

2024

NEW FRONTIERS IN SLOT INSULATION MATERIALS

COVEME BLUE RANGE ***DyBond® Blue***
DyTerm® K Blue

COVEME

THE VALUE OF INNOVATION

COVEME KEYFACTS

Thanks to sixty years of know-how in the field of electrical insulation, highly technological production lines, cutting-edge conversion processes and rigorous quality control procedures, Coveme is recognized for its competence and reliability on a global level.

The solid partnerships developed over the years have allowed Coveme to meet the challenges of a constantly changing market and to develop innovative products that respond to the needs of the market.

-
- + 60 years of know how in the electrical insulation sector**
 - + 2 production plants in Italy and Asia**
 - + 3 R&D hubs in Italy, Germany and China**
 - + 13 Coating, lamination and heat stabilization lines**
 - + 30.000 tons of polyester film converted per year**
 - + Automated slitting department for customized cuts**
 - + Worldwide distribution and service**
 - + Qualified DuPont™ Nomex® distributor and laminator**
 - + IATF certified for automotive industry**
 - + UNI EN ISO 9001, ISO 14001 and ISO 45001 certified**
-



DuPont™
NOMEX®
DISTRIBUTOR

DuPont™
NOMEX®
QUALIFIED
LAMINATOR

COVEME NEW FRONTIERS IN SLOT INSULATION MATERIALS

Coveme has developed an innovative range of mica-based flexible electrical insulation materials designed to meet the specific challenges of the latest generation of electric motors. The new products DyBond® Blue and DyTerm®K Blue mark a significant advancement in electrical stress tolerance.

PRODUCTS DESCRIPTION

DyBond®Blue and DyTerm®K Blue are mono layer and multi-layer flexible insulating materials made by Coveme. The monolayer version is a converted mica containing Nomex® product, while the multi-layer version is a laminate with a layer of polyimide film and two layers of converted mica containing Nomex®(DyBond® Blue).

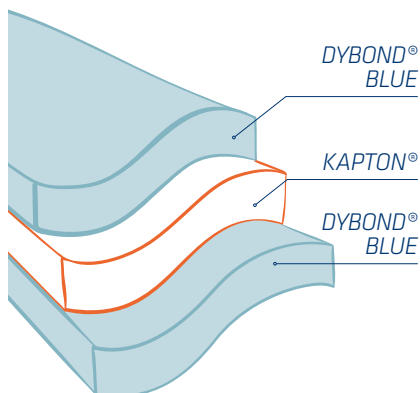
The mica containing Nomex® converted through a patented process and developed in partnership between Coveme and DuPont™, confers great mechanical stability and compactness to the materials in addition to the native partial discharges resistance (PD) of mica. The result is a process friendly product range in terms of handling, forming and insertion.

PRODUCTS APPLICATIONS

DyBond® Blue and DyTerm®K Blue are used as slot insulation and closure in inverter-fed rotating machines, as well as to separate phases on the heads of the windings. In transformers and electrical static equipment, DyBond® Blue and DyTerm® K Blue can be used as interlayer insulating material.

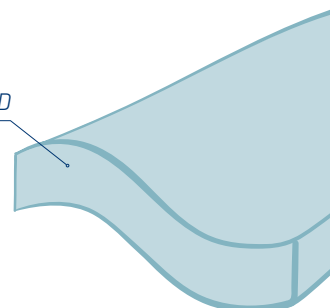
PRODUCT STRUCTURE

DyTerm® K Blue




DyBond® Blue

NOMEX® 818
RESIN TREATED



DyBond® Blue / DyTerm® K Blue

VALUE PROPOSITION



- + Partial discharge endurance**
More than 1000 times compared to standard insulation material
- + Cleaner Workplace, improved conditions**
Avoiding mica's dispersion, the workplace will be cleaner and safer
- + Thermal conductivity**
Equivalent or superior to standard insulation materials
- + Mechanical properties**
Design focusing on automatic processability
- + Motor/ Powertrain optimization**
Avoiding insulation overdesign
- + Chemical know-how, perfect compatibility**
Perfect compatibility with different resins

1.

PARTIAL DISCHARGE ENDURANCE

As the demand for efficiency, performance, and power density continues to rise, rotating machines manufacturers are increasingly considering **the implementation of higher operating voltages, such as 800V architectures for electric vehicle motors, and the adoption of new-generation power electronic converters**, including those based on Silicon Carbide devices.

