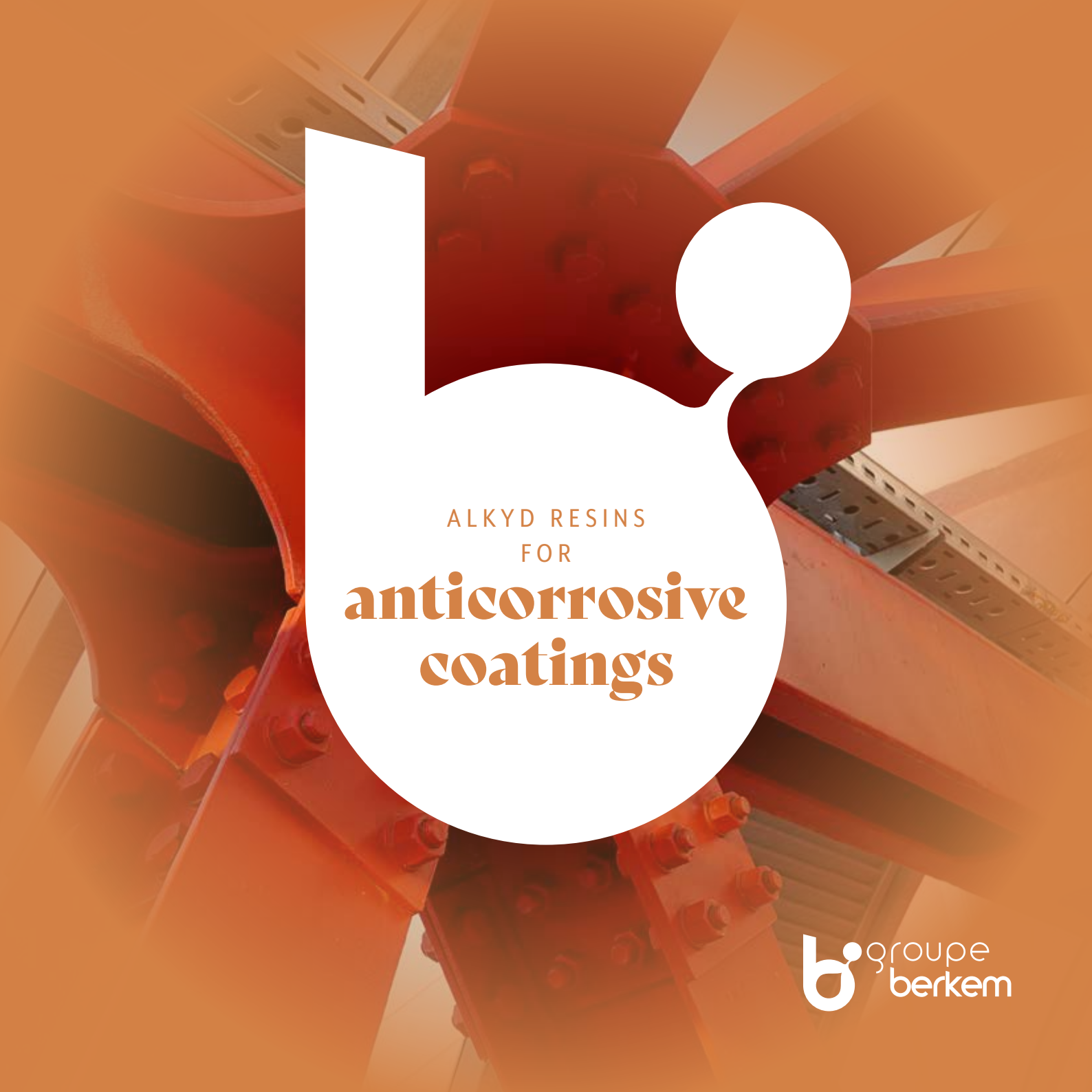
