



tesa[®] ACX^{plus}

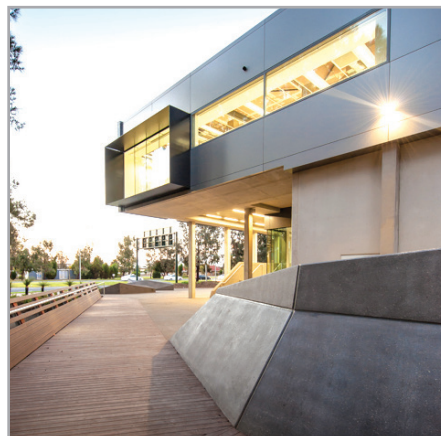
Constructive Bonding Solutions for Architectural Façade Panels

Distribuidor 
+34 **93 115 7029**
Info@DistribuidorCintasTESA.es

tesa® ACX^{plus}

Intelligent Bonding

tesa® ACX^{plus} is used to mount ACM* Panels and single-skin metals in many different kinds of construction projects, from small retail outlets to large industrial, residential, and commercial complexes.



*ACM = Aluminum Composite Panel

Architectural Façade Panel Mounting and Fabrication

Fabrication and the installation of architectural panels can now be achieved easily and reliably with tesa® ACX^{plus}, a highly viscoelastic double-sided acrylic foam tape. The special properties of tesa® ACX^{plus} make it ideal for mounting aluminum composite panels to metal substructures and single-skin metals. tesa® ACX^{plus} is designed to withstand both outdoor conditions and the panel's own dead weight.

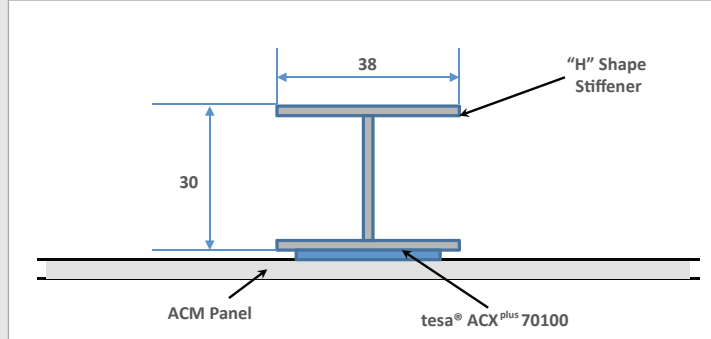
Application Details – We recommend the following steps be taken when using tesa® ACX^{plus} 70100, 70150, and 70200:

- Mating surfaces, i.e: metal frame face and panel surface, should be scoured and thoroughly cleaned prior to tape application. Follow the installation instructions in the cartons of tesa® ACX^{plus}.
- All mounting surfaces should be flat, smooth, and parallel to one another.
- Ideal ambient temperatures are above 59°F / 15°C. The product should not be used at temperatures below 40°F / 5°C.
- Do not strip the liner from the tape until you are ready to apply the second substrate surface.

tesa® 70100 ACX^{plus}

Typical Tape Mounted Stiffener / Non-Load Bearing

40 mils thick

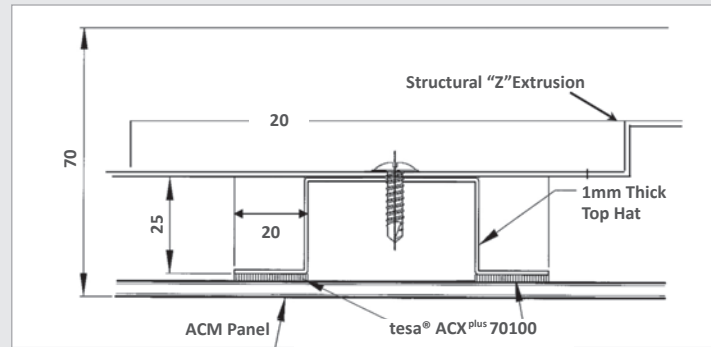


- tesa® ACX^{plus} may be used as the single bonding agent to bond metal stiffeners to the backs of ACM and single-skin metal panels, resisting panel deflection under wind load.
- tesa® ACX^{plus} 70100 offers the optimal properties for managing dynamic stresses under wind load, thermal elongation of materials, and reduction of "read through" on reflective or visually sensitive materials.
- tesa® ACX^{plus} 70100, when used alone for stiffener bonding, provides the most profitable, productive, clean, fast, and consistent method of bonding stiffeners to panels.

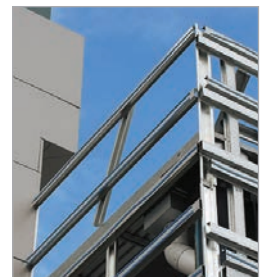
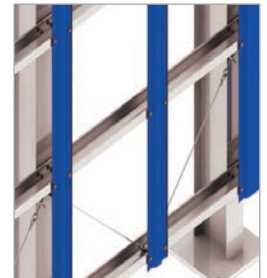
tesa® 70100 ACX^{plus}

Typical Tape Mounted Stiffener / Load Bearing

40 mils thick



- Metal extrusions are applied to the back panels using tesa® ACX^{plus} with a calculated bond area coverage to manage the long-term shear load of the panel face.
- The tesa® ACX^{plus} bonded extrusions provide additional benefits as stiffeners that are calculated to resist panel deflection under wind load.
- tesa® ACX^{plus} enables profitable and productive fabrication of panels, excelling in clean, fast, reliable, and consistent applications in which the bonding product has load bearing capabilities.



