

Adhesive and Tape Testing

BONDING PERFORMANCE, DURABILITY, AND COMPATIBILITY TESTING FOR ADHESIVES, TAPES, AND RELATED ASSEMBLIES

Adhesives and tapes are only as strong as the materials, surfaces, and conditions behind the bond. Testing evaluates peel strength, durability, compatibility, and performance before products move through customer or specification review.



Adhesives and tapes affect the performance of flooring systems, building products, consumer products, and specialty applications. Bond strength, peel performance, surface preparation, material compatibility, moisture exposure, temperature, chemistry, and installation conditions all influence long-term performance.

Testing evaluates bonded materials under defined conditions, with results that support product development, quality control, product comparison, failure review, specification support and claim verification.

In flooring applications, adhesive and tape performance depends on the flooring material, backing, substrate, environmental conditions, cleaning exposure, installation method, and cure or set time. Testing helps determine whether a product performs as expected before it moves into customer, retailer, or specification review.

Materials and Assemblies Evaluated

Evaluation covers individual products, bonded assemblies, and related

components used in flooring, building products, automotive applications, and other specialty markets. The test approach depends on chemistry, substrate, application method, exposure conditions, and documentation requirements.

Product categories include:

- Flooring adhesives
- Installation tapes
- Pressure-sensitive adhesives
- Double-sided tapes
- Laminates and bonded assemblies
- Coatings and adhesive-backed materials
- Related flooring and building product components

Adhesive and Tape Testing Considerations

Testing programs are based on the adhesive or tape type, substrate, bonding surface, cure or set conditions, exposure environment, performance claims, and applicable standards.

Evaluation areas include peel strength, adhesion performance, bond durability, material compatibility, moisture and temperature exposure, cure or set conditions, failure analysis, product benchmarking, and certification documentation.

Common Standards and Documentation Areas

Adhesive and tape testing involves peel, shear, adhesion, durability, environmental exposure or failure mode evaluation, depending on the product and application. Common reference methods include ASTM D903 for peel or stripping strength of adhesive bonds, ASTM F904 for bond strength or ply adhesion, ASTM D1781 for climbing drum peel of adhesives, ASTM D3330 for peel adhesion of pressure-sensitive tape, ASTM D429 for peel adhesion to rigid substrates and ASTM D1876 for T-peel of adhesives.

Methods should be selected based on the adhesive or tape type, substrate, application, exposure conditions, and documentation needs.

Adhesive and Tape Testing

When Testing Can Help

Adhesive and tape testing supports:

- New product development
- Formula or material changes
- Substrate compatibility review
- Installation concern review
- Product comparisons
- Failure investigations
- Specification documentation
- Claim verification

Testing compares adhesive or tape products under the same conditions. This is useful when reviewing a new formulation, alternate supplier, product substitution or installation change. A side-by-side comparison identifies differences in peel strength, adhesion, durability or compatibility before a product is selected for customer or specification review.

Bonding and Compatibility Factors

Adhesive and tape performance depends on the full assembly, not just the adhesive material. Surface preparation, substrate condition, backing material, application method, cure or set time, temperature, moisture, and cleaning exposure all influence performance.

Testing answers questions about bond strength to the intended substrate, performance after moisture or temperature exposure, failure at the adhesive or substrate interface, product-to-product comparisons, installation conditions, and the data needed for customer or specification review.

Assembly Testing Considerations

A strong adhesive or tape may still perform poorly if the substrate is contaminated, the surface is not

prepared correctly or the assembly is exposed to conditions outside the intended use. Testing can evaluate those variables separately or together, depending on the question being asked.

For example, one program may assess adhesion across multiple substrates. Another may evaluate performance after moisture exposure, heat aging, or cleaning exposure. A third may assess failure modes following a field concern. The test approach should reflect the product's intended use, the materials being bonded, and the documentation required for review.

In flooring applications, adhesives and tapes may interact with resilient flooring, carpet, underlayments, coatings, concrete, wood or other substrates. Testing helps determine whether the bond is appropriate for the intended assembly and whether additional product, installation or maintenance information is needed.

Failure Review and Documentation

When bonding problems occur, testing determines whether the issue stems from adhesive performance, substrate condition, surface preparation, application method, environmental exposure or material compatibility. This information guides next steps during product review, field investigation or customer communication.

Testing documents performance claims before they are used in technical literature, sales materials, or specification documents. When results are generated under defined conditions, they provide a clearer basis for comparing products, reviewing substitutions, or preparing documentation.

Intertek Advantage

Intertek supports testing of flooring materials, adhesives, tapes, coatings, laminates, and related building product components. With laboratory capabilities and experience evaluating bonded assemblies across product categories, Intertek helps generate data for product development, product comparison, failure investigation, and customer documentation.

Testing programs can assess peel strength, adhesion, bond durability, material compatibility, environmental exposure, failure review, and claim verification. Through Intertek's global network, manufacturers can evaluate adhesive and tape performance and prepare documentation for ASTM International standards, International Organization for Standardization (ISO) standards, European Standards (EN), or other applicable requirements for U.S., Canadian, and international markets.

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