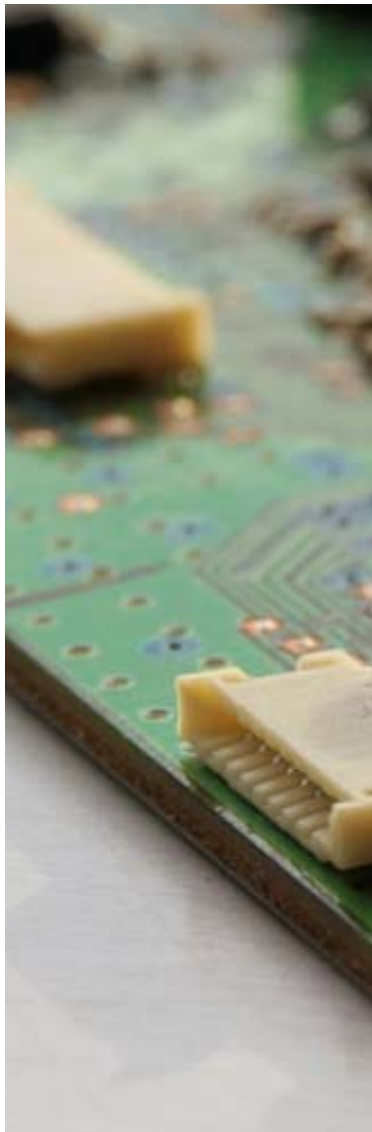
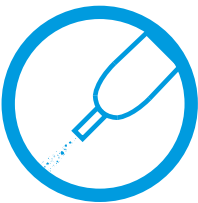
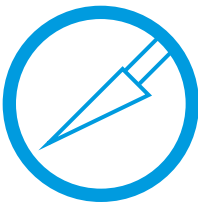
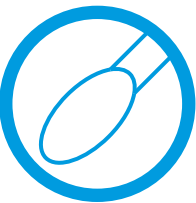


