

TWEHA®'S MODERN, AUTOMATED MIXING SYSTEMS WITH PLC CONTROL

Why consistent adhesive quality starts long before the product reaches the façade

High-performance façade bonding begins long before an adhesive cartridge arrives on site. Behind every reliable adhesive system lies a highly controlled production process in which precision, consistency, and process engineering are essential.

At TWEHA®, we continuously invest in modern automated production technology because we understand that the quality of an adhesive is determined not only by its formulation, but equally by the way it is produced.

One of the most critical elements in adhesive manufacturing is: **the mixing process.**

Adhesive production is a highly controlled engineering process

The production of adhesives and sealants requires an extremely precise balance between:

- raw materials,
- mixing energy,
- temperature control,
- process timing,
- and production consistency.

Even small process deviations can directly influence:

- viscosity,
- curing behavior,
- adhesion strength,
- stability,
- and shelf life.

This is particularly important for structural façade bonding applications, where long-term reliability and predictable performance are essential.

Mixing technology directly affects product performance

Many people assume adhesive quality depends only on the chemical formulation.

The mixing process itself plays a decisive role in determining the final product quality.

The type of mixer and mixing method used can significantly influence:

- product homogeneity,
- appearance,
- mechanical properties,
- curing consistency,
- and long-term stability.

This applies to a wide range of adhesive technologies, including:

- emulsions,
- polymer solutions,
- rubber compounds,
- sealants,
- and masterbatch systems.

Every adhesive requires its own mixing strategy

Selecting the correct mixing equipment is a highly specialized process.

The optimal mixing conditions depend on numerous technical factors, including:

- viscosity,
- solids content,
- chemical reactivity,
- temperature sensitivity,
- shear sensitivity,
- order of ingredient addition,
- vacuum or pressure conditions,
- and batch size.

Different formulations behave differently under mechanical stress.

Some materials require high shear forces for proper dispersion, while others may be damaged by excessive shear or heat generation.

This is why advanced process control is essential.

Poor mixing creates serious performance risks

Incomplete or inconsistent mixing can lead to:

- agglomerates,
- air entrapment,
- phase separation,
- uneven curing,
- inconsistent viscosity,
- and reduced bonding performance.

In high-performance façade bonding systems, these issues are unacceptable.

Structural bonding applications require:

- predictable curing,
- consistent mechanical properties,
- and reliable long-term durability.

Even minor production inconsistencies can negatively affect installation quality and façade performance.

Process control is often more important than formulation itself

In many cases, mixing problems are not caused by the adhesive chemistry itself, but by:

- unsuitable equipment,
- insufficient process control,
- incorrect mixing speeds,
- poor temperature management,
- or uncontrolled production variables.

Successful adhesive manufacturing therefore requires: **a deep understanding of material behavior combined with precise production control.**

At TWEHA®, we place strong emphasis on process engineering to ensure every production batch meets strict quality requirements.

The advantages of TWEHA®'s automated PLC-controlled systems

To guarantee consistent product quality, TWEHA® uses modern automated mixing systems with advanced PLC control.

PLC control systems allow highly accurate management of:

- mixing speed,
- process timing,
- temperature,
- vacuum conditions,
- and production sequences.

This delivers major advantages in:

- reproducibility,
- process stability,
- production safety,
- flexibility,
- and overall product consistency.

Automation significantly reduces the risk of human error while ensuring every batch is produced under carefully controlled conditions.

Consistency is essential in façade bonding

In structural façade bonding, consistency is critical.

Installers and façade engineers rely on adhesives that perform:

- predictably,
- consistently,
- and reliably

under real environmental conditions.

This means every cartridge, foil pack, or batch must deliver the same:

- viscosity,
- curing profile,
- workability,
- and adhesion performance.

Our automated production systems help ensure that customers worldwide receive the high level of quality associated with the TWEHA® brand.

Technology, expertise, and quality control working together

Modern production technology alone is not enough.

Reliable adhesive manufacturing requires the combination of:

- advanced equipment,
- material expertise,
- process knowledge,
- and strict quality control.

At TWEHA®, these elements work together to create bonding systems specifically designed for demanding façade applications.

Conclusion

The quality of an adhesive is determined not only by its formulation, but by the precision and consistency of the entire production process behind it.

TWEHA®'s modern automated mixing systems with PLC control ensure:

- optimal reproducibility,
- precise process management,
- consistent product performance,
- and reliable long-term quality.

Because in high-performance façade bonding, every detail matters — starting at the very first stage of production.

At TWEHA®, we continue to invest in advanced manufacturing technology to deliver the consistency, reliability, and performance expected from professional façade bonding solutions.

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