

## PRESSURE-SENSITIVE ADHESIVE TAPES

### pressure-sensitive adhesive (PSA) transfer and scrim tapes

PSA (also known as adhesive tapes) are adhesives that adhere to a variety of substrates when applied with pressure. The adhesive film bonds to the substrate without the need for solvent, heat, or water for activation. Applied pressure is necessary to achieve sufficient wet-out onto the substrate surface to provide adequate adhesion. The adhesive film backs the sound insulation product and is protected by a removable release liner. The primary mode of bonding a PSA backed product is not chemical or mechanical, but a polar attraction to the substrate surface.

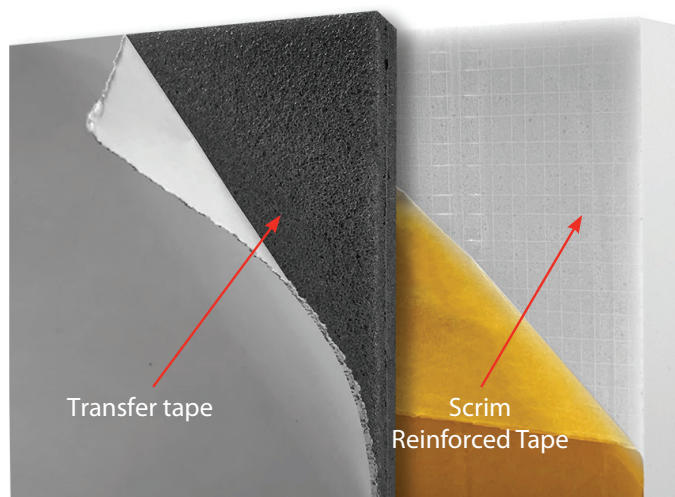
It is a quick and easy 'peel and stick' method of applying Pyrotek acoustic insulation products without the need for solvent-based adhesives and reduces the need for mechanical fixing.

### VOC, ODP, HEALTH AND SAFETY

PSA tapes are non-toxic and safe to handle by methods prescribed in the Safety Data Sheet.

### STORAGE AND SHELF LIFE

PSA coated parts need to be stored away from direct sunlight, in a clean, dry environment with a stable temperature of between 10 to 30 °C. If stored correctly, they typically have a shelf life of 12 months from date of purchase.



## evaluating adhesives

- Shear - a measure of the internal or cohesive strength of the adhesive, not a measure of the bond between the adhesive and a substrate. Usually, tack and adhesion performance decreases as shear strength increases.
- Peel adhesion - measures the bond strength between the adhesive and the substrate after pressure is applied to the adhesive and after allowing for wet-out onto the substrate (adhesive set up). The degree of adhesion can be and is controlled by manufacturers to create different products based on end-user requirements. The adhesion will continue to increase for a period of time from the moment of application, typically 24 hours.



Thicker PSA products are best rolled  
(See 3. Install on pg.2)



## CLASSIFICATION

Pyrotek offer products with a choice of 4 grades of PSA backing to suit varied application needs.

| Tapes       | Alpha-A  | Alpha-A1   | Alpha-A2   | Alpha-A3   |
|-------------|--|--|--|--|
| Description | High performance, water-resistant modified acrylic transfer tape with PP liner, scrim reinforced, suitable for most applications, including rough surfaced substrates. | Good all round acrylic dispersion transfer tape with paper liner and high bond strength to a wide range of substrates. | Double-sided, scrim reinforced for extra stability, high tack acrylic dispersion with filmic liner for general applications. | Double-sided, scrim reinforced for extra stability, acrylic dispersion with filmic liner for general applications. |

|   | Alpha-A         | Alpha-A1           | Alpha-A2        | Alpha-A3        |
|---|-----------------|--------------------|-----------------|-----------------|
| Maximum Service Temperature               | 95 °C           | 120 °C             | 120 °C          | 90 °C           |
| Minimum Application Temperature           | 10 °C           | 10 °C              | 10 °C           | 15 °C           |
| Peel Strength (Steel)                     | min. 26 N/25 mm | min. 20 N/25 mm    | min. 25 N/25 mm | min. 18 N/25 mm |
| Peel Strength (Steel) tested according to | AFERA 5001      | DIN EN 1939 (2003) | DIN EN 1939     | AFERA 5001      |

Alpha-A and Alpha-A1 are both transfer tapes which exhibit high initial tack and high temperature resistance. Alpha-A2 and Alpha A3 are double sided PSA used where more stability is required. Please consult your Pyrotek consultant for more information.