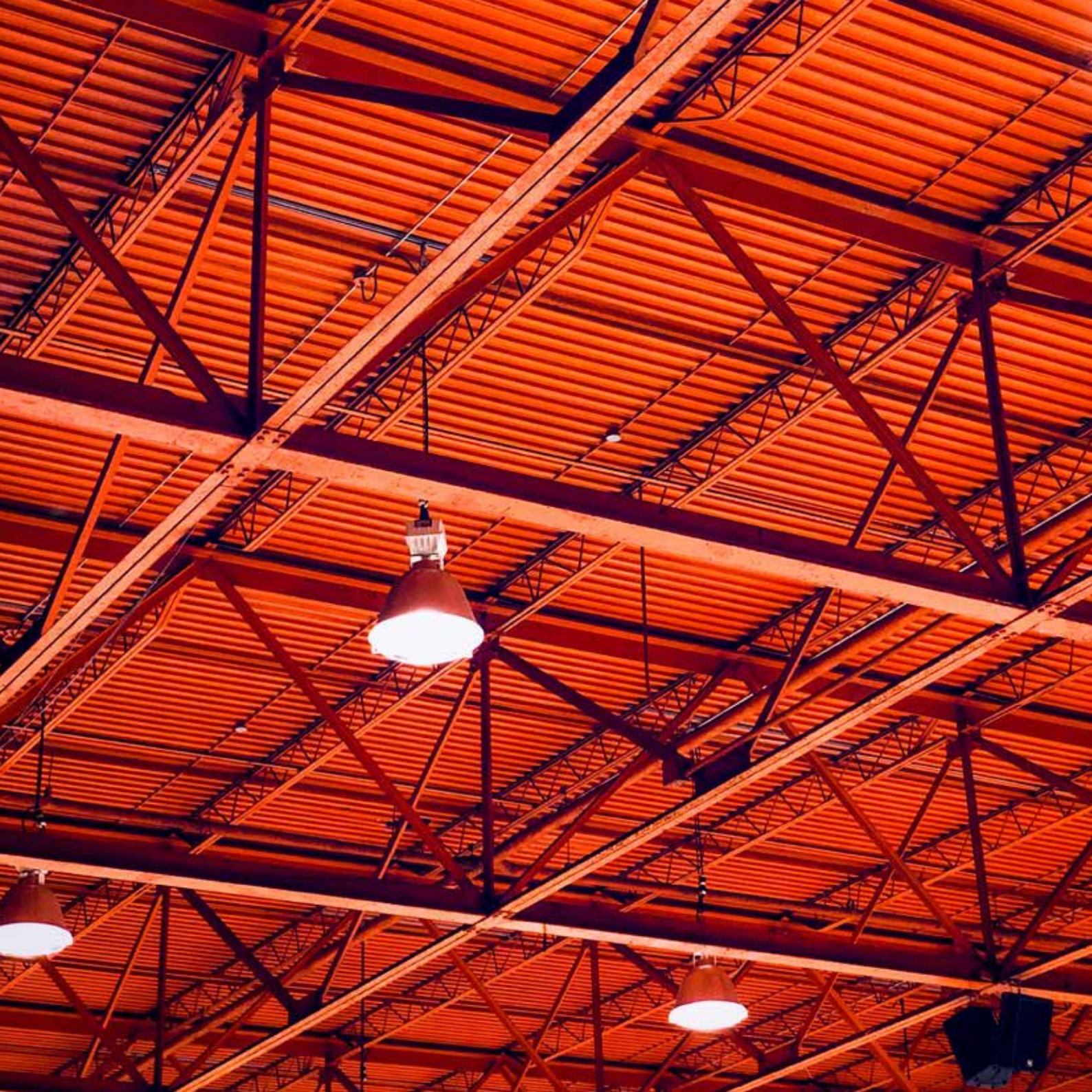


