
coveme
THE VALUE OF INNOVATION
COVEME
ELECTRICAL
INSULATION

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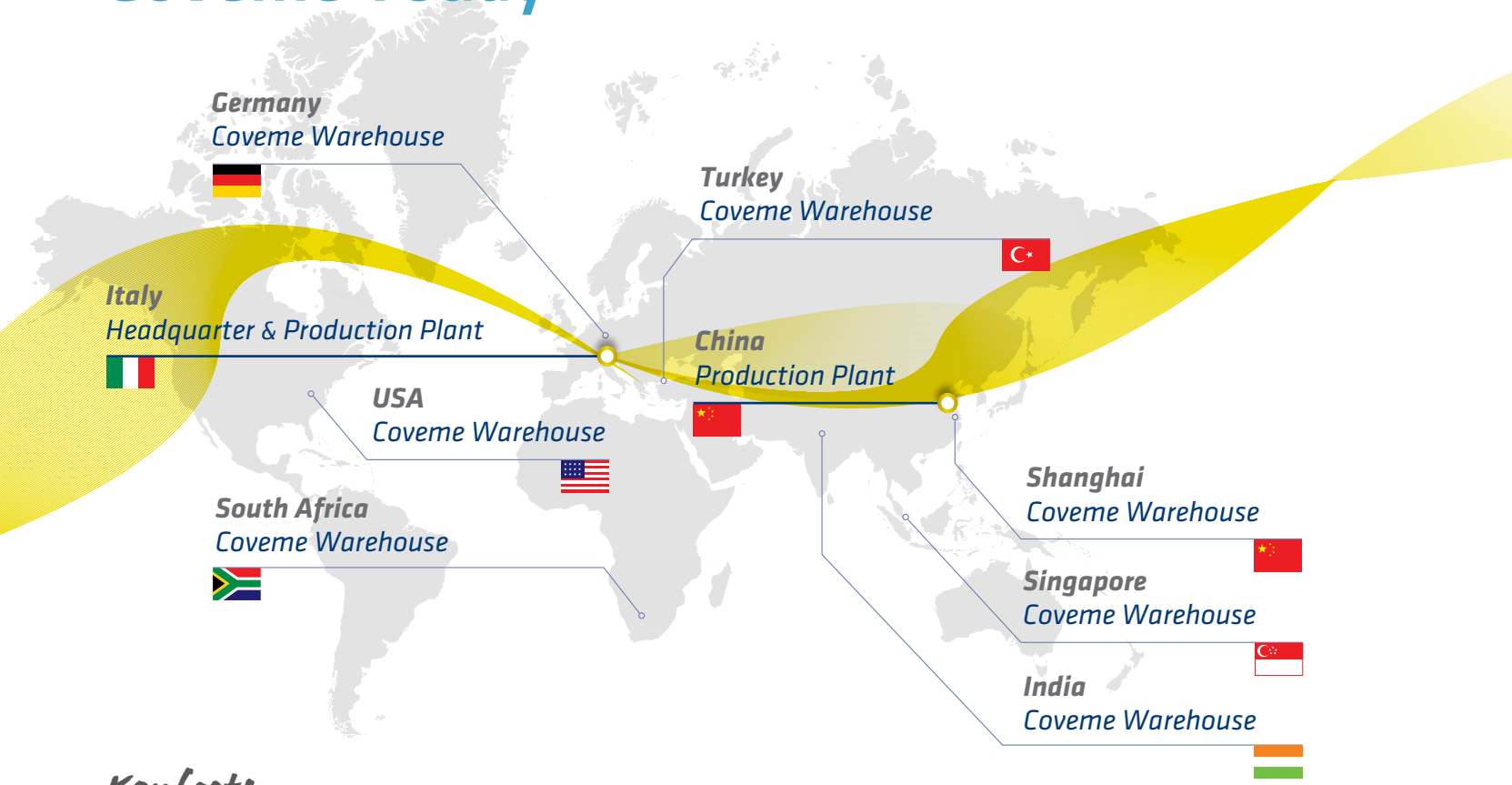
INSULATION

