

Ball materials

Ruby



Proven ball material for **standard applications**. Ruby is one of the hardest known materials after diamond, making it an ideal ball material for most standard applications.



Ruby balls can be used in a **variety of ways**. They are produced in **many different sizes** and are **very affordable** compared to other materials.



When ruby balls are used for continuous scanning, there is a **high level of wear** on the ball or **material build-up** on the test piece.



Ruby balls can be used for **all plastics**. They can also be used to measure workpieces made of **aluminium-free steel alloys**.

Ball materials

Carbide



Also known as **tungsten carbide**, this material is characterised by its **high hardness, wear resistance and high density**.



Carbide balls are **pressure and impact resistant** and are very **robust against contact or measuring forces**.



Carbide balls have a **very high weight**, in contrast to other materials. In addition, the **choice of different sizes is limited**.



Reference stylis are often made from this type of ball. They can also be used to **transmit electrical signals**.

Ball materials

Aluminium oxide



This is the **most frequently used** high-performance ceramic material. It has a **very high hardness** and its areas of application are comparable to those of zirconium oxide.



Balls made of aluminium oxide have a **high hardness**, which means they **wear less** than other materials. They are also **available in large diameters**.



Aluminium oxide balls are **attracted to aluminium alloys**. They are also **significantly heavier** than ruby balls, for example.



These balls are very suitable for **measuring abrasive surfaces** (e.g. castings). They are also used for **reference stylis**.

Ball materials

Silicon nitride



Extremely wear-resistant ceramic material with the **lowest surface roughness** of all ball materials.



Silicon nitride balls are very **wear-resistant** and are **not magnetically attracted**. They also have the **lowest surface roughness** and therefore good sliding properties.



Silicon nitride balls are difficult to manufacture, therefore they are **limited in range** and **expensive**.



Silicon nitride balls are suitable for measuring **all plastics and metal alloys with and without aluminium**.

Ball materials

Zirconium oxide



Thanks to its special surface, this material is particularly suitable for **scanning abrasive surfaces**, such as castings.



Zirconia balls have **very high wear and compressive strength**.



Zirconia balls are **heavier and more expensive** than conventional balls. They also have a **limited range**.



Zirconia balls are excellent for **measuring abrasive surfaces** such as castings.

Ball materials

Diamond coated



Diamond coated balls are made from silicon carbide coated with a diamond layer of approximately 0.03mm. See our UltraScanning range to see the full range of diamond coated styli.



Diamond coated balls are extremely wear resistant. Foreign material will not adhere to the ball and any material residue can be easily wiped off.



This ball material is considerably expensive compared to more common materials. In addition, diamond-coated balls are less commonly available.



Diamond-coated balls are used for scanning very hard surfaces, as well as very soft aluminium and titanium alloys.