



# Understanding Excelsior Adhesive Products

This document is intended to provide additional information or a deeper dive into the installation requirements regarding substrates. We are attempting to provide an understanding of how and why these items are important to and relate to issues resulting from improper substrate preparation.

The installation of resilient flooring is based upon the same requirements, no matter whether you are installing a rubber floor, solid vinyl floor, or LVT / LVP flooring. The requirements for the substrate are going to be the same. The most important aspect is that they substrate is solid, sound, and flat. I often say, it doesn't really matter regarding level, just flat. Resilient flooring, regardless of thickness will telegraph the substrate and even the trowel patterns of the adhesive below.

## IMPORTANCE OF PROPER ADHESIVE SELECTION

Adhesive should be selected based on the conditions the installed area will be subjected to and conditions of the substrate. Porosity should be reviewed to determine the appropriate method of using the adhesive and proper trowel size to utilize when applying the adhesive. All information given in reference to an adhesive is based on the prescribed installation environment information for resilient flooring. Any adhesives being used outside of the conditions should be expected to act differently than specified due to the environment they are being utilized in.

Unfortunately, selecting an adhesive is done prior to seeing the job site in its prepared condition for installation or upon the assumption that all concrete is porous. Therefore, selection of an adhesive that works for many conditions is most likely the appropriate way to go. Then it is just up to the installer to utilize the correct method of applying the adhesive for the job site conditions. There are times when the selected multi-application adhesive may not be suitable and needs to be changed to a specialty adhesive.

Determining the absorption or rate of absorption of the concrete slab is critical to the selection of the adhesive due to the way the adhesive works. Acrylic adhesive products have water in them to make them trowelable. When applied to the substrate and covered with flooring, there must be an avenue for the water to dissipate or dry. Since most resilient flooring products are impermeable, that means the moisture must go into the substrate or allowed to dry before covering.

## ADHESIVE TYPES

The different types of adhesives are Acrylic (either wet-set or dry-set), Polyurethane, Modified Silanes, & Epoxies. Excelsior products fall into most of the categories, and they all have their specific purpose and application. There are times when each should be used due to the nature of the installation and intended use of the flooring being installed. Here we will define these types and how we would like you to understand them.

Mainly the difference between the types of adhesives is related to the chemistry and performance attributes. For example, epoxies have traditionally been difficult to use as they require mixing prior to application and can be fickle to spread, but once the flooring is installed, the bond is the best normally difficult to remove. As adhesives progressed, the use of polyurethanes has replaced traditional epoxies in most applications. Being easier to spread verses epoxies and producing a hard-set bond that is resistant to water allows them to be used outdoors with great success.

With acrylic adhesives, there comes the most confusion regarding the application. There are several different terminologies utilized within the acrylic adhesive genre. Wet-set, pressure sensitive, transitional, etc. to name a few. They are not all the same, each one has its own substrate requirements and working methods and from our experience most installers treat them the same way, as pressure sensitive. Keep in mind that these are application & installation of flooring methods for the adhesives and not types.

Pressure Sensitive	<ul style="list-style-type: none"> <li>Dry-Set flooring application</li> <li>Soft-Set Adhesive when fully cured</li> <li>Can work on flooring without flooring sliding around</li> <li>Most used with VCT type products but utilized more and more with LVT / LVP</li> <li>Can be used over Porous (Absorptive) &amp; Non-Porous (Non-Absorptive) substrates</li> <li>Easiest application method but not the best long-term performance with vinyl-based products</li> </ul>
Wet-Set	<ul style="list-style-type: none"> <li>Wet-Set flooring application</li> </ul>



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	<ul style="list-style-type: none"> <li>• Hard-Set Adhesive when fully cured</li> <li>• Must work off flooring to prevent flooring from sliding around</li> <li>• Most recommend method of installation with Solid Vinyl, LVT &amp; Rubber flooring products</li> <li>• Can only be used of Porous (Absorptive) substrates</li> <li>• More difficult to work with as production is not as high as a pressure sensitive application but best long-term performance with vinyl-based products</li> </ul>
<b>Modified Pressure Sensitive (Transitional)</b>	<ul style="list-style-type: none"> <li>• Dry-Set or Wet-Set flooring application depending upon substrate</li> <li>• Firm-Set Adhesive when fully cured</li> <li>• Hybrid of the Wet-Set and Pressure Sensitive technologies</li> <li>• Can be used over Porous (Absorptive) &amp; Non-Porous (Non-Absorptive) substrates</li> <li>• Best adhesive choice for multiple substrate types and better long-term performance with vinyl-based products</li> </ul>

## ADHESIVE SETTING METHODS

The different types of adhesive setting methods are Wet-Set, Tacky-Wet, & Dry-Set. There is probably not an adhesive that can be applied, and flooring installed using all these listed methods. Most will be either wet-set or dry-set installation methods after the application of the adhesive. Here we will define these methods and how we would like you to understand them.

