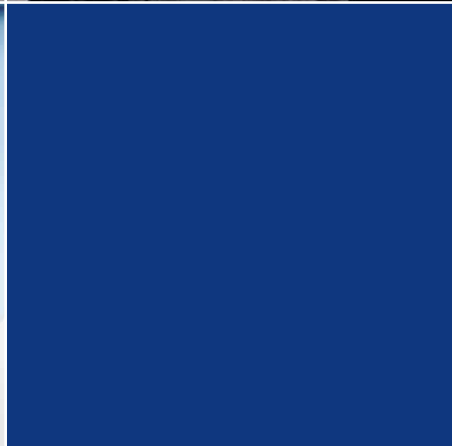
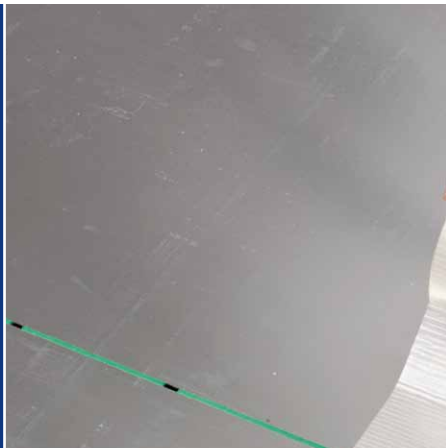


tesa® Tapes

Adhesive Tape Solutions for Industry

ASSORTMENT CATALOGUE



The World of tesa® Tapes



tesa is one of the leading global manufacturers of self-adhesive tape solutions for industry. Building on technologies and our qualified people, we aim to help you improve processes and end-products.

tesa® high quality self-adhesive tapes stand for excellent results. Building on 125 years of experience, our tapes have proven to serve a broad range of demanding applications.

This industry folder provides a clear overview of the tesa® assortment, divided into 5 groups:

■ tesa® Double Sided Tapes	page	4-7
■ tesa® Repairing Tapes	page	8-9
■ tesa® Masking Tapes	page	10-11
■ tesa® Packaging Tapes	page	12-13
■ tesa® Safety & Marking Tapes	page	14

For more specific information on certain product types or applications, please contact your local offices.

Category	Product Type	tesa® Solutions				
tesa® Double Sided Tapes tesa® double-sided adhesive tapes and sprays are versatile – a wide range of professional solutions for many fastening applications.	Constructive Bonding Tapes	705x	706x	707x		
	Thin & Strong Tapes	4965	4970	51970		
	Temporary Bonding Tapes	4964	4939	64621		
	Thin & Flexible Tapes	4959	51571	4985		
	Dampening & Gap Filling Tapes	4952	4957	64958		
	Spray Glues & Cleaners	60021	60022	60040	60042	
tesa® Repairing Tapes A specially designed assortment for every task of maintenance, repairing and overhaul in technical and industrial plants for technical services in industry, the workplace and at home.	Xtreme Conditions HD	4600				
	Premium Cloth Tapes	4651	4671			
	PE-coated Cloth Tapes	53799	4688			
	Duct Tapes	4662	4613			
	Aluminium Tapes	50575/65/25				
tesa® Masking Tapes Professional solutions to fulfill many needs – this includes surface protection against paint, dust etc. and plastering tapes for indoor and outdoor use.	Stencil Masking Tapes	4434	4432	4423		
	Powder Coating Tapes	4331	50650	50600		
	Specialties	4319	4334			
	High Temperature Masking Tapes	4341	4309			
	Low Temperature Masking Tapes	4316	4317			
	General Purpose Masking Tapes	4323				
tesa® Packaging Tapes Solutions which can help you to optimize your packaging and transportation tasks – or even to simplify the handling of heavy and bulky loads.	Carton Sealing Heavy Weight Tapes	4124				
	Carton Sealing Mid Weight Tapes	4100	4024	4089		
	Inner Packaging Tapes	4104				
	Strapping & Filament Tapes	4289	4287	4595/97/99	4592/93	4590/91
tesa® Safety & Marking Tapes Help to prevent accidents and injuries in industrial areas and factories as well as specially developed tapes for electrical insulation.	Anti-Slip Tapes	60950/51/52				
	Marking Tapes	4169	60760			
	Insulation Tapes	4163	53948	4252		

tesa® Double Sided Tapes

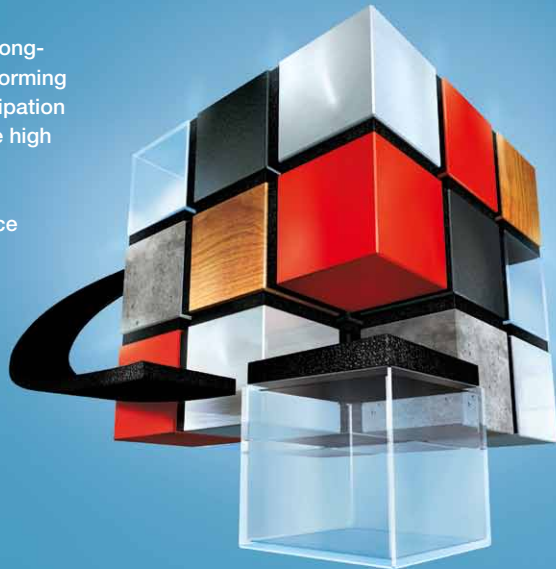
Constructive Bonding Tapes

NEW! tesa® ACX^{plus} – Intelligent Bonding

tesa® offers a new category of double sided tapes for long-term constructive bonding demands – the highest performing product line made by tesa. Bonding power, stress dissipation and temperature and weather resistance constitute the high performance of these acrylic core tapes.