# CONFORMAL COATING REMOVAL METHODS

## QUICK REFERENCE GUIDE



# CONFORMAL COATING

## IDEAL REMOVAL METHODS BY TYPE

### REMOVAL METHODS:



CHEMICAL SOLVENT



PEELING



THERMAL



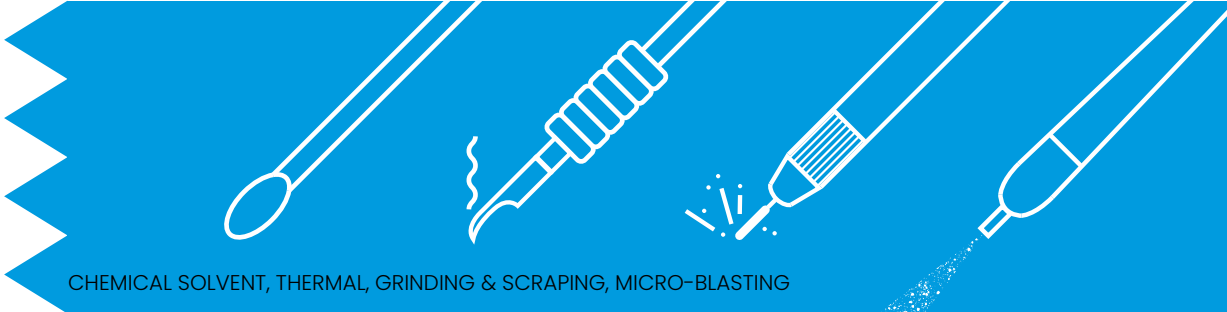
GRINDING & SCRAPING



MICRO-BLASTING

### ACRYLIC (AR)

IDEAL <-----> ACCEPTABLE



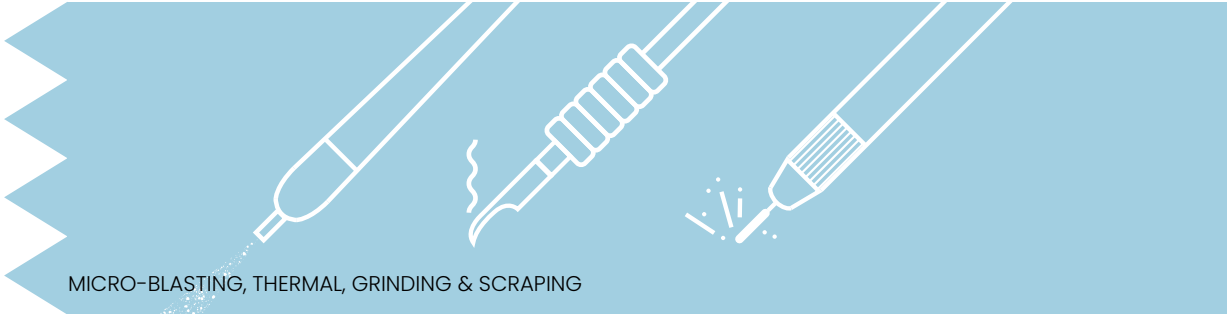
### EPOXY (ER)



### SILICONE (SR)



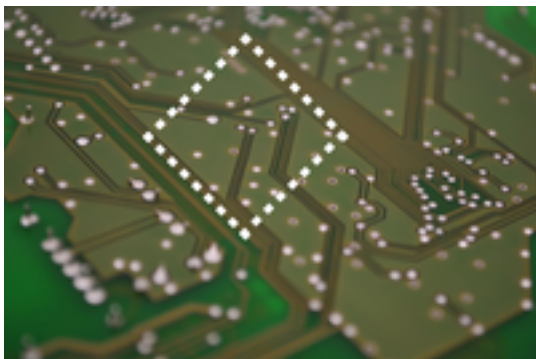
### PARYLENE (XY)



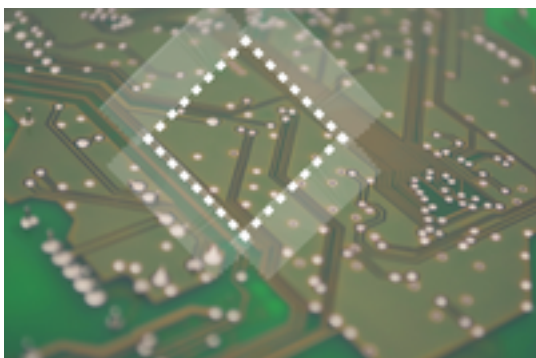
### URETHANE (UR)



# CHEMICAL SOLVENT METHOD CONFORMAL COATING REMOVAL

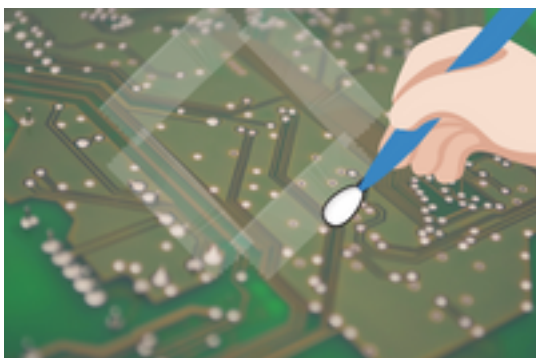


Apply High-Temperature Tape to outline the area where the coating needs to be removed.



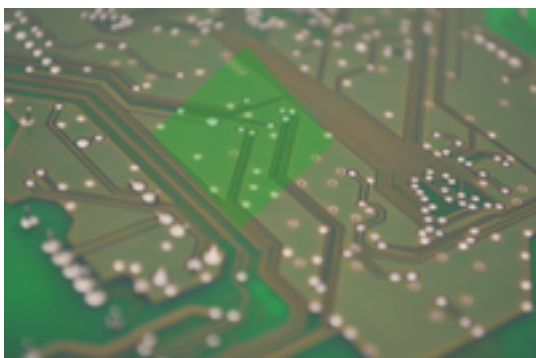
Dip the end of a foam swab in stripping solution and apply a small amount to the coating to be removed.

**Note:** Since various substances may be used as coatings, the time required for a given coating to dissolve or soften will vary. Reapply solvent several times as most solvents evaporate rapidly.



Rub the treated surface carefully with a brush or wood stick to dislodge the coating.

A wedge-shaped applicator tip, knife, or heated blade may be effective in removing some coatings, particularly polyurethanes.

