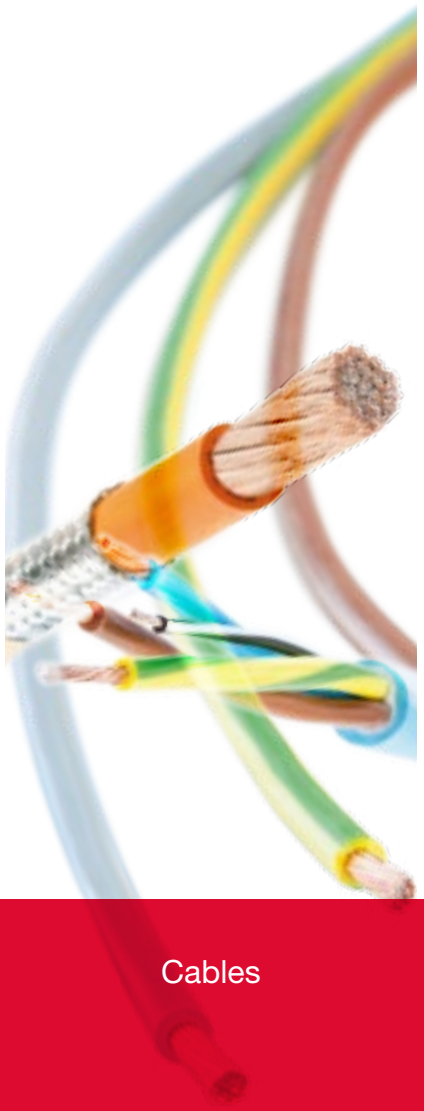
Technical Adhesive Tapes
Electrical Installation

Keeping you connected.

Coroplast

Our business units

Tapes



Cables

Cable Assemblies

Coroplast adhesive tapes – experience and innovation from a single source

Coroplast was founded back in 1928. In the early years, the company extruded PVC – a new material at that time – to make insulation sleeves, cables and insulated wires. The material expertise and process know-how that Coroplast acquired during these years enabled it to commence production of PVC electrical insulating tapes after 1945, paving the way for the new Adhesive Tapes Division. It is now more than 40 years since Coroplast's transition from a pure manufacturer of insulating tapes to a provider of technical adhesive tapes in selected markets. This journey has been accompanied by a passion for innovation and the courage to explore new technologies and go down different paths. Examples of this include:

› The shift towards environmentally-friendly, solvent-free adhesive systems and hot-melt acrylic
› The use of hot-melt technology in new products
› Numerous patent registrations
› Continual development of the product range toward special products for specific, customer-oriented applications

Coroplast insulating tape is already legendary.
Even the more recent of our products already enjoy a considerable market presence and some are already leaders in their target markets. Coroplast is an independent family owned company that specializes in the development and production of technical adhesive tapes. As a result, we have short decision-making channels that enable us to respond quickly and flexibly to customers' and market requirements and at the same time work on sophisticated technical development projects and enhance our international presence. The Adhesive Tapes Division has production plants and distribution centers on three continents and operates with a global network of distributors. The in-house formulation and production of a range of pressure-sensitive adhesives has been an important factor in the company's success and it underlines Coroplast's commitment to being an adhesive tapes brand that delivers exceptional quality.

As well as synthetic rubber, Coroplast also offers single- and double-sided adhesive tapes with dispersion adhesive and solvent acrylic adhesive, also in modified form, as well as hot-melt acrylic and self-adhesive acrylic compositions. Customers and users can be found worldwide in technically demanding sectors of trade and industry, a great many of them being automobile manufacturers and their suppliers. It goes without saying that Coroplast is certified in accordance with ISO TS 16949.

