

SYSTEMS FOR DECKS**3103**

a six page issue

January 2010
revision of May 2008

Application areas: all decks on ships, interior and exterior

Contains following specifications:

- Specification 1: multi-purpose epoxy coating system
- Specification 2: multi-purpose epoxy coating system
- Specification 3: high build reinforced epoxy coating system
- Specification 4: high solids epoxy mastic coating system
- Specification 5: alkyd coating system
- Specification 6: chlorinated rubber/modified acrylic coating system

GENERAL ASPECTS

Decks on ships are constantly exposed to the environment (UV in sunlight, rain, wind) and periodically washed with seawater. They are subject to foot and mechanical traffic and sometimes chemical spillage. Their aesthetic properties are always important, but they also have a strong protective element (both anticorrosive and safety).

The main requirements for such coating systems are:

- good anticorrosive properties
- excellent adhesion
- flexibility
- good impact resistance
- resistance against spillage of hydrocarbons, aromatics, chemicals and detergents
- easy to maintain
- non slippery

Non-skid properties can be obtained by adding 10% by weight of a special silica (such as Minigrain No. IV), or fine coconut shells to the last coat of a paint system. In case of contamination with oil or lubricants a very coarse material like Minigrain No. 1 can be used to further enhance non-skid properties. In this case an extra coat is necessary to ensure adhesion of the embedded anti-skid material and the dft of the total system should be increased in order to give the correct anticorrosive protection.

SURFACE PRETREATMENT

Best results are obtained on ISO-Sa2½ blast cleaned steel. If the surface has been treated with a suitable shop primer, sweep blasting is required to a minimum of SPSS-Ss or power tool cleaning to SPSS-Pt3. Rusty areas should be blast cleaned to ISO-Sa2½. Also possible is cleaning by hydrojetting to VIS WJ2 L or ISO Wa 2½ L.

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SPECIFICATION 1	multi-purpose epoxy coating with good resistance to abrasion, spillage of oils and mild chemicals	
pretreatment	steel; blast cleaned to ISO-Sa2½, blasting profile 40 - 70 µm steel with approved zinc silicate shop primer; sweep blasted to SPSS-Ss, or power tool cleaned to SPSS-Pt3	
paint system	SigmaPrime 700	125 µm
	SigmaCover 456	125 µm
notes	<ul style="list-style-type: none"> – SigmaPrime 700 can be replaced by SigmaCover 435 – if a durable topcoat is required, an extra coat of PSX 700 (gloss), SigmaDur 1800 (gloss), SigmaDur 550 (gloss) or SigmaDur 520 (semi gloss) can be applied – at temperatures below 5°C, SigmaPrime 700 can be replaced by SigmaPrime 700 LT 	
maintenance	should preferably be carried out to this specification	
pretreatment	in case of hydrojetted to VIS WJ2/3 L or ISO Wa 2/2½ L SigmaCover 280 should be applied as first coat at a dft of 50 µm (for more info see sheet 1498)	

SPECIFICATION 2	multi-purpose epoxy coating with good resistance to abrasion, spillage of oils and mild chemicals	
pretreatment	steel; blast cleaned to ISO-Sa2½, blasting profile 40 - 70 µm steel with approved zinc silicate shop primer; sweep blasted to SPSS-Ss, or power tool cleaned to SPSS-Pt3	
paint system	SigmaPrime 200	125 µm
	SigmaCover 456	125 µm
notes	<ul style="list-style-type: none"> – SigmaPrime 200 can be replaced by SigmaCover 435 – if a durable topcoat is required, an extra coat of PSX 700 (gloss), SigmaDur 1800 (gloss), SigmaDur 550 (gloss) or SigmaDur 520 (semi gloss) can be applied – at temperatures below 5°C, SigmaPrime 200 can be replaced by SigmaPrime 200 LT 	
maintenance	should preferably be carried out to this specification	
pretreatment;	in case of hydrojetted to VIS WJ2/3 L or ISO Wa 2/2½ L SigmaCover 280 should be applied as first coat at a dft of 50 µm (for more info see sheet 1498)	

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SPECIFICATION 3

reinforced high build epoxy coating with excellent abrasion resistance and good resistance to spillage of oils and mild chemicals

pretreatment

steel; blast cleaned to ISO-Sa2½, blasting profile 40 - 70 µm
steel with approved zinc silicate shop primer; sweep blasted to SPSS-Ss, or power tool cleaned to SPSS-Pt3

paint system

SigmaShield 220	125 µm
SigmaShield 420	125 µm
SigmaCover 456	75 µm

notes

- SigmaShield 220 can be replaced by SigmaPrime 200 or 700
- if a durable topcoat is required, SigmaCover 456 can be replaced by PSX 700 (gloss), SigmaDur 1800 (gloss), SigmaDur 550 (gloss) or SigmaDur 520 (semi gloss)
- at temperatures below 5°C, SigmaPrime 200 or 700, SigmaShield 220 and 420 can be replaced by the LT versions

maintenance

should preferably be carried out to this specification

pretreatment

in case of hydrojetted to VIS WJ2/3 L or ISO Wa 2/2½ L SigmaCover 280 should be applied as first coat at a dft of 50 µm (for more info see sheet 1498)

