

NORSOK M-501

Teknos' Coating System Guide



Ultimate corrosion protection

Teknos' NORSOK M-501 approved coating systems

We offer a versatile range of NORSOK M-501 approved coating systems for our customers to choose.

NORSOK M-501 – Surface preparation and protective coating

NORSOK M-501 standard gives the requirements for the selection of coating materials, surface preparation, application procedures and inspection for protective coatings to be applied during the construction and installation of offshore installations and associated facilities.

In this brochure, you will find Teknos' NORSOK M-501 approved coating systems for

- Structural steel
- Exteriors of equipment, vessels, piping and valves
- Flare booms and crane booms
- Insulated surfaces of tanks, vessels, piping
- Internal surface of carbon steel tanks
- Carbon and stainless steel in the splash zone
- Carbon steel surfaces exposed to operating temperature $> 120\text{ }^{\circ}\text{C}$.
- Submerged carbon and stainless steel $\leq 50\text{ }^{\circ}\text{C}$
- Structural steel with operating temperature $\leq 80\text{ }^{\circ}\text{C}$ in internal, fully dry and well ventilated areas.
- Bulk supplied carbon steel valves with operating temperatures up to $150\text{ }^{\circ}\text{C}$

Teknos' NORSOK M-501 approved coating systems ensure

- Optimal corrosion protection
- Easy maintenance and application
- Evaluated and documented health, safety and environmental impacts

Should you need any further information or assistance, our local technical support teams are happy to help you!

www.teknos.com

Contents

Introduction	2-3
Coating System no. 1	4
Coating System no. 2	5
Coating System no. 3	5-6
Coating System no. 6	6
Coating System no. 7	7
Coating System no. 8	7
Coating System no. 9	7
Contact information	8





Our NORSOK M-501 approved coating systems

COATING SYSTEM NO. 1

Carbon steel with maximum operating temperature <120°C.

Structural steel, exteriors of equipment, vessels, piping and valves (not insulated)

Pre-qualification required

Surface preparation:		Cleanliness: ISO 8501-1 Sa 2½ Roughness: ISO 8503 Grade Medium G (50µm-85µm, Ry5)	
Coating System		DFT (µm)	Test Certificate
1.1	TEKNOZINC 90 SE TEKNODUR COMBI 3560 TEKNODUR COMBI 3560	60 110 110	Report no. P702682-short SP, Sweden NORSOK M-501 rev. 5
	Total	280	
1.2	TEKNOZINC 3485 SE INERTA MASTIC MIOX INERTA MASTIC MIOX TEKNODUR AQUA 3390-09	60 110 110 40	Report no. VTT-S-09873-09 VTT, Finland NORSOK M-501 rev. 5
	Total	320	
1.3	TEKNOZINC 3485 SE INERTA MASTIC MIOX INERTA MASTIC MIOX TEKNOCRYL 2K 2540-05	60 110 110 40	Report no. P9902304-203/08 Short SP, Sweden NORSOK M-501 rev. 5 Tested and certified as free from di-isocyanates. (IFKAN No: 9252617)
	Total	320	
1.4	TEKNOZINC SS TEKNOPLAST PRIMER 7 TEKNOPLAST PRIMER 7 TEKNOCRYL AQUA COMBI 2780	60 40 140 40	Report no. P902304-170 Short SP, Sweden NORSOK M-501 rev. 5
	Total	280	
1.5	TEKNOZINC 90 SE TEKNOMASTIC 80 PRIMER TEKNODUR 0050	60 160 60	Certificate: ILAK, 6-9-15/1 Germany
	Total	280	
1.6	TEKNOZINC 80 SE TEKNOPLAST PRIMER 7 MIOX TEKNOPLAST PRIMER 7 TEKNODUR 0050	60 80 80 60	Certificate: ILAK, 6-9-15/2 Germany
	Total	280	

COATING SYSTEM NO. 2

Coating system no. 2A shall be used for all carbon steel surfaces exposed to operating temperature > 120 °C.

Coating system no. 2A or system no. 2B shall be used for the below carbon steel objects – All insulated surfaces of tanks, vessels, piping. – Flare booms and crane booms.

Underside of bottom deck included piping, jacket above splash zone lifeboat stations are optional areas (to be decided in each project).