The outstanding characteristics of this high performance acrylic system are:

- Strong bonding power, even for dissimilar materials as well as for rough, uneven and hard-to-bond surfaces
- Optimal stress compensation due to viscoelastic behaviour
- High resistance against temperatures, weather, UV and chemical exposure
- Perfect sealing of bonded components
- Reliable bond over decades for inside and outside applications



tesa® ACX^{plus} 705x High Transparency

- Highly transparent acrylic core tape
- Especially suitable for bonding of transparent and translucent materials such as glass or acrylic glass (PMMA)
- Available in different thicknesses (e.g. 500 / 1.000 µm)



Backing	Solid Acrylic	
Adhesive	Pure Acrylic	
Total Thickness [µm]	1.000	
Adhesion to Steel [N/cm]	24,0	
Temperature resistance [°C]	long term	100
	short term	200
Colours	<input checked="" type="checkbox"/>	



tesa® ACX^{plus} 706x High Adhesion

- Black acrylic foam tape
- Recommended for „hard-to-bond“ materials such as powder coatings or plastic surfaces
- Unique formulation that combines a very high adhesion level with a very good resistance against plasticizer migration
- Available in different thicknesses (e.g. 800 / 1.200 / 1.500 µm)



Backing	Foamed Acrylic	
Adhesive	Tackified Acrylic	
Total Thickness [µm]	1.200	
Adhesion to Steel [N/cm]	40,0	
Temperature resistance [°C]	long term	70
	short term	170
Colours	■	



tesa® ACX^{plus} 707x High Resistance

- Black acrylic foam tape
- Especially designed for demanding outdoor applications
- Recommended for bonding of panels and reinforcement bars
- Very good temperature resistance with an outstanding cold shock resistance
- Available in different thicknesses (e.g. 1.000 / 1.500 / 2.000 µm)



Backing	Foamed Acrylic	
Adhesive	Pure Acrylic	
Total Thickness [µm]	1.000	
Adhesion to Steel [N/cm]	30,0	
Temperature resistance [°C]	long term	120
	short term	220
Colours	■	

Thin & Strong Tapes



tesa® 4965

- Reliable bond even to non-polar surfaces
- Suitable for most applications with high stress and very high temperatures
- Immediate usability right after assembly
- High shear resistance
- Transparent
- Suitable for long-term outdoor applications



Backing	PET film	
Adhesive	Tackified Acrylic	
Total Thickness [µm]	205	
Adhesion to Steel [N/cm]	14,0	
Temperature resistance [°C]	long term	100
	short term	200
Colours	<input checked="" type="checkbox"/>	

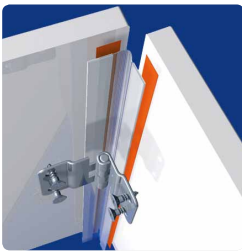


tesa® 4970

- High initial tack and immediate adhesion
- Reliable bond even to non-polar surfaces
- Good adhesion on rough surfaces
- Good plasticizer resistance
- White
- Suitable for long-term outdoor applications



Backing	PVC film	
Adhesive	Tackified Acrylic	
Total Thickness [µm]	240	
Adhesion to Steel [N/cm]	14,8	
Temperature resistance [°C]	long term	60
	short term	70
Colours	<input type="checkbox"/>	



tesa® 51970

- Excellent combination of high tack and adhesion
- Reliable bond even to non-polar surfaces
- Good adhesion on rough surfaces
- Good temperature resistance
- Transparent
- Suitable for long-term outdoor applications



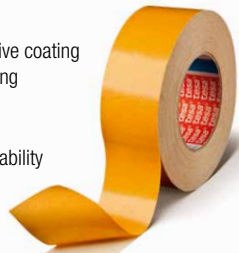
Backing	PP film	
Adhesive	Tackified Acrylic	
Total Thickness [µm]	220	
Adhesion to Steel [N/cm]	13,5	
Temperature resistance [°C]	long term	80
	short term	130
Colours	<input checked="" type="checkbox"/>	

Temporary Bonding Tapes



tesa® 4964

- Thick, tacky natural rubber adhesive coating
- Tear-resistant flexible fabric backing
- High immediate adhesion
- Suitable for rough surfaces
- In most cases residue-free removability
- Hand-tearable



Backing	Cloth	
Adhesive	Natural Rubber	
Total Thickness [µm]	390	
Adhesion to Steel [N/cm]	8,0	
Temperature resistance [°C]	long term	30
	short term	110
Colours	<input type="checkbox"/>	



tesa® 4939

- Tacky synthetic rubber adhesive coating
- High immediate adhesion
- Different adhesion levels on each side
- Removable without residues up to 14 days
- For textile floor coverings
- Especially for screed, mastic and epoxy-sealed floors
- Hand-tearable



Backing	Cloth	
Adhesive	Synthetic Rubber	
Total Thickness [µm]	265	
Adhesion to Steel [N/cm]	5,5	
Temperature resistance [°C]	long term	40
	short term	80
Colours	<input type="checkbox"/>	



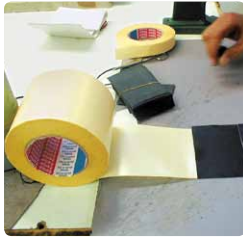
tesa® 64621

- Very high tack and immediate adhesion
- Very good adhesion to non-polar surfaces
- Transparent
- Suitable for indoor applications or pre-fixing



Backing	PP film	
Adhesive	Synthetic Rubber	
Total Thickness [µm]	90	
Adhesion to Steel [N/cm]	15,0	
Temperature resistance [°C]	long term	40
	short term	80
Colours	<input checked="" type="checkbox"/>	

Thin & Flexible Tapes



tesa® 4959

- Very conformable to flexible and uneven substrates
- Very high tack
- Very good temperature resistance
- Light and ageing resistant
- Plasticizer resistant
- High shear resistance
- Suitable for long-term applications



Backing	Non-Woven	
Adhesive	Tackified Acrylic	
Total Thickness [µm]	115	
Adhesion to Steel [N/cm]	7,5	
Temperature resistance [°C]	long term	80
	short term	200
Colours	<input checked="" type="checkbox"/>	



tesa® 51571

- Very conformable to flexible and uneven substrates
- Very high tack and immediate adhesion
- Very good adhesion to non-polar surfaces
- Suitable for indoor applications or pre-fixing



Backing	Non-Woven	
Adhesive	Synthetic Rubber	
Total Thickness [µm]	160	
Adhesion to Steel [N/cm]	13,0	
Temperature resistance [°C]	long term	40
	short term	80
Colours	<input checked="" type="checkbox"/>	



tesa® 4985

- Extremely thin and flexible
- Good immediate tack on uneven surfaces
- Cost efficient
- Transparent



