

BASEPOX® PE 50-1081 YELLOW FBE/M.L. PRIMER

Created on 18.09.2003
 Revision 26 of 22.05.2015

PRODUCT DESCRIPTION

Fusion bonded epoxy powder coating for steel pipes and fittings , with excellent hot water and cathodic disbonding resistance.
 Basepox® PE 50-1081 can also be used as primer in multilayer polyolefin pipe-coating systems.

PHYSICAL AND THERMODYNAMIC PROPERTIES

COLOUR

Yellow

DENSITY

1,49 ± 0,05 g/ml

ISO 21809-2 (clause A.7)
 CAN CSA Z245.20-06 (clause 12.6)
 ISO 8130-2 (helium pycnometer)

SIEVE ANALYSIS

ISO 21809-2 (clause A.6)
 CAN CSA Z245.20-06 (clause 12.5)
 ISO 8130-1

> 250 µm (60 mesh)	≤ 0.2 %
> 150 µm (100 mesh)	≤ 3.0 %

MOISTURE CONTENT

(Weight loss 2h at 105 °C / 221°F)

≤ 0,5 %	acc. ISO 21809-2 (clause A.5)
	acc. CAN CSA Z245.20-06 (clause 12.4)
	acc. ISO 8130-7

REACTIVITY

GEL TIME @ 180°C / 356°F	80 ± 10 s	acc. ISO 8130-6
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HOT PLATE GEL @ 205°C / 401°F	30 ± 6 s	acc. ISO 21809-2 (clause A.3)
		acc. CAN CSA Z245.20-06 (clause 12.2)

CURE TIME @ 232°C / 450°F	13 ± 2 s	acc. ISO 21809-2 (clause A.2)
By Hot-plate method		acc. CAN CSA Z245.20-06 (clause 12.1)

DIVISIONE VERNICI IN POLVERE

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THERMODYNAMIC CHARACTERISTICS

Differential Scanning Calorimeter

According with norm ISO 21809-2 (clause A.8) equivalent to ISO 11357-2

Tg 1 (powder, inflection point)	62 ± 5° C / 143 ± 9 °F
Tg 2 (cured film, inflection point)	102 ± 5° C / 215 ± 9 °F
Delta H (Enthalpy)	44 ± 4 J/g

SHELF LIFE

According with ISO 8130-8 :

- _ if used as single layer : 6 months at 25°C (77° F) and 65 % relative humidity.
- _ if used as multi layer : 12 months at 25°C (77° F) and 65 % relative humidity.

Lower temperature and humidity are recommended . **Do not exceed 30°C (86°F)** .

SURFACE PREPARATION

Surface preparation by abrasive blast cleaning shall, as a minimum, meet the requirements of ISO 8501-1, Sa 2 ½ grade. The blast cleaned surface shall have a roughness RZ between 40 and 110 µm (1.6 – 4.4 mils) as measured in accordance with ISO 4287-1.

The surface shall be dry and free from contamination.

Chemical pretreatment is allowed .

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APPLICATION

This powder performs best when applied through electrostatic spraying.
For fluidized bed application special grades are available.

RECOMMENDED FILM THICKNESS

As FBE 350 - 500 µm / 14 - 20 mils

For special applications film thicknesses of up to 800 µm (32 mils) are possible.

Typical thickness of Basepox[®] PE 50-1081 as primer in multi-layer application is 75 - 200 µm (3 - 8 mils).

THEORETICAL YIELD

590 g / m² at 400 µm dry film thickness

1.70 m²/kg at 400 µm dry film thickness

129 ft² / lbs / mil

THEORETICAL CURING SCHEDULE

at 232°C (450°F)

90 sec.

at 238°C (460°F)

80 sec.

at 243°C (470°F)

70 sec.

