



## VALENO® CAMPO®

EXCOR® VALENO® CAMPO® combines the proven corrosion protection effect of EXCOR® with the barrier properties of a UV-stabilised coextruded shrink film according to DIN 55530 and TL 813500-19.

When bulky, corrosion-sensitive objects are exposed to the elements during transport and temporary storage, special protective measures are called for. Thanks to the higher specific density of its intermediate layer, EXCOR® VALENO® CAMPO® has extremely low steam permeability. EXCOR® VALENO® CAMPO® can be supplied either with or without integrated EXCOR® corrosion protection.

In regions subject to long period of strong sunshine and where long periods in storage are required the use of a sandwich packaging design has proved itself. This involves first tightly sealing the goods in upper and lower pieces of a standard EXCOR® VALENO® corrosion protection film and only then applying the CAMPO® film without VCI.

Care should be taken to ensure that the inner film has as little contact as possible with the outer film. This technique prevents the VCI substances from breaking down too quickly due to thermal stress caused by the sunshine.

The outer packaging must be applied with great care. The goods must be completely enclosed within sealed-together upper and lower film pieces before the package is shrunk.

Our packaging engineers will be glad to assist users in selecting and designing their packaging, and we also give advice on the use of the right technical equipment such as sealing guns and shrink guns.

### 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 m<sup>3</sup> in volume are available for the purpose at EXCOR Korrosionsforschung GmbH in Dresden.

### Advantages

Barrier properties according to DIN 55530 and TL 813500-19

Corrosion protection properties according to TL 8135-0043, Level 3

Biaxially shrinking

Easy and economical to apply

Recyclable, Can be disposed through household refuse & landfill, can be incinerated

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

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

# VALENO® CAMPO®



## Technical Data

### Brief characteristics

EXCOR® VALENO® CAMPO® UV-stabilised barrier shrink film is a three-layer polyethylene COEX shrink film. The outer layer is white in colour and UV-stabilised. The barrier properties comply with DIN 55530 and TL 813500-19. The polymer matrix of the yellow inner layer is impregnated with EXCOR® active VCI substances

### Dosing

One m<sup>2</sup> of film can protect up to 10 m<sup>2</sup> 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 m<sup>3</sup> 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® CAMPO® can be stored for up to five years under normal storage conditions. Protect from direct sunlight, humidity and soiling.

### Technical Data

Property	Unit	Standard	
Film density	g/cm <sup>3</sup>	DIN 53479	0,91-0,98
Film thickness	µm	DIN 53370	200
Tensile strength			
longitudinal	MPa	DIN EN ISO 527-3/2/200	25
transverse			24
Tear strength			
longitudinal	MPa	DIN EN ISO 527-3/2/200	25
transverse			24
Elongation at break			
longitudinal %		DIN EN ISO 527-3/2/200	600
transverse			650
Dart Impact Resistance (falling dart test)	g	ASTM D1709/A	800
Steam permeability	g/m <sup>2</sup> d	DIN 53122-1	0,3
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

EXCOR® VALENO® CAMPO® Type E barrier shrink film, 200 µm  
6,000 mm wide, 50 m/roll, folded to 1,500 mm

UV-stabilised, biaxially shrinking 60/40  
Barrier properties in conformity with DIN 55530 and TL 813500-19

CAMPO barrier shrink film, 200 µm  
6,000 mm wide, 50 m/roll, folded to 1,500 mm

UV-stabilised, biaxially shrinking 60/40  
Barrier properties in conformity with DIN 55530 and TL 813500-19

## Disposal

recyclable

can be disposed 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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