Backing	No Backing	
Adhesive	Tackified Acrylic	
Total Thickness [µm]	50	
Adhesion to Steel [N/cm]	11,1	
Temperature resistance [°C]	long term	80
	short term	200
Colours	<input checked="" type="checkbox"/>	

Dampening & Gap Filling Tapes



tesa® 4952

- Strong PE-foam for constructive mounting applications
- High thickness compensates for gaps and uneven surfaces
- Leveling of tension and shock absorption
- High immediate bonding strength even at low bonding pressure
- Certified for permanent mirror mounting
- UV, humidity and ageing resistant

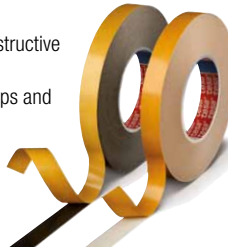


Backing	PE foam	
Adhesive	Tackified Acrylic	
Total Thickness [µm]	1150	
Adhesion to Steel [N/cm]	8,0	
Temperature resistance [°C]	long term	80
	short term	80
Colours	<input type="checkbox"/>	



tesa® 4957

- Soft, conformable PE-foam for constructive mounting applications
- High thickness compensates for gaps and uneven surfaces
- High immediate bonding strength even at low bonding pressure
- Certified for window bar mounting



Backing	PE foam	
Adhesive	Tackified Acrylic	
Total Thickness [µm]	1100	
Adhesion to Steel [N/cm]	4,0	
Temperature resistance [°C]	long term	80
	short term	80
Colours	<input type="checkbox"/> <input checked="" type="checkbox"/>	



tesa® 64958

- Soft, conformable PE-foam
- High thickness compensates for gaps and uneven surfaces
- Leveling of tension and shock absorption
- Very good adhesion to non-polar surfaces
- High immediate bonding strength even at low bonding pressure
- Recommended for indoor use



Backing	PE foam	
Adhesive	Synthetic Rubber	
Total Thickness [µm]	1000	
Adhesion to Steel [N/cm]	4,0	
Temperature resistance [°C]	long term	40
	short term	60
Colours	<input type="checkbox"/>	

Spray Glues



tesa® 60021 Spray Glue PERMANENT

- A very versatile glue for permanently bonding materials such as paper, card-board, felt, fabric, film, wood, leather, etc.
- For clean, cost efficient, secure and fast bonding of large areas
- The glue is dispersed finely and evenly
- Fast-drying and resistant against damp and mechanical and thermal stresses



Glue based on	Synthetic Rubber
Recommended time before bonding [min.]	1-5
Temperature resistance [°C]	from -20 up to 60
Quantity [ml]	500
Colour	<input type="checkbox"/>



tesa® 60022 Spray Glue EXTRA STRONG

- An extra strong, film-forming glue for permanently bonding materials such as fabric, plastic, cardboard, foam rubber, insulating materials, vinyl, leather, faux leather and rubber to each other or to metal and wood
- Particularly suitable for automotive applications



Glue based on	Synthetic Rubber
Recommended time before bonding [min.]	10
Temperature resistance [°C]	from -30 up to 80
Quantity [ml]	500
Colour	<input type="checkbox"/>

Industry Cleaners



tesa® 60040 Industry Cleaner

- Cleaning of surfaces for optimum bonding results with adhesive tapes and spray glues
- Evaporates without leaving residues
- Excellent cleaning results on machinery and many different surfaces like plastic and metal



Solvent based on	Dearomatized special petrol, isopropanol
Quantity [ml]	500
Colour	<input checked="" type="checkbox"/>



tesa® 60042 Adhesive Remover

- Reliable removal of glue residues from plastic parts, glass and metal surfaces
- Evaporates without leaving residues
- Easy removal of labels



Solvent based on	Dearomatized special petrol, isopropanol
Quantity [ml]	200
Colour	<input checked="" type="checkbox"/>

tesa® Repairing Tapes

Xtreme Conditions HD



Solve this problem in 30 seconds!



tesa® Xtreme Conditions HD

tesa® Xtreme Conditions HD is a self-amalgamating silicone tape with excellent resistance against most oils, acids, solvents, water, UV radiation and also temperatures from -65°C up to +260°C.

- For high pressure leaks, up to a maximum of 12 bar
- Easily adheres to most surfaces including dirty and oily surfaces
- Instant sealing, even under water
- For temporary and permanent applications
- Clean removal from most materials without residues



tesa® 4600 Xtreme Conditions HD

- Insulating and protecting wiring and connections
- Sealing applications in engine compartment
- Wrap hydraulic fittings and other exposed metal connections to prevent corrosion
- Masking applications in powder coating, liquid coating, e-coating, anodizing and plating
- Automotive applications for wire harness as well as general repairs
- Various bundling, securing, wrapping and repairing applications

Backing	Silicone
Total Thickness [µm]	750
Elongation at break [%]	360,0
Tensile strength [N/cm]	55,0
Breakdown voltage [kV]	12
Colours	■

Premium Cloth Tapes



tesa® 4651

- Powerful high quality acrylic coated cloth tape (148 mesh)
- Very strong adhesion, even on rough surfaces
- Highly abrasion resistant
- Excellent tensile strength
- Easy to tear by hand, straight tear edge
- Easy to write on
- Flexible and conformable



Backing	Rayon fabric
Adhesive	Natural Rubber
Total Thickness [µm]	310
Adhesion to Steel [N/cm]	3,3
Tensile strength [N/cm]	100
Colours	■ ■ ■ ■ ■ ■ ■ ■



tesa® 4671

- Strong acrylic coated cloth tape (120 mesh)
- Very strong adhesion
- Very good tensile strength
- Easy to write on
- Matt surface (black and neon colours) for low reflection



Backing	Rayon fabric
Adhesive	Natural Rubber
Total Thickness [µm]	280
Adhesion to Steel [N/cm]	3,5
Tensile strength [N/cm]	80
Colours	■ ■ ■ ■ ■ ■ ■ ■

PE-Coated Cloth Tapes



tesa® 53799

- Strong PE-extruded cloth tape (80mesh)
- High tensile strength
- Easy to tear by hand
- Low unwinding
- Olive green known as „Army“ tape



