

Recommended Procedures for using Probe Clean™ (PN 134-208) Cleaning Materials

Probe Clean™ (PN 134-208) is designed specifically to remove and collect loose debris generated during probing. The cleaning material has an effective operating temperature range of -50° C to +200° C. It is not designed to remove embedded or bonded debris. The removal of embedded or bonded debris requires more aggressive cleaning materials such as **Probe Polish™ (PN 134-209)** and/or **Probe Scrub™ (PN 134-210)**.

GENERAL

Regular use of **Probe Clean™** to collect accumulated debris can extend the time between abrasive cleanings of the probe tips. Test results have shown consistent debris collection reduces contamination build-up that can cause increased contact resistance and compromise measurement quality. In general, the amount of debris generated during probing will determine the frequency of the cleaning operations. To collect debris and maintain stable contact resistance, cleaning may be required as often as every 10 touchdowns and as infrequently as every 4,000 touchdowns. During the cleaning operations, an overtravel of 100 microns (~4 mils) will allow the probe to penetrate into the polymer material. The

maximum depth of penetration into the cleaning polymer should not exceed 125 µm (~5.0 mils). The number of touchdowns per cleaning cycle is generally 10 touchdowns while indexing to a new location between each cleaning insertion.

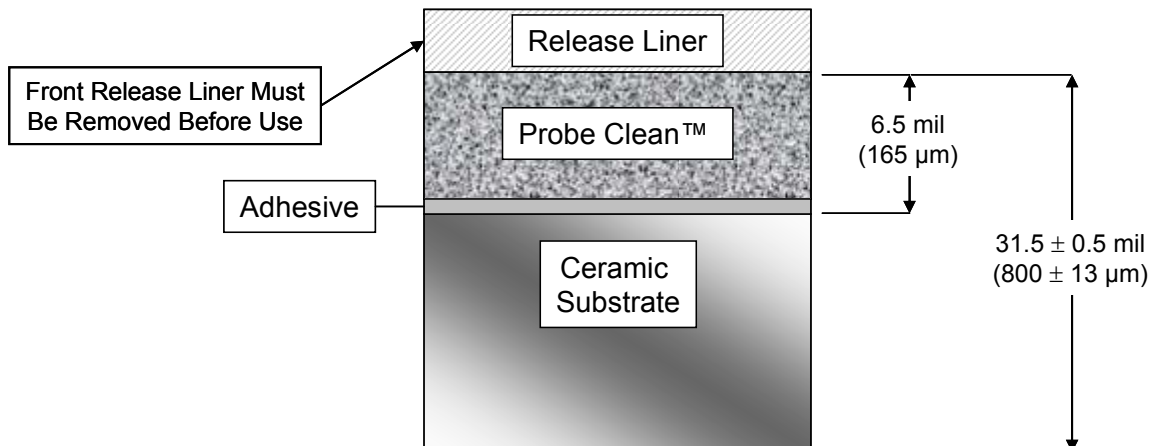
The cleaning motion with **Probe Clean™** is only in the Z direction. Very low lateral forces are applied to the probes as the polymer is penetrated. The total forces exerted on the probe when cleaning are typically less than those experienced during normal testing operations.

The **Probe Clean™** polymer layer collects and traps the debris generated during cleaning. It is important to inspect the polymer surface from time to time to ensure that it does not become overloaded with debris. Multiple insertions into of the same location are possible; however, the cleaning efficiency of the material may be reduced. To achieve maximum cleaning efficiency, each cleaning insertion should be offset approximately 2 times the probe diameter in the X and Y directions, giving consideration to the probe layout, tip size, and overall orientation.

CROSS SECTION

Probe Clean™ (PN 134-208)

Nominal Stack Height = 31.5 ± 0.5 mil (800 ± 13 µm)



Probe Clean™, Probe Polish™, and Probe Scrub™ are registered trademarks of International Test Solutions. The Cascade Microtech logo, Infinity Probe and Innovating Test Technologies are trademarks of Cascade Microtech, Inc.

Application Note



RECOMMENDED USAGE

CAUTION: Latex gloves are recommended for handling the cleaning materials to prevent working surface contamination from fingerprints and exposure to unapproved materials.

1. Place the cleaning substrate ceramic side down onto one of the auxiliary chucks.
2. Turn on the appropriate auxiliary chuck vacuum.
3. Carefully remove the protective front release liner to expose the cleaning polymer surface without damaging the edges. The cover can be re-installed back onto the cleaning surface.
 - a. Tweezer method – lift a corner of the front release liner, gently peel it from the polymer working surface to expose the polymer surface.
 - b. Transparent tape (3M Brand Scotch Tape) method – touch the edge of the front release liner and gently peel the cover off to expose the polymer surface.
4. Overdrive the probe needle into the cleaning material at least 100 μm (~ 4 mils) to penetrate into the polymer layer. The cleaning material layer is 6.5 mils thick and additional overtravel can be applied; however, care must be taken to not damage the probe needle assembly.
 - a. Cleaning overtravel, probe cleaning frequency and number of cleaning insertions varies according to the specific testing environment.
5. As a start, perform 10 insertions at a new location for each cleaning cycle. Offset the touchdown point by 2X the probe diameter in the “+Y” direction and 2X the probe diameter in the “+X” direction each touchdown.
 - a. Increase the number of insertions and/or the overtravel until the probe tip has been cleaned and is debris free. DO NOT excessively overtravel onto the lapping film.

POLYMER MAINTENANCE PRACTICES

1. On regular basis perform a careful visual inspection (while wearing latex gloves) of the polymer working surface for any debris, defects, and damage such as tears, lifted edges, bubbles, shredded material, or significant surface discontinuities. If excessive damage is observed, the cleaning material should be discarded and replaced.
2. Loose debris (such as dust or other air-borne particulates) can be cleaned from the polymer surface by gently flooding the polymer surface with IPA. With a folded lint free clean-room cloth carefully and gently wipe the IPA across the surface in one direction to avoid redistributing debris. Air-dry the polymer for at least 1 to 2 hours (24-hours, if possible) to volatilize any residual IPA.
3. More tenacious and slightly embedded contaminants (such as aluminum “tails” and solder residuals) can be removed using a very light natural fiber (i.e., sable, yak, etc.) brush.

CONTACT INFORMATION

For questions regarding the proper operation, contact your local **Cascade Microtech** customer support representative. For questions regarding the cleaning material, contact **International Test Solutions** applications engineering.

Cascade Microtech, Inc.

2430 NW 206th Avenue
Beaverton, OR 97006, USA
Toll Free: 1-800-550-3279
Fax: 503-601-1002
www.cascademicrotech.com
sales@cmicro.com

International Test Solutions

5690 Riggins Court
Reno, NV 89502 USA
Tel: 775-284-9220
Fax: 775-284-9227
www.inttest.net
sales@inttest.net

*Probe Clean™, Probe Polish™, and Probe Scrub™ are registered trademarks of International Test Solutions.
The Cascade Microtech logo, Infinity Probe and Innovating Test Technologies are trademarks of Cascade Microtech, Inc.*

PCLEAN-0705I

All specifications and data subject to change without notice.