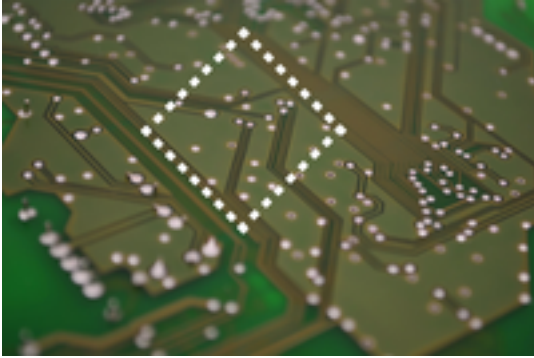


Neutralize or clean the stripped area and dry.



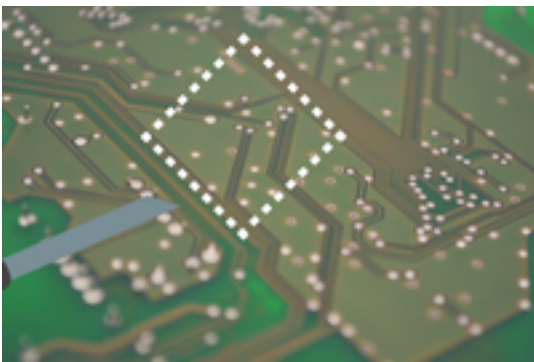
# PEELING METHOD

## CONFORMAL COATING REMOVAL



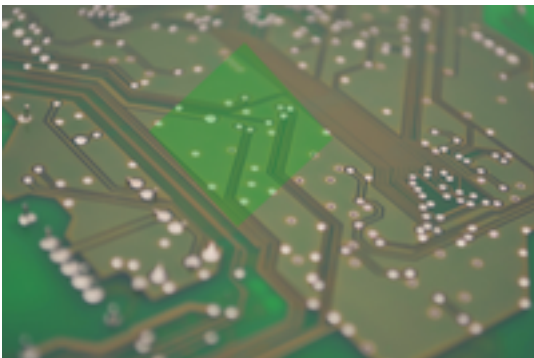
Normally used for RTV silicone or thick rubber coatings.

Use of a dull knife or blade is used to peel the coating from the circuit board.



Slit and peel off the coating material with a dull knife or heated dull blade.

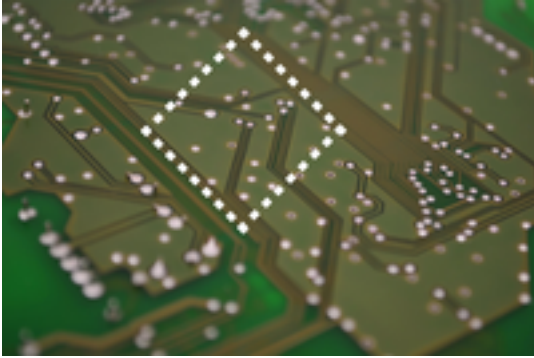
Repeat as needed until the required material is removed.



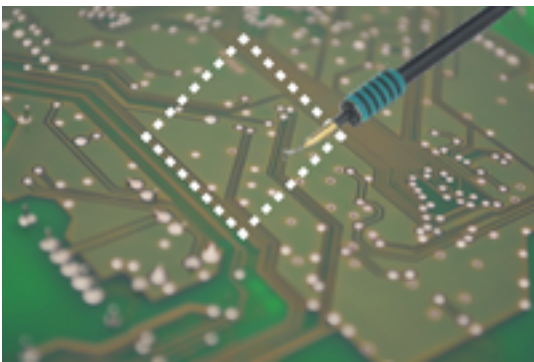


# THERMAL METHOD

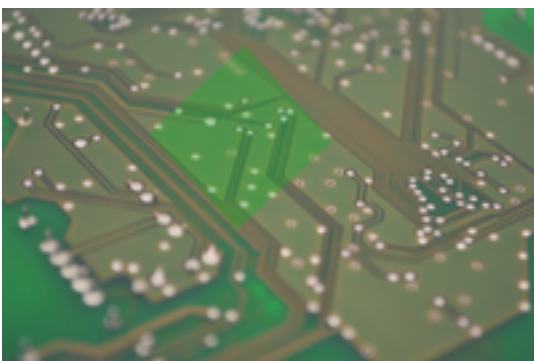
## CONFORMAL COATING REMOVAL



Select an appropriate thermal parting tip to suit the workpiece configuration. Set the nominal tip temperature, using the manufacturer's recommended procedure.