Backing	PE-extruded Cloth
Adhesive	Natural Rubber
Total Thickness [µm]	310
Adhesion to Steel [N/cm]	4,8
Tensile strength [N/cm]	77
Colours	■



tesa® 4688

- Strong PE-extruded cloth tape (55 mesh)
- Easy to tear by hand
- Low unwinding
- AREVA-certificate for use in nuclear power plants



Backing	PE-extruded Cloth
Adhesive	Natural Rubber
Total Thickness [µm]	260
Adhesion to Steel [N/cm]	4,7
Tensile strength [N/cm]	52
Colours	■ ■ ■ ■ ■ ■ ■ ■

Duct Tapes



tesa® 4662

- PE-laminated cloth (27 mesh)
- Strong duct tape
- Very good adhesion on rough surfaces
- Suitable for general purpose applications



Backing	PE-laminated Cloth
Adhesive	Natural Rubber
Total Thickness [µm]	230
Adhesion to Steel [N/cm]	4,5
Tensile strength [N/cm]	34
Colours	■ ■ ■



tesa® 4613

- PE-laminated cloth (27 mesh)
- Utility grade duct tape
- Good adhesion on rough surfaces



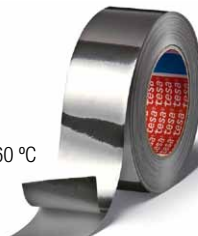
Backing	PE-laminated Cloth
Adhesive	Natural Rubber
Total Thickness [µm]	180
Adhesion to Steel [N/cm]	4,1
Tensile strength [N/cm]	34
Colours	■ ■ ■

Aluminium Tapes



tesa® 50575 / 50565 / 50525

- Good adhesion
- High mechanical resistance
- Moisture and vapour resistant
- Available with or without paper liner
- Temperature resistance from -40 to 160 °C
- 50565 is flame retardant according to UL 510



tesa®	50575 / 65 / 25
Backing	Aluminum foil
Adhesive	Acrylic
Total Thickness [µm]	80 / 50 / 30
Adhesion to Steel [N/cm]	6,0 / 6,0 / 5,0
Tensile strength [N/cm]	66 / 35 / 23
Colours	■

tesa® Masking Tapes

Stencil Masking Tapes



tesa® 4434 Heavy Duty

- Special masking tape with a strong, thick and resistant paper backing
- Developed for manual cutting
- Mainly used as a protection material during grinding, sandblasting and general metal work
- Very good durability (50 sec. / 4 bar)



Backing	Flat Paper
Adhesive	Natural Rubber
Total Thickness [µm]	670
Adhesion to Steel [N/cm]	2,7
Tensile strength [N/cm]	180,0
Temperature resistance [°C]	60
Colours	<input checked="" type="checkbox"/>



tesa® 4432 Mid Duty

- Special masking tape made of a tough and resistant coated paper backing
- With a strong natural rubber adhesive for high adhesion
- For masking during sandblasting work on glass, metal and stone
- Normal durability (6 sec. / 4 bar)



Backing	Flat Paper
Adhesive	Natural Rubber
Total Thickness [µm]	330
Adhesion to Steel [N/cm]	8,0
Tensile strength [N/cm]	93,0
Temperature resistance [°C]	100
Colours	<input type="checkbox"/>



tesa® 4423 Low Duty

- Stencil masking tape with an extra strong adhesive and a resistant paper backing
- Suitable for short term sandblasting on a variety of surfaces such as glass, aluminum, wood
- Normal durability (< 6 sec. / 4 bar)



Backing	Flat Paper
Adhesive	Natural Rubber
Total Thickness [µm]	145
Adhesion to Steel [N/cm]	4,5
Tensile strength [N/cm]	57,0
Temperature resistance [°C]	60
Colours	<input type="checkbox"/>

Powder Coating Tapes



tesa® 4331

- High temperature masking tape with a special backing: PET laminated with paper
- Combines conformability and high strength
- Masking during scratch and impact resistant multi-layer coatings
- Removable without leaving residues



Backing	PET laminated with paper
Adhesive	Silicone
Total Thickness [µm]	110
Adhesion to Steel [N/cm]	4,0
Tensile strength [N/cm]	53,0
Temperature resistance [°C]	220°C / 30 min.
Colours	<input type="checkbox"/>



tesa® 50650

- Blue, conformable
- Temperature resistant up to 220°C
- Provides sharp paint edges
- Removable without leaving residues
- Also available on liner



Backing	PET
Adhesive	Silicone
Total Thickness [µm]	55
Adhesion to Steel [N/cm]	3,0
Tensile strength [N/cm]	48,0
Temperature resistance [°C]	220 (30 min)
Colours	<input checked="" type="checkbox"/>



tesa® 50600

- Green, high strength
- Temperature resistant up to 220°C
- Removable without leaving residues
- Also available on liner



Backing	PET
Adhesive	Silicone
Total Thickness [µm]	80
Adhesion to Steel [N/cm]	4,0
Tensile strength [N/cm]	72,0
Temperature resistance [°C]	220 (30 min)
Colours	<input checked="" type="checkbox"/>

Specialties



tesa® 4319

- Suitable for masking during paintwork
- Temperature resistance up to 60 °C
- Strongly creped, flexible and tear resistant
- High stretch capacity



Backing	Highly-creped paper
Adhesive	Natural Rubber
Total Thickness [µm]	375
Adhesion to Steel [N/cm]	4,5
Tensile strength [N/cm]	28,0
Temperature resistance [°C]	60/1h
Colours	■



tesa® 4334 Precision Mask®

- Extra thin and strong paper backing coated with acrylic adhesive
- Easy removable after 5 months use indoors
- Suitable for use with water-based paints and lacquers even when applied by spatula
- Especially suited for indoor applications when a precise razor-sharp paint edge is needed



Backing	Flat Paper
Adhesive	Acrylic
Total Thickness [µm]	90
Adhesion to Steel [N/cm]	1,85
Tensile strength [N/cm]	30
Temperature resistance [°C]	100/1h
Colours	■

High Temperature Masking Tapes



tesa® 4341

- Slightly creped, stretchable and flexible paper masking tape for paint jobs
- Resistant to wet sanding
- Fillers or paints adhere well to the tape backing
- Residue free removable after oven drying



