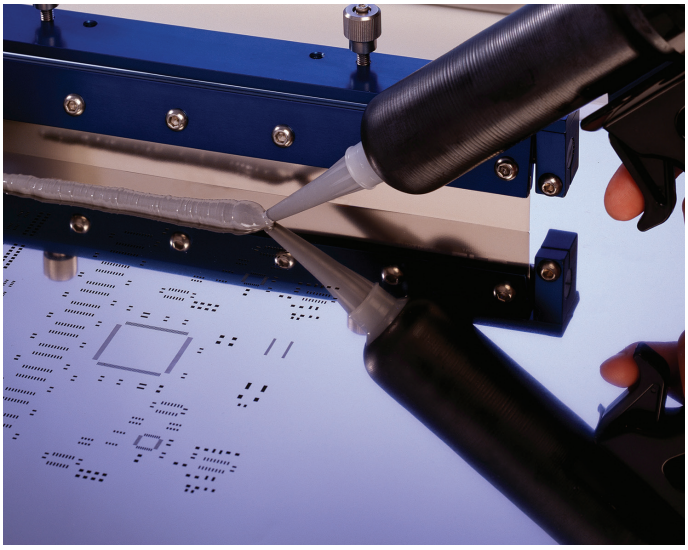
PrintPlus Solder Paste Printing Guidelines



Introduction

These guidelines are designed to maximize Nordson EFD PrintPlus® solder paste yield and print quality. By following these guidelines, you will get the longest working life and highest print quality out of your solder paste.

Storage and Handling

Store between 40° and 50° F (4° and 10° C). Do not freeze. After refrigeration, allow four (4) hours at room temperature before using. When not in use, keep containers closed.

Ambient Conditions

For optimal print quality and longevity, use PrintPlus solder paste at 68° to 77° F (20° to 25° C). Temperatures outside this recommended range have two significant effects on solder paste. First, solder paste viscosity decreases with increases in temperature. Temperatures above and below the recommended working range can have adverse effects on print quality due to thickening and thinning of the paste respectively. Second, solvent evaporation accelerates as paste temperature and air flow increase. Ventilation should be located so as to avoid direct airflow across the stencil. A cover is recommended.

While relative humidity plays a lesser role, both more humid and drier conditions can impact paste working life. Drier climates promote solvent evaporation in both rosin-based and water soluble formulations. More humid environments accelerate water absorption of water soluble pastes. Humidity should be kept between 35% and 65%.

Ageing Effects

Signs of solder paste degradation include sticking to the squeegee, stencil aperture clogs, poor roll, and loss of tack. Improper printer settings can contribute to solder paste degradation.

Note: Adding solvent to the solder paste is not recommended. When solvent is replaced, other flux vehicle constituents may not return to solution.

Paste Volume

Insufficient solder paste volume can create both poor roll and drop-off. A 0.5" diameter roll of solder paste is about right for most applications. 20 to 30 grams of paste per inch of squeegee is an acceptable rule of thumb.

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Squeegee Blades

Stainless steel blades have greater affinity for paste than polyurethane, nickel, and polymer-coated blades. If polyurethane is employed, a durometer of 80 is suggested. Both nickel and polymer-coated blades can be used to extend both squeegee blade and stencil life.

Print Speed

It is important to maintain good roll of the solder paste across the stencil. Excessively high or low print speeds may induce sliding. 0.5" to 2" per second is recommended. Pressure should be 1 to 1.5 pounds per inch of squeegee blade to board overlap.

Attack Angle

Adjusting the attack angle by up to 20° may achieve better roll and/or less sticking. The suggested starting point is a 60° angle.

Stencil

For information about stencil design and the values of each type of stencil available, contact your stencil manufacturer or call Nordson EFD at 800.556.3484

Tack and Tack Time

Boards should be populated as soon as possible after printing. Excessive exposure time prior to populating results in a loss of tack, may allow component movement.

Solder Paste Reclaim

In general, we do not recommend reuse of solder paste remaining on the stencil. However, if paste is relatively fresh, it can be put into an empty jar and stored for reuse. Never put used paste back into the same container as new paste.

Nordson EFD

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