Correlation between Durometer (Shore) A and P & J Plastometer Hardness Scales

Although the Durometer (Shore) A and D hardness scales are the most widely used in the polyurethane elastomer industry, the P & J (Pusey and Jones) Plastometer is commonly used in the roll industry. In certain applications, such as paper mill rolls, the P & J scale is used almost exclusively.

The attached chart shows a correlation between the Durometer A and P & J Plastometer scales. This correlation has been shown to hold well for a variety of Adiprene®, Vibrathane® and Ribbon Flow® compounds used in the roll industry and is meant to be used as an approximate guide in translating from one scale to the other.

Note the inverse relationship between the two scales: For example, zero P & J equals 100 A and 200 P & J equals about 39 A. Above about 95 A (about 12 P & J) the A durometer scale becomes inaccurate, and one should switch to the D scale*. For practical purposes, 5 P & J equals about 75 Durometer D and 7 P & J equals about 60 D.

For more information on P & J hardness, call Adiprene/Vibrathane Technical Services at 800-243-2650.
Although there are Durometer B and C gauges that can be used to measure hardnesses between the A and D scales, they are not in common use in the polyurethane industry.

Care should be taken in using a D gauge on the face of a finished part, since its sharp indentor may puncture the material, causing a pinhole defect.