Coveme Today



Keyfacts

2 PRODUCTION PLANTS ITALY AND CHINA	**2** R&D LABS RESOURCES IN ITALY AND CHINA	**30.000** SQM OF PRODUCTION PLANT	**25.000** TONS OF POLYESTER FILM HANDLED EACH YEAR
10 PRODUCTION LINES	**10** COVEME WAREHOUSES AROUND THE WORLD	**64** COUNTRIES CATERED AROUND THE WORLD	**12%** TURN-OVER INVESTED IN TECHNOLOGY AND R&D

Coveme, founded in Bologna, Italy, in 1965, converts polyester film for various industrial applications such as photovoltaic modules, RFID antennas, biomedical sensor strips, electrical insulation, automotive, screen print and flexible packaging. Product and process **innovation** are at the heart of Coveme's activities and fundamentals for the development of new products for highly technological industries of rapid growth and continuous evolution. In this context, the strong **partnerships** with our clients and suppliers are of utmost importance and vital for a successful common growth.Today Coveme has two production sites: the first, built in 1996 in Gorizia, Italy, and the second opened in 2011 in Zhangjiagang, China, around 200km north of Shanghai. They are the result of Coveme's **entrepreneurial mindset**, sagaciousness and know-how gained through the years.
Our factory in China, being the first of its kind by a European backsheet manufacturer, is yet another example for this spirit. Coveme's core business is positioned within renewable energy industry where PV module manufacturers are the main target of our backsheet films.
The company has kept pace with the rapid growth of this industry, and has reached a leading position within very few years.
Our concern for the **protection of the environment** is reflected not only in what we produce but also how we produce, which means a lean and green production technology and relationship with our partners.
Coveme has commercial and logistic networks all over the world. All our sales managers are responsible for their business 100%, that means they are trained to give our clients highly technical support before and after sales.
The **reliability** of Coveme, guaranteed by high quality standards and rigorous control, is the promise we keep to our clients.

GORIZIA

BOLOGNA

ZHANGJIAGANG

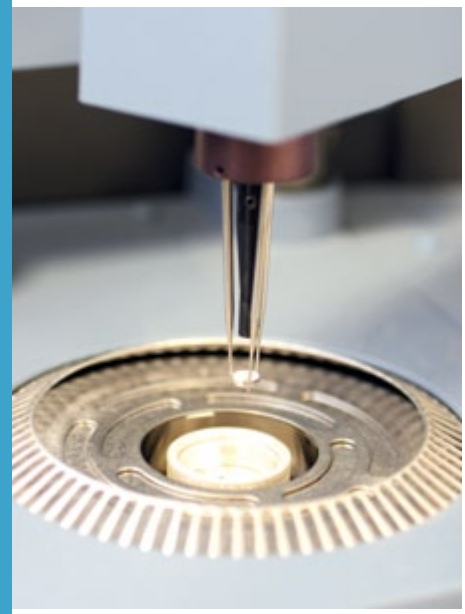
Production

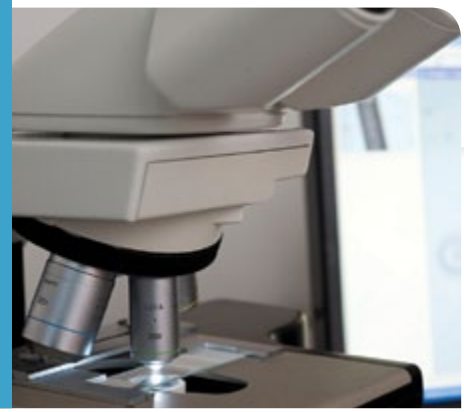
Coveme has been converting polyester film for over 20 years and has successfully developed sophisticated technologies in the production of high-tech films for various industries. The value Coveme adds to the film is vital for its clients who, themselves, work with advanced production processes.
In the two production sites, Gorizia (Italy) and Zhangjiagang (China) 10 production lines are installed and set up for the following converting processes: lamination, surface treatment, heat stabilization, coating and slitting. Both production sites enable a widespread coverage: Italy serves the European and American markets, China serves the Asian market.
Thanks to its own slitting department Coveme can provide all materials in customized rolls, sheets and punched formats. Coveme's manufacturing processes are completely focused on high quality for high performance. For us, this means strict and consistent adherence to measurable and verifiable standards to achieve uniformity of output that satisfies specific customer requirements.