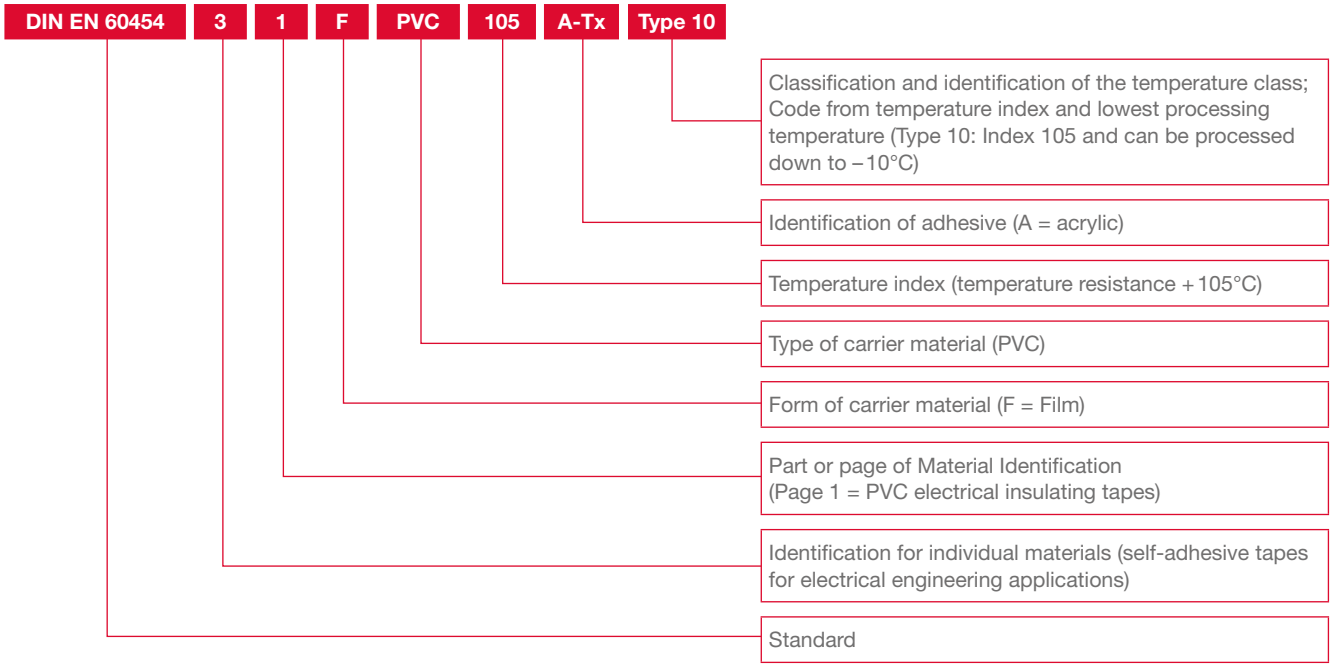
The company also provides a wide variety of different packaging and dispensing methods: From single rolls, converter rolls and cross-wound spools to die-cut parts, including processing aids. Many different options are available and even in customer-specific packaging if requested. Our convictions and values – namely a pioneering mentality and desire to strive for technical improvements, coupled with speed – are the reasons why Coroplast is consistently able to deliver new solutions and products for the market and individual customers. Find out more about our strengths in developing and producing customer-specific solutions and special requests in conjunction with you, our customers needs. Our experienced and capable development team will be glad to advise you, whatever adhesive tape solutions you may need.

Content

Adhesive tape standard for electrical insulating tape: EN 60454

The tests performed on our adhesive tapes designed for use in the electrical engineering sector are based on European Standard EN 60454 applicable to electrical insulating tapes. This standard specifies a compulsory system of product labeling that allows consumers and contractors to immediately identify the key properties and test values of insulating tapes from the product designation. The following example illustrates the complete product designation for Coroplast 302:

Coroplast 302 Electrical insulating tape



Even our standard product, Coroplast 302, reveals the outstanding temperature characteristics of Coroplast adhesive tapes by achieving the comparatively high temperature class 10 (of 12) in accordance with EN 60454-3-1 (processable down to –10°C, temperature-resistant to +105°C). Furthermore, we send our Coroplast 301 and 302 products to the VDE (Germany Association for Electrical, Electronic & Information Technologies) for external testing in line with the relevant standards, so that they can also carry the VDE approval mark. Further details and technical data can be found in the product descriptions in this catalog or you can contact us directly.

