

## Probe Polish™ on a Silicon Wafer

**Probe Polish™** is designed to remove embedded and bonded debris from probe tips and collect any loose debris that was generated during probing. The abrasive material in the polymer will remove the accumulation of embedded or bonded debris but is not so aggressive that it will alter the probe material or probe contact area.

### GENERAL

Frequent use of the **Probe Polish™** will reduce the number of touchdowns required to remove the embedded or bonded debris. **International Test Solutions** recommends to start with 100 microns over travel or penetration into the polymer. For aluminum pads begin by cleaning every 250 touchdowns. The cleaning frequency will be dictated by the amount of debris accumulation. Some customers clean, as often as every 50 touchdowns while others are able to clean every 4,000 touchdowns. The number of touchdowns per cleaning cycle is generally 10 touchdowns while indexing to a new location between each cleaning insertion. Probe card cleaning frequency and number of cleaning insertions varies according to the specific testing environment.

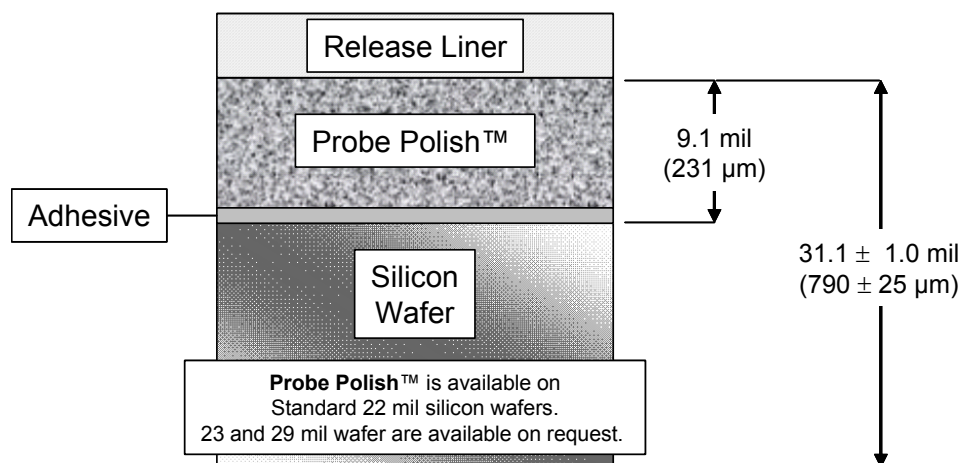
The cleaning motion with **Probe Polish™** is only in the Z direction. No lateral forces are applied to the probes. The forces exerted on the probe when cleaning with **Probe Polish™** are less than the forces as during normal testing operations.

The **Probe Polish™** polymer layer also collects and traps the debris generated during cleaning. Reuse of the cleaning pad will cause the trapped debris to be pushed deeper into the polymer. This allows reuse of the same location several times. Visually check the pad from time to time to ensure that it does not become overloaded with debris, which might cause probe damage or alignment change. To achieve maximum cleaning efficiency offset each touchdown location approximately 2 times the probe diameter in the X and Y directions, giving consideration to the probe array size and orientation.

### CROSS SECTION

#### Probe Polish™ on Silicon Wafer

Nominal Stack Height =  $31.1 \pm 1.0$  mil ( $790 \pm 25$   $\mu$ m)



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### International Test Solutions

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### RECOMMENDED USAGE ON A PROBER

1. Remove cleaning wafer from wafer case.
2. If the cleaning wafer has a protective cover, remove the protective cover by touching the edge of the protective cover with a piece of tape and gently peel the cover back across the cleaning wafer.

**CAUTION: IF THERE IS NO LABEL ON THE WAFER THEN THERE IS NO PROTECTIVE COVER THAT NEEDS TO BE REMOVED.**

**USE EXTRA CARE NOT TO TOUCH THE WORKING SURFACE WITH THE SCOTCH TAPE AS IT MAY REMOVE THE PROBE POLISH™ FROM THE WAFER SURFACE.**

3. Install cleaning wafer in prober cleaning tray.
4. Modify the cleaning utility program to overdrive into the abrasive polymer 100 µm (~ 4 mil).
  - a. The total height of each cleaning wafer is measured in four quadrants of the wafer and the average is recorded for each wafer.
  - b. Set the contact height equal to measured total height recorded for the wafer.
  - c. Set the overdrive equal to 100 µm (~4 mil), depending on probe style.
5. Modify the prober program to move over the entire surface area, ensuring that the probe array remains within the **Probe Polish™** surface area.
  - a. **International Test Solutions** recommends starting with 10 cleaning touchdowns at a new location for each cleaning. Probe card cleaning frequency and number of cleaning insertions varies according to the specific testing environment. Offset the touchdown point by 2X the probe diameter in the “+Y” direction and 2X the probe diameter in the “+X” direction each touchdown. For example, 25 µm (1 mil) probe diameter is offset 50 µm (2 mil) in the “X” direction and 50 (2 mil) µm in the “Y” direction.
  - b. By continuing the offset each time the prober cleans the probe card, a pattern can be developed to fully utilize the entire cleaning surface.
  - c. The cleaning pattern may be repeated several times over the area that has been previously used. The polymer material does not breakdown easily if it is reused in a given area but consideration needs to be given to the amount and type of debris deposited on the abrasive polymer.

Contact **International Test Solutions** at 775-284-9220, or via email at [techsupport@inttest.net](mailto:techsupport@inttest.net), to discuss your specific probe card cleaning application and requirements.

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