ALKYD RESINS
FOR

anticorrosive coatings

groupe berkem



Alkyd resins for anticorrosive coatings

SOME RESINS FROM GROUPE BERKEM'S FORMULATION RANGE OF ANTICORROSIVE COATINGS, INCLUDING ALKYD RESINS

> Conventional

LIXOGLYP 02 30 60 X

LIXOGLYP 02 30 60 X is a short oil alkyd resin supplied in xylene, designed for the formulation of air or oven drying paints and varnishes. It is particularly suitable for the formulation of one or two component topcoats. Its fast drying allows the formulation of mono-component paints and its high hydroxyl number (100mg KOH/g equivalent to an OH value of 3%) allows the formulation of two-components paints and varnishes LIXOGLYP 02 30 60 X has a high gloss as well as an excellent flexibility. It is suitable for the formulation of topcoats applied on metal substrates.

LIXOGLYP 29 60 X

LIXOGLYP 29 60 X is a short oil alkyd resin supplied in xylene, designed for the formulation of air or oven drying paints and varnishes. It is particularly suitable for the formulation of one component topcoats due to its fast drying. LIXOGLYP 29 60 X has a high gloss as well as an excellent flexibility. It is suitable for the formulation of topcoats applied on metal substrates. Improved hardness, drying and water resistance.

> Phenolic modified

LIXOPHEN 28 60 X

LIXOPHEN 28 60 X is a short oil alkyd resin modified with a phenolic resin. It is supplied in Xylene. It is designed for the formulation of air or oven drying primers, paints and varnishes.

LIXOPHEN 33 60 X

LIXOPHEN 33 60 X is a short oil alkyd resin with linseed, tung and phenolic modifications, supplied in Xylene. This resin offers an excellent drying and is ideal for the formulation of primers.

> Epoxy esters

LIXEPOX 57 60 D60

LIXEPOX 57 60 D60 is a long oil epoxy ester resin modified with fatty acids, supplied in White Spirit D60. This resin exhibits excellent chemical and mechanical properties, a good adhesion and a good recoatability. It is ideal for the formulation of anticorrosion primers and zinc rich air-drying lacquers.

The complete range of anticorrosive resins can be found on page 8.

ORIENTATION FORMULA OF A WHITE DTM ANTICORROSION LACQUER BASED ON **LIXOGLYP 02 30 60 X**

Function	Product	%
Base		
Short Oil Alkyd resin	**LIXOGLYP 02 30 60 X**	41.30
Rheology additive	BENTONE 38	0.30
Defoaming agent	BYK-077	0.50
Wetting and dispersing additive	DISPERBYK-163	2.20
Titanium dioxide	TIONA 595	13.80
Anticorrosion pigment	BUTROL 9102M	5.20
Kaolin	METASIAL V800	4.30
Solvents	NAPHTA 90/170	3.50
	XYLENE	10.28
	BUTYL ACETATE	1.70
Surface tension additive	BYK-306	0.90
Defoaming agent	BYK-077	0.80
Drying agent	OCTA-SOLIGEN ZINC 10	0.20
Catalyst	DIBUTYLTIN DILAURATE at 10%	0.02
Anti-skinning agent	TROYMAX ANTISKIN MP	0.10
Co-solvant	PROPYLENE GLYCOL METHYL ETHER ACETATE (PMA)	0.90
Hardener		
Aliphatic isocyanate hardener	TOLONATE HDB 75 MX	14.00

Viscosity at 25°C (Brookfield, RV5, 100 RPM)	767 cP
Density at 25°C	1.24
Solid content	64%
Complete drying time	80 min.
VOC according to Directive 2004/42/EC	490 $g.L^{-1}$

Persoz hardness at 15 days according to ISO 1522 (film applied at 100 µm)	94 s
Gloss according to ISO 2813	60° = 94 B.U.
Pencil hardness according to ISO 15184	7H – 8H
Cross cut adhesion according to ISO 2409	0

Salt spray resistance after 959h (Film thickness : 85µm)

ADVICE TO CALCULATE THE POLY-ISOCYANATE RATIO TO USE

Assuming equivalent reaction between the resin OH reactive groups and the NCO groups available in the isocyanate hardener, the following formula can be used to calculate the quantity of hardener (g) to add for 100g of LIXOGLYP 02 30 60 X (for 100% dry weight):

$$m\,(\text{hardener}) = \frac{42 \times 100 \times 3}{17 \times NCO\,\%}$$

With:
- 42: molecular weight (in $g.mol^{-1}$) of the NCO group;
- 17: molecular weight (in $g.mol^{-1}$) of the OH group;
- 3: hydroxyl content of LIXOGLYP 02 30 60 X in % relative to solid resin.