Please find our handling instructions online at www.coroplast.de

Coroplast 301, 302, 303

Electrical insulating tapes based on plasticized PVC

Applications, advantages and properties

› DIN EN 60454-3-1 F-PVC/105/A-Tx Type 10
› For all standard insulation work, repairing damaged insulation, wrapping cable ends and branches, stripping armatures and coils, labeling and marking
› For bundling and marking wire harnesses and branches
› Flame-retardant and good ageing properties
› Very good resistance to chemicals
› Can be applied fold-free on all uneven surfaces due to high flexibility
› Color chart on page 88/89
› Plasticized PVC adhesive tapes, transparent: see special applications Coroplast Type 331, 332 (see page 83)

301
› With VDE and ÖVE approval marks

302
› Our standard adhesive tape with VDE approval mark
› Also available in green/yellow

303
› For insulation work with high demands for mechanical stability

Coroplast 302

Technical data	301	302	303
Carrier	plasticized PVC film	plasticized PVC film	plasticized PVC film
Adhesive	acrylic	acrylic	acrylic
Thickness	0.10 mm	0.15 mm	0.20 mm
Colors	yellow, orange, red, purple, light blue, blue, green, gray, brown, white, black	yellow, orange, red, purple, light blue, blue, green, gray, brown, white, black, green/yellow	yellow, orange, red, purple, blue, green, gray, brown, white, black
Widths	9, 12, 15, 19, 25, 30, 38 and 50 mm	9, 12, 15, 19, 25, 30, 38 and 50 mm	9, 12, 15, 19, 25, 30, 38 and 50 mm
Lengths	10, 25 and 33 m	4.5, 10, 25 and 33 m	10 and 20 m
Tensile strength	20 N/cm	25 N/cm	38 N/cm
Elongation at break	180%	190%	195%
Adhesion on steel	1.8 N/cm	2.0 N/cm	2.1 N/cm
Dielectric strength	> 40 kV/mm	> 40 kV/mm	> 40 kV/mm
Heat resistance	–10 to +105°C	–10 to +105°C	–10 to +105°C
Tested by	DIN EN 60454	DIN EN 60454	DIN EN 60454
Approval mark	VDE and ÖVE	VDE and ÖVE	

Coroplast 701 PE

Electrical insulating tapes based on elastomer-modified PP

Coroplast 701 PE

for halogen-free, polypropylene-based wire harness tapes (available in several colors), see Coroflex 512 on page 9

Applications, advantages and properties

› DIN EN 60454-3-12 F-PE/75/R-Tp Type 4
› For electrical insulation work, particularly high-voltage insulation, insulation of high-frequency components, and for cable assembly
› Acts as a water or water vapor barrier when wrapped in several overlapping layers
› Halogen-free
› Solvent-free
› Very good resistance to low temperatures
› High adhesion
› Excellent resistance to ageing

Technical data	701 PE
Carrier	PE film
Adhesive	synthetic rubber
Thickness	0.15 mm
Colors	black, other colors available on request
Widths	9, 12, 15, 19, 25, 30, 38 and 50 mm
Lengths	10 and 25 m
Tensile strength	24 N/cm
Elongation at break	320%
Adhesion on steel	6.3 N/cm
Dielectric strength	> 40 kV/mm
Heat resistance	– 20 to + 75°C

Corotex 800, 8005

Plastic-coated adhesive tape

Corotex 8005

Applications, advantages and properties

› Universal adhesive textile adhesive tape for industry and trade, wiring installation and repair work, labeling and marking
› Easy to tear by hand and write on
› Good chemical resistance
› High adhesion
› Excellent resistance to ageing
› Good resistance to cold and heat
› Excellent electrical insulating properties
› See color chart on pages 88/89

