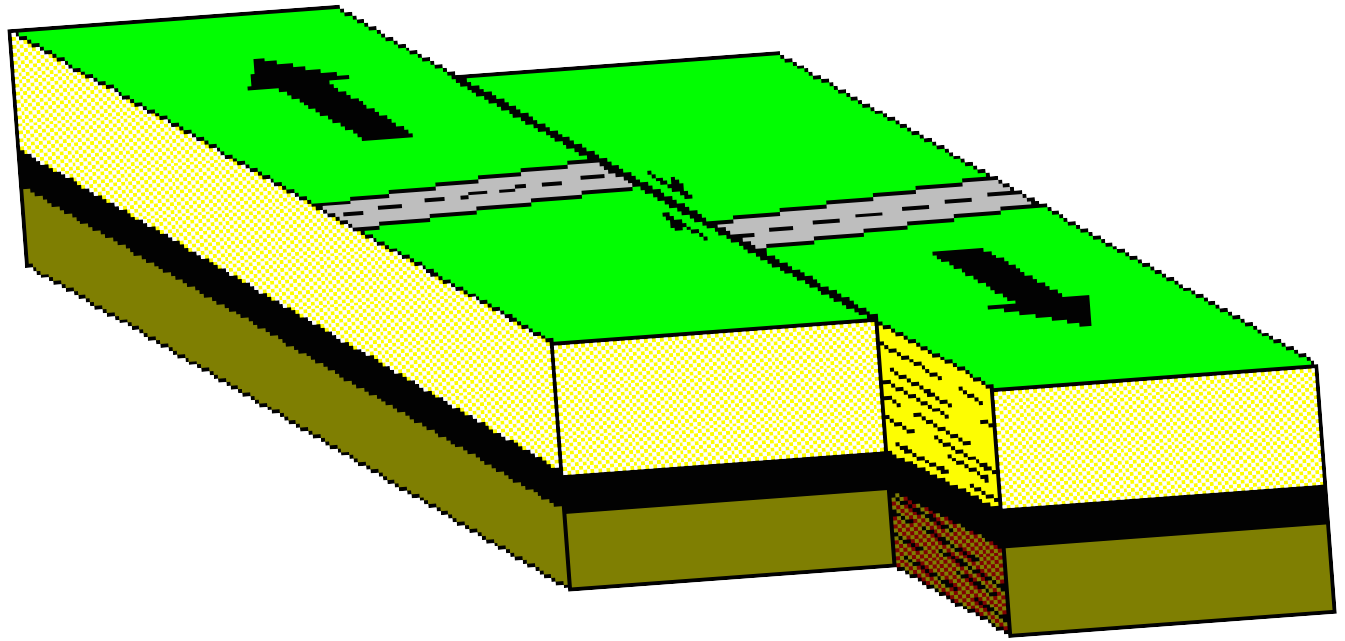
Fracture

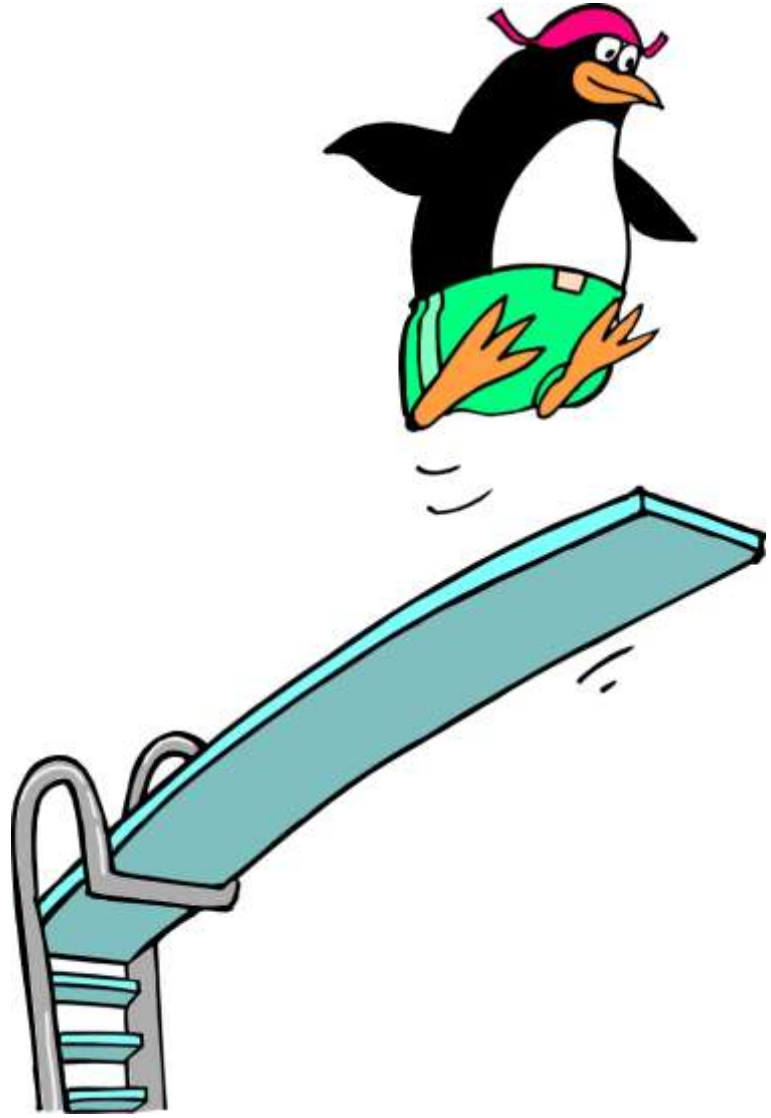
Ground shifting during an earthquake

Constraint: **Shearing**

Deformation:

Fracture





Spring board

