

## Shear Strength: Why Is It So Important?

Shear strength is a scientific measurement of the pressure required to move an object from its starting position. For example, when applied to the holding or bonding strength of a wood floor adhesive, it is measured in pounds per square inch (PSI). That is the force required to dislodge flooring from the subfloor. It also refers to the amount of pressure that can cause cupping or end-lifting.

Adhesive manufacturers for carpet, vinyl, ceramic, and wood floors must meet requirements to ensure the flooring properly bonds to the subfloor. Because flooring materials change with their environment and will also react differently depending on the type of flooring is used, the shear strength required will vary with the floor.

Carpet will not expand and contract as much as wood vinyl floors when the moisture content changes. And engineered wood flooring won't move nearly as much as solid wood floors.

Carpet and vinyl require a shear strength of up to 100 PSI. Wood floors range higher, from 150 to over 600 PSI. The thickness and width of the flooring and whether it is solid or engineered determine how much strength is needed to hold it in place and prevent cupping.

The higher the PSI, the stronger and longer-lasting the adhesive bond will be. This means that over the lifetime of a wood floor, as it is continually exposed to changes in moisture content, relative humidity, and temperature, it will stay flattened and more securely bonded when the PSI is higher. You can imagine how helpful that will be when there is a particularly wet season, your doors swell shut, windows refuse to open, and drawers won't close. But unfortunately, your wood floor is suffering from the same stresses, and the quality of the adhesive is the only thing that will reduce cupping and prevent it from coming loose.

STAUF adhesives offer a higher PSI ratings than our competitors because we know flooring. For nearly 200 years, our adhesives have done their job. Below is an example of our PSI compared to the industry average.

Type of Adhesive	STAUF Product	Product PSI	Industry Average
Solvent	WFR-930	682 PSI	428 PSI
Urethane	PUM-950	391 PSI	250 PSI
Polymer	SMP-920	290 PSI	174 PSI
Urethane	PUK-455	682 PSI	250 PSI
Outdoor - 2 component	R701	>1000 PSI	250 PSI
Outdoor - 1 component	R741	580 PSI	250 PSI

Visit [www.staufusa.com](http://www.staufusa.com) for more information, or call Technical Services at (901) 820-0007.