ORIENTATION FORMULA OF A WHITE DTM ANTICORROSION LACQUER BASED ON **LIXOGLYP 29 60 X**

Function	Product	%
Short Oil alkyd binder	**LIXOGLYP 29 60 X**	37.80
Thickener	BENTONE SD-1	0.30
Dispersant agent	DISPERBYK-164	1.45
Defoamer	BYK-A-505	0.40
Drier	OCTA-SOLIGEN CALCIUM 10 BASIC	0.50
Titane dioxide	TIONA 595	9.50
Anticorrosion pigment	HEUCOPHOS ZPO	5.70
Calcium carbonate 5 µm	CRISCAL 5	8.75
Baryum sulfate	BARISTAR 9025	7.60
Talc	TALKRON STYL 10	3.80
Short Oil alkyd binder	**LIXOGLYP 29 60 X**	9.60
Solvent	XYLENE	12.80
Leveling additive	BYK-077	0.20
Drier	ECOS MIX 26 NEO D60	1.40
Anti-skin agent	TROYMAX ANTISKIN MP	0.20

Viscosity at 23°C (Brookfield, RV4, 250 RPM)	7900 cP
Density at 25°C	1.3
Non volatile content	65.7%
Dust-free drying time	20 min.
VOC according to Directive 2004/42/EC	690 $g.L^{-1}$

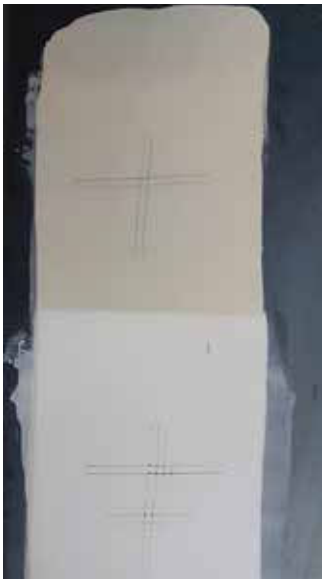
Persoz hardness at 15 days according to ISO 1522 (film applied at 100 µm)	103 s
Brightness according to ISO 2813	60° = 23 B.U.
Pencil hardness according to ISO 15184	H – 2H
Cross-cut test according to ISO 2409	1

ORIENTATION FORMULA OF AN ANTICORROSION PRIMER BASED ON **LIXOPHEN 28 60 X**

Function	Product	%
Short Oil Alkyd resin modified with a phenolic resin	**LIXOPHEN 28 60 X**	45.00
Rheology additive	BENTONE SD-1	0.50
Solvent	XYLENE	7.00
Dispersing additive	ANTI-TERRA-204	0.10
Drying agent	OCTA-SOLIGEN CALCIUM 10	0.20
Anticorrosion pigment	HEUCOPHOS ZPO	3.10
Titanium dioxide	TIONA 595	8.40
Calcium carbonate	CRISTAL 2	18.90
Talc	TALKRON STYL 10	12.60
Drying agent	ECOS MIX 26 Neo D60	1.00
Anti-skinning agent	TROYMAX ANTISKIN MP	0.20
Co-solvent	DOWANOL PM	3.00

Viscosity at 20°C (Brookfield, RV5, 5 RPM)	2 930 cP
Density at 25°C	1.38
Solid content	71%
Complete drying time	10 min.
VOC according to Directive 2004/42/EC	400 $g.L^{-1}$

Persoz hardness at 15 days according to ISO 1522 (film applied at 100 µm)	161 s
Gloss according to ISO 2813	60° = 6 B.U.
Pencil hardness according to ISO 15184	3H – 4H
Cross cut adhesion according to ISO 2409	0



Recoatability of the primer by a polyurethane topcoat

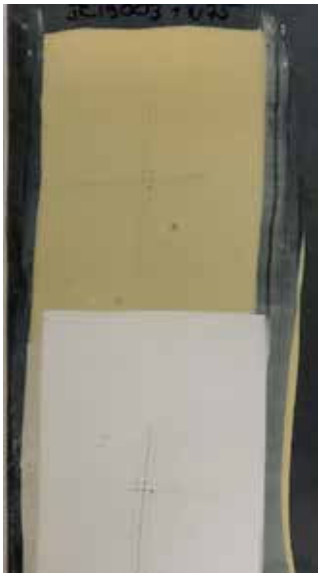
Salt spray resistance after 1000h (Film thickness : 100µm)