Constraint: **Deflection**

Deformation: **Elastic**

Building Columns

Constraint:

Compression

Deformation:

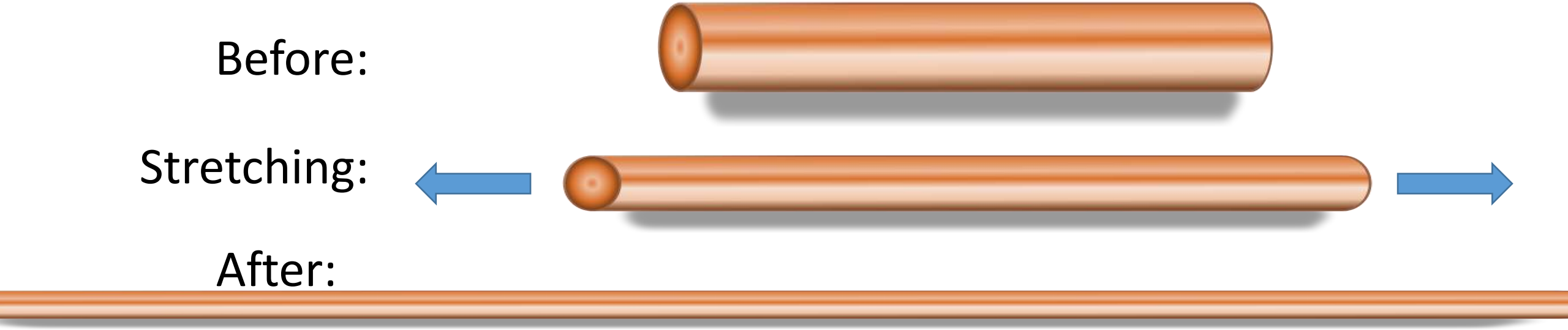
None

Ductility of metal

Before:

Stretching:

After:



Constraint: **Tension**

Deformation: **Plastic**

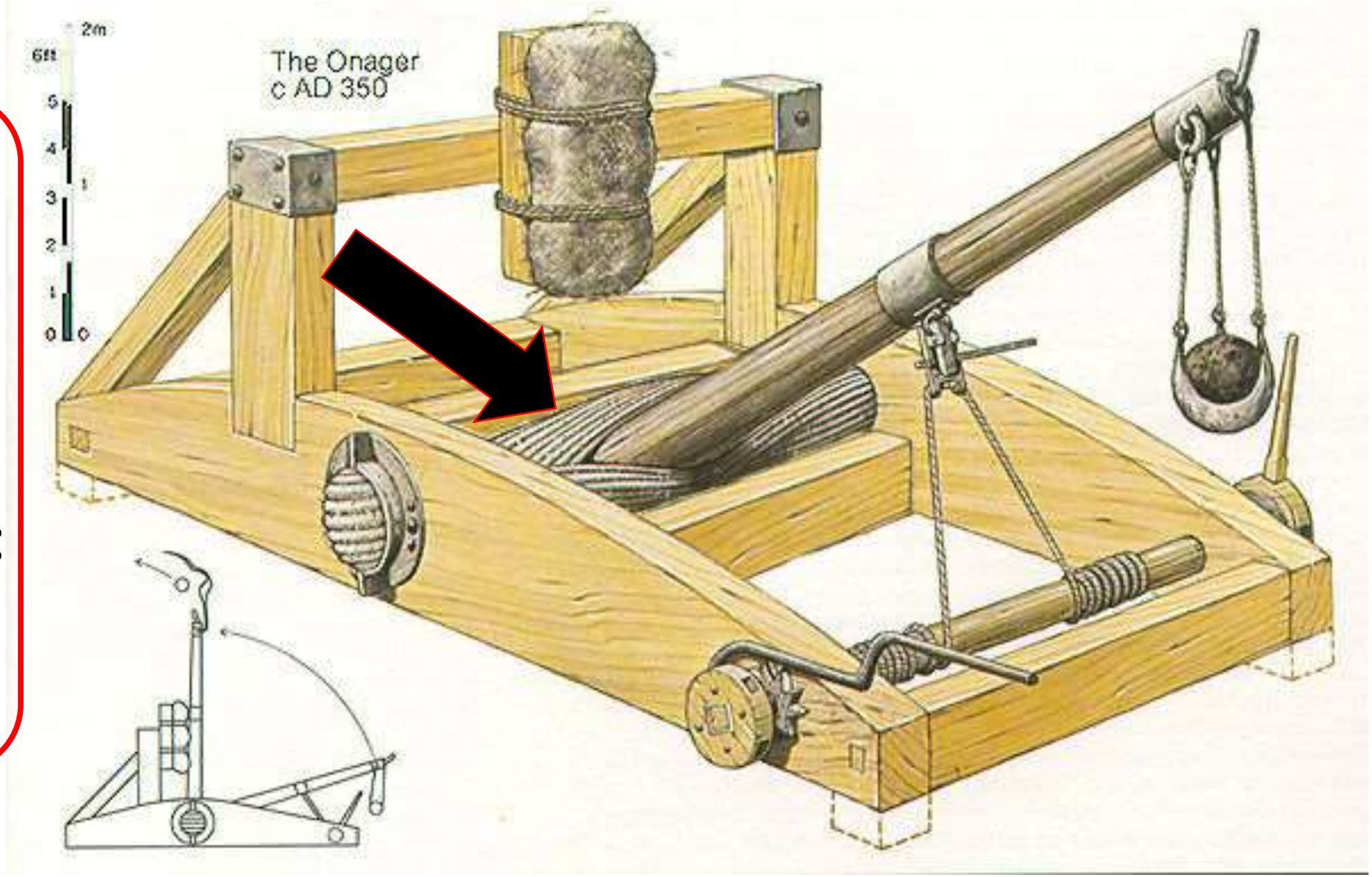
Rope storing the energy in a catapult

Constraint:

Torsion

Deformation:

Elastic



Properties of Materials

5 sec

Properties of Materials

Some mechanical properties

5 sec

Hardness	Ductility
Elasticity	Malleability
Resilience	Stiffness

Properties of Materials

Some mechanical properties

4 sec

Hardness	Ductility
Elasticity	Malleability
Resilience	Stiffness

Properties of Materials

Some mechanical properties

3 sec

Hardness	Ductility
Elasticity	Malleability
Resilience	Stiffness

Properties of Materials

Some mechanical properties

2 sec

Hardness	Ductility
Elasticity	Malleability
Resilience	Stiffness

Properties of Materials

Some mechanical properties

1 sec

Hardness	Ductility
Elasticity	Malleability
Resilience	Stiffness

Properties of Materials

Some mechanical properties

Hardness	Ductility
Elasticity	Malleability
Resilience	Stiffness

The ability to be **flattened** or **bent** without breaking: **Malleability**

The ability to **resist shocks** without breaking: **Resilience**

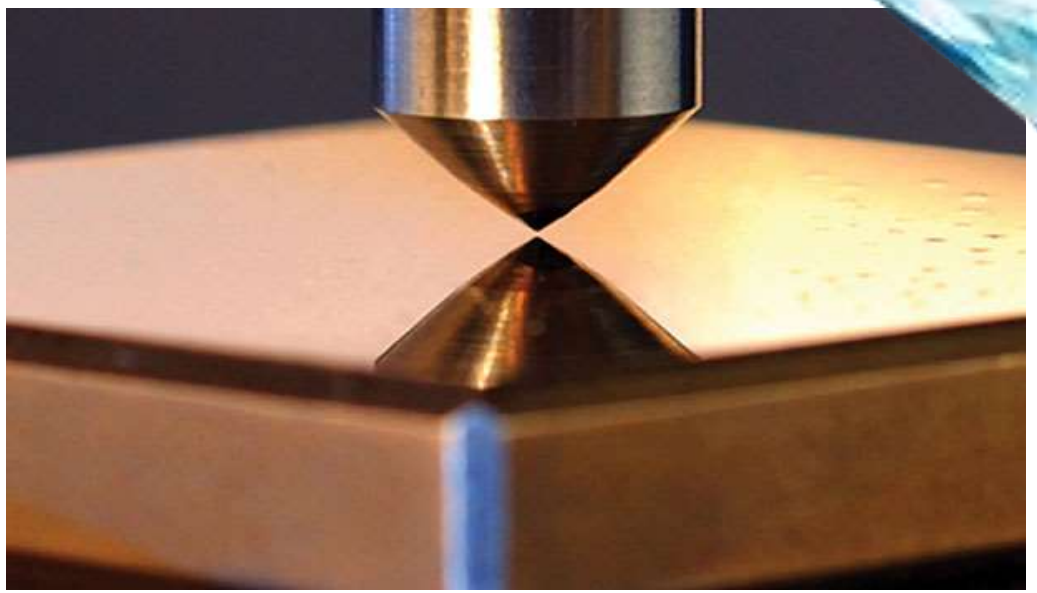
SHOCKPROOF

100% Shockproof, so fear no terrain or impact, they are built for all conditions.

The ability to **retain its shape** under constraints: **Stiffness**

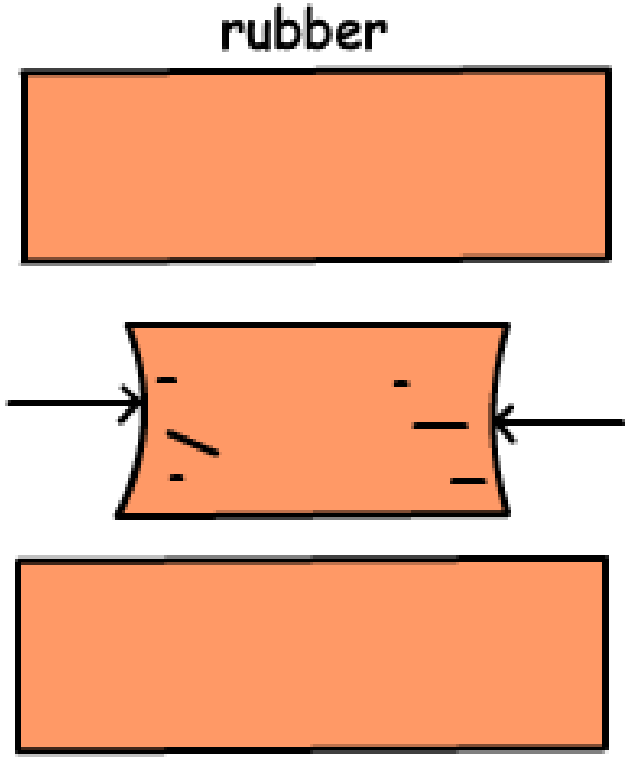
The ability to be **stretched** without breaking: **Ductility**