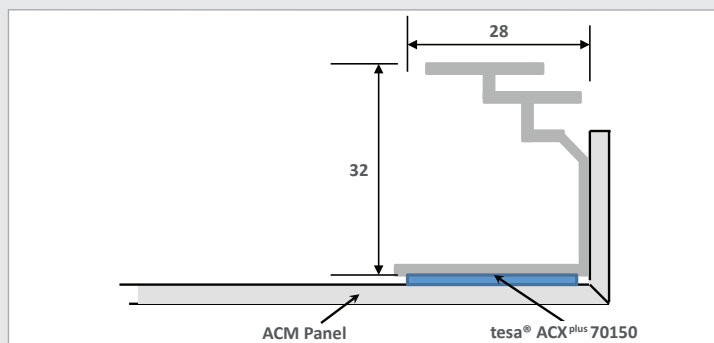
Members of the tesa® ACX^{plus} product family have been tested for use with both Mitsubishi Alpollic® and Alcoa Reynobond® panels. With successful tests concluded, both brands now recommend tesa® ACX^{plus} for use with their products.



tesa® 70150 ACX^{plus}

Perimeter Frame Mounting

60 mils thick



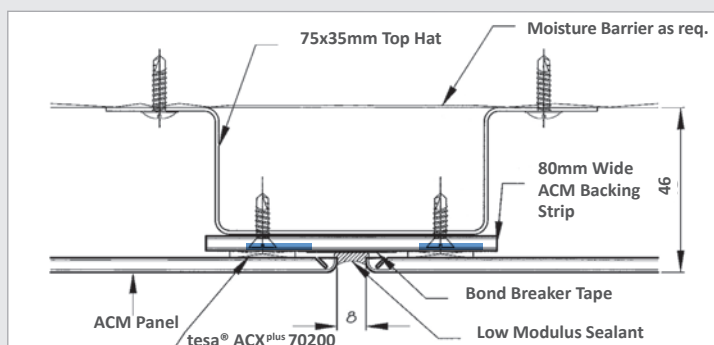
- Specific metal extrusions are applied to the interior perimeters of panels using tesa® ACX^{plus} with a calculated bond area coverage to manage the long-term shear load of the panel face in a design system.
- The tesa® ACX^{plus} bonded extrusions in a designed system simultaneously act to provide secure and reliable management of wind load on the panel.
- tesa® ACX^{plus} offers the opportunity to present the most pleasing appearance of panels in a fastener-free design, while dissipating stresses typically concentrated on mechanical fasteners prone to mechanical fatigue failure.



tesa® 70200 ACX^{plus}

Façade Panel Attachment / Stick System

80 mils thick



- tesa® ACX^{plus} may be used for flat panel attachment to substructures, providing precise, attractive results on site.
- Installation with tesa® ACX^{plus} enables clean, fast, reliable, and consistent application for façade construction.
- The principles of flat panel mounting extend to panel remediation or “skinning” jobs in which tesa® ACX^{plus} and a variety of other tesa solutions may be employed.

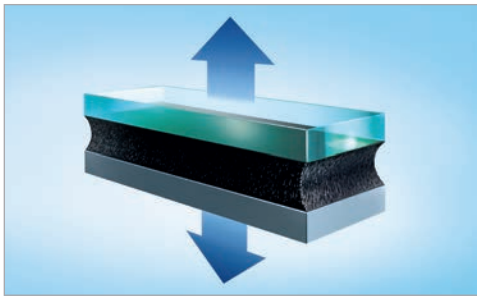
highperformance

tesa® ACX^{plus} – The Core is Key

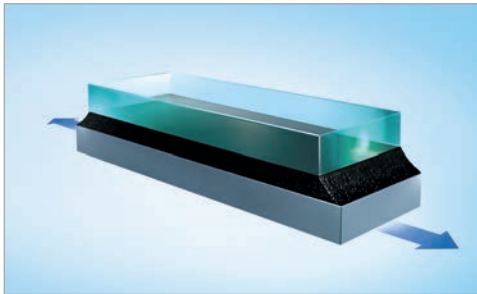
tesa® ACX^{plus} – High Performance

The high performance of tesa® ACX^{plus} is based on a special feature: viscoelasticity. Viscoelasticity describes material performance that is defined by both elastic and viscous characteristics.

