INTELLIGENT SOLUTIONS FOR CONSTRUCTIVE BONDING

tesa® ACXplus Reference Book
# REFERENCE BOOK

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THE BEST PERFORMANCE FOR EVERY TASK

The high performance of tesa® ACXplus is based on its viscoelasticity: this leads to elastic and viscous characteristics, providing inner strength as well as relaxation of mechanical stresses. A special acrylic system results in the following main features:

**Bonding power**
- For powerful long-lasting bonds – even on material with different surface characteristics
- Wetting and chemical adaption to the bonded surfaces
- Tape thicknesses can be adjusted to compensate for rough and uneven surfaces

**Stress dissipation**
- tesa® ACXplus has an outstanding ability to compensate static, dynamic and temperature stress, up to the life cycle of a component
- Due to viscoelastic behavior stresses can be dissipated to ensure a secure bond
- Very high outdoor temperature changes are tolerated even when joined materials have different elongation factors

**Temperature and weather resistance**
- This superior bond can resist high natural temperature, weather and other influences
- The high degree of oxidation resistance is based on the fully saturated carbon chain which is the foundation of the acrylates used in tesa® ACXplus
- The special curing chemistry forms an outstanding temperature-resistance network

The world of constructive bonding applications

Constructive bonding is a key element in every industry and can be very challenging. For many applications high-tech materials are used which have special structures and properties that need to be maintained. Dissimilar materials need to be bonded. Traditional mechanical fasteners like rivets, welds, screws, or liquid glue may not be suitable or can even damage these materials.

That is where our most innovative product idea comes into the play: tesa® ACXplus bonding solutions can outperform conventional fastening methods by optimizing our customers’ production processes and the quality and aesthetics of their products.

Advantages of double-sided tapes vs. liquid glue and mechanical fastening

<table>
<thead>
<tr>
<th></th>
<th>Double-sided Tapes</th>
<th>Liquid Glue</th>
<th>Mechanical fastening (e.g. rivets, screws, nails)</th>
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<tr>
<td><strong>Design</strong></td>
<td>▪▪▪▪</td>
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<td>Improved visual appearance – no damage to the material</td>
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<td>Invisible fastening – mounting of transparent materials</td>
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<td>Fast application process – elimination of curing time and reduction of complexity</td>
<td>▪▪▪▪</td>
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<td>Healthy working environment and clean production sites</td>
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<td>Compensation of irregular or uneven surfaces – gaps between bonded surfaces are eliminated</td>
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<td>Compensation of tension and stress dissipation – single bonding point with mechanical fasteners can lead to material breakage</td>
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<td>Noise-dampening properties – sounds caused by vibration are eliminated</td>
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<td>Shock absorption</td>
<td>▪▪▪▪</td>
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<tr>
<td>Sealing function – tape seals and protects against dust and moisture</td>
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<td>Reduced risk of corrosion</td>
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**** Very good   ▪▪▪ Good   ▪ Medium   ▪ Low
SOLUTIONS FOR TRANSPARENT PARTITION WALLS

Glass-to-glass bonding
Transparent joining of glass elements or glass on alu
- High initial tack on glass
- Easy adjustment of tolerances
- Clean and fast application

Certificates and external test reports
- UN-EN ISO 140-3 sound reduction index
- ift Rosenheim DI 02/1-2 2009-3 compatibility of tesa® ACXplus and PVB foil (laminated safety glass)
- ETAG 003, category IV safety in use, mechanical resistance and stability for internal partition walls
QUALITY THAT WITHSTANDS TOUGH CONDITIONS

Muntin bar mounting
Permanent bonding of multiple decorative muntin bar substrates to windows
- Temperature and weather resistance
- Shock absorption
- Gap filling
- Dust and moisture seal

Dry glazing
Heavy duty fixation of window panels to PVC profiles
- Structural and permanent bonding solution
- Anti-burglar security
- Resistant to harsh outdoor conditions, optimal sealing function

tesa® ACXplus is renowned in the window industry and is used by various international companies in Germany, Italy, and the Nordic countries.

Door panel mounting
Secure and durable bond of the door panel to the door leaf
- High bonding strength and excellent shear resistance for a secure bond
- Viscoelastic tape can compensate for different thermal elongation of bonded parts
- Resistance to outdoor conditions and cold-shock

tesa® ACXplus has a high reputation in the door industry and is used by several well-known companies in East Europe, Asia, and Germany.

Certificates and external test reports
- Certified by the American Architectural Manufactures Association regarding AAMA 813-11
- Conformity to ift Guideline VE-08/1
BONDING SOLUTIONS
BUILT TO LAST

Sign manufacturing
Invisible mounting of various different materials used in the signage industry, such as the bonding of metals with plastics
- Vapor- and watertight sealing due to solid acrylic core
- Very good conformability and transparency
- No more screwing and welding

Shell Monolights Kuala Lumpur, Malaysia
tesa® ACXplus 7074

Signage, India
tesa® ACXplus 7058

Hugo Boss, Germany
tesa® ACXplus 7074

RBC Royal Canadian Bank Signs
tesa® ACXplus 7076

Hugo Boss, Germany
tesa® ACXplus 7074

Mc Donald’s Signs, Australia
tesa® ACXplus 7078
NO LIMITS TO ARCHITECTURAL CONCEPTIONS

Stiffener mounting in cassette systems
Secure and durable bond of non-load-bearing stiffeners in prefabricated cassette systems
- Resistant to harsh outdoor conditions
- Compensation of different thermal elongation of the material in use
- Aging stability

