



Technical Information #10

SHEAR STRENGTH: WHY IS IT SO IMPORTANT ??

SHEAR STRENGTH is a scientific measurement of the amount of pressure required to move an object from its starting position. 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 sub floor. It also refers to the amount of force that can cause cupping or end lifting.

Adhesive manufacturers for carpet, vinyl, ceramic, and wood floors all have requirements their adhesives meet to properly bond their floor to the sub floor. Because flooring materials will always react to their environment and will also react differently depending on what type flooring is used, the shear strength required will vary with the floor.

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

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 to prevent cupping.

In general, 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 flatter and more securely bonded when the PSI is higher. You can imagine how helpful that will be when there is a particularly wet season and your doors swell shut, windows refuse to open, and drawers won't close. 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 higher PSI ratings than our competitors because we know wood floors. For over 180 years, our adhesives have done their job. Here's an example of Stauf's PSI contrasted to the industry averages.

Type Adhesive:	Stauf Product:	Stauf PSI:	Industry Average.:
Solvent	WFR-930	682 PSI	428 PSI
Urethane	PUM-950	391 PSI	250 PSI
Polymer	SMP-940	290 PSI	174 PSI
Water/Acrylic	M2A-900	392 PSI	82 PSI