Backing	Slightly-creped paper
Adhesive	Natural Rubber
Total Thickness [µm]	190
Adhesion to Steel [N/cm]	4,7
Tensile strength [N/cm]	53,0
Temperature resistance [°C]	140/1h
Colours	■



tesa® 4309

- Slightly creped, stretchable and flexible paper masking tape for paint jobs
- Resistant to wet sanding
- Fillers or paints adhere well to the tape backing
- Residue free removable after drying



Backing	Slightly-creped paper
Adhesive	Natural Rubber
Total Thickness [µm]	170
Adhesion to Steel [N/cm]	3,5
Tensile strength [N/cm]	47,0
Temperature resistance [°C]	120/1h
Colours	■

Low Temperature Masking Tapes



tesa® 4316

- Finely creped paper masking tape
- Thin and flexible
- Suitable for general masking applications
- Resistant to wet sanding
- Paints and fillers adhere well to the backing



Backing	Slightly-creped paper
Adhesive	Natural Rubber
Total Thickness [µm]	140
Adhesion to Steel [N/cm]	3,4
Tensile strength [N/cm]	38,0
Temperature resistance [°C]	100/1h
Colours	□



tesa® 4317

- Finely creped paper masking tape
- Thin and flexible
- Suitable for general masking applications
- Resistant to wet sanding
- Paints and fillers adhere well to the backing



Backing	Slightly-creped paper
Adhesive	Natural Rubber
Total Thickness [µm]	140
Adhesion to Steel [N/cm]	3,3
Tensile strength [N/cm]	38,0
Temperature resistance [°C]	80/1h
Colours	□

General Purpose Masking Tapes



tesa® 4323

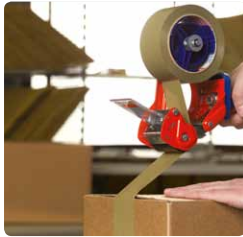
- Finely creped paper masking tape
- Suitable for general purpose applications
- Temperature resistance up to 50 °C (short term)



Backing	Slightly-creped paper
Adhesive	Natural Rubber
Total Thickness [µm]	130
Adhesion to Steel [N/cm]	3,0
Tensile strength [N/cm]	33,0
Temperature resistance [°C]	50/1h
Colours	■

tesa® Packaging Tapes

Carton Sealing Heavy Weight Tapes



tesa® 4124 PVC

- Secure closure of medium and also heavy-weight cartons
- Excellent performance on all kind of cardboard
- Low noise and smooth unwind
- For manual and automatic carton sealing



Backing	PVC
Adhesive	Natural Rubber
Total Thickness [µm]	65
Adhesion to Steel [N/cm]	3,2
Tensile strength [N/cm]	60,0
Colours	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Carton Sealing Mid Weight Tapes



tesa® 4100 PVC embossed

- Based on a PVC backing and natural rubber adhesive
- Embossed film backing guarantees an even and smooth unwind
- Embossed backing prevents reflection during barcode reading
- For manual and automatic sealing of cartons of medium range weight



Backing	Embossed PVC
Adhesive	Natural Rubber
Total Thickness [µm]	65
Adhesion to Steel [N/cm]	2,2
Tensile strength [N/cm]	47,0
Colours	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>



tesa® 4024 / 64014 PP

- Based on a PP backing coated with a special high tack water based acrylic adhesive
- Low noise unwind
- Excellent ageing resistance
- Can be used on all common hand dispensers and machines



tesa®	4024 / 64014
Backing	PP
Adhesive	Acrylic
Total Thickness [µm]	52 / 45
Adhesion to Steel [N/cm]	3,0 / 2,8
Tensile strength [N/cm]	45,0 / 35,0
Colours	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>



tesa® 4089 PP

- Based on a 28 micron PP backing with natural rubber adhesive
- Manual or automatic sealing of light and medium range weight cartons
- Easy unwind



Backing	PP
Adhesive	Natural Rubber
Total Thickness [µm]	46
Adhesion to Steel [N/cm]	2,2
Tensile strength [N/cm]	41,0
Colours	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Inner Packaging Tapes



tesa® 4104

- Ensures a safe and easy closure of bags for e.g. tobacco, single items and small industrial parts
- Excellent adhesion on different kind of surfaces
- Available in several colours and transparent
- tesa® 4104 red enables a sharp-edge masking for multicolour painting



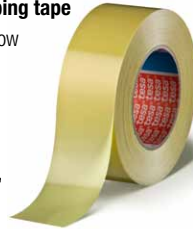
Backing	PVC film
Adhesive	Natural Rubber
Total Thickness [µm]	67
Adhesion to Steel [N/cm]	3,6
Tensile strength [N/cm]	60,0
Colours	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Strapping & Filament Tapes

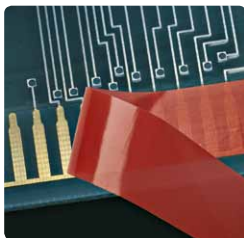


tesa® 4289 Heavy Duty tensilized strapping tape

- Features very high tensile strength and low elongation at the same time
- High abrasion resistance
- Residue free removability
- Application: Surface protection of glass, bundling of heavy steel pipes, palletizing, end tabbing, etc.



Backing	MOPP
Adhesive	Natural Rubber
Total Thickness [µm]	150
Adhesion to Steel [N/cm]	5,5
Tensile strength [N/cm]	375,0
Colours	



tesa® 4287

- Medium tensile strength with good shear resistance and low elongation
- tesa® 4287 has natural rubber adhesive



