

PITT-CHAR® XP

DESCRIPTION

Two-component, 100% solids, flexible, epoxy intumescent fire protective coating for use in industries such as oil & gas, chemicals, energy, transportation and defence that potentially involve major accident hazards including explosions, hydrocarbon jet and pool fires and cryogenic spills

PRINCIPAL CHARACTERISTICS

- Provide passive fire protection to structures, divisions (decks, bulkheads and firewalls), process vessels, pipework and equipment which are safety critical. Ensure structural stability, integrity, meeting insulation requirements
- Highly durable, epoxy intumescent coating that offers excellent corrosion protection
- Resistant to industrial environments including splash and spillage of chemicals
- Suitable for use in offshore and onshore environment with ISO 12944-2 corrosivity categories of C5-I and C5-M
- Suitable for protecting substrates including aluminium, carbon steel, galvanized steel, stainless/duplex steels, fibre reinforced polymers and concrete
- Suitable for use as protection against cryogenic spills to prevent steel embrittlement
- Resistant to the damage from vibration, abrasion, and impact from deflection of structures during fabrication, transportation and extreme loading conditions
- Withstands vapour cloud explosion events including over-pressure, drag and secondary projectile impact forces
- Unique, patented elastomeric formulation provides excellent flexibility and ductility
- Can be applied by spray, nozzle or trowel. Suitable for moulding or extruding into finished goods
- Independently tested in accordance with international recognized standards including ASTM E-84, BS 476, ISO 834, ISO 22899, ISO 20340, NFPA 209, NORSOK M501 Edition 6, UL 1709, UL 263, IMO FTP Code, GASAFE, and Russian GOST
- Type approval and certification by industry leading bodies including ABS, BV, DNV, LR, KMERI, Russian Maritime and UL
- Operating Temperature Limits: -40°C (-40°F) to +80°C (176 °F) continuous; for short term/infrequent excursions beyond these limits please contact PPG for advice

COLOR AND GLOSS LEVEL

- Gray (not available in tints)
- Matt
- Available topcoats in wide range of colors

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Mass density	1.0 g/cm ³ (62.4 lb/ft ³) (ISO 1183-1:2012 Method A - Spray Applied)
Volume solids	100%
VOC (Supplied)	Directive 1999/13/EC, SED: max. 0.0 g/kg max. 0.0 g/l (approx. 0.0 lb/US gal)



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Data for mixed product

Shelf life	Base: at least 24 months when stored cool and dry Hardener: at least 24 months when stored cool and dry
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Notes:

- Material should be stored in dry conditions, out of direct sunlight and at temperatures above 0°C (32°F) and below 35°C (95°F)
- The applied density is dependent upon many variables such as temperature, test method, application method and equipment
- Required dry film thickness must be in accordance with requirements of fire approval certification
- Apply appropriate loss/wastage factor

RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- Substrate must be sound, dry and free from any contamination and surface prepared in accordance with PITT-CHAR® XP APPLICATION GUIDELINES
- Primer system should be within specified thickness, fully cured, and within over-coating interval guidelines for the system used
- Only primers qualified for use with Pitt-CHAR XP shall be used, please refer to PPG's INFORMATION SHEET 1204
- For non-PPG primers or topcoats, please contact your PPG representative
- Where mesh reinforcement of PITT-CHAR® XP is necessary, this should be carried out in accordance with the PITT-CHAR® XP APPLICATION GUIDELINES

Substrate temperature and application conditions

- Ambient temperature below 10°C (50°F) is acceptable; however curing to hardness takes longer, and it will cease curing below 5°C (41°F)
- Substrate temperature during application and curing should be at least 3°C (5°F) above dew point
- Relative humidity during application and curing should not exceed 85%

Note: Curing will effectively cease below 5°C (41°F), but once temperature rises again, it will continue to cure

INSTRUCTIONS FOR USE

- Application should be strictly in accordance with PITT-CHAR® XP APPLICATION GUIDELINES

Mixing ratio

- By volume: base to hardener 2.33 : 1
- By weight: base to hardener 3.05 : 1

Note: Tolerance +/- 10%. When applying by single feed spray pump or trowel application, it is recommended that full kits are mixed

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Airless Spray – Heated Plural Component (Preferred)

- Hoses should normally be kept as short as possible

Recommended thinner

No thinner should be added

Nozzle angle

40° – 60°

Nozzle orifice

Approx. 0.79 – 1.09 mm (0.031 – 0.043 in)

Nozzle pressure

24.0 - 31.0 MPa (approx. 240 - 310 bar; 3481 - 4496 p.s.i.)

