

tesa[®] ACX^{plus} – Intelligent Bonding

Constructive Bonding Solutions with tesa[®] ACX^{plus}

APPLICATION GUIDELINE



tesa® ACX^{plus} Intelligent Bonding

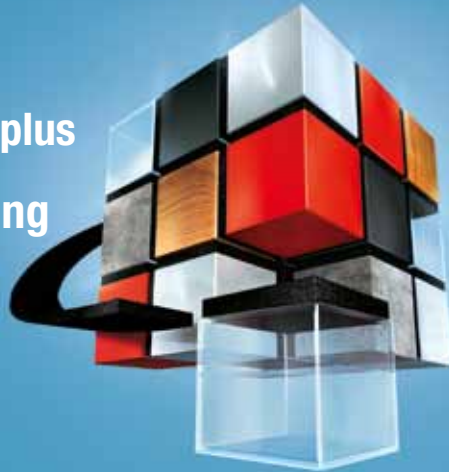


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Based on 75 years of experience in the production of self-adhesive tape and system solutions, tesa has become one of the world's leading suppliers in many fields of self-adhesive applications.

tesa prides itself in having in-depth understanding of its customers processes and needs in order to provide high class technical support and to select the best solution for your application.

Therefore we are proud to present you tesa® ACX^{plus}, a new category of double sided tapes for constructive bonding which is the highest performing product range made by tesa.

On the next pages we would like to give you general guidance and support on how to use tesa® ACX^{plus} and to reach the best performance with our tapes.

All information and recommendations are provided to the best of our knowledge on the basis of our practical experience.

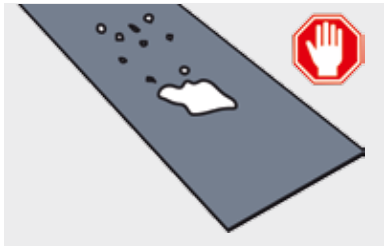
Nevertheless tesa SE can make no warranties, expressed or implied, including, but not limited to any implied warranty of merchantability or fitness for a particular purpose.

Therefore we recommend contacting our tesa sales staff and technical support team when using tesa® ACX^{plus}.

We will be glad to support you!

1. Surface Preparation & Cleaning

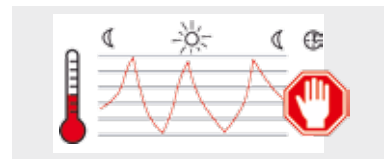
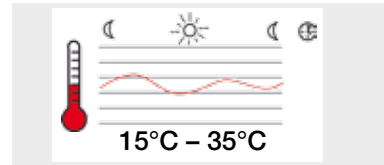
- 1.1** It is important to follow some specific rules when applying tesa® ACX^{plus} products in order to have an appropriate working area and to achieve the maximum performance of our acrylic core tapes:



- The surfaces should be free of dust, grease, oil, moisture and other contaminants as they will decrease the level of bonding power significantly.



- For the right cleaning of the surfaces use appropriate solvents, such as Ethanol or Isopropanol (100%) or our tesa® Industry Cleaner together with a lint free cloth. Please always test the surfaces before using solvents as we don't recommend using them on PC or PMMA.



- Recommended ambient and application temperature is from 15° to 35°C, avoiding sharp temperature changes over the day. For lamination we recommend the same temperature for the tape and the material surface.

- 1.2** Abraid Surfaces with a very fine scourer pad.



- 1.3** Clean surfaces with an appropriate solvent using a lint free cloth to remove any loose particles.



2. Adhesion Promoter

We recommend using our Adhesion Promoter Assortment when tesa® ACX^{plus} products are used. We have developed 3 different Adhesion Promoters matching perfectly to tesa® ACX^{plus} products:

- tesa® 60150 Adhesion Promoter:** Universal Promoter for critical surfaces such as PP/ EPDM, zinc and painted metal.
- tesa® 60151 Adhesion Promoter for Glass:** To ensure a permanent and moisture resistant bond.

- tesa® 60152 Adhesion Promoter for PU and HPVC:** Especially developed for ACX^{plus} applications on PU and HPVC.

By using AP we achieve:

- Higher adhesion to certain substrates**
- Better humidity resistance**

Surface	PP / EPDM	Glass	PU & HPVC
AP	tesa® 60150	tesa® 60151	tesa® 60152
Application	Apply thinly	Apply thinly and wipe off with clean cloth	Apply thinly
Tools	Lint free cloth or brush	Lint free cloth or brush	Lint free cloth or brush
Evaporation Time	30 sec to 5 min as solvent must evaporate	30 sec to 5 min as solvent must evaporate	2 min to 5 min as solvent must evaporate
Open Time for Bonding	Several hours / days	5 min	Several hours / days

3. Tape Application

On this page we would like to show you how to apply tesa® ACX^{plus} in the right way, achieving the best results in terms of bonding power and aesthetic.

3.1. Manual Application



- Hold the tape roll with one hand and unwind the tape approximately 30 to 40 cm.