Backing	MOPP
Adhesive	Natural Rubber
Total Thickness [µm]	79
Adhesion to Steel [N/cm]	4,0
Tensile strength [N/cm]	180,0
Colours	



tesa® 4595 / 4597 / 4599

- Crossweave filament tape based on polyester filaments
- High adhesion and excellent elongation at break
- Bundling and palletizing, heavy duty carton sealing, transport securing, fixing and end-tabling
- High tear resistance



tesa®	4595 / 97 / 99
Backing	PET Fiber / PET Film
Adhesive	Synthetic Rubber
Total Thickness [µm]	250 / 300 / 350
Adhesion to Steel [N/cm]	9,0 / 9,0 / 9,0
Tensile strength [N/cm]	500 / 750 / 1.000
Colours	<input type="checkbox"/>



tesa® 4592 / 4593

- Monofilament tape (4592) and crossweave filament tape (4593) based on glass filaments
- High UV and ageing resistance
- High temperature resistant (up to 150°C short term)
- Transport securing, fixing, bundling, palletising and end-tabling applications
- High tear resistance



tesa®	4592 / 4593
Backing	Glass Fiber / PET film
Adhesive	Acrylic
Total Thickness [µm]	110 / 160
Adhesion to Steel [N/cm]	4,0
Tensile strength [N/cm]	250,0
Colours	<input type="checkbox"/>



tesa® 4590 / 4591

- Monofilament tape (4590) and crossweave filament tape (4591) based on glass filaments
- High adhesion and excellent elongation at break
- Bundling and palletizing, heavy duty carton sealing, transport securing, fixing and end-tabling
- High tear resistance



tesa®	4590 / 91
Backing	Glass Fiber / PET film
Adhesive	Synthetic Rubber
Total Thickness [µm]	125 / 150
Adhesion to Steel [N/cm]	6,0 / 8,0
Tensile strength [N/cm]	250,0 / 250,0
Colours	<input type="checkbox"/>

tesa® Safety & Marking Tapes

Anti-Slip Tapes



tesa® Anti Slip 60950/51/52

- Suitable for all applications where safe footing is required
- Can be used in humid areas
- High adhesion
- Heavy duty anti-slip coating
- Resistant to water, temperature, UV-light and cleaners



Backing	PVC
Adhesive	Acrylic
Total Thickness [µm]	810
Adhesion to Steel [N/cm]	10,0
Colours	

Marking Tapes



tesa® Permanent Marking Tape 4169

- For permanent and heavy duty marking
- Thick, strong vinyl backing
- UV resistant
- Good adhesion on various surfaces
- Available in several colours according to the EU recommended colours for marking



Backing	Soft PVC
Adhesive	Acrylic
Total Thickness [µm]	180
Adhesion to Steel [N/cm]	1,8
Tensile strength [N/cm]	75,0
Colours	



tesa® Marking Tape 60760

- For temporary and low duty marking
- Thick, strong vinyl backing
- Good adhesion on various surfaces
- Available in several colours



Backing	Soft PVC
Adhesive	Natural Rubber
Total Thickness [µm]	150
Adhesion to Steel [N/cm]	2,5
Tensile strength [N/cm]	160,0
Colours	

Insulation Tapes



tesaflex® 4163

- For insulation, marking, bundling, repairing, splicing and many other applications
- UV stable acrylic adhesive, suitable for permanent applications
- Temperature resistant up to 105 °C
- Isogeno grey color is suitable for installation jobs



Backing	Plasticized PVC
Adhesive	Acrylic
Total Thickness [µm]	130
Adhesion to Steel [N/cm]	1,8
Tensile strength [N/cm]	30,0
Colours	



tesaflex® 53948

- Certified according IMQ, Semko, and IEC regulations
- Flame retardent
- Dielectric breakdown voltage 5000V
- Multicolour towers available



Backing	Plasticized PVC
Adhesive	Natural Rubber
Total Thickness [µm]	120
Adhesion to Steel [N/cm]	2,0
Tensile strength [N/cm]	22,0
Colours	



tesaflex® 4252

- Multipurpose soft-PVC tape
- Suitable for temporary applications
- Assorted colours and dimensions



Backing	Plasticized PVC
Adhesive	Natural Rubber
Total Thickness [µm]	120
Adhesion to Steel [N/cm]	1,7
Tensile strength [N/cm]	13,0
Colours	

What you should know about adhesive tape

By definition, adhesive tapes are carrier materials with a self-adhesive coating. Self-adhesive means that the tapes stick to a base surface simply through touch and light pressure. As is well known, adhesive tapes do not need any drying or curing time, as is the case with conventional adhesives.

The secret of adhesive tapes lies in a special quality in the bonding mass used: it must be elastic enough that, when pressed, it adapts to the surface it is to stick to. At the same time, the bonding substance must be firm enough that it is suitable for long-term application. The adhesive must have viscoelastic properties.



The considerable technical expertise that lies behind modern adhesive tapes and what a wide variety of applications they have is not often not appreciated. For example, almost all components of mobile phones, PDAs and tablet PCs, i.e. microphones, loudspeakers, screens and camera units, are now fixed into the devices using double-sided, high-performance adhesive tapes.

Structure of adhesive tape

Adhesive tapes consist of various functional layers. The adhesive layer can be applied to either one or both sides of the backing (to create single or double-sided tape).

The typical structure of single or double-sided adhesive tapes is outlined in the following diagram.

Structure of single-sided adhesive tapes

Release coat _____
 Backing _____
 Primer _____
 Adhesive _____

Structure of double-sided adhesive tapes

Release liner (silicon-coated) _____
 Adhesive (closed side) _____
 Primer _____
 Backing _____
 Primer _____
 Adhesive (open side) _____

What a tesa® tape is made of

Backings:

The “heart” of a high quality tesa® tape is the backing which can be made of a variety of materials from paper to plastic films.

tesa® tapes are available with 5 different backing materials. Each of these – in combination with the most appropriate adhesive – fits the specified application.

tesa® Backings	
Material	Characteristics
Filmic Tapes (PP, PET, PVC)	Dimensionally stable, chemically stable, heat resistant (PET), transparent or white
Non-Woven Tapes	Conformable, heat-resistant, hand-tearable, translucent
Foam Tapes (PE)	Noise & vibration dampening, adapts to rough substrates, compensating different expansion factors (e.g. glass on metal), black or white
Cloth/Fabric Tapes	Conformable, tear resistant, hand tearable, for high coating weight
Transfer Tapes	No backing, only adhesive on liner, very conformable, very thin

Adhesives:

The adhesive layer can be applied to either one or both sides of the backing (to create single or double-sided tapes). The coating weight (g/m²) and the formulation of the adhesive depend on the intended applications the tape is designed for.