Coveme is
UNI EN ISO 9001-2008
Certified

Research & Development

Our Research and Development laboratory has always been one of the most advanced and strong points of the company, where our technological and operative know how is at complete disposal of the clients' needs, with the aim to find for each of them the very best solution possible.
Highly motivated teams of young technicians - in Italy and in China - generate and sustain a technical/ productive cross fertilization within the company while collaboration between clients and the production department and between the technical department and suppliers permits the exploitation of experience in order to realize innovative products.





Sustainability

Green production

in its two production sites Coveme works by adopting measures to protect the environment:

- EMISSION TREATMENT
- STORAGE OF CHEMICALS
- WASTE DISPOSAL
- PEST CONTROL PROCEDURE
- OPTIMIZATION OF ENERGY RESOURCES
- ROHS AND REACH COMPLIANCE

Coveme is
UNI EN ISO 9001:2008, ISO 14001:2004,
OHSAS 18001:2007 certified

Carbon footprint

- ENERGY SAVING

Coveme has invested in balancing its Carbon footprint through 258kW of solar panels installed on the roof of Coveme's headquarters and plant.

- WASTE MANAGEMENT

All the by-products generated by Coveme production process (like VOC from adhesive solvents) are burned to generate heat that finally is used for other facilities of Coveme's production plant in Zhangjiagang (China).

- WHITE CERTIFICATES

In the year 2013/2014 Coveme gained 1618 TEE (Energy Efficiency Securities or white certificates), achieving a target of energy saving.

Electrical insulation

Coveme's activity in the field of electrical insulation started in the early '70s as distributor for DuPont Nomex® and Kapton®.
In the same period, due to the success in introducing these high performances materials to the market, Coveme began the production and distribution of slitted polyester film.

The close collaboration with the company from Wilmington and the know-how of engineering PET films, led Coveme to start its own laminates manufacturing activity, capturing the market of rotating machines requiring high temperature insulating material having little space available.

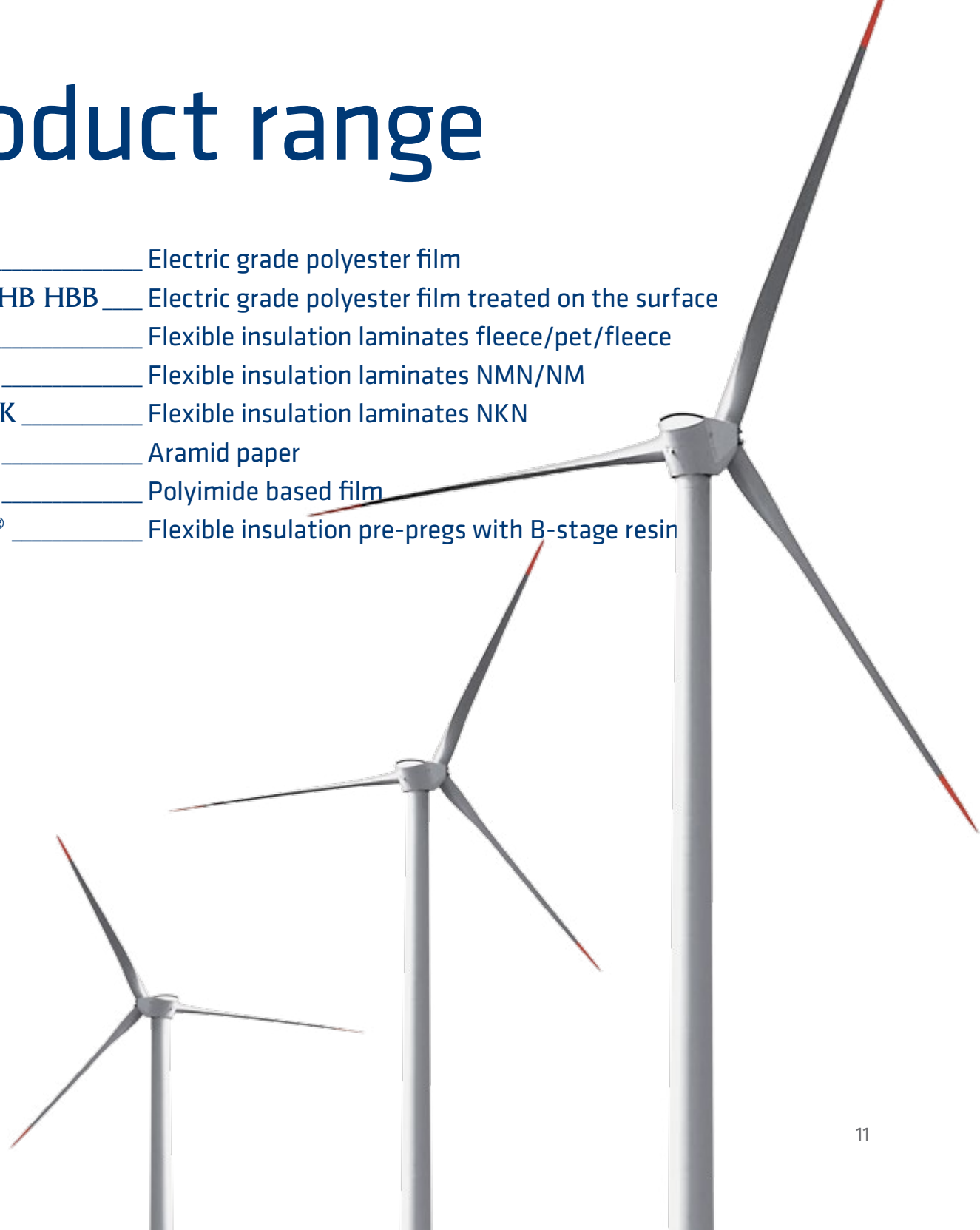
Today Coveme's product range for flexible insulation includes plain material, pre-pregs and laminates made of up to seven layers.