The ability to **resist scratching** or **indentation**: **Hardness**

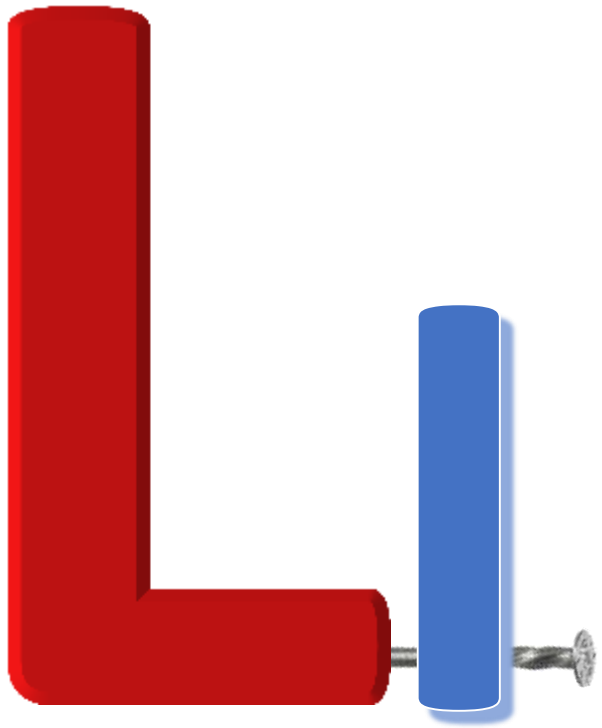


The ability to return to its original shape after a deformation:

Elasticity



after removing applied force rubber regains its original shape



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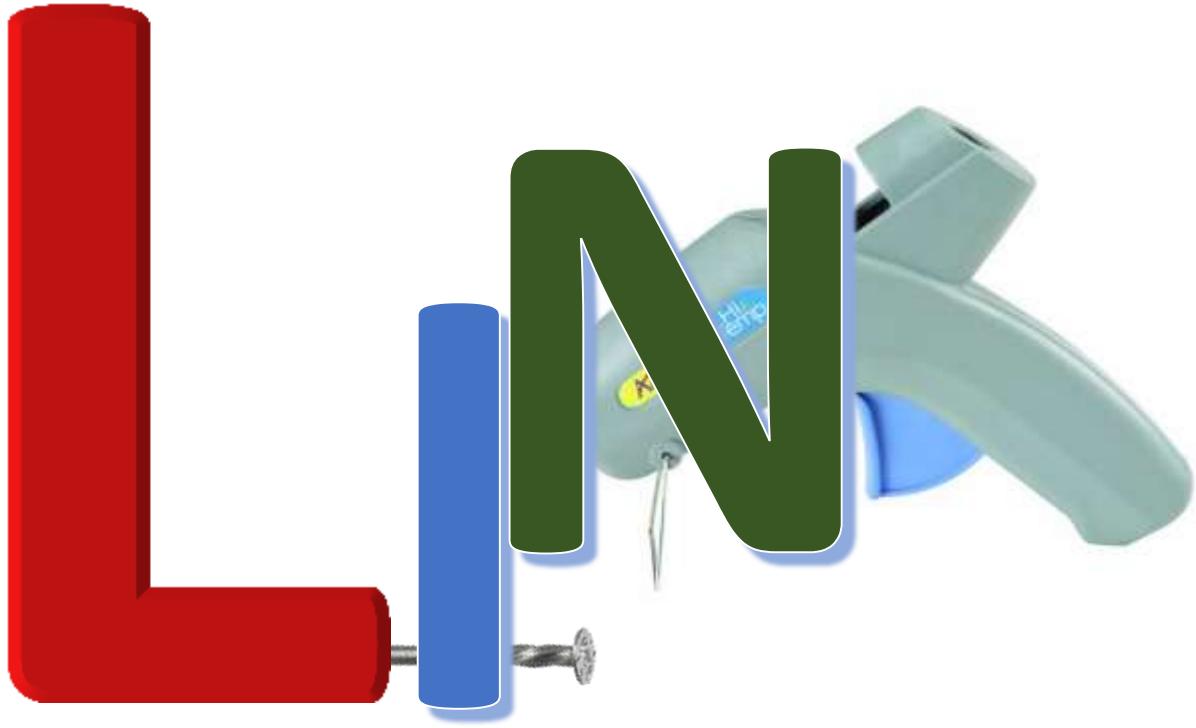