Attach the first few centimeters of tape to the substrate, starting in one corner.

Keep continuous tension on the tape so that the rest of the tape does not touch the substrate.



- Now start from the same side to apply the tape to the substrate at constant speed and pressure, rubbing it down with the thumb along the bonding area.

This procedure is important for a reliable application and to avoid air bubbles.



- At the corner the tape can be overlapped and cut at a 90° angle for a clean appearance.

3.2. Pressure Application



- Pressure is essential for a good adhesion performance since it ensures tight contact between tape and bonding area and avoids air bubbles.

For optimal results we recommend a uniform pressure, applied with an automatic or manual roller.

Inadequate pressure may cause insufficient contact to the bonding surface and doesn't allow maximum performance. Too much pressure however, can deform the tape or induce stretch in the tape.

For a more precise and convenient mounting procedure, we strongly recommend to use an application tool such as a tape dispenser and lamination equipment.

3.3. Automatic Application



- For specific needs tesa can develop individual application solutions.

Please contact our local tesa Sales team for the joint development of an optimal application solution.

Further Information Material:
 Please refer to our "Complementary Assortment Folder" which includes an overview of our Dispenser, Pressure Roller and Tabbing Cutter.

4. Bonding Parts

For a perfect bonding performance, it is crucial that the part perfectly matches the respective prepared surface and is applied using light pressure. Temperature of both substrates and the tape should be around 21°C.



- In case of mounting a cover to a frame, lift just the liner in the corner and apply the frame by fixing it at the corner.



- Alignment is still possible because most of the tape is still covered by the protective liner.



- Once the final mounting position is achieved, apply light pressure to the corner where the liner has been removed from the tape.

The part of the liner which is already lifted should be taken to remove the remaining liner by carefully pulling it from under the frame.



- After the final position of the frame is reached and both parts are mounted together, we recommend a uniform pressure of 20N/cm² over the complete area of the mounted components.

Due to immediate bonding, repositioning the tape is not recommended. To remove the tape from the part again is only possible shortly after the tape has been applied. Once a tape has been removed, it cannot be used again and has to be discarded.

5. Bond Build Rate

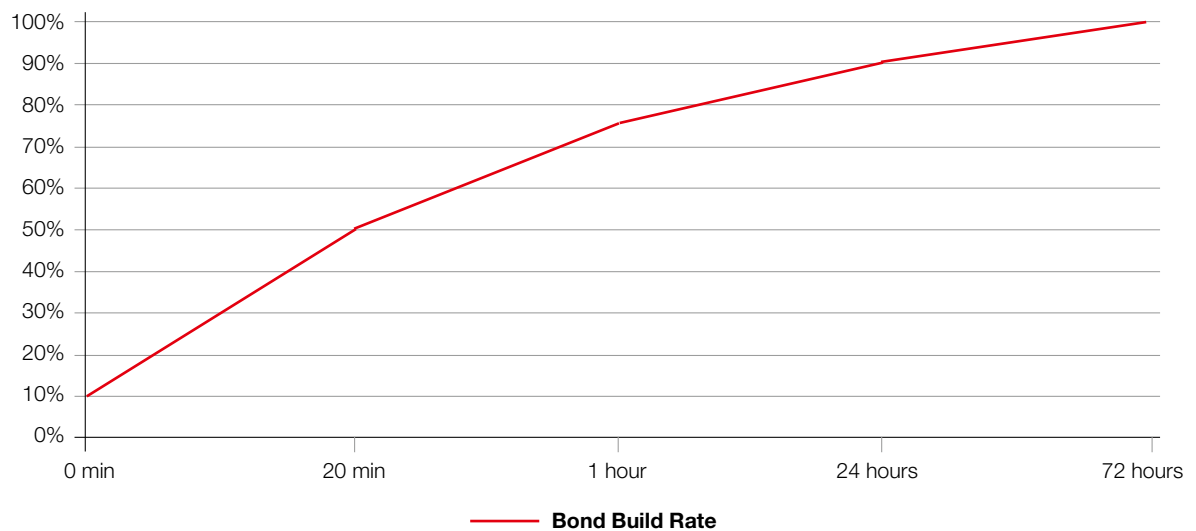
After applying the right application pressure within the recommended guidelines, the bond strength of tesa® ACX^{plus} will increase over time as the high-performing

acrylic system flows into the bonding surface.