Beside developing innovative products, Coveme has also made large investments in its slitting technology and capacity to meet Customer's specific needs.

Coveme products for flexible insulation are used in many fields, such as elecrical motors, car alternators and starters, large generators, inductances and transformers (cast resin, dry or oil) and electronic circuits. The reliability and quality of Coveme insulating materials are proven by the long experience and long lasting presence in the market.
Coveme materials are UL certified and approved by all major certification bodies worldwide.

Product range

DyFilm®	Electric grade polyester film
DyFilm® HB HBB	Electric grade polyester film treated on the surface
DyFlex®	Flexible insulation laminates fleece/pet/fleece
DyTerm®	Flexible insulation laminates NMN/NM
DyTerm®K	Flexible insulation laminates NKN
Nomex®	Aramid paper
Kapton®	Polyimide based film
DyBond®	Flexible insulation pre-pregs with B-stage resin



DyFilm®

Electric grade polyester film

GENERAL DESCRIPTION AND APPLICATIONS

DyFilm® is a polyester film obtained by the condensation between ethylene-glycol and terephtalic acid. Thanks to its excellent physical, chemical and electrical properties, DyFilm® is universally accepted and requested in all markets, industries and applications where a polyester film is required. DyFilm® is a film with excellent dielectric properties which make it particularly suitable for applications in the field of electrical insulation in machines up to class B (130°C). It is available as hazy (medium transparency) or milky white film, featuring high slipperiness and tear strength. DyFilm® is approved by the Underwriters Laboratories (UL).

SUPPLY SPECIFICATIONS

Standard width is 925 mm (tolerance +- 2mm).
Rolls in different widths are available on request.
Rolls with different outer diameter are available upon request.
Available thicknesses 12-350 micron.

DyFilm® HB HBB

Electric grade polyester film treated on the surface

GENERAL DESCRIPTION

DyFilm® HB HBB is a polyester film of electric grade chemically treated on one side (HB) or two sides (HBB) with a special process giving the material a higher surface tension (over 58 dynes). This guarantees a perfect adhesion of resins and saturation and impregnation varnishes used in the industry of electric insulation. These films are suitable for the insulation of electric motor, transformer, condensers, ballasts, tapes, laminates in general and cables.