The qualities of the adhesive mass can be manipulated through the addition of various additives, but all three adhesion systems have typical basic characteristics. In adhesion technology, a distinction is made essentially between rubber resin adhesive masses and acrylate adhesive masses.

There are three basic types of adhesives. The difference lies in which raw material (elastomer) forms the basis of each:

■ Acrylic Adhesives

- Industrially synthesized polymers
- Precise adjustment of polymers allows control of adhesive properties
- Polymerisation, compounding and coating by tesa

■ Natural Rubber Adhesives

- Natural polymers
- Compounding and coating by tesa

■ Synthetic Rubber Adhesives

- Industrially manufactured synthetic thermoplastic polymers
- Compounding and coating by tesa

tesa® Adhesive Systems		
Material	Characteristics	
	+ Advantages	- Limitations
tesa® Acrylic Adhesives	<ul style="list-style-type: none"> + Sticks well to polar substrates (PET, PC, glass, metals) + Temperature resistance + Age resistance + Environmental resistance + Usually higher shear resistance at elevated temperatures 	<ul style="list-style-type: none"> - Ultimate adhesion strength is reached after dwell time so some of the tapes are repositionable - Low immediate peel adhesion - Lower adhesion level on non-polar substrates
> for permanent and outdoor applications		
tesa® Rubber Adhesives	<ul style="list-style-type: none"> + High initial tack or “grab” + High initial bond to substrate + Excellent adhesion to non-polar surfaces, such as PP, PE or EPDM 	<ul style="list-style-type: none"> - Lower resistance against elevated temperatures - Lower ageing resistance - Lower environmental resistance - Lower chemical resistance - Lower humidity resistance
> for bonding non polar surfaces and general purpose applications		

Release Liners for double-sided tapes:

An adhesive-repellent liner is needed to be able to unwind and properly apply the tape. The material can be either a plastic film or a special paper:

- **Glassine Paper:** Standard Solution
- **PE-coated Paper:** Humidity-resistant, branded
- **MOPP Film:** Mainly for die-cuts and automated processes
- **PE Film:** Mainly for foam tapes
- **PET Film:** Mainly for high precision die-cuts in the electronic industry

tesa® Release Liners	
Material	Characteristics
Glassine Paper	<ul style="list-style-type: none"> - Hand tearable - Good tensile strength - Good electrostatic discharge - Stable under pressure due to hard paper core - Die-cuttable - Cost efficient
PE Coated Paper	<ul style="list-style-type: none"> - Better dimensional stability - PE layer prevents moisture absorption - Hand tearable - Good tensile strength - Good electrostatic discharge - Die-cuttable
MOPP Film	<ul style="list-style-type: none"> - Dimensionally stable, good tensile strength - Humidity resistant - Small thickness tolerance - Die-cuttable - Translucent
PE Film	<ul style="list-style-type: none"> - Very flexible for winding thick products - Humidity resistant
PET Film	<ul style="list-style-type: none"> - Temperature resistant (max. 150 °C) - Good thickness tolerance - Dimensionally stable, thin - Die- and kiss-cuttable - Transparent

Technical details of adhesive tape

There are a number of established terms used to describe an adhesive tape and its main characteristics. The most important ones are explained here:

Adhesive force, adhesion, peeling force

Measure of the adhesion of a tape to a surface. The adhesive force is the force necessary to remove the tape from the surface. For the purpose of standardisation, smooth stainless steel is used as a reference surface. The force is given in Newtons per centimetre of tape width (N/cm).

Tack

The tape's ability to bond spontaneously to a surface, without pressure being applied.

Unwinding force

The force needed to pull the adhesive tape from the roll.

Shear strength

Shear strength measures an adhesive tape's resistance when it is pulled in parallel to the bonding surface. This is important in practice, for example, when it comes to securing wall mirrors with mounting tapes.

Tear strength, maximum pulling force

The strength of the backing is measured lengthways and represents the force with which the tape tears. The force is given in Newtons per centimetre of tape width (N/cm).

Ultimate elongation

The ultimate elongation tells us how much the tape can be stretched lengthways before it tears. The figure is given as a percentage value.

Adhesive tape thickness

The thickness of the adhesive tape is given in $\mu\text{m} = 1/1000 \text{ mm}$.

Thread count

The strength of fabric tapes is given by the thread count. This is calculated by the total number of threads in both directions (mesh) in an area of 2.54 cm x 2.54 cm (one square inch).

Technical Definitions			
Units of measurement			
N =	Newton. One Newton is the force, which accelerates a mass of 1 kg by 1 m/s ² .		
$\mu\text{m} =$	Unit to measure thickness of tapes and backings. 1 $\mu\text{m} = 1/1000 \text{ mm} = 0,001 \text{ mm}$.		
Abbreviations of most common plastics (according to DIN 7728)			
PE	Polyethylene	PUR	Polyurethane
PET	Polyester (Polyethylene terephthalate)	PVC	Polyvinyl chloride
PP	Polypropylene	H-PVC	Hard PVC
		W-PVC	Soft PVC

General recommendations for use

First: Considerations when choosing an adhesive tape

It is very important to observe some specific rules when using adhesive tapes. First, we recommend clarifying your individual requirements concerning the application.

■ Is the tape for indoor or outdoor use?

If it is to be used outdoors, weather-resistant products are essential. The tape must remain unaffected by UV radiation and moisture.

■ What temperatures will the tape/the bond be subjected to?

Adhesive tapes should only be applied between 10° and 40°C. With lower temperatures, condensation on the bond surface can reduce adhesion. Lower or higher temperatures may be tolerated after application of the tape.

■ How long is the duration of use?

If the tape to be used for long or short-term application? In answering this question, the choice of the correct bonding mass is crucial (see page 16, Adhesive Systems).

■ Should various substrates be bonded with one another?

In bonding two different substrates, the relevant expansion criteria should be taken into account (see page 4-5, Fastening Solutions).

■ What is the condition of the base surface?

There are a number of points to consider here:

- Smooth, rough or structured surface
- Type of coating material
- Compatibility with coating materials
- Chemical ingredients (e.g. plasticizer)
- Adhesive strength
- Surface tension

Due to the various surface materials used in practice, tests by the user are the most effective way of testing the material before use. Following are some hints and tips for saving costs and time concerning the most common surface materials when using the appropriate tesa® products.

