DANLUBE A/S

"Så ved du det holder"

Guideline for professional advice and correct use

WEICON Mounting Tapes

www.weicon.com

Why adhesive tapes?

Adhesive tapes combine many advantages and have become increasingly popular in industrial use. Their easy handling, instant adhesion and broad range of applications make adhesive tapes a versatile addition to our range of products.

What are the advantages of adhesive tapes?

Adhesive tapes offer easy and flexible handling and accelerate processes due to their instant adhesion. Because of their material thickness, adhesive tapes create a well-defined, even adhesive gap and are also capable of partly levelling uneven surfaces.

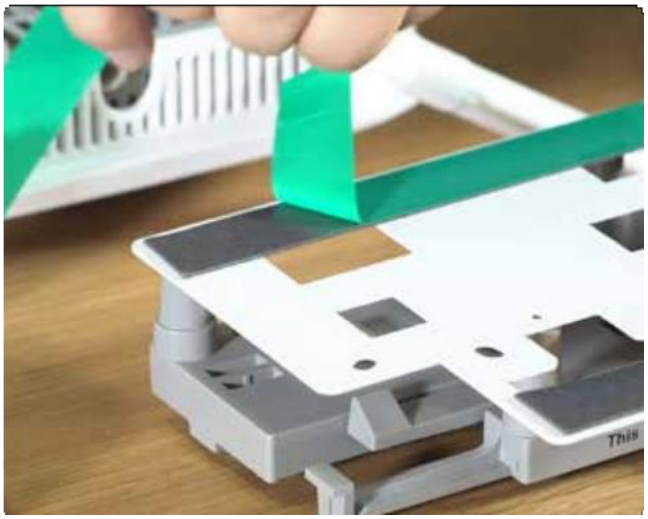
In addition to that, they are not limited in their processing time, they do not give off any harmful substances to their environment and they stay put as soon as they have been applied. As no liquid adhesive can leak, subsequent cleaning is usually not necessary either.

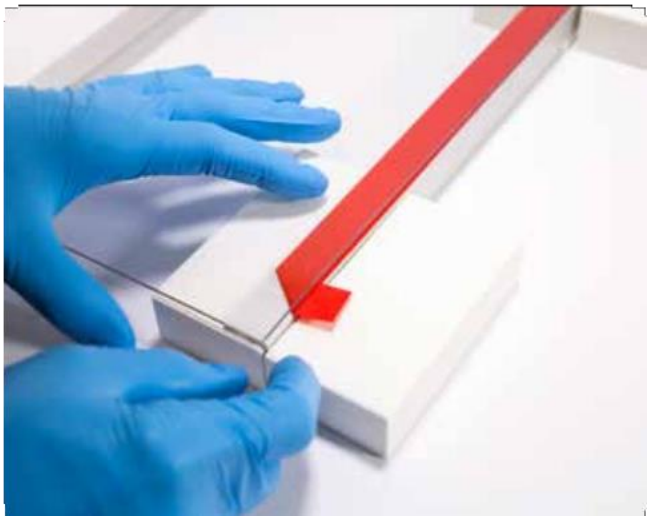
Endless possibilities?

Despite their advantages and their versatility, adhesive tapes are no "all-purpose adhesives". Adhesive tapes are very flexible and need no curing time after their application. That way, they stay elastic, but do not develop high internal strength either. By their material thickness, the distance between the adherends is determined and the gap filling capacity is also limited. Adhesive tapes are easy to handle due to their set geometry, but when used as common adhesives, they need to be pressed on after application.

What is a hybrid adhesive joint?

The magic words 'hybrid adhesive joint' can be heard nearly everywhere at the moment. Hybrid adhesive joint simply means to combine the advantages of several adhesives. By using adhesive tape and 1-component or 2-component adhesives, instant adhesion can be combined with high constructional strength. That way, components can be produced which feature high strength after the adhesive has cured and which can also be handled immediately thanks to the adhesive tape.





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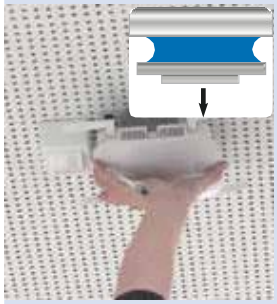
Implications for usage

How do I find out how much adhesive tape I need?

In our technical data sheets, you find all information you need in order to perform an adhesion correctly. Generally, adhesive tapes should only be exposed to certain stresses. Adhesive tapes resist tensile stress and sheer stress very well. In general, constructions which generate nip load or peel load should be avoided. Shear and tensile load need to spread evenly over the whole surface. Avoid tensions towards the edges of the adherends.

