

Vinyl Adhesion Test Instruction Sheet

Adhesion Test

Materials needed for Adhesion Test (All of these products can be made or purchased in FELLERS Catalog)

- 10 strips of 5 different film/overlamine combinations: each is marked with its respective film name.
- Ohaus Spring scale
- Rags In A Box or Lint Free Cleaning Cloth
- Squeegee
- * Isopropyl Alcohol 70%

How do I make the test strips?

• The test strips need to be 1 inch by 10 inch strips using the same film and overlamine as your intended graphic. It is important to label each strip properly for identification on the test strip and on the appropriate Worksheet. Punch two holes at the top of the test strip approximately .5 inch apart.

Procedure

1. Wipe the surface where the test will be conducted. We recommend using a lint free cloth.
2. Make a measured reference guide. Mark a piece of paper with reference lines at 1/2 inch increments from 0 to 8 inches. Tape it on the cleaned test surface area at eye level.
Note: You will be testing THREE samples of the same film and comparing the results.
3. Remove at least two inches of the liner from the punched end of the film strip. Fold and align the two pre-punched holes adhesive to adhesive, to make a tab on the test strip.
4. Remove the rest of the liner from the film. Use your thumb to adhere the film to the cleaned surface adjacent to the measured reference guide.
5. Working in the long direction of the test strip and using a squeegee, use firm pressure to go over the strip three times to firmly adhere.
6. Repeat steps 3 to 5 for two more test strips of the same film, placing them a couple of inches apart.
7. Wait a full 15 minutes before proceeding with the test.

8. READ THIS STEP THOROUGHLY BEFORE REMOVING THE TEST STRIP.

- a. Make sure the spring scale is reset to 0. To do this, hold the scale upright (logo at the top) and push or pull the aluminum tab at the top of the tool.
- b. Hold the scale so the gauge faces you.
- c. Slide the scale's S hook through the punched hole in the test strip.
- d. Using the scale, pull down on the test strip at a slight angle, keeping the scale as parallel to the surface as possible without any portion of the scale or your hand contacting the surface during the test.
- e. Pull at a steady rate of about 1 inch in 5 seconds, using the measured reference lines as a guide. ***DO NOT STOP once you have started.*** Release 1 inch in 5 seconds. Make sure that the scale is in correct position and is being held properly. The back of the scale should not touch the surface.
- f. As you pull off the test strip, take note of: - the release characteristics as the film pulls away from the wall; - the grams/inch registering on the scale.
- g. Repeat for the other test strips.

9. Adhesion Test Evaluation.

- If two or three out of three strips of the same film perform the same way, those are the characteristics by which you judge the suitability of that particular film for your surface.

Interpreting Scale Values

Scale Value Release Characteristics Recommendation

• 0-250 grams/ inch

- a. Removes too easily
- b. little or no resistance.
- c. Unacceptable adhesion, try another film

• 250-450 grams/ inch

- a. Smooth, consistent, no jerkiness.
- b. No jerkiness
- c. Acceptable adhesion, some film may be successfully removed.

• 450+ grams/ inch

- a. Smooth, consistent;
- b. No jerkiness but more difficult to remove
sample may stretch or break.
- c. Acceptable adhesion , for a permanent graphic; not recommended for removable graphics.

- **450+ grams/ inch**

- a. Then drops
- b. Pulls inconsistently; seems jerky.
- c. Unacceptable adhesion, try another film.

10. Factors in Unsatisfactory Test Results

- **Test strip removes jerkily, unevenly.**

- a. Inconsistent or low adhesion value; due to high and low spots in the surface texture, the film's adhesive does not make consistent contact.

- b. Cold surface and air temperature, which doesn't allow adhesive to flow or contact as it is designed.

- **Test strip pulls paint off.**

- a. If any paint or surface finish is pulled off with the test strip, the paint is not sufficiently bonded to the substrate and graphics should not be applied until the problem is corrected test is performed again with satisfactory results.

- **Wrong film for the job.**

- a. If the first type of film you tried does not perform acceptably, try a different film and repeat the tests.

Enhancing Film Adhesion

if the test strips show less than 250 grams adhesion you can sometimes increase the adhesion by using different cleaning agents that have a stronger solvent content. PrepSol, Xylene, and Denatured Alcohol can effect how the vinyl adheres. Always use Isopropyl Alcohol as the final cleaning agent.