

## WHAT MAKES TWEHA ADHESIVES A BETTER CHOICE?

Adhesives applied on building exteriors are subjected to rigorous weather conditions which may cause damage to its physical state leading to the loss of its designed functionalities.

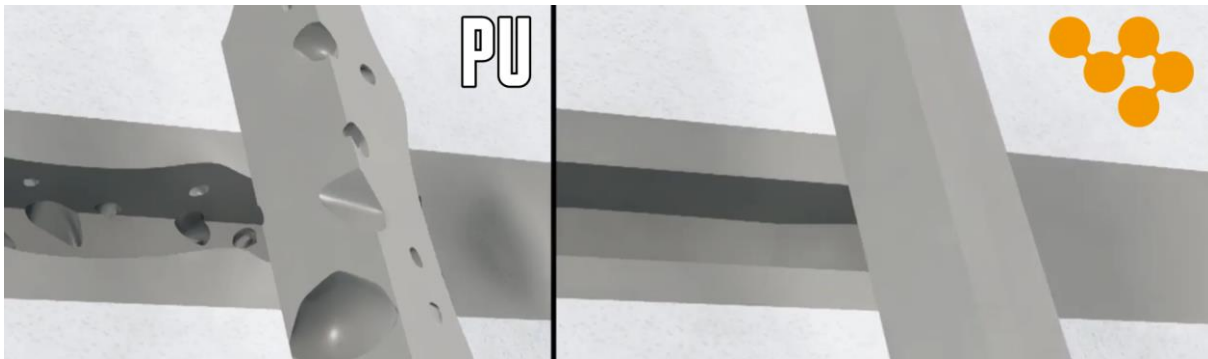
The advanced Silane Modified TWEHA adhesives combines the strength of the former silicone, polyurethane and MS Polymer adhesives while also addressing some of their inherent weaknesses.

Edward M . Petrie ('Adhesive Sealant Council' USA) published a Performance Comparison of MS Polymer, Polyurethane and Silicone Sealants. Which gives you a general overview in the differences in performance of these kind of materials.

Performance Comparison of MS Polymer, Polyurethane, and Silicone Sealants			
Property	MS Polymer	Polyurethane	Silicone
Environmental friendliness	10	5	9
Non-bubbling	10	6	10
Low temperature gunnability	10	8	10
Slump resistance	10	10	10
Quick cure	10	7	10
Storage stability	10	7	9
Body (tooling)	8	10	8
Weather resistance	8	6	10
Adhesion to various substrates	10	5	8
Mechanical properties	10	10	10
Heat resistance, mechanical stability	9	8	10
Non-dirt pickup	10	10	5
Stain resistance	8	8	5
Paintability with water-based paint	10	10	3
Totals	133	110	117
Scale: 10=excellent; 1=very poor	Scale: 10=excellent; 1=very poor		
Table from 'MS Polymers in "Hybrid" Sealants' by Edward M. Petrie.			
Used here with permission from the Adhesives and Sealant Council.			

In addition TWEHA adhesives have special performance benefits where other technologies reach their limit, such as:

### **NO BUBBLING**



When adhesive is applied it is exposed to moisture ( $H_2O$ ) from the ambient environment as well as its adjacent substrates. Polyurethane contains a chemical called isocyanate which upon reaction with moisture, releases Carbon Dioxide ( $CO_2$ ).

The  $CO_2$  molecules in turn form bubbles and voids in the adhesive bead which can also cause an uneven surface. Over time the voids in the adhesive bead may, in case of extreme stress due to storm i.e., also cause a cohesive failure.

Since TWEHA adhesives does not contain isocyanate, there will be no bubbling issue.

### **DAMP SUBSTRATE BONDING**

Without isocyanate TWEHA adhesives can therefore be applied on damp substrates which is prohibited with polyurethanes.

This feature allows application even after rain, thus giving your project a greater flexibility.

### **NO SHRINKAGE**

Many polyurethanes contains solvent which evaporates during the curing process, causing bead shrinkage.

TWEHA adhesives are totally free of solvent and water, hence no shrinkage.

### **GOOD UV RESISTANCE**

Compared with polyurethane (PU), SMP adhesives has a much better UV resistance for achieving longer service life.

### **NON STAINING**

Most silicone adhesives contains non-reactive 'silicone-oil' that will migrate into or onto adjacent substrates causing stains.

TWEHA adhesive does not contains silicone-oil, therefore there is no substrate staining issue caused by silicone-oil migration.

Over the years TWEHA has developed a comprehensive range of SMP adhesives. Whatever your construction application is, you can be sure of finding your high performance, cost-effective and eco-friendly solution in TWEHA adhesives.



TWEHA, 2020