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Technical Article
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# Durometer ➟ Measuring Hardness

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For most soft rubber and plastics a Shore A scale is used. The scale covers from 0 to 100 but most instrument makers do not consider it as reliable below 10 or above 90. Softer materials including foams use an OO scale measurement device, while harder materials will be measured using a Shore D scale instrument.

The scales vary due to the strength of the spring and size and configuration of the foot of the instrument.

The testing of hardness with a durometer is taken at ambient temperature as extreme heat or cold will impact the results. To be accurate and repeatable in Shore A, the sample should be at least 1/4" thick. A sample may be built up using additional pieces of test material; this eliminates the problem of measuring the table below a thinner gauge sample.

Correlation between the various scales, A through OO, is difficult at best. Each scale should be used independently and results compared within that scale.

Finally, there is no correlation between durometer and other physical characteristics, abrasion, cut, tear etc., of *different materials*. However, within a particular class of material, i.e., SBR rubber or a polyester urethane, a correlation may be determined between durometer and some other physical properties with proper testing. The durometer measurement can then be used as an indicator of the other properties, for that specific material. In the case of rubber, you may determine whether or not the material is cured based on the durometer of the sample.