

PYROCLAD[®]X1

The Jet Fire Protection You Need When Lives are on the Line



Superior Jet Fire Protection

Pyroclad X1 is the latest breakthrough in epoxy based intumescent fireproofing technology. Pyroclad X1 is a two component, solvent free coating designed to provide both jet fire and hydrocarbon pool fire protection for oil and gas installations.

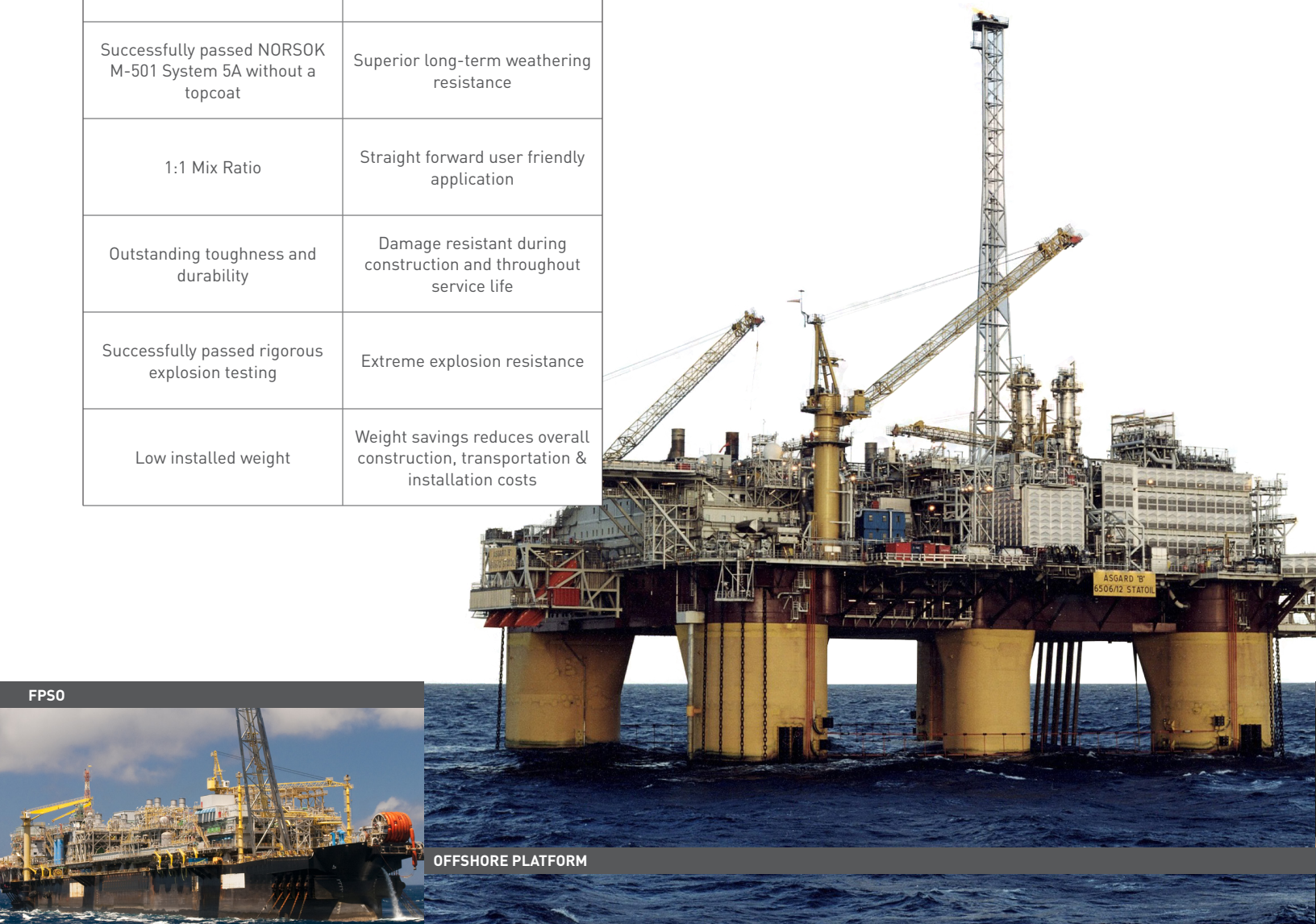
Pyroclad X1 was developed to save lives and provide a superior level of fire protection for oil and gas assets around the world. This innovative new epoxy intumescent system withstands the harsh environmental conditions of coastal and offshore environments and successfully passed the NORSOK M-501 environmental test program without a topcoat. Its unsurpassed weathering characteristics ensures the integrity and long term performance of the system. The superior physical characteristics of Pyroclad X1 promote high durability during construction and while in service. The outstanding toughness of Pyroclad X1 makes it suitable for both shop and field applications.