LINK


LINK


LINK

Direct / Indirect

Complete / Partial

Removable / Non-removable

Rigid / Flexible

Link joining the two scissor blades:

Indirect

Partial

Rigid

Non-removable

Link joining the Lego bricks:

Direct

Complete

Rigid

Removable

Thorin Oakenshield Bobblehead: Link between his head and body

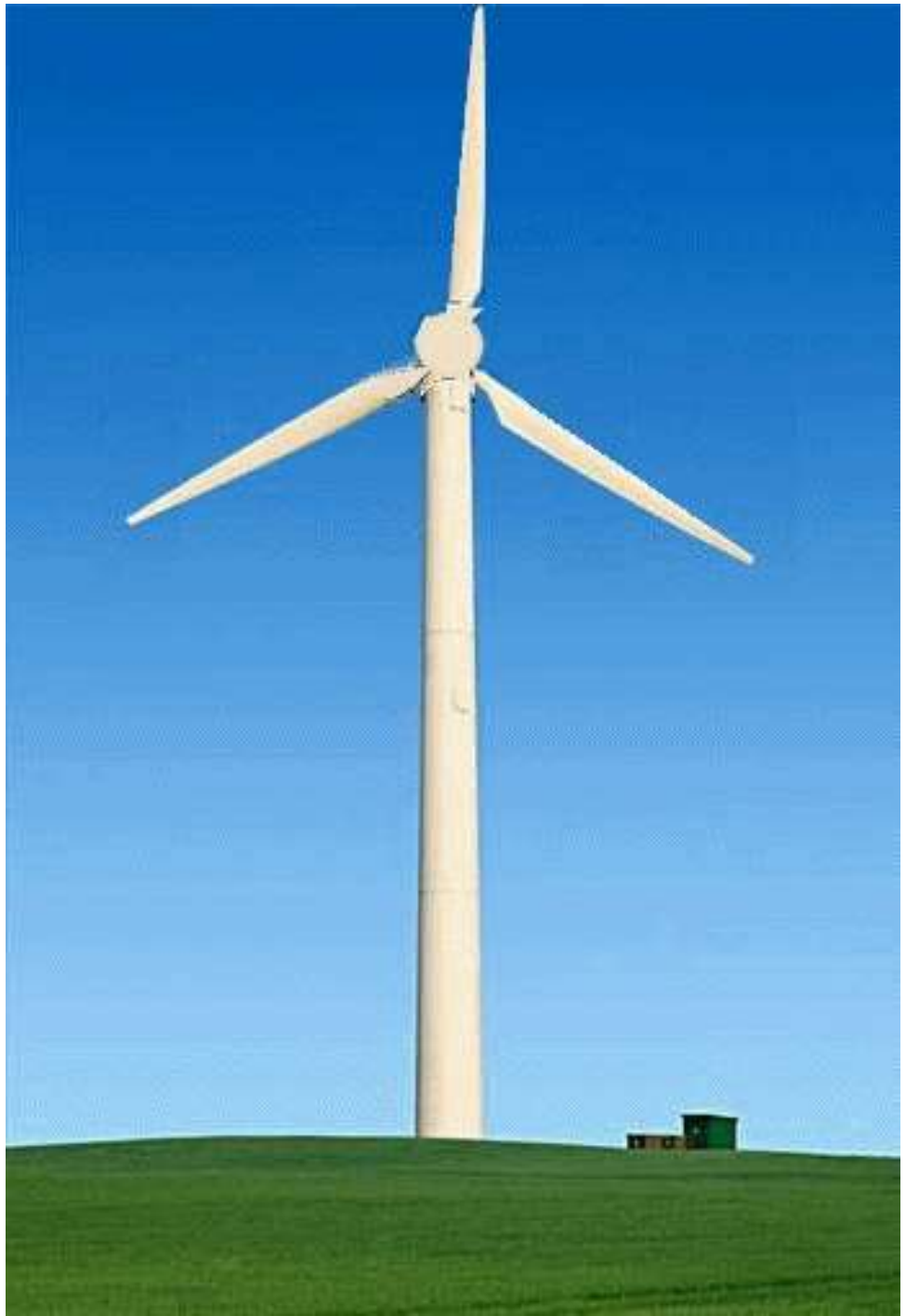
(Head glued to one end of a spring, body glued to the other)