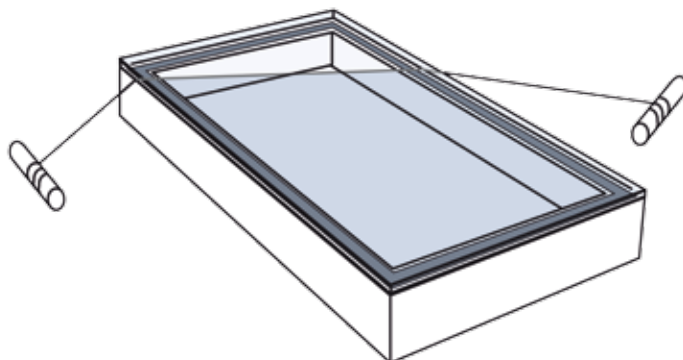
At a room temperature of 21°C, 50% of the total bonding power will be achieved

after 20 minutes. 75% of the bonding power after approximately 1 hour and 90% after 24 hours. Full strength will be reached after 72 hours:

Bond Build Rate tesa® ACX^{plus}



6. Demounting

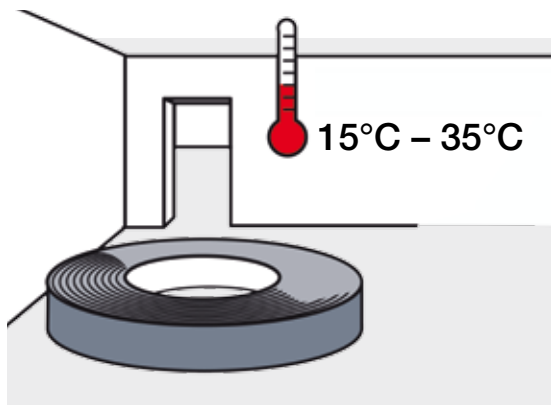


In case of demounting the bonded substrates, the most effective way is cutting the tesa® ACX^{plus} tape.

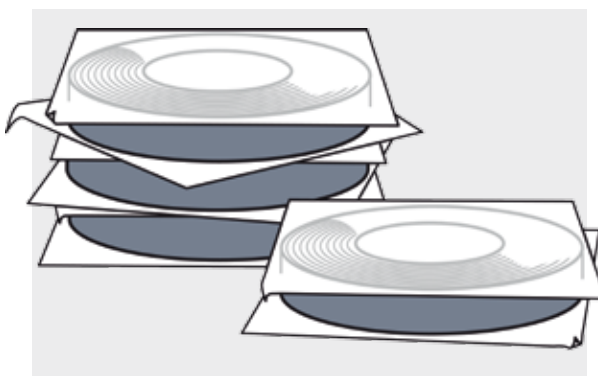
Therefore we recommend special tools such as a piano wire, an automatic sealant cutter or a sharp blade.

These tools should be used to cut carefully through tesa® ACX^{plus}. To remove residues from the mounted elements we offer tesa® Adhesive Remover 60042.

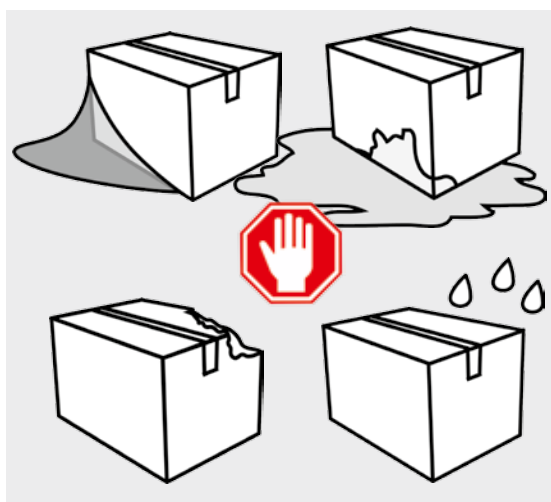
7. Storage Conditions



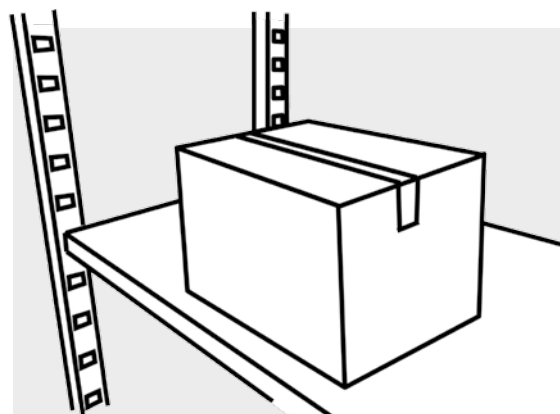
- tesa® ACX^{plus} tapes should be stored at temperatures between 15°C and 35°C avoiding high humidity.



- All slit edges should be covered with suitable separators made of siliconised film. If several rolls are stacked use two sheets per roll.



- Ensure that no dust, dirt or any contamination during transportation and storage will cause any damage or deformation of the packaging.



24 months

- The shelf life of tesa® ACX^{plus} is 24 months from delivery date if the covered storage and transportation guidelines are followed.

tesa self-adhesive tapes are used in many sectors to solve a variety of problems. Our publications contain numerous examples of such uses, intended to help towards a solution of your particular problems. Each tesa product has been developed for a particular range of applications. Nevertheless, experience has shown that even for one and the same objective, the exact requirements may differ from case to case. We therefore recommend that you carry out your own tests in each case to confirm that the tesa self-adhesive tape which you envisage using is appropriate for your particular application. The Advisory Section of our Technical Service Department will be happy to assist. All information and recommendations are given by us in good faith, on the basis of practical experience, but without warranty.

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