

Pressure Sensitive Adhesive Guidelines

This guideline applies to all AIRDEC and RAILDEC products that are backed with pressure sensitive adhesive (PSA), and is intended to aid in the storage, handling, and application of these products.

Description

Pressure sensitive adhesive is an adhesive that is tacky or sticky at temperatures above about 50°F (10°C), which consequently makes this type of adhesive conducive to application at typical room temperatures. PSA is a relatively viscous material, as opposed to an elastic material, which imparts its soft and tacky nature. Consequently, PSA tends to "flow" and become more intimate with the surface it is in contact with over time, so it usually takes about a week after application for bond strength to reach a maximum. On the other hand, PSA also tends to "creep" and pull away from a surface if outside forces act upon it over a long period of time. Skyline Products' PSA is designed to provide relatively high initial tack, the ability to reposition it during application (before any pressure is applied), approximately 3 to 5 pounds per inch of peel strength (approximately 1 week after application), and good creep resistance up to approximately 120°F (48°C).

Storage

Products with PSA should be stored at 70°F (21°C), but will withstand storage temperatures of 50°F (10°C) to 90°F (32°C). Rolls of materials with PSA should be stored suspended from the core and wound up tight (and taped) to avoid any creeping of the white polyethylene liner, which can set permanent wrinkles and other deformation into the adhesive and the product. Winding and storing rolls with the white polyethylene liner and adhesive on the outside of the roll also helps prevent the liner from pulling away from the adhesive during storage. Sheet materials or roll materials that have been sheeted should be stored flat or rolled up with the white polyethylene liner and adhesive on the outside of the roll, preferably taped tight onto on a core. The shelf life of the adhesive is typically about one year, but can be extended considerably by storing the product at the recommended temperature and conditions.

Handling

The PSA on these products is very tacky and should be handled with care and foresight. Keep storage and work areas clean and free of dust and debris because foreign material will easily stick to and contaminate the adhesive and cause a defect in the finished part. Do not peel the liner from the adhesive until the panel surface is clean, and the material is properly cut to size and in position for application. If the liner is removed and contacts a surface, the adhesive can be damaged trying to "reposition" the material. If the white polyethylene liner and adhesive appear to have bubbled or crept from the laminate due to improper storage, press it back on with sweeping hand motion or a roller before application.

Application

Application of products with PSA are best conducted at temperatures between 70°F (21°C) and 80°F (27°C). Cut the adhesive to the desired size, which is usually larger than the part. Clean the panel surface with isopropyl alcohol and remove any dust and debris from the part surface and the work area. Position the laminate over the part with the polyethylene liner and adhesive side down. Lift up the closest edge and pull the liner back approximately one inch. Carefully position the bare adhesive edge squarely in place, and apply sweeping hand pressure to tack it to the surface. Lift the rest of the laminate away from the panel and reach around and grab the loose edge of the liner. Carefully pull the liner up and away from the backside of the laminate while sweeping and pressing the laminate onto the panel by hand or with a roller. Large parts may require two or more people to perform this operation. Work slowly and avoid trapping any air between the adhesive and the panel. If air is trapped, reposition and reapply the laminate, or poke the laminate with a needle or sharp instrument and press the air out by hand or with a roller. After application, trim the laminate to net size. Allow the parts to "cure" at temperatures between 70°F (21°C) and 80°F (27°C) for one to two days before testing the bond strength, or putting any out of plane stresses on the bond-line.

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