Indirect

Partial

Flexible

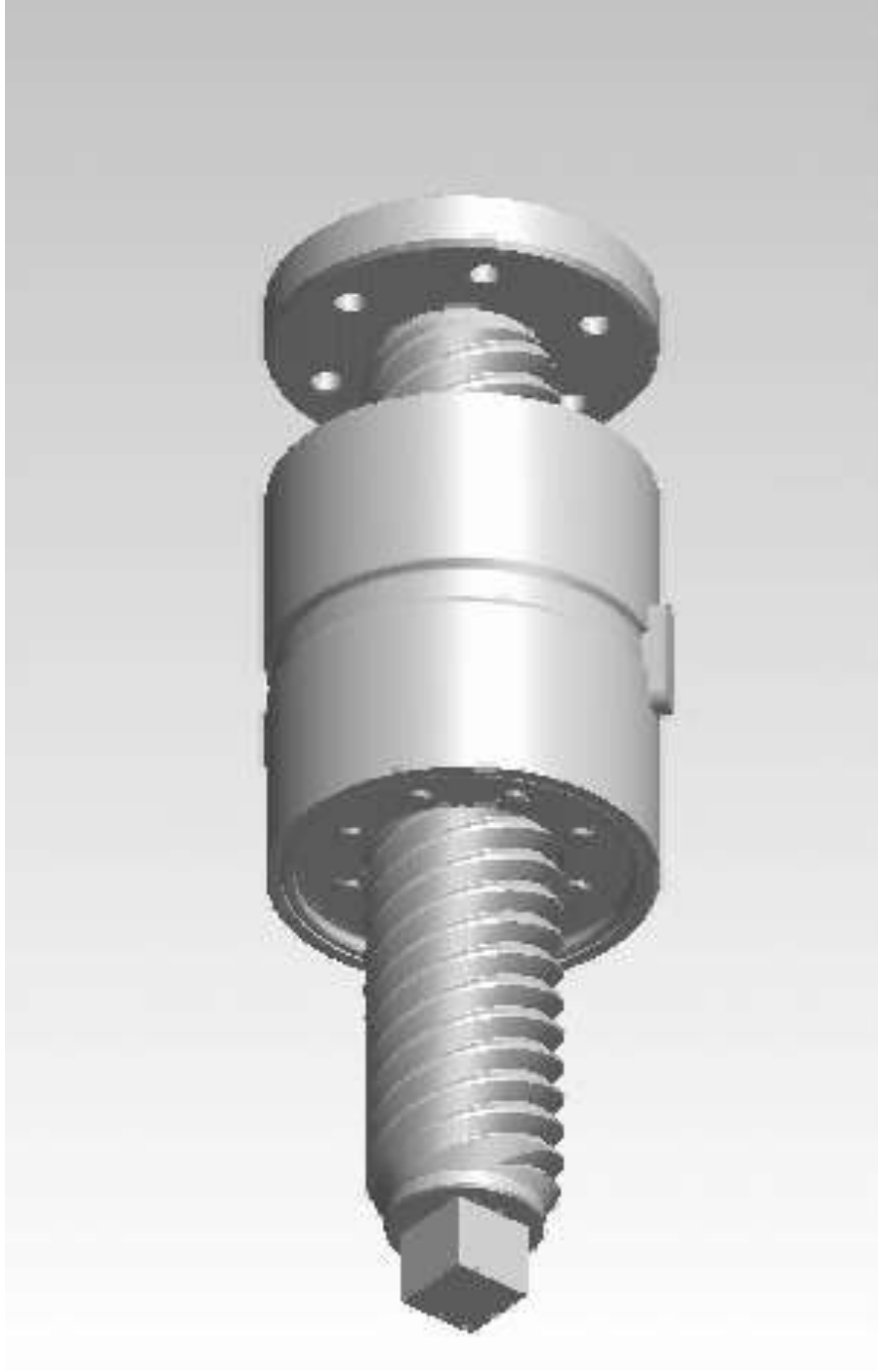
Non-removable



Guiding Controls

Guide Type

