SIGMA TCN 300 | 7472

December 2000

DESCRIPTION	two component high build polyamine adduct cured coal tar epoxy coating
PRINCIPAL CHARACTERISTICS	- outstanding water and crude oil resistance - excellent corrosion resistance - good resistance against chemically polluted water - can be applied and cures at low temperatures (down to -5 °C) - good abrasion resistance - recognized corrosion control coating (Lloyds register), see sheet 1886 - resistant to well designed cathodic protection
COLOUR AND GLOSS	black and brown - eggshell
BASIC DATA AT 20 °C	(for mixed product)
Mass density	approx. 1.5g/cm³
Solids content	approx. 71% by volume
VOC (supplied)	max. 295 g/l
Recommended dry film thickness	125 - 500 µm (see system sheets)
Theoretical spreading rate	5.7 m²/ltr for 125 µm*
Touch dry after	approx. 4 hours
Overcoating interval	min. 6 hours* max. 5 days*
Full cure after	7 days
Shelf life (cool, dry place)	at least 12 months
Flashpoint	base 25 °C - hardener 26 °C
RECOMMENDED SUBSTRATE CONDITIONS	**for immersion in water with cathodic protection** - steel; blast cleaned to ISO-Sa2½ - steel with approved shop primer; sweep blasted to SPSS-Ss or power tool cleaned to SPSS-Pt3 - existing coal tar epoxy coating; sufficiently roughened and free from any contamination

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for immersion in water without cathodic protection
- steel; blast cleaned to ISO-Sa2½
- steel with approved shop primer; sweep blasted to SPSS-Ss or power tool cleaned to SPSS-Pt3
- existing coal tar epoxy coating; sufficiently roughened and free from any contamination

for atmospheric exposure conditions
- steel; blast cleaned to a minimum of ISO-Sa2
- steel with approved shopprimer; power tool cleaned to a minimum of SPSS-Pt2
- existing coal tar epoxy coating; sufficiently roughened and free from any contamination

note:
- in order to obtain the maximum resistance against chemical and mechanical influences, the substrate should be above 5 °C during application and curing
- application at temperatures down to -5 °C is possible but curing to full hardness takes considerably longer and complete resistance will be reached when the temperature increases
- substrate temperature should be at least 3 °C above the dew point

SYSTEM SPECIFICATION	AREA	SYSTEM SHEET
	marine	3101, 3102, 3106, 3107

INSTRUCTIONS FOR USE
- mixing ratio: by volume; base to hardener 86 : 14
- the temperature of the mixed base and hardener should be above 15 °C, otherwise extra solvent may be required to obtain the correct application viscosity
- too much solvent will result in lower sag resistance and slower cure
- thinner should only be added after proper mixing of comopnents

Induction time at 20 °C 15 minutes

Pot life at 20 °C 6 hours*

AIRLESS SPRAY

Recommended thinner Sigma thinner 91-79 (flashpoint 26 °C)

Volume of thinner 0 - 5% for a dft of 250 µm
10 – 15% for a dft of 125 µm

Nozzle orifice approx. 0.48 - 0.53 mm (0.019 - 0.021 inch)

Nozzle pressure 150 bar (approx. 2100 p.s.i.)

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AIR SPRAY

Recommended thinner	Sigma thinner 91-79 (flashpoint 26 °C)
Volume of thinner	5 – 10%
Nozzle orifice	1.5 – 3.0 mm
Nozzle pressure	2 - 4 bar (approx. 43 - 57 p.s.i.)
BRUSH AND ROLLER	only for touch up and spot repair
Recommended thinner	Sigma thinner 91-79 (flashpoint 26 °C)
Volume of thinner	0 - 5%
CLEANING SOLVENT	Sigma thinner 90-53 (flashpoint 30 °C)

SAFETY PRECAUTIONS

see safety sheets 1430, 1431 and MSDS 7472 for information on LEL and TLV values

Minimum ventilation air quantity required for 1ltr of:

mixed paint	a. to reach 10% of LEL	58 m³
	b. to reach TLV	892 m³
Sigma thinner 91-79	a. to reach 10% of LEL	164 m³
	b. to reach TLV	3723 m³
Sigma thinner 90-53	a. to reach 10% of LEL	156 m³
	b. to reach TLV	3501 m³

ADDITIONAL DATA

Film thickness and spreading rate

Dry film thickness in microns (µm)	125	250	300	400	500
Theoretical spreading rate (m²/l)	5.7	2.8	2.4	1.8	1.4

Minimum dft for closed film with airless spray: 80 µm

Maximum dft for brush application: 125 µm

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overcoating table for dft up to 250 µm

with Sigma TCN 300 and Sigma TCN Tiecoat and other compatible paints

Substrate temperature	5 °C	10 °C	15 °C	20 °C	30 °C
Minimum interval	24 hours	18 hours	12 hours	6 hours	4 hours
Maximum interval when exposed to direct sunshine	21 days	12 days	8 days	4 days	3 days
Maximum interval when <u>not</u> exposed to direct sunshine	40 days	30 days	24 days	18 days	14 days

- the surface should be free from any contamination
- if overcoating material is not compatible tar bleeding can occur
- when overcoating work has to be carried out on coatings thicker than 250 µm, which have been applied in a one coat application, the minimum overcoating interval should be extended as follows:
  applied coating of 300 µm - 2 times as long
  400 µm - 3 times as long
  500 µm - 4 times as long
- adequate ventilation is required during application and curing
- when the paint is applied at lower temperatures, the temperature of the mixed paint must be at least 15 °C and the induction time must be at least 1 hour

Curing table for a dft up to 250 µm

	Initial cure	**Full cure**
Substrate temperature	**for exposure to sea water and slightly polluted atmosphere**	**for immersion in polluted water or crude oil**
5 °C	96 hours	-------
10 °C	48 hours	15 days
15 °C	30 hours	10 days
20 °C	24 hours	7 days
30 °C	18 hours	3 days
40 °C	12 hours	2 days

adequate ventilation must be maintained during application and curing (refer sheets 1433 and 1434)

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Drydockings

- exposure to sea water is permitted after the initial cure time
- if TCN 300 has been applied by means of hot airless spray, exposure to sea water is permitted after an initial cure of 4 hours
- if dft's between 250 - 500 µm are applied in a one coat application curing times should be doubled to obtain mechanical strength
- the mechanical strength is initially low when cured at low temperature but will increase quickly when exposed to sea water

Pot life (at application viscosity)

Paint temperature	Pot life
15 °C	8 hours
20 °C	6 hours
25 °C	5 hours
30 °C	4 hours
35 °C	2 hours

REFERENCES explanation to product data sheets on information sheet 1411