Corotex 8005

› Rot-resistant textile polyester carrier

Technical data	Corotex 800	Corotex 8005
Carrier	acrylic-coated spun rayon fabric	acrylic-coated PET cloth
Adhesive	synthetic rubber	synthetic rubber
Thickness	0.28 mm	0.25 mm
Colors	yellow, red, blue, green, gray, brown, white, black	yellow, red, blue, green, gray, brown, white, black
Widths	6, 9, 12, 15, 19, 25, 30, 38 and 50 mm	9, 12, 15, 19, 25, 30, 38 and 50 mm
Lengths	2.5, 10, 25 and 50 m	25 and 50 m
Tensile strength	85 N/cm	85 N/cm
Elongation at break	10%	17%
Adhesion on steel	5.2 N/cm	4.0 N/cm
Heat resistance	– 40 to + 90°C	– 40 to + 105°C

Coroplast Dispenser TDI

Insulating tape dispenser

Coroplast
Dispenser TDI 1

Applications, advantages and properties

- Soft film adhesive tapes (e.g. Coroplast 301, 302, and 303) can be cut easily and perfectly using the special cutting mandrel
- Easy to handle
- No over-stretching of the adhesive tape and therefore reliable and perfect use of the tape
- Protection of the adhesive tape against dirt down to the last layer of the roll
- The color of the tape is visible at all times due to the transparent casing
- The attractive individual packs have pictograms illustrating instructions for use (TDI 1)
- The small tape dispensers (TDI 1) can easily be joined together to form a block, e.g. with textile adhesive tape Corotex 800, so that several colors are to hand at the same time (see picture)
- Material: environment-friendly polystyrene

TDI 1
small dispenser, in single pack

TDI 302
small dispenser, in single pack and filled with Coroplast 302, 15 mm x 10 m, (please indicate color)

TDI 2
large dispenser, in single pack

Technical data	TDI 1	TDI 2
Recommended adhesive tape width	12, 15 mm	15, 19, 22 mm
Recommended length	4.5 and 10 m	25, 33 m

Coroplast BCR 26

Pipe warning tape

Coroplast
BCR 26

Applications, advantages and properties

- Ensures early warning during excavation work on cable and pipe routes
- Proven quality for many decades
- Ageing and rot-resistant
- Stable colors and permanent printing
- Wide selection of texts available, including symbols and non-Latin characters

Technical data	BCR 26
Material	plasticized PVC
Strength	0,15 mm
Colors	yellow, blue and red
Standard printing tests	› Attention Gas Pipe › Attention High-voltage Cable › Attention Cable › Attention Low-voltage Cable › Attention Pipeline › Attention Power Cable › Attention Water Pipe
Widths	40, 80, 100 and 150 mm
Lengths	250 m

Coroplast counter and display stands

Coroplast revolving display stand 301, 302

Coroplast 1000, 1010

Coroplast 2000, 2010

Applications, advantages and properties

› Contains the established insulating and adhesive tapes Coroplast 301, 302 and Corotex 800
› For space-saving presentation of goods on the counter
› Increased sales from a small display area
› End-user-friendly sale of single rolls at the point of sale

Choose from:

1. Coroplast revolving display stand 301:
› Most popular of our sales assortments
› Our multi-product display stands with advertising card on the top
› Solid metal design
› Stable and non-tip
› Filled with 104 rolls of Coroplast 301, 0.10 mm x 15 mm x 10 m, with 13 rolls of each color: black, white, red, yellow, green, blue, gray and brown

2. Coroplast revolving display stand 302:
› Like revolving display stand 301, but filled with 104 rolls of Coroplast 302, 0.15 mm x 15 mm x 10 m