Hands-on examples:



In overhead applications, e.g. attaching panelling elements to ceilings, the adhesion is exposed to tensile loads due to the component‘s weight.

The load capacity describes the transmissive loads here. It should be determined in a tensile test with the materials used. Our load capacities were determined for the bonding of unalloyed steel.

In vertical adhesive bondings, e.g. attaching panelling elements to walls, the bonding is exposed to shear stress. Due to this, the major part of the load should be close to the adhesive surface, so the load does not generate peel or split tensile strength.

The dynamic shear strength (or tensile shear strength) specifies the transmissive loads here. The shear strength was determined for unalloyed steel.

Overhead applications must be carried out very carefully!

According to DIN 2304 and DIN 6701, all adhesive bondings are classified by the user into safety classes S 1 - S 4 (DIN 2304) or A 1 to A Z (DIN 6701). Simply speaking, the classification is solely based on the question:

What happens when an adhesive bond fails?

For all relevant information, go to:

www.qualitaetssicherung.ifam.fraunhofer.de

Important information for processing

Processing temperature

The ideal processing temperatures (adherends and ambient temperature) lie between +15°C and +30°C. Adhesive bondings below these temperatures are not recommended.

Surface finish

Ideal adhesive bonds are formed on even surfaces. Unproblematic material pairings: Metals, glass, rigid PVC, polycarbonate.

Examples of problematic material pairings: PP and PE, powder coatings, rubber, plastics with lubricants, soft PVC and silicones.

Surface cleaning

In order to achieve an optimal adhesive bonding, the surfaces need to be dry, dust-free and free of release agent and oils. The adhesive surface must not come into contact with fingers. Use gentle cleaning agents like WEICON Surface Cleaner. Please note the safety regulations of the respective producer. The cleaning cloth must be lint-free and should only be used once.

Pressing

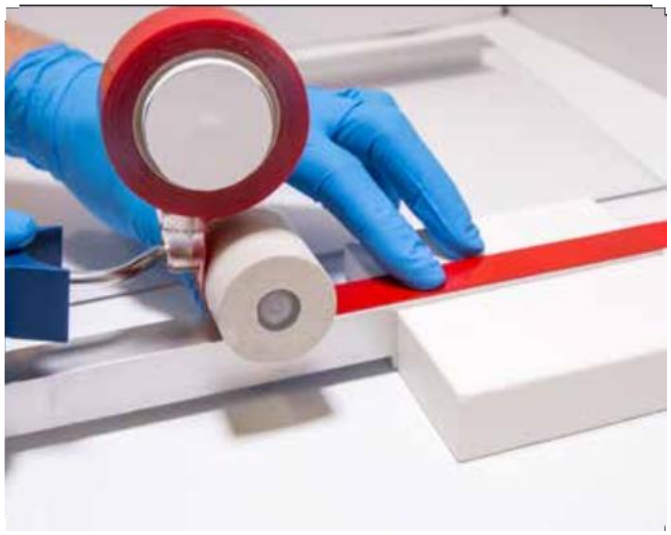
In order to achieve maximum adhesive strength, the tapes must be applied firmly to the surface. Pressing the tape onto the surface should be done with a pressure roller or a doctor blade.

Perfect adhesive bonds can be achieved by applying the tape with a tape dispenser. It prevents air inclusions and ensures best results.

Shelf life

The adhesive tapes have a shelf life of 12 months, in general, depending on storage conditions.

Ideally, the adhesive tapes should be stored in dry rooms with non-varying interior climate, where they are protected against direct sunlight.



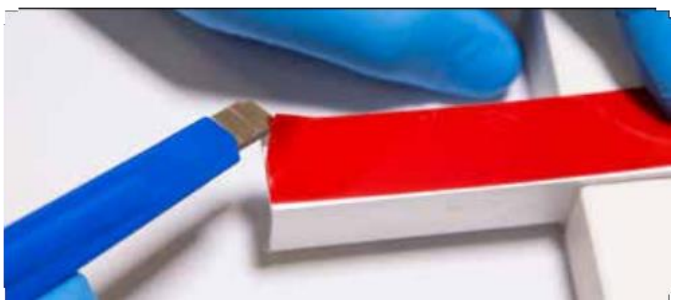
WEICON Mounting Tapes

Our Mounting Tapes at a glance

	The All-rounder **Transparent**	The Specialist **Grey**
Adhesive tape structure	Adhesive: acrylate Colour: transparent Carrier foil: PE foil, red	Adhesive: acrylate, modified, acrylate foam Colour: grey Carrier foil: PE foil, green
Product features	Highly flexible, transparent adhesive made of pure acrylate. They have a well-balanced performance profile and can be used indoors as well as outdoors. They are particularly well-suited for applications where transparent, flexible bonding is needed. In addition to that, the adhesive has good absorption qualities.	Grey, double-sided adhesive tape made of acrylate foam. The modified, high-strength acrylate adhesive provides excellent adhesion to different surfaces (e.g. plastics or painted surfaces). The tape is highly flexible for an optimal compensation of tension in bondings on curved surfaces.
Range of applications	- visible adhesive bonds - bondings with small adhesive gap (0.5mm)	- bonding different materials - adhesive bondings to very smooth surfaces and to low surface energy plastics (e.g. PE, PP)

