



VALENO® film

EXCOR® VALENO® films combine the proven corrosion protection effect of EXCOR® with the broad functional and applications spectrum of polyethylene film, which is so popular in the packaging industry.

VALENO® is available in a variety of different forms, for instance flat, tubular and semi-tubular film, side gusset bags, box covers, bags, ziplock bags, sheets, shrink film, bubble film, automatic packaging film, etc.. On top of the corrosion protection effect VALENO® film offers further properties including UV protection, increased mechanical strength, transparency, flame retardation and ESD protection. The EXCOR® active corrosion protection substances are impregnated in the polymer matrix and sublimate from both sides into the atmosphere. This means the user does not have to worry which way round the product is used. Depending on the design, specific metals and alloys are protected both through direct contact and via the vapour phase within the enclosed packaging. The corrosion-preventing properties conform to TL 8135-0043, Level 3.

Under normal usage conditions VALENO® guarantees corrosion protection for at least two years, and long-term corrosion protection for up to 15 years is possible provided the instructions and specific logistic and technical packaging guidelines are followed.

Once the VALENO® film is opened the protective film evaporates from the metal surface without residue within one to two hours, and the packed product can be assigned to its intended use without having to undergo any further processing.



ADVANTAGES

Active on both sides, event at high relative humidities of $\leq 98\%$

Recyclable, disposal through household refuse & landfill, can be incinerated

Poses no health hazard, non-toxic, no risk posed by skin contact or inhalation

Conforms to TL 8135-0043, Level 3

Parts arrive dry, clean, corrosion-free and ready for installation

EXCOR® VALENO® films are transparent, meaning packages do not have to be opened to allow customs inspections

EXCOR® the corrosion protection that comes out of the packaging!

Protective effect*

Type E: Steel, cast steel, partially galvanised steel, Cr, Al 4xxx (Si > 7%), cast iron

Type NE C: Cu, brass, Al 2xxx (Cu) and 5xxx (magnesium) possible

Type NE S: Ag, Cu, brass, Al 2xxx (Cu) and 5xxx (magnesium) possible

Type MM: Steel, galvanised and tin-plated steel, Cu, brass, aluminium 2xxx (Cu), 5xxx (Mg), 6xxx (Mg, Si), 7xxx (Zn), other Al alloys on request, also combinations of the above metals

Type A: Steel, galvanised and tin-plated steel, Cu, brass, aluminium 2xxx (Cu), Mg alloys possible, cast iron


* In the case of metal parts with unusual surface properties, such as high levels of roughness or coated with residue from processing media, before the large-scale commercial employment of EXCOR VCI materials we advise conducting tests on sample packaging in an environment simulating the actual conditions of use. Various climatic test cabinets and environmental chambers up to 16 m³ in volume are available for the purpose at EXCOR Korrosionsforschung GmbH in Dresden.

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Technical Data

Brief characteristics	EXCOR® VALENO® corrosion protection film is a polyethylene film with active VCI substances impregnated in the polymer matrix. Active on both sides.				
Dosing	One m² of film can protect up to 10 m² of metal surface. The dosing is influenced by a variety of factors, such as the packaging design, logistical processes, pretreatment of parts, etc.), and because of this prior technical consultation may be necessary. Our application engineers will be happy to advise you.				
Active substance build-up phase	About one hour in one m³ of tightly sealed packaging space at a temperature of 20°C. The closer the product is to the VCI dispenser the shorter the build-up phase.				
Active life	Up to two years provided instructions are followed. Long-term corrosion protection for up to 15 years is possible if the instructions and specific logistic and technical packaging guidelines are followed.				
Storage	As delivered EXCOR® VALENO® can be stored for up to five years under normal storage conditions. Protect from direct sunlight, humidity and soiling.				
Approval	Approved by: Audi AG, BMW AG, Daimler AG, Volkswagen AG				
Technical Data	Film density	DIN EN ISO 1183-1	0,91 - 0,98 g/ cm³		
		(100 µm)		norm. Qual.	S-Qual.
	Tensile strength*	DIN EN ISO 527-3/2/200	longi- tudinal	≥ 18 MPa	≥ 31 MPa
			trans- verse	≥ 17 MPa	≥ 28 MPa
	Elongation at break*	DIN EN ISO 527-3/2/200	longi- tudinal	≥ 480 %	≥ 580 %
			trans- verse	≥ 560 %	≥ 680 %
	Puncture resistance*	ASTM D 1709/A		≥ 160 g	≥ 510 g
	Steam permeability* (23°C, 85% rel. humidity)	DIN 53122-1 for d ≥ 100µm		≤ 1 g/(m² x d)	
	Surface resistance (standard)	DIN EN 61340 - 5 - 1		R _s > 10 ¹⁴ Ω	
	Sealing properties	Heat impulse sealing Separation sealing			
Quality assurance	EXCOR® tests representative samples from every production batch of VCI packaging for their corrosion inhibitor content. The emission rate of VCI components is tested on a random sampling basis. The German testing body TÜV Süd certifies that the concentrations of VCI active substance or the VCI system have been inspected and approved.				





Delivery forms

Flat film
Tubular film
Semi-tubular film
Automatic packaging film
Sheets
Bubble film
Stretch film
Bags
Ziplock bags
Side gusset bags
Box covers
etc.

From 25-250 µm thick
Special high-strength film

Optional:

- Customer-specific printing
- Shrinkable
- ESD protection according to DIN EN 61340-5-1 (Rs = 10⁹ - 10¹¹ Ω)
- Flame retardant according to DIN 4102-B2 (at d ≥ 80 µm)
- Defined transparency according to ASTM D 1003 (HAZE < 28%)

Disposal

recyclable

disposal through household
refuse & landfill

can be incinerated

Health

Poses no health hazard

Non-toxic

No risk posed by skin contact or inhalation

No monitoring requirements under TRGS 615 and no restrictions under TRGS 900

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