3. Coroplast 1000:
› Practical wire stand
› Stable and non-tip
› Space-saving
› Filled with 60 rolls of Coroplast 302, 0.15 mm x 15 mm x 10 m, with 10 rolls of each color: black, white, gray, red, green and blue

4. Coroplast 1010:
› Like display stand 1000, but filled with 60 rolls of Coroplast 301, 0.10 mm x 15 mm x 10 m

5. Coroplast 2000:
› Practical cardboard stand
› Easy to handle
› The presentation packaging functions as a selling aid.
› Filled with 60 rolls of Coroplast 302, 0.15 mm x 15 mm x 10 m, with 10 rolls of each color: black, white, blue, gray, red and brown

6. Coroplast 2010:
› Like display stand 2000, but filled with 60 rolls of Coroplast 301, 0.10 mm x 15 mm x 10 m

DIY packs

Sample single-material pack of textile adhesive tape

Sample single-material block combi-set

Sample single-material pack of insulating tape

Further retail packs:

Sample single-material 6-pack

Sample single-material 3-pack

Sample single-material 1-pack

Applications, advantages and properties

› Customized design on request
› Space-saving
› Environment-friendly, single-material pack
› With Euro hole
› Contents highly visible
› Choose contents individually

Standard assortment:

Coroplast single-material pack of insulating tape:
› Filled with 6 rolls of Coroplast 302 in size 19 mm x 3.3 m, colors: yellow, blue, white, black, red, green

Coroplast single-material pack of textile adhesive tape:
› Filled with 3 rolls of Corotex 800, 19 mm x 2.5 m, colors: green, yellow, red

Coroplast single-material block combi-set:
› Sample contents:
3 rolls of Coroplast 302 15 mm x 5 m, colors: white, black, blue
2 rolls of Coroplast 302 12 mm x 5 m, colors: gray, red
1 roll of Coroplast 302 19 mm x 5 m, Color: black
3 rolls of Corotex 800 19 mm x 2.5 m, colors: yellow, red, green

Technical data:
See Coroplast insulating tape 302 and Corotex 800

Coroplast net bags

Coroplast round can, 20 m and 50 m

Applications, advantages and properties

› Space-saving, minimalist packaging
› Contents highly visible
› Highly suitable packaging for sales campaigns
› Contents of net can be flexibly adjusted according to product, dimensions and number of rolls readily variable
› Goods label with promotional message and/or product information

Sample assortment:
› Insulating tape net set – with 4 rolls of Coroplast 302, 15 mm x 10 m in black, blue, white and red.
› Insulating tape net set – with 10 rolls of Coroplast 302, 12 mm x 3.3 m in purple, yellow, white, green, orange, black, brown, blue, gray and red
› Textile adhesive tape net set – with 3 rolls of Corotex 800, 19 mm x 5 m in black, red and yellow

Technical data:
see Coroplast 301, 302 and 800

Applications, advantages and properties

Round tin, filled with classic Coroplast electrical insulating tape 302

Round tin, 50 m
Filled with one 50-m roll of insulating tape 302
› 0.15 mm x 19 mm x 30 m, black
› 0.15 mm x 19 mm x 12.5 m, red
› 0.15 mm x 19 mm x 7.5 m, blue

Round tin, 20 m
Filled with one 20-m roll of insulating tape 302
› 0.15 mm x 19 mm x 4 m, black, red, blue, brown, green/yellow

Also available as a Wuppertaler Talwaren version in a cardboard sleeve (www.talwaren.de).

Technical data:
see Coroplast 302 on page 31

Many other combinations are available, also with private labels. Please get in touch – we would be happy to supply you with your own DIY packs.

Glossary

Abrasion resistance
Abrasion resistance is the resistance of an adhesive tape to rubbing or friction to rubbing or friction. Adhesive tapes are classified according to abrasion classes A (low abrasion resistance) to G (outstanding abrasion resistance for special applications) in line with LV 312.

