

## HOW TO MEASURE RUBBER AND POLYURETHANE ROLLER HARDNESS (SHORE-A SCALE)



Roller hardness indicates how resistant the rubber surface is to indentation, which affects the roller's performance in various applications. It's measured using the Shore Hardness Scale, with the Shore A scale being the most common for rubber materials. A higher Shore A number signifies a harder material.

Precise hardness measurements ensure that your rollers perform optimally, leading to:

- **Consistent product quality:** maintaining the desired hardness ensures uniformity
- **Extended roller lifespan:** proper hardness reduces wear and tear, enhancing durability.
- **Operational efficiency:** accurate measurements prevent issues like excessive vibration or material deformation during use.

A tool called a durometer is used to measure the hardness. The scale runs from 0 to 100:

- Lower numbers = Softer rubber and PU.
- Higher numbers = Harder rubber and PU.

The Shore-A scale works for most rubber and polyurethane rollers. For very hard materials (like "ebonite"), we use a different scale called Shore-D.

### TIPS FOR ACCURATE HARDNESS MEASUREMENTS

To ensure accurate readings, keep these points in mind:

- Regular calibration: durometers need to be checked against a standard regularly to ensure they're working correctly.
- Different durometers, different readings: using different tools can give slightly different results (up to 4 points or more).
- Technique matters: measurements can vary based on how you use the durometer. Follow the correct method below.

### CORRECT WAY TO MEASURE HARDNESS

#### 1. Roller surface:

Ensure the surface is clean, smooth, and free from contaminants. Imperfections can lead to inaccurate readings.

#### 2. Positioning:

Place the durometer perpendicular to the roller surface, ensuring full contact without tilting. Start measuring 25 mm (1 inch) from each end of the roller.



#### 3. Apply pressure:

Gently press the durometer down without slamming it. Use about 1 kg (2 pounds) of pressure. Take the reading immediately upon full contact (within 2 seconds).

#### 4. Temperature:

Measure at room temperature (around 23°C or 74°F). Temperature variations can affect rubber hardness readings.

By following these guidelines, you can reliably measure the hardness of your rubber and polyurethane rollers and optimize performance.