Notes:

- See PITT-CHAR® XP APPLICATION GUIDELINES for full details
- Base and hardener need to be pre-heated to a minimum of 55 - 60°C (131 - 140°F) while circulating through the unit
- Suitable insulated and/or heated hoses should be used
- After airless application, please make surface smooth with roller using recommended thinners

Airless Spray – Single Feed Pump

Recommended thinner

THINNER 91-92

Volume of thinner

5 - 7%, but the quantity shall never exceed 10%

Nozzle angle

40° – 60°

Nozzle orifice

Approx. 0.69 – 0.89 mm (0.027 – 0.035 in)

Nozzle pressure

35.0 MPa (approx. 350 bar; 5077 p.s.i.)

Notes:

- The addition of thinner will affect sag resistance and overcoating intervals
- Contact PPG representatives for alternative thinner
- Material (mixed) temperature needs to be between 23°C (73°F) and 35°C (95°F)
- The maximum length of the hoses should not exceed 30 m (98.4 ft)
- Use of spray equipment with a ratio of 74:1 is recommended
- After airless application, please make surface smooth with roller using recommended thinners

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Trowel

Recommended thinner

THINNER 91-92

Volume of thinner

0 - 2%

Notes:

- Recommend that only full kits are mixed and applied (avoid part kits to ensure correct mix ratio)
- Recommended for small areas and touch-up only
- Contact PPG representatives for alternative thinner

Cleaning solvent

THINNER 91-92 or THINNER 90-53

ADDITIONAL DATA

Overcoating interval for solvent-free coatings

Overcoating with...	Interval	5°C (41°F)	10°C (50°F)	15°C (59°F)	20°C (68°F)	30°C (86°F)	40°C (104°F)
itself, tiecoat, polyurethane or epoxy top coat	Minimum	30 hours	20 hours	15 hours	12 hours	8 hours	4 hours
	Maximum	3 months	3 months	3 months	2 months	2 months	1 month

Notes:

- Surface should be dry and free from any contamination
- If solvent thinners have been added, minimum over-coating intervals should be extended to prevent solvent entrapment
- See PITT-CHAR® XP APPLICATION GUIDELINES for full details

Curing time for solvent-free application

Substrate temperature	Dry to touch	Dry to handle	Full cure
5°C (41°F)	26 hours	3.5 days	1.5 months
10°C (50°F)	22 hours	52 hours	30 days
20°C (68°F)	9 hours	18 hours	15 days
30°C (86°F)	7 hours	10 hours	10 days
40°C (104°F)	3 hours	7 hours	7 days

Notes:

- Adequate ventilation must be maintained during application and curing (please refer to INFORMATION SHEETS 1433 and 1434)
- Curing times may vary depending on substrate, ambient and material temperature
- Drying times have to be doubled from dry to handle time for walk-on
- See PITT-CHAR® XP APPLICATION GUIDELINES for full details



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Pot life (at application viscosity)	
Mixed product temperature	Pot life
25°C (77°F)	45 minutes
35°C (95°F)	20 minutes

Note: Pot life is dependent on many variables including material temperature, substrate temperature, mixing time, addition of solvent, etc. Figures provided are for guidance only

SAFETY PRECAUTIONS

- For paint and recommended thinners see INFORMATION SHEETS 1430, 1431 and relevant Material Safety Data Sheets
- Although this is a solvent-free paint, care should be taken to avoid inhalation of spray mist, as well as contact between the wet paint and exposed skin or eyes

REFERENCES

• PITT-CHAR® XP APPLICATION GUIDELINES	INFORMATION SHEET	1202
• PITT-CHAR® XP QUALIFIED PRIMER LIST	INFORMATION SHEET	1204
• EXPLANATION TO PRODUCT DATA SHEETS	INFORMATION SHEET	1411
• SAFETY INDICATIONS	INFORMATION SHEET	1430
• SAFETY IN CONFINED SPACES AND HEALTH SAFETY, EXPLOSION HAZARD – TOXIC HAZARD	INFORMATION SHEET	1431
• CLEANING OF STEEL AND REMOVAL OF RUST	INFORMATION SHEET	1490
• RELATIVE HUMIDITY – SUBSTRATE TEMPERATURE – AIR TEMPERATURE	INFORMATION SHEET	1650
• CONVERSION TABLES	INFORMATION SHEET	1410
• SPECIFICATION FOR MINERAL ABRASIVES	INFORMATION SHEET	1491

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