Surface preparation:		Cleanliness: ISO 8501-1 Sa 2½ Roughness: ISO 8503 Grade Medium G (50µm-85µm, Ry5)	
Coating System		DFT (µm)	Test Certificate
2A.1	TEKNOPLAST PRIMER 3 (Diluted 20 vol-% with TEKNOSOLV 9506)*	Sealer	Sealer for thermally Sprayed Aluminium. Service temperature below 120°C.
	Total		
2A-2	TEKNOHEAT 500 RAL-9006 (Siliconaluminium)	Sealer	Sealer for thermally Sprayed Aluminium. Service temperature above 120°C.
	Total		
2A-3	INERTA 300	150 150	Alternative to Thermal Sprayed Aluminium. For insulated surfaces at service temperatures below 120°C.
	Total	300	
2B-1	TEKNOPLAST PRIMER 3 (Diluted 20 vol-% with TEKNOSOLV 9506)*	25	NOTE 2. Intermediate coat and top coat must be pre-qualified as part of system No.1. Applied on top of 100 µm Thermal Sprayed Zinc and alloys of Zinc. Not recommended for use under Insulation.
	TEKNOPLAST PRIMER 7 TEKNOCRYL 2K 2540-05**	125 75	
	Total	225	
2B-2	TEKNOPLAST PRIMER 3 (Diluted 20 vol-% with TEKNOSOLV 9506)*	25	NOTE 2. Intermediate coat and top coat must be pre-qualified as part of system No.1. Applied on top of 100 µm Thermal Sprayed Zinc and alloys of Zinc. Not recommended for use under Insulation.
	INERTA MASTIC MIOX TEKNOCRYL 2K 2540-05**	125 75	
	Total	225	

* TEKNOPLAST PRIMER 3 may be replaced with TEKNOPLAST PRIMER 5

** TEKNOCRYL 2K 2540-05 may be replaced with TEKNOCRYL AQUA COMBI 2780 or TEKNODUR COMBI 3560 in Coating system 2B-1 & 2. When an isocyanate-free product is required, TEKNOCRYL 2K 2540-05 or TEKNOCRYL AQUA COMBI 2780 should be used.

COATING SYSTEM NO. 3 (System no. 3B shall be pre-qualified)

Internal surface of carbon steel tanks

3A. Potable water tanks

Surface preparation:		Cleanliness: ISO 8501-1 Sa 2½ Roughness: ISO 8503 Grade Medium G (50µm-85µm, Ry5)	
Coating System		DFT (µm)	Remarks
3A	INERTA 200	300 300	Report no. ELI0231 and ELI0232 by the Technical Research Centre of Finland.
	Total	600	

All products used internally in potable water tanks and fresh water tanks shall be approved for such use by end users' governing requirements/local authorities.

3B. Ballast tanks

Surface preparation:		Cleanliness: ISO 8501-1 Sa 2½ Roughness: ISO 8503 Grade Medium G (50µm-85µm, Ry5)	
Coating System 3B		Remarks	
3B	TEKNOMASTIC 80 PRIMER TEKNOMASTIC 80 PRIMER TEKNOMASTIC 80 PRIMER	200 200 200	Report no. 11-17-14/1 by ILAK.
	Total	600*	

* Approved according to NORSOK M-501 Edition 6.

3C. Tanks for stabilised crude, disel and condensate

Surface preparation:		Cleanliness: ISO 8501-1 Sa 2½ Roughness: ISO 8503 Grade Medium G (50µm-85µm, Ry5)	
Coating System		DFT (µm)	Remarks
3C	INERTA 270 INERTA 270	150 150	Please consult your Teknos representative for further advice regarding service temperatures or alternative coating systems
	Total	300	

3D. Process vessels < 0,3 MPa < 75 °C

Pre-qualification not required

Surface preparation:		Cleanliness: ISO 8501-1 Sa 2½ Roughness: ISO 8503 Grade Medium G (50µm-85µm, Ry5)	
Coating System		DFT (µm)	Remarks
3D-1	INERTA 280	400	Please consult your Teknos representative for further advice regarding service temperatures or alternative coating systems
	Total	400	

3G. Vessels for storage of methanol, mono ethyl glycol etc.