ORIENTATION FORMULA OF AN ANTICORROSION PRIMER BASED ON **LIXOPHEN 33 60 X**

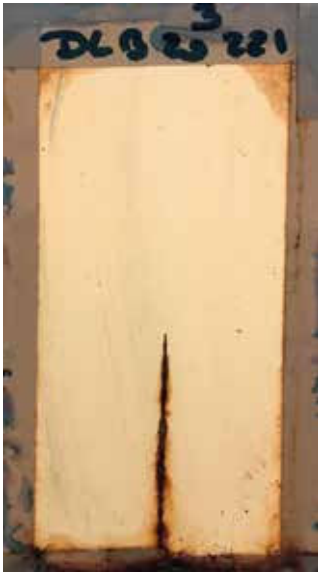
Function	Product	%
Short Oil Alkyd resin modified with a phenolic resin	**LIXOPHEN 33 60 X**	35.00
Solvent	SOLVESSO 100	20.50
Co-solvent	DOWANOL PM	2.00
Rheology additive	AEROSIL 300	0.20
Solvent	XYLENE	3.00
Rheology additive	BENTONE SD-1	0.30
Dispersing additive	ANTI-TERRA-204	0.10
Drying agent	OCTA-SOLIGEN CALCIUM 10	0.40
Anticorrosion pigment	HEUCOPHOS ZPO	10,.00
Titanium dioxide	TIONA 595	4.50
Kaolin	METASIAL V800	4.50
Yellow iron oxide	BAYFERROX 920	0.40
Talc	TALKRON STYL 10	11.00
Dolomite	DOLKRON EXTRA	7.00
Drying agent	ECOS MIX 26 Neo D60	0.80
Anti-skinning agent	TROYMAX ANTISKIN MP	0.30

Viscosity at 25°C (Brookfield, RV5, 100 RPM)	970 cP
Density at 25°C	1.30
Solid content	63%
Complete drying time	50 min.
VOC according to Directive 2004/42/EC	485 $g.L^{-1}$

Persoz hardness at 15 days according to ISO 1522 (film applied at 100 µm)	129 s
Gloss according to ISO 2813	60° = 2 B.U.
Pencil hardness according to ISO 15184	6H – 7H
Cross cut adhesion according to ISO 2409	0



Recoatability of the primer by a polyurethane topcoat



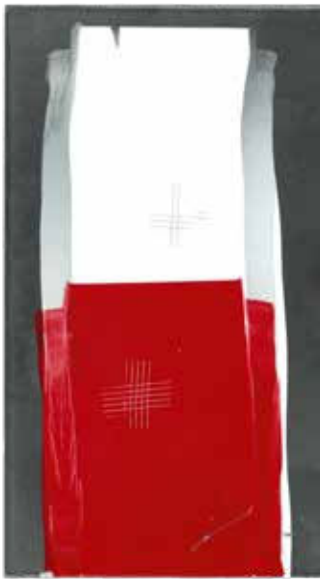
Salt spray resistance after 1000h (Film thickness : 100µm)