Acrylic adhesive
Acrylic adhesives are made of polymerized acrylic acid esters. They can be mixed with resin to enhance tack. These adhesives are available as solutions, watery dispersions or as hot melt adhesives. Their special characteristics include high ageing, temperature and chemical resistance, good compatibility with cable insulations and high resistance to UV radiation and oxidation.

Adhesion
Adhesion describes the hold between the surface of the adhesive tape and the taped material.

Adhesive force
Adhesive force combines the terms adhesion and cohesion and describes the force that is necessary to remove an adhesive tape from a surface. Standardized laboratory tests per EN 1939 are conducted to achieve comparable values. A 20 mm-wide strip of adhesive tape is applied to a steel plate and rolled on with a steel roller. It is then pulled off at a specified speed and at angle of 180° and the force required to pull it off is measured in N/cm.

Ageing resistance
Adhesive tapes used in the automotive industry are subjected to various ageing tests (e.g. temperature endurance tests) to ascertain whether and how their properties change as a result.

Backing material
The backing material is the carrier material to which the adhesive is applied.

Breakdown voltage
The minimum voltage that makes an insulator act as a conductor. It is significant for electrical insulating tapes and is measured in kV/mm.

Cohesion
Cohesion describes the inner stability of the adhesive. Adhesives with low cohesion leave a residue on the substrate when the adhesive tape is removed.

Compatibility
Ability of two or more materials to interact without impairing the performance of any one component. A good compatibility of the adhesive tape with the cable insulation is a necessity when the cables are being wound.

Dispersion adhesive
In dispersion adhesives, the adhesive polymer particles are finely dispersed in water. Most dispersion adhesives are solvent-free. Emulsifiers have to be added to stabilise the dispersion.

Elongation at break
The strain required to break the material. For adhesive tapes this is specified according to EN 14410 and it is stated in %.

Hot-melt adhesive
A solvent-free adhesive that is applied hot. Both acrylic adhesives and synthetic rubber-based adhesives can be processed hot.

Initial tack
Pressure-sensitive adhesives bond on contact. This is called initial tack. Some adhesives, especially adhesives on a butyl or acrylate basis, only achieve maximum adhesion some hours or days after they have been applied.

Laminate
Different backing materials are joined inseparably (laminated) whereby the combination of their respective properties results in a new back material.

Leak tightness
Leak tightness is a material´s barrier function against substances such as chemicals, moisture or gas.

Liner
Films and papers coated on one or both sides with silicone are used as liners pressure-sensitive sensitive adhesives. The siliconization makes them adhesive-repellent, which prevents this unintentional bonding of the various layers.

LV 312
A recognized testing guideline (Leistungs-Vorschrift) published by German automotive manufacturers for rating of wire harness tapes.

µm (micron)
A micrometer or micron is one millionth of a meter or one thousandth of a millimetre (0.001 mm). It is used to measure the thickness of materials such as films.

N
Newton is a unit of measure for force.

Non-woven
Textiles made of natural or man-made fibers without weaving. The non-woven's internal stability is achieved by pressing under heat or by stitching the individual fibers.

Operating temperature
The operating temperature is the range of temperatures at which the adhesive bond remains intact and has nothing to do with the processing temperature. Electrical insulating tapes are classified according to EN 60454 and wire harness tapes according to LV 312.

Polyamide (PA)
Depending on the carrier, adhesive tapes with a PA backing material exhibit high temperature and abrasion resistance. Adhesive tapes with PA textile or PA velour backing material possess the highest level of abrasion resistance as defined by LV 312.

Polyester (polyethylene terephthalate, PET)
PET films and fabrics have outstanding tensile strength and tearing resistance. They are extremely resistant to high temperatures, alkaline solutions, acids, oils and many solvents. PET fabrics generally unite high abrasion resistance with good resistance to high temperatures and chemicals.