SPECIFICATION 4

high solids epoxy mastic system for maintenance with good resistance to abrasion, spillage of oils and mild chemicals

pretreatment

steel; blast cleaned to ISO-Sa2½
I steel with approved zinc silicate shop primer; sweep blasted to SPSS-Ss or power tool cleaned to SPSS-Pt3

paint system

SigmaCover 630	125 µm
SigmaCover 630	125 µm

notes

- if a durable topcoat is required, an extra coat of SigmaDur 1800 (gloss), SigmaDur 550 (gloss) or SigmaDur 520 (semi gloss) can be applied
- if a recoatable epoxy system is required, SigmaCover 456 should be specified as topcoat

maintenance

should preferably be carried out to this specification

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SPECIFICATION 5	one component alkyd based system for maintenance	
pretreatment	steel; blast cleaned to ISO-Sa2½ or power tool cleaned to ISO-St3 steel with approved shop primer; power tool cleaned to SPSS-Pt3	
paint system	Sigmarine 28	75 µm
	Sigmarine 48	35 µm
	Sigmarine 48	35 µm
notes	<ul style="list-style-type: none"> – Sigmarine 48 can be replaced by Sigma Vikote 56 – one coat of Sigmarine 28 can be replaced by 2 coats of Sigmarine 24 at dft of 35 µm each – not suitable for decks where spillage of oils and/or solvents can be expected 	
maintenance	should preferably be carried out to this specification	

SPECIFICATION 6	one component chlorinated rubber/modified acrylic system	
pretreatment	steel; blast cleaned to ISO-Sa2½ or power tool cleaned to ISO-St3 steel with approved shop primer; sweep blasted to SPSS-Ss or power tool cleaned to SPSS-Pt3	
paint system	Sigma Vikote 18	75 µm
	Sigma Vikote 46	75 µm
note	not suitable for decks where spillage of oils and/or solvents can be expected	
maintenance	should preferably be carried out to this specification or with Sigmarine 28 as first coat (dft of 75 µm)	
note	Sigma Vikote 46 has good overcoating and good drying characteristics (to below 0°C) which simplifies maintenance	

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MAINTENANCE

The system to be used for maintenance will depend on the size of repair, possibilities of surface preparation and the weather conditions.

The removal of oil, grease and contamination can be achieved by high pressure water cleaning in combination with the use of suitable detergents. This should be followed by a thorough fresh water wash and drying before blast cleaning and/or repainting.

For major areas of breakdown maintenance is normally carried out by a fresh water wash followed by reblasting to ISO-Sa2½ and recoating with the original system. Minor areas can be power tool cleaned to SPSS-Pt3.

When blast cleaning (dry or wet) is impossible or not tolerated the surface should be derusted by means of power tool cleaning to a minimum of SPSS-Pt2 and primed with SigmaCover 280 (dft of 50 µm) followed by the build coat and top coat as described in the specification.

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REFERENCES

PSX 700	see product data sheet 7546
Sigma Vikote 18	see product data sheet 7318
Sigma Vikote 46	see product data sheet 7350
Sigma Vikote 56	see product data sheet 7355
SigmaCover 280	see product data sheet 7417
SigmaCover 456	see product data sheet 7466
SigmaCover 630	see product data sheet 7430
SigmaDur 1800	see product data sheet 7529
SigmaDur 520	see product data sheet 7524
SigmaDur 550	see product data sheet 7537
SigmaPrime 200	see product data sheet 7416
SigmaPrime 200 LT	see product data sheet 7931
SigmaPrime 700	see product data sheet 7930
SigmaPrime 700 LT	see product data sheet 7946
Sigmarine 24	see product data sheet 7135
Sigmarine 28	see product data sheet 7117
Sigmarine 48	see product data sheet 7238
SigmaShield 420	see product data sheet 7951
SigmaShield 420 LT	see product data sheet 7955
SigmaShield 220	see product data sheet 7922
SigmaShield 220 LT	see product data sheet 7926
Cleaning of steel and removal of rust	see information sheet 1490
Hydrojetting	see information sheet 1498
prefabrication primers	see system sheet 3015

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