■ Wood

The pre-treatment of wood is important to avoid damage. Non sufficient ply bond strength of the wood can lead to wooden fibre splinters during removal of the tape.

Incompletely dried paints which were applied on old and dirty surfaces have, during removal, a better bond to the tape than to the surface. Such damage can be identified due to occasional residues which don't cover the whole length/width of the tape. The temperature where the adhesive tape is to be used should be above +10°C. To ensure a residue free removal, the tape should be removed at an angle of 45°.

■ Metal

Copper, zinc and lead can be discoloured due to chemical reactions. An adhesive tape application should therefore be short term and preferably use narrow widths.

■ Anodised Aluminium Surfaces

On window and door profiles or roller shutters with poor anodised finishes, adhesive residues can occur during removal of the tape.

We recommend to test the aluminium surface with an ink test. If ink residues appear, it shows a badly compressed surface. Therefore an adhesion test is recommended before application, to ensure a residue-free removal.



Ink test: Put a drop of ink on the anodized surface and wipe off with an absorbent cloth



Ink can be wiped off: high quality surface



Remains a ink drop: lower quality surface

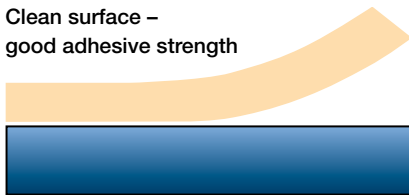
■ Natural and Artificial Stone

We do not recommend applying adhesive tapes on natural and artificial stone as discolouring can become visible on the surface, even on short term applications.

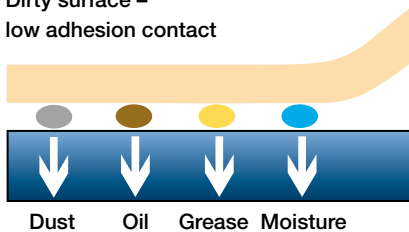
2. Second: Correct application

The prerequisite for secure adhesion is generally a dry bonding surface that is free from dust, grease, oil and any other dirt. Traces of silicon and wax (e.g. from polishes) reduce bonding capacity in particular.

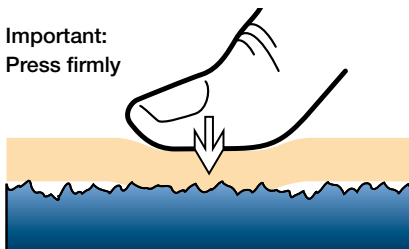
**Clean surface –
good adhesive strength**



**Dirty surface –
low adhesion contact**



**Important:
Press firmly**



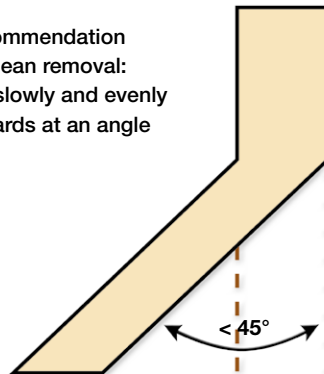
For optimum adhesion, apply firm, even pressure.

3. Third: Correct removal

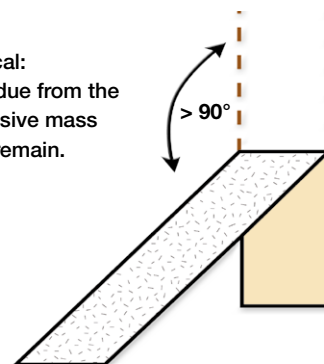
When adhesive tapes are to be used temporarily, it is important to remove the tape correctly to avoid leaving remnants of the adhesive on the surface, as these are difficult or impossible to remove.

It should ideally be pulled from the surface at an angle. An angle of up to 45° offers the lowest risk of leaving residue behind.

**Recommendation
for clean removal:
Pull slowly and evenly
upwards at an angle**



**Critical:
Residue from the
adhesive mass
can remain.**



The adhesive dwell time of the tape on the base surface also has a decisive influence on its removal. Adhesive tapes designed for long-term use can be removed even after days or weeks with no residue remaining. Others, on the other hand, must be removed after just a few hours or a few days in order to avoid damage or adhesive residue.

4. Fourth: Correct storage

Adhesive tapes are not different to any other object: to ensure quality, they must be stored correctly. Temperature and storage duration have a significant influence on quality, and even on the usability of the tape.

- When stored at higher temperatures, adhesive tapes age far more quickly.
- An adhesive tape stored for too long or stored incorrectly can cause damage to the bonded surface.
- Cold or warm rolls of tape should, where possible, first be allowed to adjust to the surrounding temperature before they are used.
- Be careful of frost or excessive heat when storing adhesive tapes. We would particularly like to warn against storing tapes behind windscreens.



tesa SE: Worldwide Manufacturer of Self-Adhesive System Solutions

tesa SE is one of the world's leading manufacturers of self-adhesive product and system solutions for industry, trade, and consumers. The company's 75 years of experience in coating technology and its development of adhesives and innovative product solutions have taken tesa, headquartered in Hamburg, to the top of the world market in many fields of application. As a partner to industry, tesa works together with its clients to analyze their production processes in order to develop tailored solutions for increasing efficiency or optimizing end products. Research labs in Germany, the United States, China, and Singapore ensure continual development of innovative product solutions. Our company sees its orientation toward international quality, environmental, and occupational safety standards as a matter of course. As a result, we submit to regular evaluations by recognized certification companies in the context of our "Global Certification Concepts", which we impose upon ourselves, to determine whether our Hamburg headquarters and the regional subsidiaries meet these standards.

Further Information Material

For more detailed information regarding other products and applications please refer to the following brochures:

- **tesa® ACX^{plus} Intelligent Bonding Products and Applications**
- **tesa® Strapping Tapes – More than just packaging**
- **tesa® Xtreme Conditions HD – The Repairing Tape for Extreme Conditions**
- **tesa® Double-sided Tapes for Industrial Business – The Right Solution for Every Application**



tesa® products prove their impressive quality day in, day out in demanding conditions and are regularly subjected to strict controls. 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, 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 advise you.

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The tesa Management System complies with the industry's most important certification standards