

The Hardness of Polymers

SHORE A
—
SHORE D



Hard or Soft?

One of the key properties to consider when selecting a TPE is the **degree of hardness** required.

Hardness can be defined as a material's resistance to permanent indentation and Durometer is one of several scales used to measure hardness. The most common instrument for measuring rubber hardness is called a **Shore durometer**.



How does it work?

A spring is used to push a metal indenter into the surface of the material, measuring how far it penetrates. The instrument measures the depth penetration from **zero to 0.100 inches**.

A zero reading on the scale means the indenter is at the maximum depth and a reading of 100 indicates that no penetration was detected.



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EVA



ABS



TPU 60 Sh A to 65 Sh D



Dryflex & Mediprene TPE 0 Sh A to 65 Sh D



Vulcanised Rubber



PE



Lifolit soft PVC 40 Sh A to 60 Sh D



PP



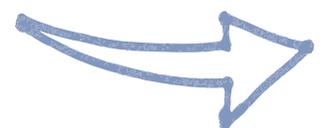
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Shore A

Shore D



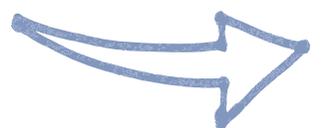
Increasing Hardness



Shore Durometers Hardness Range

Shore durometers come in a variety of hardness ranges. The **Shore A scale** uses a blunt indenter with a moderate spring force.

Shore A instruments are not as accurate when readings are above 90, so for harder materials, the **Shore D durometer** is used, as it has a sharp indenter and a stronger spring to penetrate to a greater depth.



Our Materials

Dryflex and **Mediprene** TPEs are available as ultra-soft gel like materials measuring 0 Shore A through to rigid materials measuring up to 65 Shore D.

Our **Lifolit** range of soft PVC's is available in hardnesses from 40 Shore A to 60 Shore D and our **TPU** compounds from 60 Shore A to 65 Shore D.



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