ORIENTATION FORMULA OF AN ANTICORROSION PRIMER BASED ON **LIXEPOX 57 60 D60**

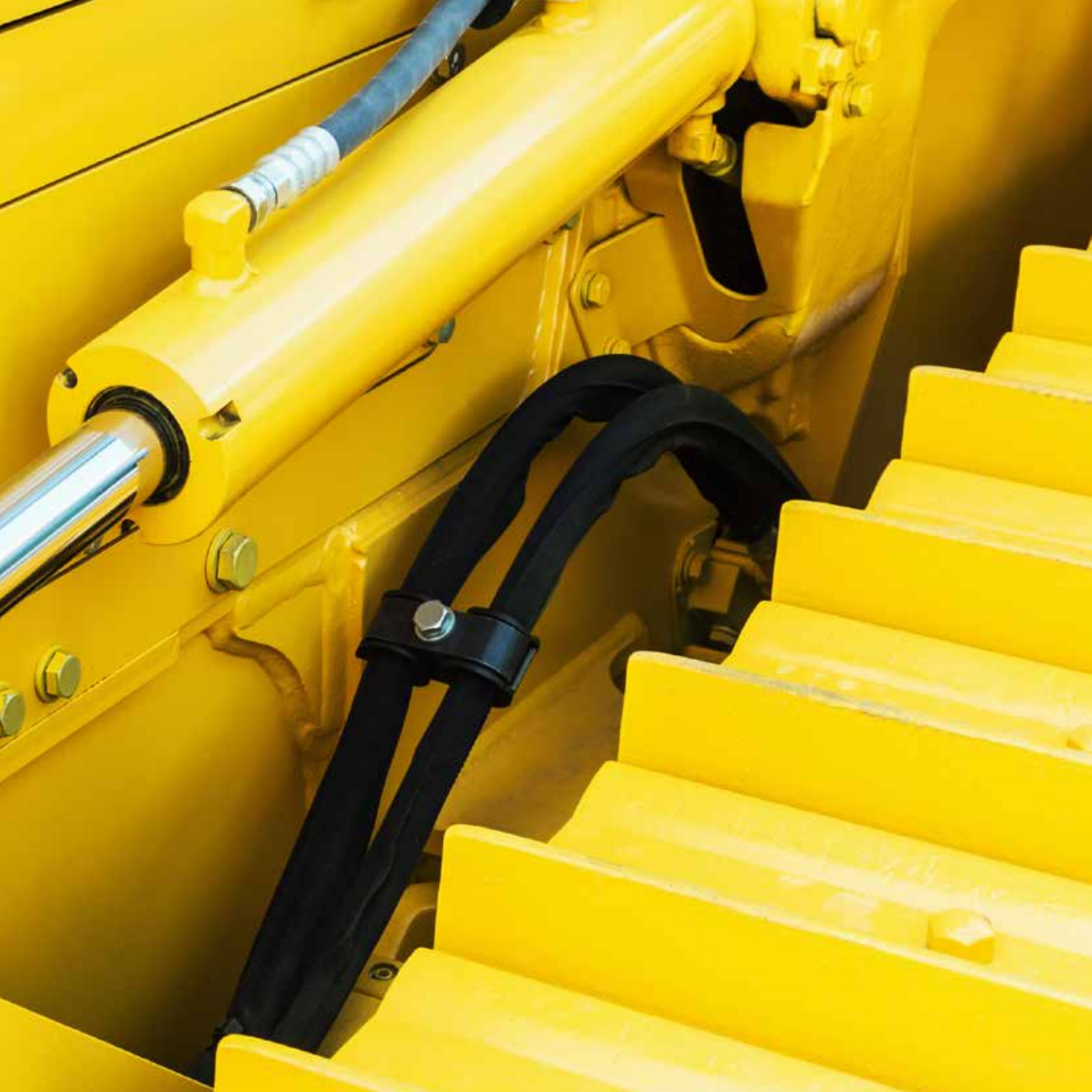
Function	Product	%
Long Oil Epoxy Ester resin	**LIXEPOX 57 60 D60**	30.00
Drying agent	OCTA-SOLIGEN CALCIUM 10	0.25
Dispersing additive	ANTI-TERRA 204	0.45
Rheology additive	BENTONE 38	0.40
Solvent	WHITE SPIRIT D60	6.50
Anticorrosion pigment	ZINC OXIDE	30.00
Talc	TALKRON STYL 10	15.00
Solvents	ISOPROPANOL	1.50
	SOLVESSO 100	15.00
Defoaming agent	BYK-077	0.30
Drying agent	ECOS MIX 26 Neo D60	0.40
Anti-skinning agent	TROYMAX ANTISKIN MP	0.20

Viscosity at 23°C (Brookfield, RV4, 250 RPM)	720 cP
Density at 25°C	1.46
Solid content	69%
Complete drying time	120 min.
VOC according to Directive 2004/42/EC	490 $g.L^{-1}$

Persoz hardness at 15 days according to ISO 1522 (film applied at 100 µm)	125 s
Gloss according to ISO 2813	60° = 3 B.U.
Pencil hardness according to ISO 15184	3H – 4H
Cross cut adhesion according to ISO 2409	0