SUPPLY SPECIFICATIONS

DyFilm® products are available in rolls in width from 6 mm up to 1830 mm
Packaging can be suspended or vertical depending Customer's specifications.

Product name	Treatment	Available thicknesses (µ)
HB	One side pre-treated pet film (electric grade)	23,36,50,75,100 clear base 125,190,250,350 milky white base
HBB	Both side pre-treated pet film (electric grade)	23,36,50,75,100 clear base 125,190,250,350 milky white base

Note:
Other thicknesses on request.
DyFilm® is a Coveme registered trademark

DyFlex®

Flexible insulation laminates fleece/pet/fleece

GENERAL DESCRIPTION

DyFlex® insulating products are produce by the coupling of a polyester non woven fleece with a polyester plastic film.
The non woven polyester fleece employed is made out of strongly calendered short fibers laminated to the polyester film with appropriate adhesives.
Further improvements in the overall performance of the laminate are achieved by saturating the non woven fleece with special synthetic resins.
DyFlex® laminates are available both unsaturated (ISF and IDF) and saturated (SF and SDF). The unsaturated version is natural white, the saturated one is pink (other colors available upon request).
Coveme DyFlex® laminates are designed for the insulation of electric motors, transformers and electrical equipment of class F. In electrical motors or, in general, in rotating machines, these laminates are used in slot closure and insulation as well as a separator phase on the heads of the windings.
In transformers and electrical static equipment Dyflex® is used as interlayer insulator.

SUPPLY SPECIFICATIONS

DyFlex® products can be delivered in width from 6 mm up to 1830 mm

DyFlex type®	Product Structure	Treatment
ISF	Double	Unsaturated
SF	Double	Saturated
IDF	Triple	Unsaturated
SDF	Triple	Saturated

DyTerm®

Flexible insulation laminates NMN/NM

GENERAL DESCRIPTION

Coveme DyTerm® insulating products are produced by the coupling of Nomex® aramid paper with polyester films. Nomex® layers stick firmly to the plastic films by appropriate adhesives. DyTerm® laminates are a highly performing solution for the insulation of electric motors, transformers and electrical machines with following working temperatures:
- up to 155°C class F: type N2S
- up to 180°C class H: types N1D,N2D,N3D, N3S

The presence of films enhances the mechanical, physical and dielectrical properties of the laminate.
In rotating machines, DyTerm® is used in slot closure and insulation, as well as to separate phases on the heads of the windings.
In transformers and electrical static equipments, DyTerm® is used as interlayer insulating material.

SUPPLY SPECIFICATIONS

DyTerm® products can be delivered in width from 6 mm up to 1830 mm

DyTerm type®	Nomex thickness	Structure
N1D	38 micron	Triple
N2S	50 micron	Double
N2D	50 micron	Triple
N3S	80 micron	Double
N3D	80 micron	Triple
N5D	130 micron	Triple
N5S	130 micron	Double

DyTerm® is a Coveme registered trademark.
DyTerm® is U.L. certified (file nr. E209645)
Nomex® is a DuPont registered trademark
DyFlex® products can be delivered in width from 6 mm up to 1830 mm

DyTerm® K

Flexible insulation laminates NKN

GENERAL DESCRIPTION

Coveme DyTerm® K insulating products are produced by coupling of Nomex® aramid paper with polyimide (Kapton®). Nomex® layers stick firmly to the films by appropriate adhesives. DyTerm® K laminates are suitable for use in electrical appliances up to 200°C Coveme material names N2DK, N3DK, N5DK, N7DK with thickness from 0,20 mm to 0,40 mm.
The presence of films enhances the mechanical, physical and dielectrical properties of the laminate.
DyTerm® K laminates are a highly performing solution for the insulation of electric motors and, more generally in rotating machines, DyTerm® K is used in slot closure and insulation, as well as to separate phases on the heads of the windings.
In transformers and electrical static equipments, DyTerm® K is used as interlayer insulating material.

SUPPLY SPECIFICATIONS

DyTerm®K laminates are supplied in rolls with standard width 914mm and and inside core of 76mm diameter.
Other widths are available on request, starting from a minimum of 6mm with increases of 0,1mm and a tolerance of +/- 0,2 mm.

