How to test bonds » Tweezer Pull » Ribbon Pull and Peel Testing

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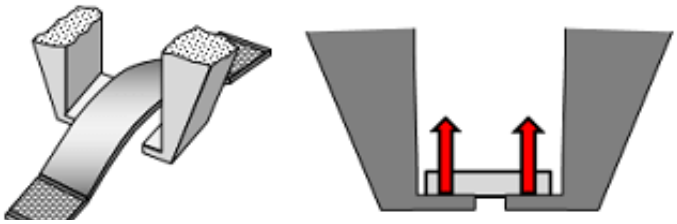
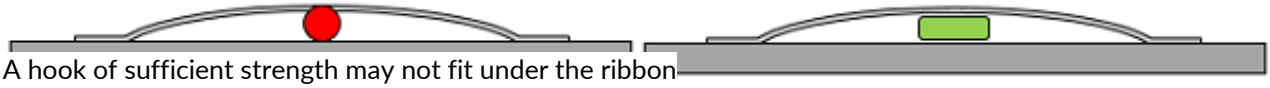


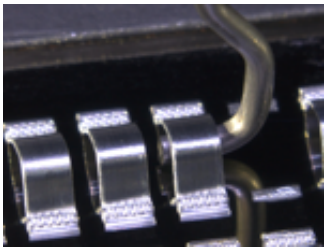
Ribbon pull by tweezers; the two hooks pull the ribbon evenly

6. Ribbon pull

Ribbon pull can often work effectively with a flat hook and/or an offset hook to keep the pull force on the center of the bond. However, hook type tweezers are also a good solution for ribbon pull, sometimes better. It always distributes the load under the bond evenly.



A hook of sufficient strength may not fit under the ribbon



Ribbon pull test by an offset wire hook. Click to go to our how-to on Wire Pull

Ribbon loop heights are often very low. Special hooks can help but the tweezer solution has the highest pull force, so it may be the preferred solution.

7. Peel testing

i. Perpendicular

Peel tests are normally done by tweezers. The principle of a peel test is to move two axes at the same time. This is typically the Z axis and the X or Y axis. The following schematic outlines the way this works when the objective is to keep the angle of the pull force perpendicular to the sample.

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Bond testers

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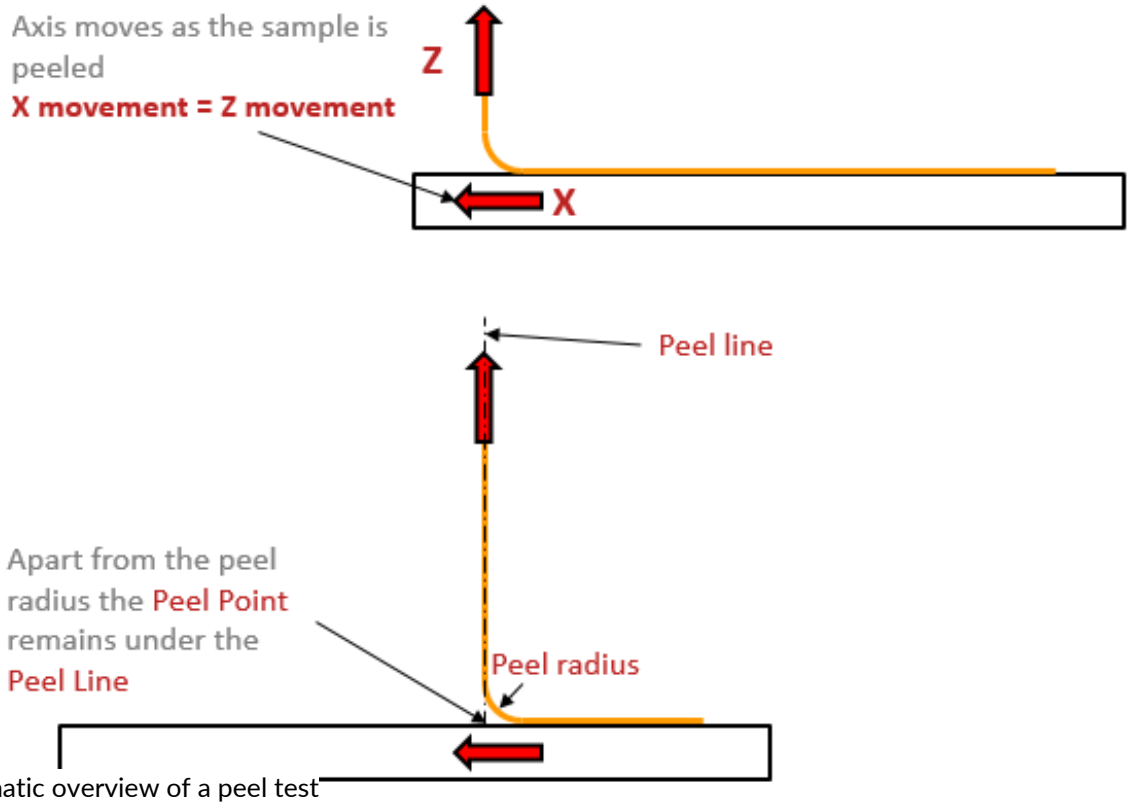
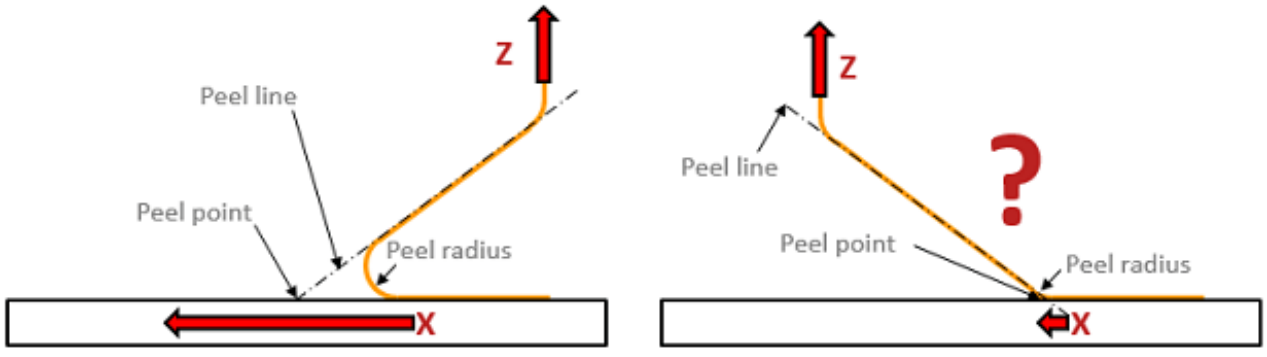


