# FLEXIBLE **CERAMICS**

Ceramics made into

flexible fabrics

Most ceramics you might know about and see everyday like a coffee mug are rigid



Ceramic fabrics were initially used to protect space shuttles. The ceramic fabric could prevent heat from getting through gaps in the tiles at the front of a space shuttle.

• HOW ARE THEY MADE?

## WHAT ELSE ARE CERAMIC **FABRICS USED FOR?**

Since the fibers are made of ceramic materials, they can protect components against high temperature, are chemically resistant and are also lightweight! Some applications include:



metal manufacturing

Insulation for aircraft engines



The fibers are then collected and can be woven into

One way to make ceramic fabrics is to first mix and melt the raw materials (mainly SiO<sub>2</sub> and  $Al_2O_3$ ) at high temperature (above 2000°C/3500°F!).

> The hot liquid is then spun into fibers by pouring it over rollers that spin at high speed.







Insulation for pipes in many industries

#### **CERAMICANDGLASSINDUSTRY** UNDATI $\bigcirc$ $\bigcirc$ For more information visit

ceramics.org/ceramics-are-cool

#### Created by:



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### useful shapes

## **SUMMARY**

Ceramics are traditionally known to be rigid solids. However, using special processing methods, they can be made flexible making them useful for many more applications (can you imagine trying to insulate a pipe with a rigid ceramic!?)

#### WANT TO LEARN MORE?

To learn more about flexible ceramics, you can visit the following website (ceramics.org/tag/flexible-ceramics) or scan the QR code.