DyTerm®K is UL certified (file nr. E209645)
DyTerm® is a Coveme registered trademark.
Kapton® e Nomex® are DuPont registered trademarks

Nomex®

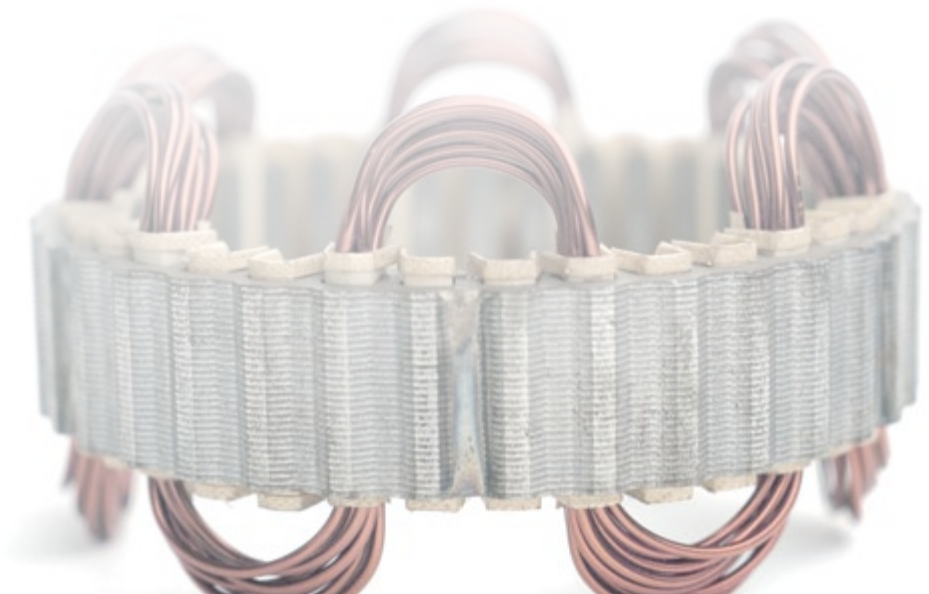
Aramid paper

GENERAL DESCRIPTION

Nomex® aramid paper is mainly employed as dielectric insulator for high temperature systems. Aging diagrams show that an insulation system based on Nomex® paper has a lifetime over 20.000 hours at 220°C. Apart from heightening the average lifetime of electrical appliances Nomex® reduces considerably the number and probability of damages and protects the machine in case of electrical overload and temperature peaks.
The resistance to cryogenic temperatures, humidity, radiation and fire and its non-toxic fumes complete the list of Nomex®'s unique characteristics. Nomex® is classified as insulator class C (220°C) by Underwriters Laboratories (file E34739) and all major certifying bodies worldwide.

SUPPLY SPECIFICATIONS

Nomex® can be delivered in width from 6 mm up to 1828 mm.



