

Read About Material Properties

MATERIAL PROPERTIES DEFINITION

A property is a quality of something like strength, stretchiness or absorbency. Materials have properties that help them serve specific purposes. For example, a chair is made of metal or wood because it is strong.

To better understand material properties and their purpose...

LET'S BREAK IT DOWN!

Different materials have different properties.

Metal is strong and not stretchy. Fabric is soft and stretchy. Since these two materials have different properties they are useful for different purposes.



A bridge is made of strong material such as metal.

This helps it hold up lots of heavy cars and trucks. Other materials that are strong include wood and concrete. Many buildings are made of these strong materials.

A bungee cord is made of stretchy material.

This helps it to serve its purpose so that the jumper can slow down safely after they jump. It is also important for a sock to be stretchy so when you put it on it does not rip.



The main purpose of a diaper is to absorb liquids.

That's why it is made of a super absorbent material to help parents clean up a baby's mess. Other materials that need to be absorbent are sponges and paper towels.

A raincoat has many properties that serve its purpose.

The important property is that it is not absorbent. This is important to keep the person wearing it dry. It is also flexible so it can be comfortable to wear.



MATERIAL PROPERTIES VOCABULARY

Property	A quality of a material.
Purpose	What something is used for.
Flexibility	How easily something can bend.
Strength	How strong something is.
Stretchiness	How easily something can be pulled apart and returned back to its original shape.
Absorbency	How well something can soak up a liquid like water.

QUESTIONS ABOUT PROPERTIES AND PURPOSES

Why is pizza not a good choice for building a chair?

It's not strong enough to hold a person up. It will just collapse when you sit on it.

How could you test different materials to see which is the most absorbent?

You could test each material by seeing which one absorbed the most liquid.

What property of a school crossing sign serves its purpose of being easily seen?

The sign is brightly colored so that people see it.

Why is the property of stretchiness important for a bungee cord?

If it wasn't stretchy you wouldn't bounce back up. It also allows you to slow down safely.

What kinds of things would you not want to be absorbent?

A raincoat, umbrella and a house should not be absorbent.

Why is it important that engineers know about the properties of materials?

They need to choose the right materials based on the purpose of what they build.