Pre-qualification not required

Surface preparation:		Cleanliness: ISO 8501-1 Sa 2½ Roughness: ISO 8503 Grade Medium G (50µm-85µm, Ry5)	
Coating System 3B		Remarks	
3G	TEKNOZINC SS	80	
	Total	80	

COATING SYSTEM NO. 6

Other metals

Surface preparation:		System no. 6A: Sweep blasting with non-metallic and chloride free grit to obtain anchor profile of approximately 25 µm to 85 µm. System no. 6B: Cleaning with alkaline detergent followed by hosing with fresh water System no. 6C: Sweep blasting with non-metallic and chloride free grit to obtain anchor profile of approximately 25 µm to 85 µm.	
Coating System		DFT (µm)	Remarks
6A/B	TEKNOPLAST PRIMER 3* TEKNOPLAST PRIMER 7 MIOX** TEKNOCRYL 2K 2540-05***	50 125 50	Un-insulated stainless steel when painting is required. Aluminium when painting is required.
	Total	225	
6C	INERTA 300 INERTA 300	125 125	Insulated stainless steel piping and vessels at temperatures < 150°C
	Total	250	

* TEKNOPLAST PRIMER 3 may be replaced with TEKNOPLAST PRIMER 5

** TEKNOPLAST PRIMER 7 MIOX may be replaced with INERTA MASTIC MIOX.

*** TEKNOCRYL 2K 2540-05 may be replaced with TEKNODUR AQUA 3390-09, TEKNOCRYL AQUA COMBI 2780 or TEKNODUR COMBI 3560.
When an isocyanate-free product is required, TEKNOCRYL 2K 2540-05 or TEKNOCRYL AQUA COMBI 2780 should be used.

Coating System no. 7

7A Carbon and stainless steel in the splash zone
 7B Submerged carbon and stainless steel ≤ 50 °C
 7C Submerged, temperature above 50 C

Pre-qualification required

Surface preparation:		Cleanliness: ISO 8501-1 Sa 2½ Roughness: ISO 8503 Grade Medium G (50µm-85µm, Ry5)	
Coating System		DFT (µm)	Remarks
7A	TEKNOMASTIC 80 PRIMER	200 200 200	Certificate: ILAK-11-17-14/1 ILAK, Germany NORSOK M-501 Edition 6
	Total	600	
7B	TEKNOMASTIC 80 PRIMER TEKNOMASTIC 80 PRIMER	175 175	Certificate: ILAK-11-17-14/2 ILAK, Germany NORSOK M-501 Edition 6
	Total	350	

COATING SYSTEM NO. 8

Structural steel with operating temperature ≤ 80 °C in internal, fully dry and well ventilated areas.

Surface preparation:		Cleanliness: ISO 8501-1 Sa 2½	
Coating System		DFT (µm)	Remarks
8A	TEKNOMASTIC 80 PRIMER	150	Please consult your Teknos representative for further advice regarding service temperatures or alternative coating systems
	Total	150	
8B	TEKNOZINC 80 SE TEKNOPLAST PRIMER 5	60 25	Tie coat: TEKNOPLAST PRIMER 5 (diluted 20 vol-% with TEKNOSOLV 9506)
	Total	85	

COATING SYSTEM NO. 9

Bulk supplied carbon steel valves with operating temperatures up to 150 °C.

Pre-qualification not required

Surface preparation:		Cleanliness: ISO 8501-1 Sa 2½ Roughness: ISO 8503 Grade Medium G (50µm-85µm, Ry5)	
Coating System		DFT (µm)	Remarks
9	INERTA 300 INERTA 300	150 150	2 coats epoxy phenolic
	Total	300	
9	TEKNOZINC SS TEKNOPLAST PRIMER 3 (diluted 20 vol-% with TEKNOSOLV 9506)	75 25	zinc silicate epoxy tie coat
	Total	100	

Teknos Group Companies

Teknos Oy

Helsinki factory, Head office
Takkatie 3
P.O.Box 107
FI-00371 Helsinki
FINLAND
Tel. +358 9 506 091
sales@teknos.fi

Teknos Oy

Rajamäki factory
Perämatkuntie 12
P.O.Box 14
FI-05201 Rajamäki
FINLAND
Tel. +358 9 506 091
sales@teknos.fi

Teknos A/S

Industrivej 19
DK-6580 Vamdrup
DENMARK
Tel. +45 76 93 94 00
teknos@teknos.dk

Teknos AB

Head office in Tranemo
Limmarödsv. 2, P.O.Box 211
SE-514 24 Tranemo
SWEDEN
Tel. +46 325 619 500
info@teknos.se