Apply the thermal parting tip to the coating, using a light pressure. The coating material will either soften or granulate. Polyurethanes will soften and epoxies will granulate. The tip temperature should be regulated to a point where it will effectively "break down" the coating without scorching or charring.



Gradually reduce the coating thickness around the component body without contacting the board surface.

Clip leads of component parts that are known to be faulty, thus permitting removal of the part body separately from leads and solder joints. Low-pressure air or a brush should be used to remove the loosened coating.

Once sufficient coating has been removed, leaving only a small bonded joint between the part body and printed board, heat the component body with the thermal parting tool or hot air jet to weaken the bond beneath the component.

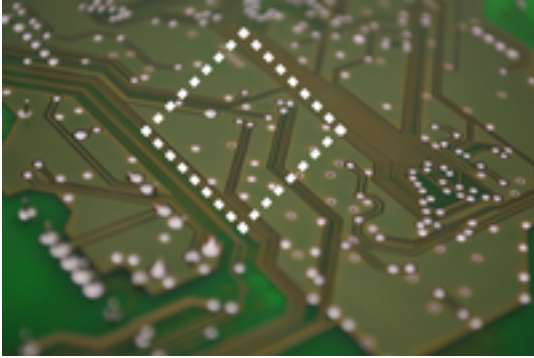
Lift the component body free of the printed board using small pliers.

**Note: Twist the component prior to removal to shear any remaining epoxy bond to the printed board surface.**

Once the component body has been removed from the board surface, the remaining coating material can be removed by additional thermal parting. The remaining leads and solder joints are then removed by appropriate solder extraction means.

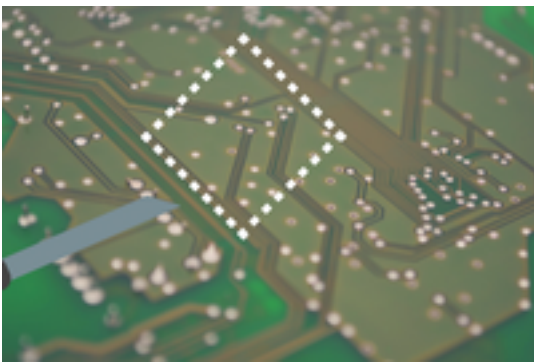


# GRINDING AND SCRAPING METHOD CONFORMAL COATING REMOVAL



Be careful, as the use of abrasion can cause excessive electrostatic discharge.

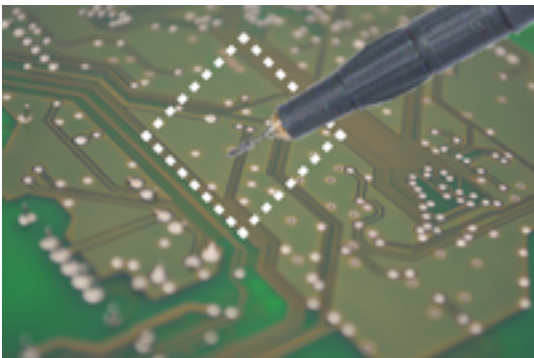
The coating can be scraped away with a #16 blade knife.



Thin, hard coatings can be ground away using a rubber abrasive with a rotary-style tool or micro motor.

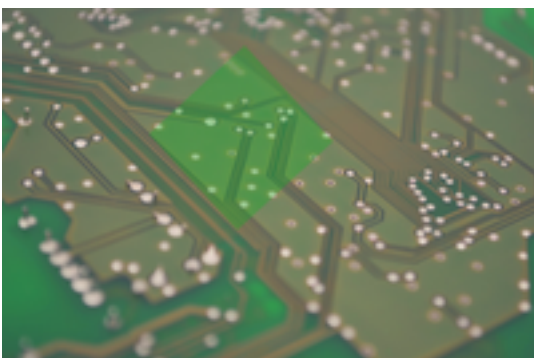
Soft coatings can be ground away using a rotary brush.

