WPC’s are a product made up of a blend of, usually wood or other natural fibres, and various types of plastic polymers such as LD-PE, HD-PE, PP, PVC or PS. Some samples even have a mix of plastic materials in the recipe. The diversity of formulations is huge as each manufacturer has his own proprietary mixture.

WPC’s are used for a variety of applications:
- in the automotive industry (Formpress process for cockpit parts)
- for exterior use as deck planking, patios, posts or hand rails
- for interior use such as door frames, skirting boards
- window frames

These are just a couple of application fields where WPC’s are being used nowadays.

Some of the benefits of WPC are:
- Less susceptible to water and humidity (shrinkage/swelling),
- resistance to insects
- The ability to be labelled „green“ due to the use of recycled materials
The challenge for us as adhesive manufacturers is the diversity of existing recipes and formulation. Each formulation is not only made up of the fibres and plastics, but also includes lubricants and stearates oder other chemical elements, which are necessary for a smooth extrusion process. When it comes to bonding though, some of these materials can have a negative effect on the short or long term bonding abilities and bonding values.

When it comes to adhesion to plastic materials, usually a pre-treatment is necessary to achieve a satisfying bond. These methods can include the use of a primer or an electrical discharge such as corona or plasma treatment. These pre-treatment methods can enhance the bondability of natural and synthetic materials and are a vital part of the PVC window frame wrapping process.

Here the application of a liquid primer is crucial for long-term adhesion in exterior use.

As each formulation of WPC’s is unique, no general statements can be made as to the bondability of the material before trials have been performed. These trials are necessary to find the right adhesive for the application. In our lab and our technical department we perform these trials with state-of-the-art equipment and can test the bonding simulating various real-life situations. These testing parameters can be performed to the most rigorous extent, which is the simulation of exterior use of materials. Here the specimen are exposed to heat, humidity and UV light.

Listed below is a small selection of our large product range which has been successful in adhesion to some WPC’s.

**KLEIBERIT 743.7 EVA**
- based hotmelt adhesive

**KLEIBERIT 750.0, 750.5 PO**
- based hotmelt adhesive

**KLEIBERIT 702.5, 704.0, 704.5 PUR**
- based hotmelt adhesive

**KLEIBERIT PUR 501.0, 569.0 PUR**
- based 1 component liquid adhesive

**KLEIBERIT Primer 831.0**

As stated, these adhesives do not guarantee a bond to every WPC material. They were successfully trialled with some formulations. Therefore this is not a recommendation for general use, but we ask to perform trials on the material were an adhesion is required before we grant a product recommendation.