Recoatability of the primer by a polyurethane topcoat



OTHER PRODUCTS IN THE ALKYD RESINS RANGE FOR THE FORMULATION OF ANTICORROSIVE COATINGS

	Reference	Oil %	Non volatile content %	Solvent	Viscosity	Acid value on solid resin	Colour	Characteristics
LIXOGLYP	LIXOGLYP 02 60 60 D40	60	60	*WS D40*	100/110-20°C	15 max	≤ 7	Long oil alkyd for economical anticorrosive systems. Good gloss.
	LIXOGLYP 02 60 60 D40 HV	60	60	*WS D40*	130/150 - 20°C	15 max	≤ 7	Long oil alkyd for economical anticorrosive systems. Good gloss.
	LIXOGLYP 02 60 60 D60	60	60	*WS D60*	100/110 - 20°C	15 max	≤ 7	Long oil alkyd for economical anticorrosive systems. Good gloss.
	LIXOGLYP 02 52 50 D40	52	50	*WS D40*	30/35 - 20°C	15 max	≤ 7	Resin for topcoat lacquer for agricultural machinery and auto-motive finishes. Fast drying.
	LIXOGLYP 24 52 50 D40	52	50	*WS D40*	180/220 - 20°C	15 max	≤ 7	Binder for high quality primer, basecoat and topcoat. Fast drying, good hardness and gloss.
	LIXOGLYP 24 52 50 D40-X	52	50	*Xylene / WS D40*	50/70 - 20°C	15 max	≤ 7	Binder for high quality primer, basecoat and topcoat. Fast drying, good hardness and gloss.
	LIXOGLYP 02 48 60 X	48	60	*Xylene*	20/30 - 20°C	15 max	≤ 7	Resin for touch-up repair and finishing lacquer. For bodywork, agricultural machinery and public works.
	LIXOGLYP 48 55 D40-X	48	55	*Xylene / WS D40*	80/100 - 20°C	10 max	≤ 7	Alkyd for high quality touch-up repair and finishing lacquer. Excellent drying and hardness. Good outdoor resistance.
	LIXOGLYP 02 40 70 BA	40	70	*Butyl acetate*	90/120 - 20°C	15 max	≤ 7	Resin for primers and industrial lacquers, oven enamels.
	LIXOGLYP 02 40 60 X	40	60	*Xylene*	40/60 - 20°C	15 max	≤ 7	Resin for primers and industrial lacquers, oven enamels.
	LIXOGLYP 03 34 60 X	34	60	*Xylene*	50/70 - 20°C	12 max	≤ 6	Fast drying resin for one- or two- component industrial lacquers. Good gloss
	LIXOGLYP 03 34 60 X HV	30	60	*Xylene*	100/120 - 20°C	12 max	≤ 6	Fast drying resin for one- or two- component industrial lacquers. Good gloss.
	LIXOGLYP 02 30 60 X	30	60	*Xylene*	100/150 - 20°C	12 max	≤ 6	Resin for one- or two-components industrial lacquers.
	LIXOGLYP 29 60 X	29	60	*Xylene*	100/150 - 20°C	12 max	≤ 6	Resin for two-components industrial lacquers with improved drying and hardness.
LIXOPHEN	LIXOPHEN 33 60 X	33	60	*Xylene*	45/65 - 25°C	20 max.	≤ 12	Alkyd resin with linseed, tung and phenolic modifications. Fast drying. Good pickling resistance.
	LIXOPHEN 28 60 X	28	60	*Xylene*	120/220 - 20°C	25 max.	≤ 12	Phenolic modified alkyd resin. Fast drying. Good pickling resistance.
	LIXOPHEN 35 50 X	35	50	*Xylene*	15/30 - 25°C	30 max.	≤ 12	Alkyd resin with linseed, tung and phenolic modifications. Fast drying. Excellent chemical, corrosion and mechanical resistance & re-coatability.
	LIXOPHEN 33 70 BA	33	70	*Butyl acetate*	45/65 - 25°C	20 max.	≤ 12	Alkyd resin with linseed, tung and phenolic modifications. Fast drying. Good pickling resistance.