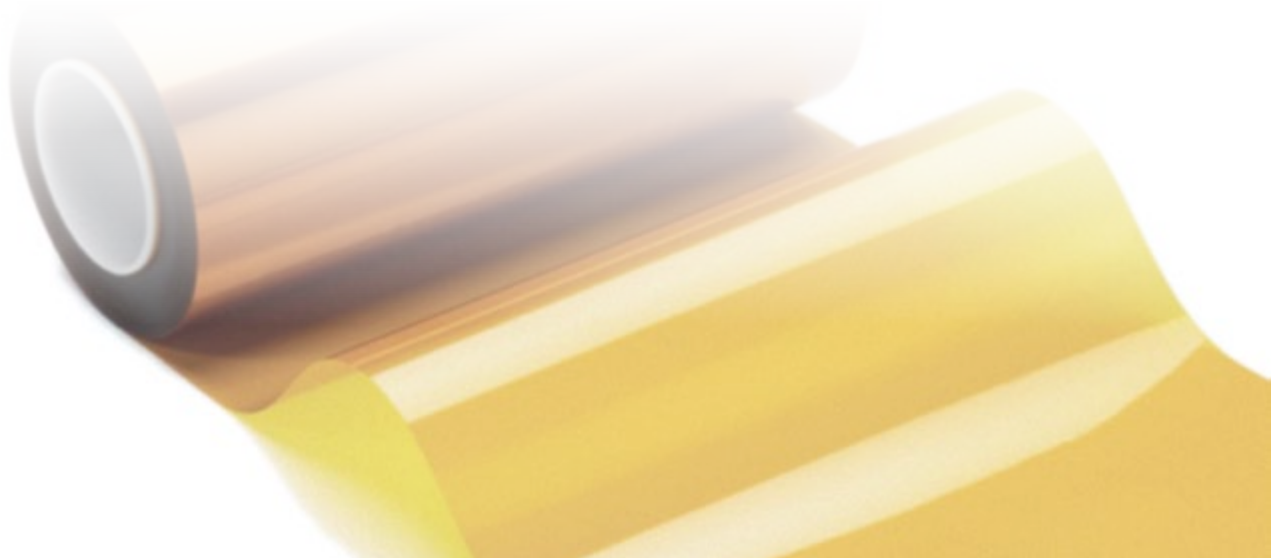
Kapton®

Polyimide based film

GENERAL DESCRIPTION

Kapton® polyimide film is synthesized by polymerizing an aromatic dianhydride and an aromatic diamine. With its excellent physical, chemical and electrical properties Kapton® film can be used in a wide temperature range (-269÷+400°C).
Kapton® is available in different versions according to the application.
The base type is Kapton® HN. It is mainly used for the insulation of electrical motors in class H and super H, in the production of adhesive tapes for dielectric uses and when resistance to extreme temperatures is required .
Kapton® FN is the HN type coated on one or both sides with Teflon® FEP, that enhances chemical resistance and imparts heat sealability. It is used for the covering of copper wires and cables in high temperature applications.
Kapton® CR (available also with a coating in Teflon®: FCR) was developed to withstand the damaging effects of corona.

Kapton® MT is appropriate for all applications where an high thermal conductivity is required.
Kapton® FPC, in its different versions, is suitable for the production of flexible circuits.



DyBond®

Flexible insulation pre-pregs with B-stage resin

GENERAL DESCRIPTION

The Coveme DyBond® products are flexible insulating materials having a B-Stage (semi polymerized) resin on one or both sides. The material can be coated with a resin (in thermal class H) on the full surface or with a diamond pattern.
DyBond® is used as electrical insulator in dry and oil transformers as well as some types of rotating machines. The product range includes materials produced using several substrates such as:
- Nomex® brand paper
- DyTerm®: flexible laminates of Nomex® paper and polyester film
- DyTerm® K: flexible laminates of Nomex® paper and Kapton® polyimide film
- DyFlex®: flexible laminates of non woven and polyester film
- DyFilm® HB-HBB: surface treated polyester film

SUPPLY SPECIFICATIONS

DyBond® products are available in rolls in width from 6 mm up to 1830 mm.
Packaging can be suspended or vertical depending customer's specifications.

Values refer to a DyBond® full surface one side treated

Properties	Unit	Value	Test Method
Resin Coating per side	gr./mq	15 +/- 20%	ASTM D646
Resin thickness after curing	µ	10	ASTM D374
Peeling force after polymerization on Cu	N/cm.	300 +/- 10%	COVEME 7

Coveme talents

In the electromechanical industry there are consolidated products that satisfy standard needs. Then there are innovative solutions that, if integrated into the outlay of rotating and static machines, help to reduce costs, facilitate industrialization and increase performances. Thanks to the experience gained over the years and long standing partnerships with its clients, Coveme has developed new industrial products that offer innovative solutions: especially thick films and laminates customized according to customer request.