## CHOOSING AN ADHESIVE

Pressure-sensitive adhesives are designed to work in specific temperature ranges depending on the end-use of the component and the application environment. As with all pressure-sensitive applications, the following factors, as well as testing, are crucial in determining the correct adhesive selection. Adhesion tests are recommended for powder-coated surfaces. Aging trials should be performed on plasticised PVC and some rubbers.

**Surface contour:** The contour of the object to which the product is applied is a primary consideration. Where irregular angles are involved, more flexible face stocks should be used. An adhesive, no matter its strength, can't overcome continuous stress placed on it by a rigid or stiff product attempting to return to its original condition. This is referred to as stock "memory". In such applications, a more conformable face stock should be chosen.

**Surface Energy:** This is a measure of how well an adhesive wets out over the surface of the material to which it is applied. Materials with low surface energy (LSE) do not allow adhesives to wet out. Materials with high surface energy (HSE) provide excellent wet-out, providing the best adhesion. Acrylic adhesives such as Alpha-A usually offer better adhesion to LSE surfaces. Some substrates require special treatment such as corona treating, primers, top coating, etc. to achieve better adhesion. On some LSE substrates, adhesion levels improve the longer the adhesive is applied.

**Surface Contamination:** The presence of contamination such as dust, paper debris, oils, etc. on the surface of the substrate can prevent contact of the adhesive with the substrate. Many types of surface contamination are not visible but can be identified analytically. It may be necessary to clean the surface to obtain an acceptable bond.

**Surface Texture:** The texture of a substrate can impact the adhesive bond. Textured materials do not allow complete contact of the adhesive with the substrate. Less surface contact results in a smaller bonding area and lower adhesion levels. Where substrates have texture, more aggressive adhesives are recommended.

*Please note: Under extreme temperature conditions or where the substrate surfaces cannot be free from contaminants, mechanical fixing will be required. For installing products weighing over 4 kg/m² such as Sorberbarrier, mechanical fixing is highly recommended in addition to PSA adhesion on all inverted installations, including ceiling installations.*



## APPLICATION GUIDELINES FOR PSA-BACKED PRODUCT

Make sure to avoid air pockets and contamination of adhesive. Please use these instructions as a general guide. The responsibility to assess application requirements within a specific environment lies with the installer.

**Exposure to air:** While air exposure has little effect on PSA, it attracts airborne contaminants that may reduce performance. Minimise exposure to air by peeling off the liner just before use.

### 1. Surface preparation

- Ensure that all target surfaces (whatever the substrate) are clean, dry and free of contaminants (e.g. liquid, dirt, dust, oil, loose paint, rust, wax, grease, fibreglass release agents).
- PSA products are best cut to size (as required) before installation.

### 2. Measure and pre-cut product where required

- Measure surfaces to be installed. Check for allowances at corners and bends.
- Transfer measurements /dimensions on the product with a marker (this could also be achieved by making paper/ cardboard templates).
- Where possible, cut the long lengths of required parts along the width of the product. This will minimise foam shrinkage when installing.
- If using templates, lay the panel on a flat, clean and dry surface with face-up (PSA backing down). Place templates on facing side of the panel and make reference marks (with a marker or cleanable chalk as desired).
- To cut, use straight edge or level and cut with a sharp utility knife.
- If the product is foam, you may need to compress the foam while cutting through or alternatively you can make a series of cuts rather than cut through in one go. Do a trial to check for correct fits and allowances before peeling off the release liner for installation.
- When installing pre-cut parts, do not remove the entire release liner. Partially remove the liner from the side of the product to be installed first, and apply the product with firm pressure to the mounting surface. Gradually peel off the rest of the liner, simultaneously installing the product as the rest of the liner is peeled off.

### 3. Install

- Remove the liner and allow the adhesive-backed material to relax for 10 to 30 seconds before applying to the substrate to release tension during application.
- Peel off the liner carefully to avoid tearing the liner or touching the PSA.
- Using reference lines as a guide, peel liner from the side to be adhered first and apply the product to the surface and press firmly.
- Do not stretch material as you apply. Once the release liner is removed, the product should be applied to the entire surface without tension or stretching with uniform pressure, which is best achieved by using a roller. Stretching material during application can cause undue stress.
- For products 1 to 2 mm thick, use a wooden scraping block or stiff-bladed scraping tool
- For products 3 to 50 mm thick (e.g. Sorberfoam or Sorberbarrier) use a 150 mm thick x 200 mm wide rubber roller.
- Avoid air pockets, press firmly with uniform pressure in one direction only. Move the block/ tool/roller in the same direction each time, making sure the entire surface is covered. Firm pressure develops better adhesive contact and improves bond strength.

