

POLYURETHANE vs POLYMER

Get a Grip the Right Way

Silicone. Polyurethane. They are almost the 'iPad' of the adhesive world, synonymous with anything that seals or even adheres, no matter what the substrate or conditions are.

Actual silicone and polyurethane-based adhesives have lived on unquestioned by trades for decades as the default solution for filling joints, achieving watertightness and finishing-off construction projects. And in construction, there's a real "if it ain't broke, don't fix it" rule, so getting innovative products across the line with tradesman, like polymer adhesives, can be a long-term proposition.

There are, however, some fundamental reasons why you should come across to the polymer side.

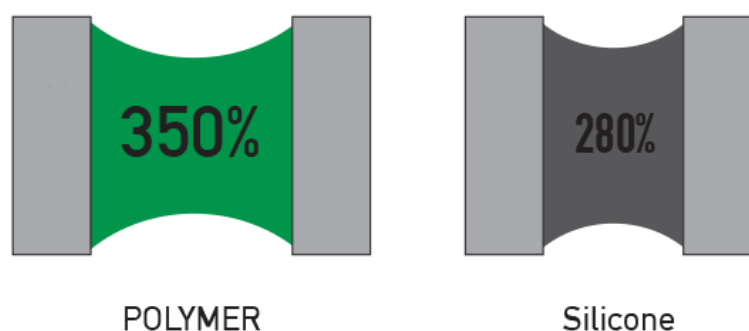
Safety – an Environmental and Personal Concern

Polyurethanes—and a handful of coloured silicones—contain isocyanate as a curing agent. Polymer-based adhesives do not. Isocyanate can cause occupational asthma, skin irritation such as dermatitis, irritation to the mucus membranes, eyes, nose and throat, as well as gastrointestinal irritation, chemical bronchitis and pneumonitis. It doesn't take much more evidence to realise that this sort of danger can jeopardise compliance with OH&S regulations let alone the welfare of contractors. Polymer-based adhesives are also solvent-free, making the use of them onsite far better for the environment, especially where rain encourages run off.

Multi-Substrate Cohesion

Again, standard silicone and polyurethane has been seen as the use-for-all adhesive by many for a long time. But polymer adhesives have a far greater cohesion strength and will adhere to far more types of surfaces and substrates, including composite, GRP, polycoated steel, concrete, masonry, and rigid and flexible EPDM/PVC. And some polymer adhesives also double as a sealant. In this category, there are some impressive numbers in regard to strength and durability. For example, with polymer, the elongation at break point can stretch up to 350% whereas many silicone alternatives may only stretch to around 280%. And the polymer option will remain cohered to both substrates. This is obviously important in a scenario where the substrates filled are susceptible to drastic expansion and contraction.

ELONGATION:





A Continuum of Durability

The other advantage of polymer compared to silicone is advanced durability, the most notable is hardness. For example, most a silicone-based adhesives have a low Shore A rating. Compare that with TWEHA with a Shore A rating of 60 and you have not only a adhesive but a virtual substrate within a substrate that can withstand high external forces and climactic conditions.

Workability in Finish and Design

During curing, polymer does not attract or catch dirt or any other kind of particle. Nor does it bubble, resulting in a completely smooth finish with maximum paint ability, if desired, with water-based paint.

This again bolsters polymer as the choice for increasing the health and safety of the user.

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