EXTRA THICK LAMINATES

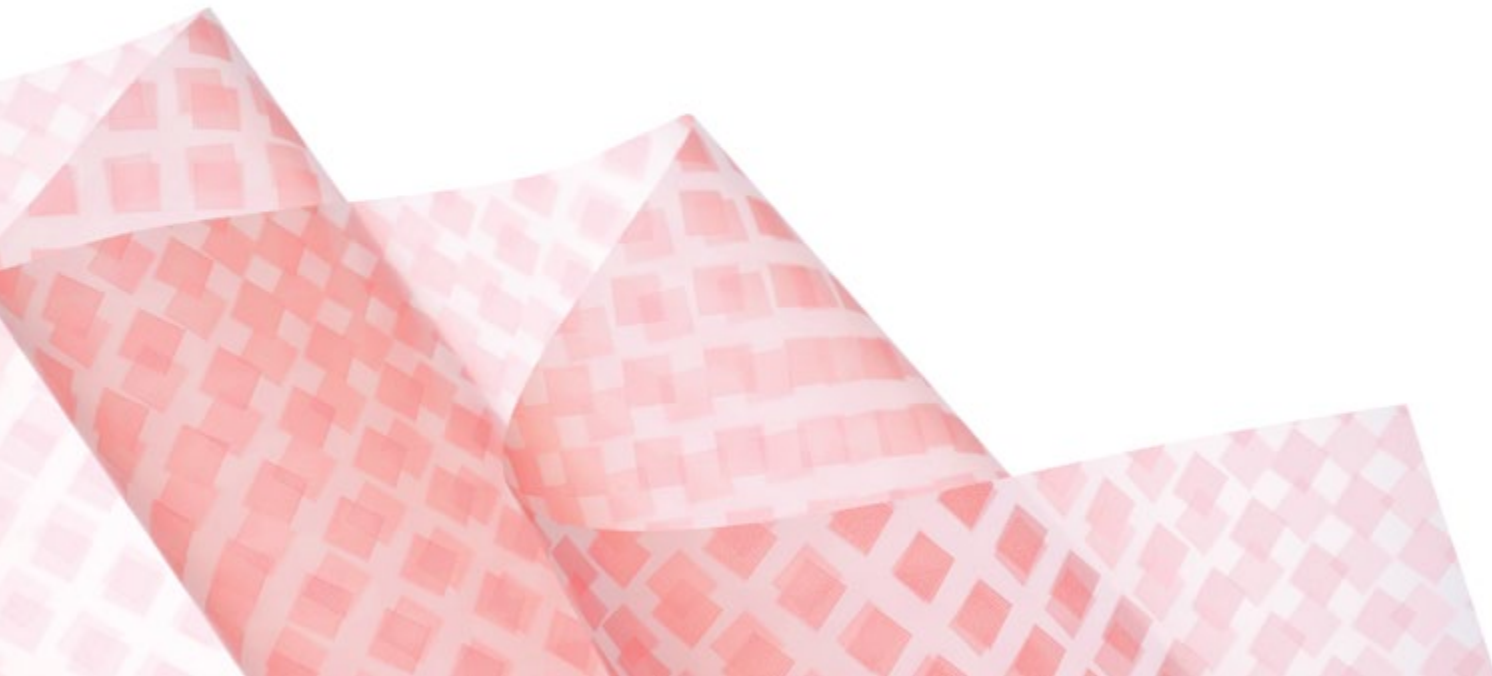
The various combinations of Pet, Nomex® and TNT can be expanded in order to reach a laminate thickness of 1,4 mm, as for example: Nomex®/Pet/Nomex®/Pet/Nomex® or Nomex®/Pet/TNT/Pet/Nomex ®. These laminates are available in widths of up to 1600 mm. The main applications for these kind of laminates are circuit breakers and separation cilinders LT-MT in resin cast transformers.

LAMINATES WITH THERMOADHESIVES

Laminates with thermoadhesives, used in a temperature range from 85°C to 150°C, feature an excellent self-adhesion and adhesion to special surfaces. The thermoadhesive can be applied on the full surface or in diamond dot pattern.
The main application for these kind of laminates are mainly resin cast transformers where laminates of various thicknesses and in widths of up to 1600mm are employed.

THERMOADHESIVE FILMS

Thanks to a thin multilayer thermoadhesive coating, these films are tailored for specific needs of the customer. The polyester film is firstly TCA treated and then the thermoadhesive is applied in a diamond dot pattern. The main application for these special laminates are instruments transformers where widths of up to 1600mm are employed.



Certifications

Products

Dyterm®, Dyterm K® and Dyflex® are UL approved (file n° E209645)
Electrical insulation product range is Repackage Recognized Component UL (E351391)

Coveme is
UNI EN ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007 certified

COVEME

THE VALUE OF INNOVATION

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