



THOMBERT

*The Longest Ride™*

The Lowest Cost

## An Overview of Durometer

Durometer is the term used to designate the hardness of any polyurethane material used for load wheels and tires on electric lift trucks. Most polyurethanes are on the Shore A scale. The Shore A scale goes from 1 to 100. There is a Shore D scale that is technically higher but it is not typically used for polyurethane wheels and tires.

Most polyurethane wheels and tires range in hardness from 83 to 97 durometer. The biggest misconception about durometer is that hardness is always directly correlated to load capacity and performance. This is not necessarily true. The performance of the polyurethane compound is related to the input chemicals that are used to make the product.

There is well documented research of an 83 Shore A durometer, such as Thombert's Dyalon B compound, actually outperforming a 90 Shore A durometer in load capacity and overall life. Even polyurethanes of equal hardness will offer different performance based on the raw materials used in the production of the product.

As the polyurethane gets softer it can offer users of electric lift trucks a softer ride and improved traction. In particular, the 83 durometer compound is used for drive tires and steer tires and wheels in lighter duty cycles with less load and shorter runs. To further improve traction, the 83 and 93 Shore A materials can be siped, router siped, or diamond siped for wet applications. The softer material will always offer improved traction.

As a compound moves up the hardness scale to 93-97 Shore A, it will flex less and may be capable of carrying more load. As stated earlier, this is all dependent on the input chemicals used. Wheels and tires that need to handle longer runs and higher loads in abusive warehouse applications are typically in the 93-97 hardness range.