Applications for WEICON Mounting Tapes

Sandwich panels in interior construction, frames and acrylic panels in advertising technology, housing seals in the electronics industry, vibration absorption in machine engineering, panels on home appliances, car body components, metal profiles, viewing panels etc.



Mounting Tapes - technical data briefly explained

Technische Daten

		Transparent	Grey
1	Elongation at break	750 %	750 %
2	Breaking strength	9 N/cm	10 N/cm
3	Load capacity	80 kg/m	85 kg/m
4	Dynamic shear strength*	40 N/cm²	45 N/cm²
5	Static shear strength**	> 10.000 Min.	> 10.000 Min.
6	Adhesion strength on steel*	20 N/cm	20 N/cm
7	T block tensile strength on aluminium*	80 N/cm	50 N/cm
8	Strength after 24 hours	60-80%	60-80%
	Width	19 mm	19 mm
	Length	3 metres	3 metres
	Material thickness	0,5 mm	0,9 mm
	Core size	40 mm	40 mm
	Temperature resistance	-40 to +160 °C	-40 to +120 °C

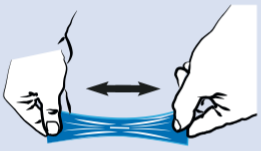
* 72 h
** +23°C and +70°C, 1000 g, 625 mm²

Data sorted by tests:

Tensile test:

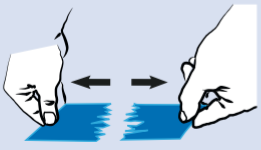
1 Elongation at break

Elongation value at which the material tears. For adhesive tapes, this value is determined according to DIN 14410 and given in percentage.



2 Breaking strength

Often also referred to as tensile strength, which is needed to tear a material apart. For adhesive tapes, it is determined according to DIN EN and given in N/cm (cm refers to the width of the tape in this context).



3 Load capacity 85 kg/m

Load capacity during tensile stress when bonding two components made of steel (i.e. for a tape length of 1 m and tape width of 19 mm, the loading capacity vertically is approx. 85 kg).

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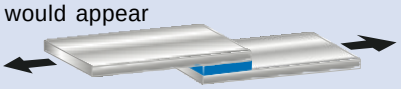
Shear test:

4 Dynamic shear strength

Equivalent to the common shear strength. Tested like other adhesives, with the help of a shear testing machine. Given in N/cm², as otherwise, values would appear to be very small.

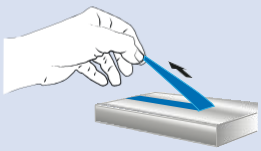


5 Static shear strength

Test in order to determine the creep resistance of adhesive tapes. The samples are loaded with 1000 g at +70°C. If the sample has not changed or deformed at all after seven days (10,000 minutes), it passes the test.

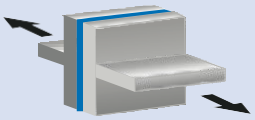
Peel test:

6 Adhesive strength on steel (also peel strength)



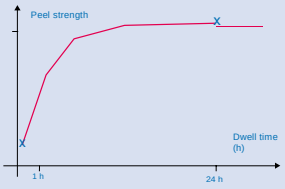
Adhesive strength combines the two terms adhesion and cohesion and describes the strength which is needed in order to remove an adhesive tape applied to a surface. In order to achieve similar values, labarotary tests are carried out e.g. according to DIN EN 1939: For this, an adhesive tape is applied to a steel sheet and then, after it has been rolled with a steel roller, it is pulled off from a 180° angle at a specified speed and the strength needed in order to do so is measured in N/cm (cm relates to the width of the tape in this context).

7 T block tensile strength on aluminium



Specifies the tensile strength of two T blocks made of aluminium bonded with adhesive tape. The strength needed to pull the tape off the surface is measured. The two components are pulled apart from a 90° angle and the strength needed in order to do so is measured in N/cm (cm refers to the width of the tape in this context).

8 Development of adhesive strength



Adhesive tapes bond with the so-called intial strength right after they have been applied. Some adhesives, especially those based on acrylate, reach their maximum strength after up to 72 hours after their application.

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