Proper Use of Contact Adhesives

What are contact adhesives?

An adhesive applied to both surfaces, allowed to dry and provides a permanent bond when proper pressure is applied. They are used in a variety of applications as they bond to many different substrates. They work very well in the woodworking industry when bonding High Pressure Laminate (HPL) to other wood surfaces such as particleboard of plywood.

Contact adhesives are available in liquid form with the liquid being either solvent or water. Solvent systems can either be flammable or non-flammable. These products can be either spray or brush applied.

The 4 golden Rules of Contact Adhesives:

1. Apply the right amount of adhesive
2. Allow proper Dry Time
3. Do not exceed the Open Time
4. Allow for proper pressure

Apply the right amount of adhesive

When spraying contact adhesives, 85% coverage (2.5-3.0 dry grams/sq ft) should be applied to both surfaces. Coverage should be higher around the edges by applying a second coat. The optimal range is 2.5 to 3.0 dry grams depending on if a neoprene contact (2.0-2.5) or SBR (2.5-3.0). The easiest means to check is take a one sq. ft. of particleboard weigh it and then spray the adhesive. Allow the adhesive to dry completely, reweigh the board, then wait 5 minutes and reweigh the board. If the weight has not changed, then the liquid has completely evaporated. If there is a weight change, wait another 5 – 10 minutes and reweigh. Once the weight has stopped changing, the board is giving you the dry gram weight of adhesive. This number should optimally be 2.5-3.0 dry grams.

When brushing or rolling contact adhesive (solvent or water base), application rates will be 100%. This will result in a higher deposition, usually closer to 3.0 dry grams. If the adhesive is applied uniformly, a glossy sheen will indicate proper deposition when dry. Any areas that look dull may have insufficient coverage.
Suggested base coverage rate for contacts is between 2.0 – 3.0 dry grams/sq ft. It is more critical to apply the recommended amount with water base. Do not apply much more than 3.0 dry grams or the adhesive will have an extended dry time.

When applying contact to porous surfaces such as plywood edges or sanded surfaces, it is best to apply two coats. Apply one coat, allow to dry; then apply a second coat.

Allow for Proper Dry Time

Contact adhesives must completely dry before bonding. Dry time varies depending on the type of adhesive, deposition of adhesive, substrates as well as the conditions within the facility. Heat and humidity also affect the dry rates of contacts.

The proper way to check if the contact is dry is to take the back of your finger and press your knuckle into the adhesive film. Turn your knuckle about 90 degrees. If adhesive transfers to the back of your hand, the product still needs longer to dry. Do not use the tip of your finger or palm as they have oils that can transfer to the surface preventing a bond.

Do Not Exceed the Open Time

All contact adhesives have an open time. This is the amount of time you have to make a good bond without having to reapply adhesive. Most contact adhesives have between 30 and 60 minutes of open time. If 60 minutes are exceeded, either apply a thin coat of adhesive or solvent to one surface to reactivate. Heat may also work.

Apply the Proper Amount of Pressure

Once the dry time has been reached, carefully position or index the parts to be bonded. This is important as once the film is bonded, there is little to no repositionability. Once the parts are bonded, a pinch roller or J-Roller must be used to insure the bondline is fused together. Apply a minimum of 30 psi

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