Direct-stick method
Concealed mounting of aluminum composite panels to metal substructures
- Invisible and optimal aesthetic design
- No damage to the material in use
- Weather-resistant and suitable for outdoor use

Kube Building Darwin, Australia
tesa® ACX® Plus 70200

Rolands Apartment Adelaide, Australia
tesa® ACX® Plus 70200

Netball Centre Perth, Australia
tesa® ACX® Plus 70200

one tesa Hamburg, Germany
tesa® ACX® Plus 7074

Clinica Alemana de Santiago, Chile
tesa® ACX® Plus 70200

Industrial Complex Churolla,
Australia
tesa® ACX® Plus 70200

Hyundai Melbourne, Australia
tesa® ACX® Plus 70200

Flinders Park Family Dental
Adelaide, Australia
tesa® ACX® Plus 70200

Corporate Center Ponta Grossa,
Brazil
tesa® ACX® Plus 70200

Federal Police Building
Adelaide, Australia
tesa® ACX® Plus 70200

Mosque, Australia
tesa® ACX® Plus 70200

BP on the Run Dry Creek, Australia
tesa® ACX® Plus 70200

Mogas Heuley Petrol Station
Adelaide, Australia
tesa® ACX® Plus 70200
Mounting of glass curtain walls
Fastening of glass panels on aluminum frames supported by L-Profiles
- Certified and tested by different institutes in Chile, Brazil, and USA
- Secure bond
- Sealing and high holding power

Certificates and external test reports
- ASTM E284-04, 330-02, 331-00 wind load and water penetration test
- AAMA 501.6-09 earthquake test on facade elements
- NBR 10821-3/11 water and air penetration of facade elements
- ETAG 002 creep measurement
- ETAG 002 dynamic tensile measurement
- DIN EN 13501-1.2012 classification of reaction to fire
- LEED
SAFETY ON A NEW LEVEL

Reinforcement bars
Bonding of reinforcement bars to the elevator door or cabin shell panel
• Prevention of deformation caused by forces
• High initial tack
• Vibration and shock resistance

tesa® ACXplus is recognized and used by the main elevator and escalator companies worldwide, as our tape ensures long-lasting holding power and reliable performance due to its visco-elastic foamed acrylic core.
FOR COMFORTABLE JOURNEYS

Panel mounting on vehicle body frame
- Fast and secure assembly of metal panels on the skeleton substructure
- Absorbs shocks and dampens vibration
- Clean and aesthetic exterior surface
- Eliminates holes in body panels – minimizes the potential for corrosion

Horse Trailer, USA
tesa® ACX® 7074

Interior Panel Mounting, Germany
tesa® ACX® 7065

Trailer, Germany
tesa® ACX® 7078
INVISIBLE BONDING FOR PERFECT DESIGN

Deco panel mounting
Fixing transparent or translucent decorative panels to appliances, such as refrigerators
- High initial tack – even on low-energy surfaces
- Invisible bonding
- Long lasting and durable

Mounting of design panels
Fixing decorative panels to the outside of appliances, such as the metal housing of an oven
- High bonding strength to keep the panel in place
- Foamed based design dampens and avoids rattling
- High temperature resistance to withstand all climate conditions
**CONFIRMED AND TESTED BY INDEPENDENT INSTITUTES**

<table>
<thead>
<tr>
<th>Organization</th>
<th>Test Description</th>
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<tr>
<td>ETAG 003, Category IV</td>
<td>Resistance to functional damage from hard body impact load – 0.5kg steel ball. Resistance to functional damage from soft body impact load – 50kg bag UN-EN ISO 140-3. Certificate for sound reduction index.</td>
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<td>UL 746C</td>
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<td>DIN EN 13501-1:2012</td>
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<tr>
<td>Static shear test including mathematical extrapolation up to ten years</td>
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<tr>
<td>Dynamic tensile and shear measurements according to VE-08/1</td>
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<tr>
<td>ft/DI-02/1.2: 2009-03</td>
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<tr>
<td>Dynamic tensile measurement according to ETAG 002</td>
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<tr>
<td>Static shear and static tensile load</td>
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<tr>
<td>Creep measurement according to ETAG0002</td>
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<tr>
<td>LEED (EQ credit 4.1: Low-Emitting Materials: adhesive &amp; sealants)</td>
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<td>Full part wind load test regarding ABNT NBR 10821-3/11</td>
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<td>AAMA 5016-09 Earthquake Test</td>
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<td>STN EN ISO 6892-1 Road Sign</td>
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<tr>
<td>ASTM E 284-04, 330-02, 331-00 Rain Screen Testing</td>
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<tr>
<td>AS 4040.2/3, AS 4040.3 Cyclone Testing</td>
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**Exclusive application testing**

In our application laboratories, we analyze the customers’ materials in combination with several adhesive tape solutions. Depending on customer-specific demands, our analysis includes tests on resistance to UV light, high and low temperatures, peel adhesion, shock and tension absorption, and much more. The result: adhesive tape solutions that perfectly suit any technical application.

*tesa*® products prove their impressive quality day in, day out in demanding conditions and are regularly subjected to strict controls. All technical information and data above mentioned are provided to the best of our knowledge on the basis of our practical experience. They shall be considered as average values and are not appropriate for a specification. Therefore tesa SE can make no warranties, express or implied, including, but not limited to any implied warranty of merchantability or fitness for a particular purpose. The user is responsible for determining whether the *tesa*® product is fit for a particular purpose and suitable for the user’s method of application. If you are in any doubt, our technical support staff will be glad to support you.
Our management system is certified according to the standards ISO 9001, ISO/TS 16949, and ISO 14001.