Polyethylene (PE)
PE films are soft and elastic, with high leak tightness and low tensile strength. Polyethylene is solvent-resistant but sensitive to UV radiation. These films are used to make electrical insulating tapes and anti-corrosion tapes.

Polypropylene (PP)
PP films are halogen-free and their properties are comparable with those of PE films. Although they are slightly less flexible, they are more temperature-resistant and can be used as a substitute for PVC adhesive tapes.

Polyvinyl chloride (PVC)
PVC films have good ageing and UV resistance properties. That is why PVC adhesive tapes are often used for outdoor applications. Different quantities of plasticizer can be added to PVC to make it extremely flexible. PVC adhesive tapes are widely used as electrical insulating tapes due to their flame-retardant properties and good dielectric breakdown values.

Pressure-sensitive adhesive
A permanently active adhesive that is widely used on adhesive tapes or labels. As the name indicates, the adhesive is activated by pressure. Secure bonding of the adhesive strip is achieved by pressing it down firmly.

Primer
A primer improves adhesion on surfaces that make adhesion difficult. It is often applied as a solvent-containing coating.

Processing temperature
The temperature at which adhesive tapes can be processed. As far as possible, however, they should be applied at ambient temperatures between +10°C and + 30°C.

Rubber-based adhesive
Rubber-based adhesives consist of natural or synthetic rubber with added resin and softeners to provide adhesive tack. These adhesives are available as solutions or hot-melt adhesives. They have high initial adhesion but limited resistance to chemicals, solvents and UV radiation. Rubber-based adhesives are less temperature- and plasticizer-resistant than acrylic adhesives.

S_d value
The S_d value is the measurand of the water vapor permeability of a substance. The higher the value, the less water vapor permeates the substance in comparison with air.

Shear resistance
Shear resistance is the bonding strength of an adhesive when it is pulled off parallel to the glued surface (0° angle). It is tested by applying a section of adhesive tape to the end of a vertical steel plate and attaching a weight to the other end. Shear resistance is measured either as the time until the bond breaks or the maximum weight that the adhesive can bear.

Shelf life
The time for which an adhesive tape can be stored without any notable impairment of performance. Adhesive tapes generally have a shelf life of at least 6 months.

Silicone
Silicone is made of chemically modified SiO_2 (sand). It has an adhesive-repellent surface and is therefore used on release papers or films (liners).

Solvent-based adhesive
50% of the adhesive often consists of a mixture of different solvents that have to be vaporized when the coating is applied to the backing material. Rubber adhesives and acrylic adhesives can be applied as solvent-based adhesives. Adhesive tapes with these adhesives often have a distinctive odor as a result of incomplete vaporization of the solvents.

Sound dampening
The extent to which adhesive tapes dampen noise. Adhesive tapes are classified in sound dampening classes A (low sound dampening) to E (maximum sound dampening) per LV 312.
It is measured in dB(A).

Tack
A measure of the viscous flow of an adhesive that describes its stickiness at minimum application pressure. Tack is measured in tests such as the “rolling ball test”, in which a steel ball is rolled onto the adhesive surface. The distance that the ball rolls until it sticks to the from a ‘ramp’. is measured. The shorter the distance, the higher the tack.

Telescoping
Telescoping is when the adhesive tape protrudes from the side of the roll as a result of internal pressure. This deformation does not affect its adhesive properties. Telescoping can be caused by the rolls being too tight or by improper storage or transport conditions (temperature, moisture).

Tensile strength
The pull stress required to break a material. For adhesive tapes, tensile strength is determined in accordance with EN 14410, and it is stated in N/cm.

Textiles
Textiles may be cloth, made of warp and weft, or non-wovens. Yarn and fibers are usually made of polyester, viscose or polyamide.

Unwind force
The force that is necessary to unwind the adhesive tape from the roll. Unwind force is measured in N (Newton).

UV radiation
Ultra-violet radiation is a component of sunlight that can cause chemical reactions. UV radiation can also be used for cross-linking to improve the stability of acrylates.

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