	Reference	Oil %	Non volatile content %	Solvent	Viscosity	Acid value on solid resin	Colour	Characteristics
LIXOTHAN	LIXOTHAN HU 03 75 60 D40	75	60	*WS D40*	70/90 - 20°C	3 max.	≤ 7	Urethane oil for anticorrosive paint. Excellent chemical and mechanical resistance. Good drying speed and good adhesion on old substrates.
	LIXOTHAN HU 03 75 60 D40-X	75	60	*Xylene / WS D40*	25/35 - 20°C	3 max.	≤ 7	Urethane oil for anticorrosive paint. Excellent chemical and mechanical resistance. Good drying speed and good adhesion on old substrates.
	LIXOTHAN HU 03 75 60 D60	75	60	*WS D60*	70/90 - 20°C	3 max.	≤ 7	Urethane oil for anticorrosive paint. Excellent chemical and mechanical resistance. Good drying speed and good adhesion on old substrates.
	LIXOTHAN U 03 68 60 D60-S	68	60	*WS D60 / SOLVESSO*	16/24 - 23°C	3 max.	≤ 7	Urethane alkyd resin for primer and topcoats, glossy to silk gloss. Excellent chemical and mechanical resistance. Good adhesion.
	LIXOTHAN U 02 62 55 D60	62	55	*WS D60*	25/35 - 25°C	5 max.	≤ 7	Urethane alkyd resin for primer. Excellent chemical and mechanical resistance.
	LIXOTHAN U 03 60 55 D40	60	55	*WS D40*	35/45 - 25°C	5 max.	≤ 7	Urethane alkyd resin for primer. Excellent chemical and mechanical resistance.
	LIXOTHAN U 03 60 55 D60	60	55	*WS D60*	35/45 - 25°C	5 max.	≤ 7	Urethane alkyd resin for primer. Excellent chemical and mechanical resistance.
	LIXOTHAN U 03 55 55 D40	55	55	*WS D40*	30/45 - 25°C	5 max.	≤ 7	Urethane alkyd resin for primer and topcoats, glossy to silk gloss. Excellent chemical and mechanical resistance.
	LIXOTHAN U 02 52 50 D40	52	60	*WS D40*	40/60 - 25°C	5 max.	≤ 7	Urethane alkyd resin for primer and topcoats, glossy to silk gloss. Excellent chemical and mechanical resistance.
	LIXOTHAN UAL 55 60 D40	55	60	*WS D40*	45/55 - 25°C	5 max.	≤ 7	Aliphatic urethane alkyd resin for basecoat and topcoat. Good UV resistance. Fast drying. Good substrate wetting.
	LIXOTHAN UAL 55 60 D60	55	60	*WS D60*	50/65 - 25°C	5 max.	≤ 7	Aliphatic urethane alkyd resin for basecoat and topcoat. Good UV resistance.Good substrate wetting.
	LIXOTHAN UAL 55 55 D40	55	55	*WS D40*	50/70 - 25°C	5 max.	≤ 7	Aliphatic urethane alkyd resin for basecoat and topcoat. Good UV resistance. Fast drying. Good substrate wetting.
	LIXOTHAN UAL 55 55 D60	55	55	*WS D60*	90/130 - 25°C	5 max.	≤ 7	Aliphatic urethane alkyd resin for basecoat and topcoat. Good UV resistance. Good substrate wetting.
LIXEPOX	LIXEPOX 57 60 D60	57	60	*WS D60*	20/70 - 20°C	5 max.	≤ 10	Epoxy ester resin for anticorrosive primer and topcoat. Absence of flammable labelling. Salt spray resistance.
LIXOTHIX	LIXOTHIX TH80 D40	60	55	*WS D40*	Strong gel	12 max.	≤ 7	Thixotropic alkyd to blend with medium and long oil alkyds.
	LIXOTHIX TH20 64 D60	60	64	*WS D60*	Flexible gel	15 max.	≤ 10	Soft gel thixotropic alkyd to blend with medium and long oil alkyds.
	LIXOTHIX TH SP 52 D40-X	52	50	*Xylene / WS D40*	Flexible gel	15 max.	≤ 7	Thixotropic alkyd to blend with medium and long oil alkyds.

ALKYD RESINS
FOR

anticorrosive coatings

Use biocidal products with care. Read the label and product information before use.

groupe berkem

Construction & Materials

A business area of Groupe Berkem

construction.groupeberkem.com