These higher operating voltages, combined with the rapid and repetitive transients from converters, enhance the electrical stresses on the insulation materials, eventually causing partial discharges activity.

Partial discharges pose a substantial threat to the reliability, causing motor failures in very short times if not remedied.

In this scenario, the new Coveme products have been specifically developed to resist partial discharges in slot liners and have been tested in highly critical conditions that can occur in reality.

2.

MECHANICAL PROPERTIES

The processability and productivity needs of electric motors producers have been a key driver in the design and development of this new range of advanced insulation materials.

Coveme and DuPont™ have made mica mechanically stable in both versions of this new range, the single layer and multi layer laminate products.

Mica stability guarantees to electric motor manufactures workability and efficiency in slot liner insertion and winding processes, whether manual or automatic along with unrivalled Partial discharge endurance.

3.

THERMAL CONDUCTIVITY

The conversion technology developed by Coveme and DuPont™ positively evolves the mica based Nomex® thermal conductivity.

Different laminates' structures and components (polyester and polyimide) can be selected for achieving the desired thermal class and conductivity requirements.

4.

CLEANER WORKPLACE, IMPROVED CONDITIONS

Thanks to Coveme's innovative converting chemistry and process **the mica is firmly integrated into the products avoiding mica's dispersion** creates a safe and clean working environment.

5.

CHEMICAL KNOW HOW, PERFECT COMPATIBILITY

Perfect compatibility with different resins is guaranteed by the chemistry used within the products themselves and Coveme, thanks to the know how and technologies developed over the years, has been able to confer this important added value to the new range of products.

The new range of mono and multilayer products, developed in partnership by Coveme and DuPont™ thus becomes a guarantee of high mechanical performance and excellent dielectric insulation combined with impregnation compatibility with different resins used.

6.

MOTOR/ POWERTRAIN OPTIMIZATION

Coveme's innovative slot insulation materials mark a significant advancement in electrical stress tolerance, eliminating the necessity of insulation overdesign. As a result, the design of motors with higher torque/power densities is enabled without compromising reliability.

The advantages introduced by these insulation materials can be leveraged to:

- *enhance motor performance*
- *reduce the overall machine size*

ultimately optimizing the motor cost per unit of power.

DyBond[®] Blue / DyTerm[®] K Blue **APPLICATIONS**

**800V
EV MOTORS**



**WIND TURBINE
GENERATORS**



**TRACTION
MOTORS**



**HIGH FREQUENCY
TRANSFORMERS**



Coveme is certified ISO 9001:2015 for quality management standards, ISO 14001:2015 for environmental management and ISO 45001:2018 for occupational health and safety.

COVEME ITALY CERTIFICATES



ISO 9001:2015



ISO 14001:2015



ISO 45001:2018

COVEME CHINA CERTIFICATES



ISO 9001:2015



ISO 14001:2015



ISO 45001:2018



Coveme insulating materials are UL Underwriters Laboratories certified and recognized by all major certification bodies worldwide.



Coveme is IATF (International Automotive Task Force) certified as suppliers to the automotive industry



Coveme has received the Bronze Medal Ecovadis certification as the result of a corporate sustainability performance evaluation.



www.coveme.com

COVEME EUROPE

Italy

Coveme S.p.A.

Headquarters:

Via Emilia, 288
40068 - S. Lazzaro di Savena (BO) - Italy
ph. +39 051 6226111

Production Plant and Registered Offices:

Via Gregorcic, 16
34170 - Z.I. S. Andrea - Gorizia - Italy
ph.+39 0481 579911

COVEME ASIA

China

Coveme Engineered Films Zhangjiagang Co., Ltd.

Production Plant and Office:

No. 16, Yuefeng road, Yangshe Town, Zhangjiagang
City, Jiangsu Province, China
P.C. 215600
Ph. +86 512 82559911

COVEME AMERICA

USA

Coveme America INC

Registered Office:

65 N River Lane, Suite 209 Geneva, IL 60134 (USA)
Tel: +1 (630) 578-6671

Operation Office:

1817 N Shawano Street, New London, WI 54961 (USA)
Tel: +1 (847) 867-1272