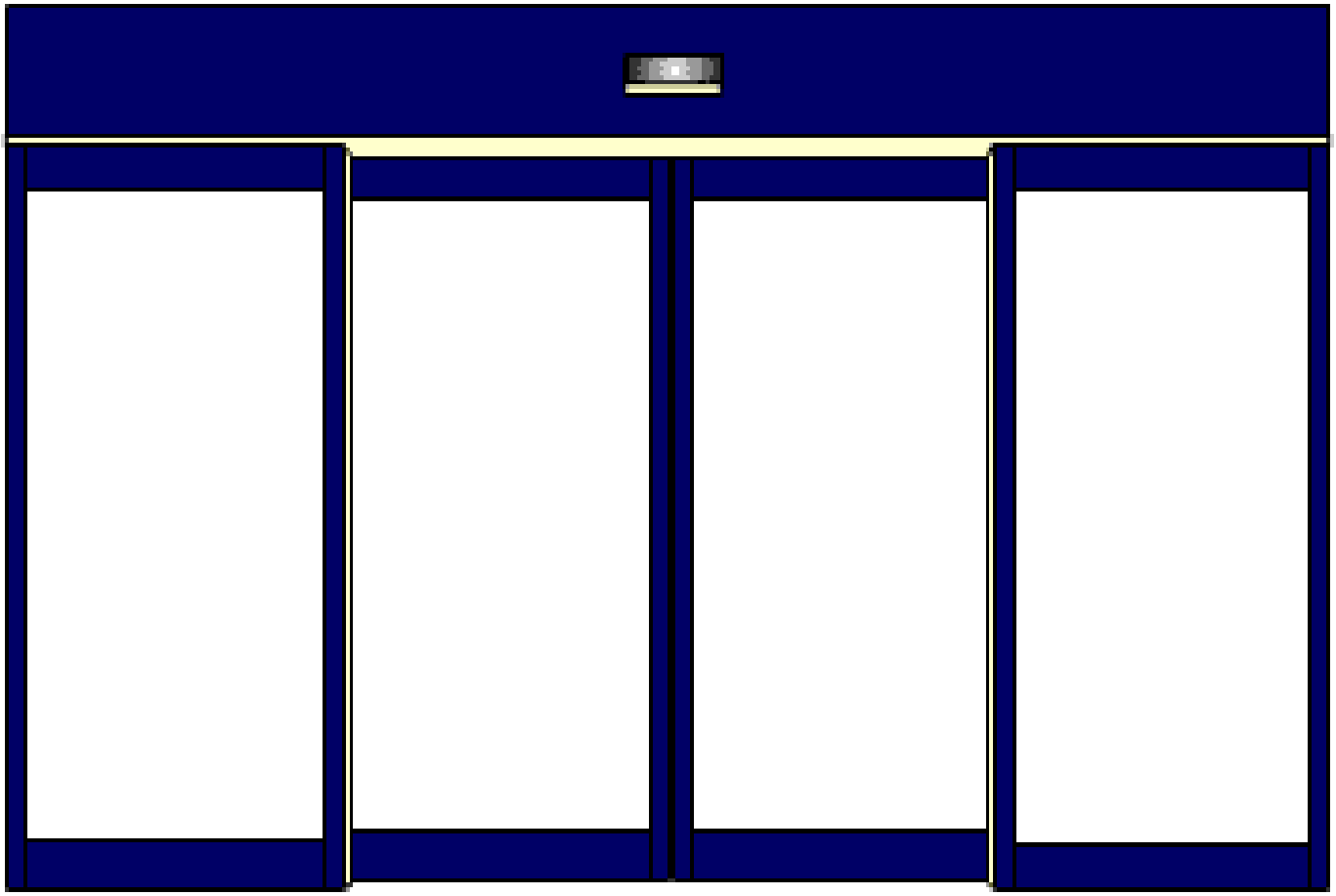
Rotational



Guiding Controls

Guide Type

Helical



Guiding Controls

Guide Type

Translational


TECHNOLOGY