Clean the area.



GRINDING: Insert an abrasive tip into the handheld drill. Abrade away the damaged or unwanted coating.

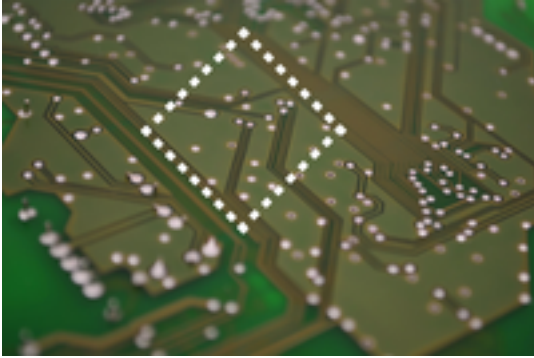
Move the tool from side to side to prevent damage to the circuit board surface.



Remove all loose material and clean the area a final time.



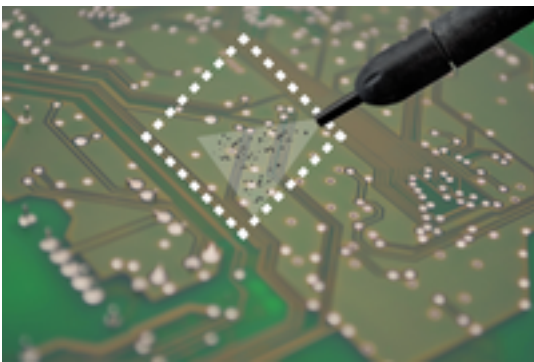
# MICRO ABRASIVE SANDBLASTING METHOD CONFORMAL COATING REMOVAL



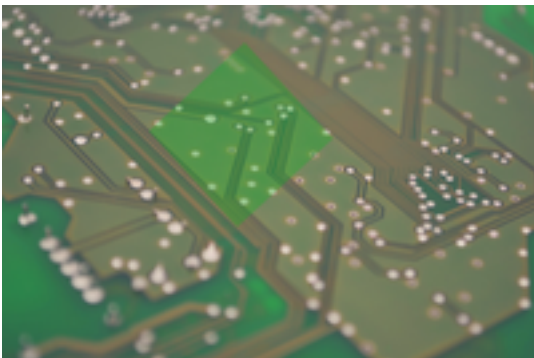
Clean the area.

Select the appropriate abrasive blasting powder and nozzle size.

Set the air pressure at the desired setting per equipment manufacturer's instructions.



Apply masking tape or other masking material to protect the circuit board surface as needed. Masking materials can consist of tapes, curable liquid masks or reusable stencils.



If the circuit board has static sensitive components, insert the entire circuit board into a shielded bag. Only the area needing rework should be exposed. Ground the circuit board to dissipate static charges.

Insert the circuit board into the blasting chamber and blast away the damaged or unwanted coating/solder mask. Slowly move the nozzle along the area where the coating is to be removed.

Blow off the blasting dust and clean the area.



# ADDITIONAL RESOURCES



## VANIMAN.COM: THE ULTIMATE GUIDE TO CONFORMAL COATING REMOVAL

Complete guide with infographics, step by step instructions, video, and links to additional resources and products.  
<https://www.vaniman.com/ultimate-conformal-coating-removal-guide/>



## SANDBLASTER: VANIMAN MASTER PROBLAST 3 ESD

Electrostatic discharge-resistant micro blaster with three media tanks and internal blowoff nozzle. Ideal for conformal coating removal.  
<https://www.vaniman.com/product/master-problast-3-esd-80056/>



## DUST COLLECTOR: VANIMAN ABRASIVE VAC

Compact suction unit with pre-filter cyclone Accumulator to collect debris from sandblaster. Perfectly suited to the Master Problast 3 ESD.  
<https://www.vaniman.com/product/abrasive-vac-w-lg-accumulator-foot-remote-10660/>



## THERMAL PARTING TOOL: VANIMAN VECTOR

Rapid heat-up, rapid cool-down, and a variety of available easy-on/easy off golden tips available; this electronic tool is useful in a variety of industries.  
<https://www.vaniman.com/product/vector-electronic-waxer-10150/>