

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

Created on 18.09.2003
Revision 24 of 20.06.2014

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 (air 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 ≤ 0,5 % acc. ISO 21809-2 (clause A.5)
(Weight loss 2h at 105 °C / 221°F) 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

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 Calorimetry (TA Instruments Q10)
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 .

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.

Thickness of Basepox® PE 50-1081 as primer in multi-layer application is typically 75 - 200 µm (3 - 8 mils) .

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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.

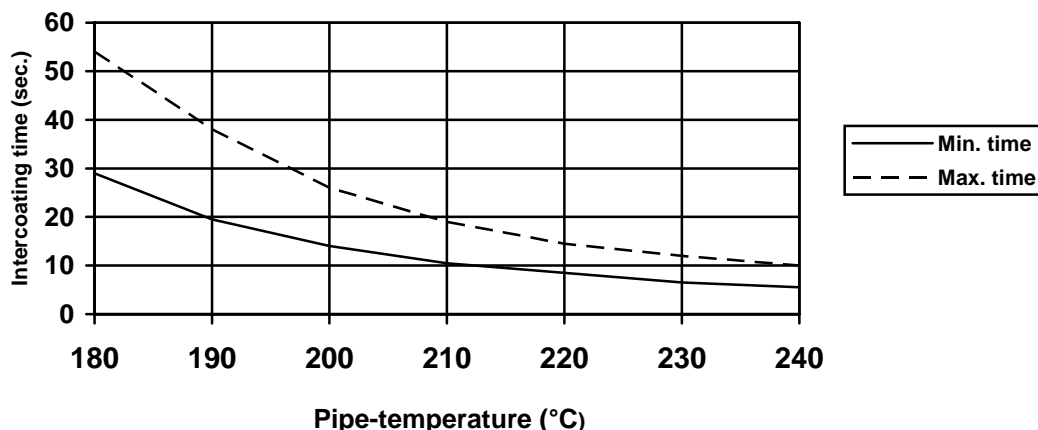
SINGLE LAYER APPLICATION RECOMMENDED CURING TEMPERATURE

232°C - 243°C / 450 °F - 470°F

MULTILAYER APPLICATION RECOMMENDED INTERCOATING TIME PRIMER - ADHESIVE

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

Application window



The above figures are provided for guidance only. The exact timing should be verified by testing in line.

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

FLEXIBILITY

ISO 21809-2 (clause A.12)
CAN /CSA 245.20-06 (clause 12.11)
BG-CW 6

Pass 2.0° at 0°C (32°F)
Pass 3.0° at -30°C (-22°F)
Pass at 23°C (73°F) and - 30°C (- 22°F)

TENSILE STRENGTH

ASTM D-2370

> 500 kg / cm² (7000 psi)

ELONGATION

ASTM D-2370

> 5 % at 23°C (73°F)

IMPACT RESISTANCE

ISO 21809-2 (clause A.13)
CAN/CSA 245.20-06 (clause 12.12)

> 1.5J at -30°C (-22°F)

ASTM G-14 modified

> 18 J (160 inch.lbs)

SPECIFIC ELECTRICAL INSULATION RESISTANCE

DIN 30670

Rs > 10⁹ Ohm *m²

ELECTRICAL RESISTANCE

ASTM D5682

max 10⁸ Ohm *m²

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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