Release performance is affected by a very large number of potential variables. These include the degree of coverage of the silicone coating as well as the thickness of both the coating and the adhesive.

**Silicone Release Coating Coverage**

The degree of silicone coverage of the base liner is a major factor affecting release. If greater or larger portions of the base are left uncoated or incompletely coated, the adhesive will contact the base, and release values will be both higher and less stable with time.

**Coverage Measurement** – Coverage is easily tested on paper substrates by one of a number of dye stain methods. Essentially, the stain covers the paper and not the silicone. Non-covered areas are easily seen. However, just how complete coverage needs to be to provide acceptable performance is somewhat more subjective. It is not difficult, however, to provide a dye stain “standards” match to release performance. Colorimetric measurement methods are also commonly used to assign a quantitative value to coverage.

**Adhesive and Silicone Coating Thickness**

Adhesive and silicone coating thickness also affect release force measurement. The greater the thickness of either, the greater their energy-absorbing capabilities as they stretch, and the higher the release forces required. However, for stiff, fairly inelastic examples, the impact may be very small.

Figure 1 shows the impact of silicone coat weight (or layer thickness) on release values for three silicone systems. “A” represents the amount necessary for total coverage; less allows paper fibers to affect release values. Figure 2 shows how adhesive thickness affects release force.

**Coat Weight Measurement** – Coat weight measurement is very easy today, thanks to the emergence of benchtop x-ray fluorescence units that accurately measure silicon content. To translate this to coat weight, however, known standard coat weights are required; so the instrument is only as good as its calibration. Nevertheless, these instruments have wrought a mini-revolution in the silicone release coating industry. Methods of coat weight measurement based on other forms of detection do exist but are not widespread. Methods based on usage can also act as a general check.
For Troubleshooting Assistance
Contact your Dow technical representative.

For Pressure Sensitive Product
and Service Information
Visit consumer.dow.com. For easy future reference, bookmark the page and add it to your list of “Favorites.”

We’re Here to Help
Whether you are trying to solve a problem, improve your profits or take advantage of a new opportunity, the Dow team can help … with solutions, capabilities and choices you may never have imagined.

Dow is more than materials and more than silicones. We are also process optimizers, cost reducers, custom formulators, applications engineers, technology innovators, productivity experts, global market expanders and more.

Let us put our innovative thinking to work for you.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY
The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that our products are safe, effective and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow's sole warranty is that our products will meet the sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, DOW SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY.
DOW DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

®™ Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow
© 2018 The Dow Chemical Company. All rights reserved.
30023848 Form No. 30-1108-01 A