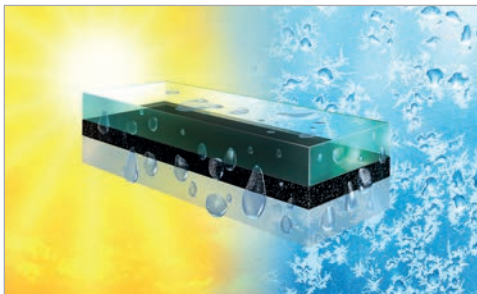
The elastic-restoring forces provide inner strength, while the viscous part of the material behavior leads to relaxation of mechanical stresses. tesa® ACX^{plus} tape employs a special acrylic system that combines both beneficial effects. The special balance between elastic and viscous performance not only secures optimal wetting of different surfaces, but also absorbs dynamic forces and vibrations, relieving stress in the bonded joint. At the same time, the adhesive bond is dimensionally stable and permanent.



Bonding Power



Stress Dissipation



Temperature and Weather Resistance

tesa® ACX^{plus} Advantages and Opportunities

Bonding Power

- tesa® ACX^{plus} has a powerful bond to materials with different surface characteristics because of its acrylic adhesive system that secures optimal wetting and chemically adapts to bonded surfaces.
- Moreover, the tape thicknesses can be adjusted to compensate for rough and uneven surfaces. The result is permanent contact and complete sealing of the joined partners.
- This leads to high-strength and durable bonding that will last for decades.

Stress Dissipation

- During the life cycle of a component, static and dynamic stresses act on the constructive bond.
- A special stress dissipation case involves stresses in the bonded joint that are caused by different thermal elongations of the respective substrates. Due to the viscoelastic behavior of tesa® ACX^{plus}, the rising stresses are optimally dissipated, ensuring a secure bond.
- Extreme temperature changes are tolerated in joined partners with different elongation factors.

Temperature and Weather Resistance

- tesa® ACX^{plus} offers high resistance to temperatures and different weather conditions because of its oxidation resistance to the fully saturated carbon chain, which is the foundation of the acrylates used in tesa® ACX^{plus}.
- Furthermore, the special curing chemistry forms an excellent temperature-resistance network, which results in a superior bond that resists temperature, weather, UV (ultraviolet), and chemical influences.

productspecifications

tesa® ACX^{plus} Product Information

tesa® ACX^{plus} 70100, 70150, and 70200 are black acrylic foam tapes. Due to their unique components, they combine very good temperature resistance (428°F / 220°C / 20 min & 248°F / 120°C / permanent) with superior cold-shock resistance (down to -40°F / -40°C). tesa® ACX^{plus} 70100, 70150, and 70200 are designed for demanding outdoor bonding applications, especially in combination with tesa® Adhesion Promoters. The viscoelastic foamed acrylic core compensates for different thermal elongation of bonded parts. tesa® ACX^{plus} products provide good immediate tack and peel adhesion.

Technical Data	tesa® ACX ^{plus} 70100 High Resistance 1000µm / 40 mils	tesa® ACX ^{plus} 70150 High Resistance 1500µm / 60 mils	tesa® ACX ^{plus} 70200 High Resistance 2000µm / 80 mils
Backing material	foamed acrylic	foamed acrylic	foamed acrylic
Color	black	black	black
Thickness of tape	1000µm / 40 mils	1500µm / 60 mils	2000µm / 80 mils
Type of adhesive	pure acrylic	pure acrylic	pure acrylic
Elongation at break	1000%	1000%	1000%
Temperature resistance (20 min)	428°F / 220°C	428°F / 220°C	428°F / 220°C
Temperature resistance long term	248°F / 120°C	248°F / 120°C	248°F / 120°C
Adhesion To			
Steel (initial)	12.0 N/cm / 17.0 oz/in	14.0 N/cm / 19.8 oz/in	16.0 N/cm / 22.7 oz/in
Aluminum	10.0 N/cm / 14.0 oz/in	12.0 N/cm / 17.0 oz/in	14.0 N/cm / 19.8 oz/in
Glass (initial)	20.0 N/cm / 28.3 oz/in	22.0 N/cm / 31.2 oz/in	24.0 N/cm / 34.0 oz/in
Steel (after 3 days)	30.0 N/cm / 42.5 oz/in	35.0 N/cm / 49.6 oz/in	40.0 N/cm / 56.6 oz/in
Aluminum after (3 days)	25.0 N/cm / 35.4 oz/in	28.0 N/cm / 39.7 oz/in	32.0 N/cm / 45.3 oz/in
Glass (after 3 days)	32.0 N/cm / 45.3 oz/in	36.0 N/cm / 51.0 oz/in	40.0 N/cm / 56.6 oz/in
Temperature resistance (20 min)	428°F / 220°C	428°F / 220°C	428°F / 220°C
Temperature resistance long term	248°F / 120°C	248°F / 120°C	248°F / 120°C
Properties			
Tack	••	••	••
Resistance to chemicals	••••	••••	••••
Aging resistance	••••	••••	••••
Humidity resistance	••••	••••	••••
Static sheer resistance at 73°F / 23°C	••••	••••	••••
Static sheer resistance at 158°F / 70°C	••••	••••	••••
Softener resistance	••	••	••
T-block	••••	••••	••••
	Evaluation across relevant tesa® assortment: •••• Very good •••• Good •• Medium • Low		
Additional information	PV 24 = Blue filmic liner		

Distribuidor 
+34 93 115 7029
Info@DistribuidorCintasTESA.es

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262-3000-IND-0614