Teknos AB

Vedevåg factory in Vedevåg
Industrigatan 7
SE-711 72 Vedevåg
SWEDEN
Tel. +46 581 645 900
info@teknos.se

Teknos Deutschland GmbH

Edelzeller Strasse 62
D-36043 Fulda
GERMANY
Tel. +49 661 1080
info@teknos.de

Teknos Norge AS

Industriveien 28
NO-3430 Spikkestad
NORWAY
Tel. +47 31 29 49 00
teknos@teknos.no

Teknos (UK) Limited

Unit E1, Heath Farm
Banbury Road, Swerford
Oxfordshire OX7 4BN
UK
Tel. +44 1608 683 494
sales@teknos.co.uk

Teknos Ireland Limited

Unit 1, Fortwilliam
Industrial Estate
Dergan Crescent
Belfast BT3 9JP
NORTHERN IRELAND, UK
Tel. +44 2890 960670
sales.ni@teknos.co.uk

Teknos Scotland Limited

Nettlehill Road
Houston Industrial Estate
Livingston EH54 5DL
UK
Tel. +44 1506 436222
sales.scotland@teknos.co.uk

Teknos OOO

Butyrskij Val, 68/70, bl.4, of.211
127055 Moscow
RUSSIA
Tel. /Fax +7(495) 967 19 61
teknos.russia@teknos.com

Branch of Teknos OOO

in St.Petersburg
Ul. Novye Zavody, d.56, k.3
198517 Peterhof, Maryino
RUSSIA

Teknos Sp. z o.o.

ul. Ziemowita 59
PL-03-885 Warsaw
POLAND
Tel. +48 22 678 70 04
biuro@teknos.pl

Teknos Oliva Sp. z o.o.

ul. Chwaszczyńska 129-149
PL-81-571 Gdynia
POLAND
Tel. +48 58 629 91 62
biuro.gdynia@teknos.pl

Teknos d.o.o.

Cesta na Rupo 67
4000 Kranj
SLOVENIA
Tel. +386 4 236 58 78
Fax +386 4 236 58 79
info@teknos.si

Teknos LLC

10G Starokyivska Str., Of. 442
04055 Kiev
UKRAINE
Tel. /Fax +38 044 359 0333
teknos.ukraine@teknos.com

Teknos OÜ

Jüri Tehnopark
Kesk tee 29, Aaviku küla
75305 Rae vald, Harjumaa
ESTONIA
Tel. +372 656 3491
teknos@teknos.ee

SIA Teknos

Unijas street 8 k10
LV-1084 Riga
LATVIA
Tel. +371 6780 6430
teknos@teknos.lv

UAB Teknos

Raudondvario pl. 170C
LT-47172 Kaunas
LITHUANIA
Tel. +370 6710 3108
teknos@teknos.lt

Teknos Coatings (Shanghai) Co., Ltd

Rm 405a-407a
Silver Centre
No. 1388 North Shan Xi Road
Putuo District
Shanghai
CHINA
Tel. +86 21 6149 8582
teknos.china@teknos.com

Teknos Coatings and Paints Private Limited

7 Udyog Bhavan, Sonawala Rd,
Goregaon East
Mumbai - 400063
Maharashtra
INDIA
Tel. +91 22 26861106

Joint Venture Company Manfield Teknos Chemical (Changzhou) Co. Ltd

Contacts via
Teknos Coatings Shanghai office

Teknos Oy Representative Office

Kiseljova Street 55, rom 12
220002 Minsk
REPUBLIC OF BELARUS
Tel. /Fax +375 17 237 4336
teknos.belarus@teknos.com

Teknos Group Oy

Teknos Group's Parent Company
Takkatie 3
P.O.Box 107
FI-00371 Helsinki
FINLAND
Tel. +358 9 506 091
Fax +358 9 5060 9229
sales@teknos.fi

The Teknos Group

Teknos is one of Europe's leading suppliers of industrial coatings with a strong position in retail and architectural coatings.

Teknos has its own production in seven countries: Finland, Sweden, Denmark, Germany, Poland, Russia and China. In addition, Teknos has sales companies in 16 countries and exports to more than 20 countries via a well-established network of dealers.

Teknos employs around 1 200 staff. Teknos was established in 1948 and is one of Finland's largest family-owned businesses.

● Group companies

● Network of dealers

www.teknos.com