<b>Wet-Set</b>	<ul style="list-style-type: none"> <li>• Utilized on Porous (Absorptive) Substrates Only.</li> <li>• Flooring is placed into the adhesive in a wet state, usually within 5-10 minutes of applying the adhesive.</li> <li>• There is a window for installing flooring that is small compared to other methods due to the nature of the adhesive. If the adhesive is not covered within the window, it does lose the ability to bond the flooring.</li> <li>• After installation and rolling, there should be a smooth adhesive bed under the flooring with no visible trowel ridges and transfer of adhesive to the back of the flooring.</li> </ul>
<b>Tacky-Wet</b>	<ul style="list-style-type: none"> <li>• Utilized on Non-Porous (Non-Absorptive) Substrates Only.</li> <li>• Flooring is placed into the adhesive in a tacky state. Meaning the valleys of the trowel ridges will be dry, the ridges will be wet with a layer of dried adhesive on top that is tacky. When pressed with a finger and moderate pressure the ridge will collapse and show wet adhesive underneath. This can take 15-20 minutes depending upon conditions.</li> <li>• There is a window for installing flooring that is small compared to other methods due to the nature of the adhesive. If the adhesive is not covered within the window, it does lose the ability to bond the flooring.</li> <li>• After installation and rolling, there should be a mixture of smooth to some trowel ridges under the flooring with some transfer of adhesive the back of the flooring.</li> </ul>
<b>Dry-Set</b>	<ul style="list-style-type: none"> <li>• Utilized on Porous (Absorptive) &amp; Non-Porous (Non-Absorptive) Substrates.</li> <li>• Flooring is placed into the adhesive in a dry state. The trowel ridges will be tacky dry to the touch with no transfer to the finger with moderate pressure. This usually takes 30 minutes or longer.</li> <li>• The window for installing flooring with this method will be longer as the adhesive is designed to accept the flooring longer in this state. This is typically a pressure sensitive adhesive, and the working time will vary.</li> <li>• After installation and rolling, there should be flattened trowel ridges under the flooring with no or very little of adhesive the back of the flooring, normally there will be some signs of where the flooring was touching the adhesive.</li> </ul>



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## PUTTING IT ALL TOGETHER

How do you know when to use which type and which setting method for which application?

If you ask us, in our experience it is always best to use an acrylic adhesive that is designed or can be used as wet-set adhesive for most applications. The only time we would refer to a urethane or epoxy adhesive would be either outdoors or an installation that will see topical moisture. By topical moisture we simply mean more than maintenance water. This could be a locker room or area directly off a shower, entry way in a rainy climate, etc.

In the Excelsior line, we do not have a simple pressure sensitive adhesive product and would not recommend they be used with our types of products. Vinyl has a known quality of movement with temperature changes, that doesn't make it defective is just needs an adhesive designed to help prevent unsightly seams over time.

We do have a wet-set adhesive in our AW-510 that we recommend with most all our products. It can be used with rubber flooring, solid vinyl flooring, as well as luxury vinyl flooring in climate-controlled environments.

Also, in our line we have our PS-525 Modified Pressure Sensitive Adhesive that is extremely versatile for use on many substrates and application methods. It is widely our most recommended adhesive for many applications. The only limitations are indoor use only and no topical water. With a firm-set after curing it can be utilized in applications with hil-rom beds and other rolling loads.

Our U-705 Urethane and EW-710 Two-Part Epoxy adhesives are more than suitable for any heavy-duty application you need and should be used in areas in which topical moisture may be present. U-705 is recommended for all products and recommended for use outdoors with products that are approved for outdoor use.

The technical data sheets for all Excelsior adhesives contain all of the information necessary to make the correct choice in adhesive for any application.

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