Schematic overview of a peel test

ii. Angled peels

Less common are angled peels. Here, the movement shown in the X is not equal to the upward movement. Backward peeling decreases the lifting force on the sample and can be useful testing thin substrates that tend to bend upwards. Forward peeling has no known advantages.



Backward peeling and forward peeling[nt]

iii. Results

The results from a peel test often require more analysis than the results from a simple pull or shear test. The useful data in the force displacement graph can consist of the maximum (peak)

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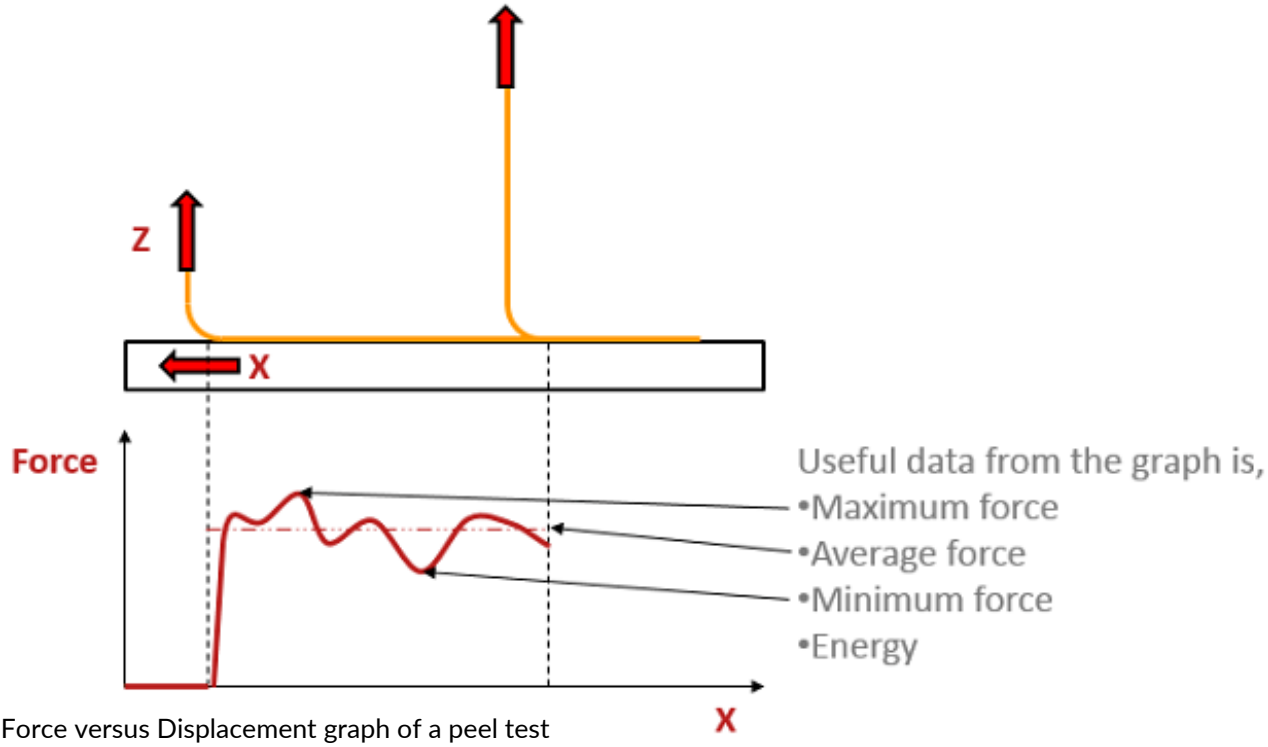
force, the average force, the minimum force or the energy. A bond tester with a good SPC package can give you all these results directly after the test is completed.



Force versus Displacement graph of a peel test

Continue to read:

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Next page: Copper Pillar

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