SINGLE LAYER APPLICATION RECOMMENDED CURING TEMPERATURE

232°C - 243°C / 450 °F - 470°F

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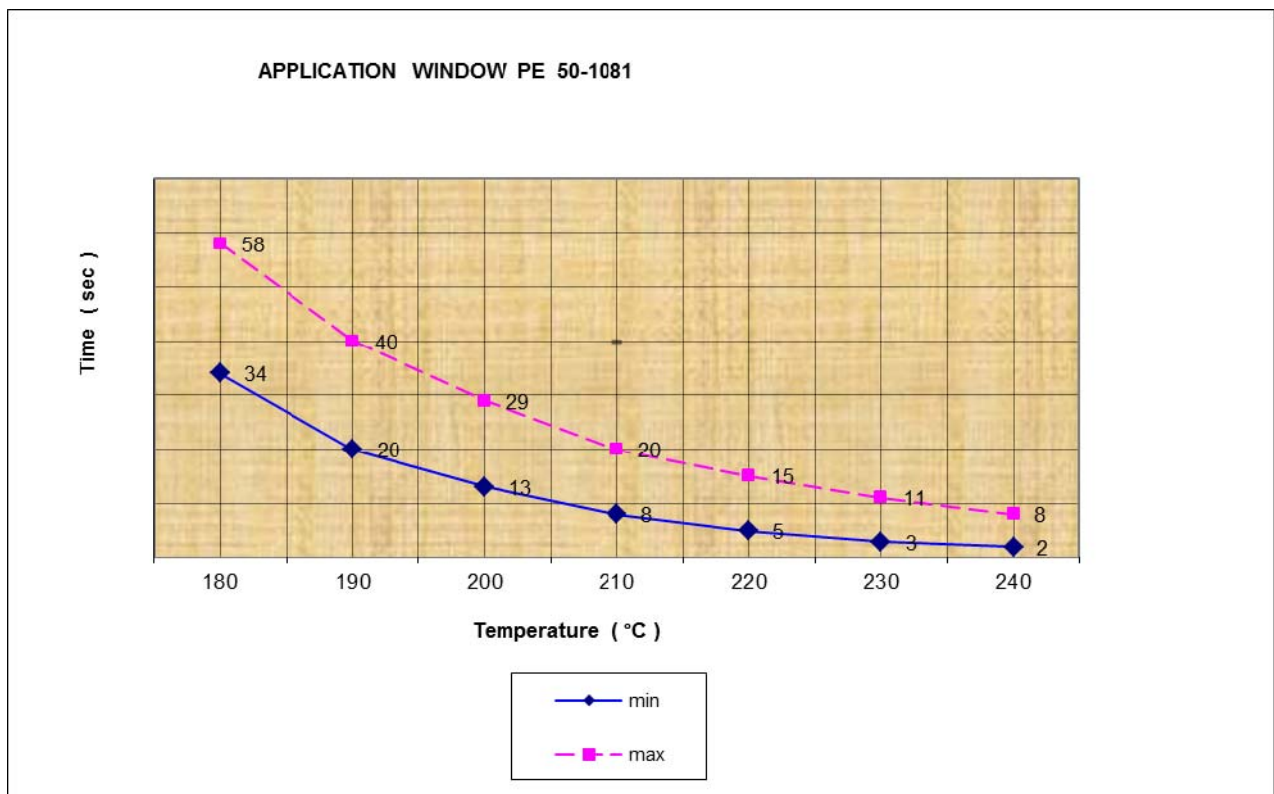
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MULTILAYER APPLICATION RECOMMENDED INTERCOATING TIME PRIMER - ADHESIVE

To achieve maximum performance properties the following application window is suggested .



The above figures are provided for guidance only; exact timing should be verified by testing in line .
 Recommended thickness is 100 - 150 µm (4 - 6 mils) , as per our internal laboratory trials .

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PROPERTIES OF CURED FILM **(Typical values)**

FLEXIBILITY

ISO 21809-2 (clause A.12)	Pass 2.0° at 0°C (32°F)
CAN /CSA 245.20-06 (clause 12.11)	Pass 3.0° at -30°C (-22°F)
BG-CW 6	Pass at 23°C (73°F) and - 30°C (- 22°F)

TENSILE STRENGTH

ASTM D-2370	> 500 kg / cm ² (7000 psi)
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ELONGATION

ASTM D-2370	> 5 % at 23°C (73°F)
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IMPACT RESISTANCE

ISO 21809-2 (clause A.13)	> 1.5J at -30°C (-22°F)
CAN/CSA 245.20-06 (clause 12.12)	
ASTM G-14 modified	> 18 J (160 inch.lbs)

SPECIFIC ELECTRICAL INSULATION RESISTANCE

DIN 30670	Rs > 10 ⁹ Ohm *m ²
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ELECTRICAL RESISTANCE

ASTM D5682	max 10 ⁸ Ohm *m ²
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DIELECTRICAL RESISTIVITY

ASTM D149	min 50 V/μm
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VOLUME RESISTIVITY

IEC 60093 > 10¹⁵ Ohm * cm

CATHODIC DISBONDMENT

ISO 21809-2 (clause A.9)
CAN/CSA 245.20-06 (clause 12.8)

20°C (68°F) , 28 days	≤ 5 mm disbonded radius
65°C (149°F) , 24 hours	≤ 5 mm disbonded radius
65°C (149°F) , 28 days	≤ 15 mm disbonded radius

RESISTANCE TO STRAIN POLARIZATION

28 days , BG CW6 pt. 1 Pass (No cracking)
ISO 21809-2 (clause A.14)
CAN/CSA 245.20-06 (clause 12.13)

SALT SPRAY RESISTANCE

ISO 7253, 4000 h No blistering , no rust

CROSS SECTION POROSITY

ISO 21809-2 (clause A.11) Fulfills requirements in figure A.10
CAN/CSA 245.20-06 (clause 12.10) Rating 1 to 4 accepted

INTERFACE POROSITY

ISO 21809-2 (clause A.11) Fulfills requirements in figure A.11
CAN/CSA 245.20-06 (clause 12.10) Rating 1 to 4 accepted

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WATER RESISTANCE TEST

ASTM D870

No blistering , loss of hardness <10%

HOT WATER IMMERSION

75°C , 24 hours , tap water
ISO 21809-2 (clause A.15)
CAN/CSA 245.20-06 (clause 12.14)

Rating 1 to 3 accepted

75°C , 28 days , tap water
ISO 21809-2 (clause A.15)
CAN/CSA 245.20-06 (clause 12.14)

Rating 1 to 3 accepted

WATER ABSORPTION

According with TS-C4 GAS-COAT 0 V1.0 Appendix 5.1

60°C , 28 days , demineralized water
80°C , 28 days , demineralized water

Weight increase < 2.5 %
Weight increase < 15 %

ABRASION RESISTANCE

Taber Abraser ASTM D-4060
CS 17 / 1000 g / 5000 cycles

< 0,2 g

BUCHHOLZ HARDNESS

UNI EN ISO 2815

90 - 100

REMARKS

Basepox[®] PE 50-1081 is also available as

- Basepox[®] PE 50-1080 with higher reactivity and reduced gel time.
- Basepox[®] PE 50-7081 in grey colour at same reactivity.
- Basepox[®] PE 50-6081 in green colour at same reactivity.

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