Pyroclad® X1 Features and Benefits

PRODUCT FEATURE	PERFORMANCE BENEFIT
Meets ISO 22899 jet fire and ISO 834/BS 476 hydrocarbon pool fire test standards	Ideal for use in oil and gas applications
Excellent jet fire & hydrocarbon ratings	Low installed thickness & labor savings
Successfully passed NORSOK M-501 System 5A without a topcoat	Superior long-term weathering resistance
1:1 Mix Ratio	Straight forward user friendly application
Outstanding toughness and durability	Damage resistant during construction and throughout service life
Successfully passed rigorous explosion testing	Extreme explosion resistance
Low installed weight	Weight savings reduces overall construction, transportation & installation costs

Applications

- > Offshore platforms
- > FPSOs
- > Refineries
- > Petrochemical plants
- > LNG terminals
- > LPG storage facilities



FPSO

OFFSHORE PLATFORM

Rigorously Tested For Performance

Pyroclad X1 has been extensively tested and certified in accordance with ISO 22899 jet fire, ISO 834/BS-476 hydrocarbon pool fire, and UL 1709 rapid rise hydrocarbon fire test standards. It has type approvals from certifying organizations such as Lloyd's Register (LR), Det Norske Veritas (DNV), American Bureau of Shipping (ABS), Intertek, and Underwriter's Laboratories (UL). It also successfully passed the NORSOK M-501 System 5A test program and the UL environmental test program which ensures long term performance.

Certifications & Listings:

Tested in accordance to ISO 22899, ISO 834/BS-476, and UL 1709 for structural steel, and H-0, H-60, H-120, J-30, J-60, J-120 bulkheads and underdecks. All testing has been witnessed by the following certifying organizations:

- > Lloyd's Register
- > Det Norske Veritas
- > American Bureau of Shipping
- > Intertek
- > Underwriter's Laboratories

Environmental Testing:

Successfully passed harsh onshore and offshore weathering exposures and durability testing with excellent performance without a topcoat.

- > NORSOK M-501 System 5A
- > UL 1709 Environmental Test Program

Performance Testing:

Blast Overpressure Testing

Successfully passed simulated explosion testing.

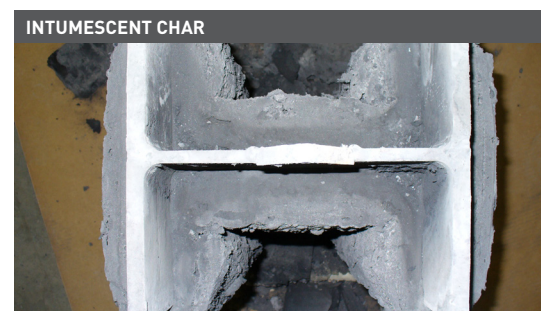
- > 4 bar explosion resistance
- > Able to resist 5" (127 mm) deflection over 6' (1.8 m) span
- > No cracking or delamination

Hose Stream Endurance

Successfully passed NFPA 58, Annex H torch/hose stream impingement testing.

- > Retains integrity during fire and hose stream impingement
- > Maintained fire performance during exposure

PHYSICAL PROPERTIES	TEST PROCEDURE	TYPICAL RESULTS
Density Density of the spray applied film will vary depending on application parameters.	ASTM E605	1.03 - 1.10 g/cm ³
Solids By Volume		100%
Moisture Absorption	NORSOK M-501	0.2% (un-topcoated)
Adhesion/Cohesion	ASTM D4541	1,840 psi (12.7 MPa)
Compressive Strength	ASTM D695	3,672 psi (25.3 MPa)
Flexural Strength	ASTM D790	3,925 psi (27.1 MPa)
Flame Spread	ASTM E84	20
Smoke Development	ASTM E84	60
Shore D Hardness	ASTM 22YO	70
Film Build		240 mils (6 mm)
Mix Ratio		1:1 (by volume)
Recoat Time @ 77° F (25° C)		1 hour
Topcoat Time @ 77° F (25° C)		6 hours



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CARBOLINE COMPANY
GLOBAL HEADQUARTERS
2150 SCHUETZ ROAD
ST. LOUIS, MO 63146 USA
PH: +1-314-644-1000
WWW.CARBOLINE.COM

ARGENTINA - BUENOS AIRES
EINSTEIN 1095
PARQUE INDUSTRIAL OKS
GARÍN PROV. DE BUENOS
AIRES, ARGENTINA
PHONE: 54-3327-44-2222
FAX: 54-3327-44-2223

AUSTRALIA - BRISBANE
7 PRODUCTION AVE
ERNEST JUNCTION
QUEENSLAND 4214
AUSTRALIA
PHONE: +61 7 3287 0222
FAX: +61 7 5594 9093

CANADA - ONTARIO
420 TAPSCOTT ROAD UNIT 5
SCARBOROUGH, ONTARIO
M1B 1Y4, CANADA
PHONE: 416-292-2361
FAX: 416-298-5887

CHINA - DALIAN
HOU SHI CUN, DA WEI JIA
ZHEN
JIN ZHOU DISTRICT
DALIAN, CHINA 116110
PHONE: 86-411-8789-8441,
8442, 8443, 8444
FAX: 86-411-8789-8445

INDIA - CHENNAI
NO. 356 & 357 SIDCO
INDUSTRIAL ESTATE
AMBATTUR,
CHENNAI 600 098
INDIA
PHONE: 91-22-28500321
FAX: 91-22-28500323

INDIA - MAHARASHTRA
GUT NO. 300
VILLAGE MUSSARNE
BHIWANDI WADA ROAD,
TALUKA WADA,
DISTRICT PALGHAR,
MAHARASHTRA
INDIA

INDONESIA - JAKARTA
MENARA SATU, BULEVAR
KELAPA GADING LA3 NO.1,
7FL, SUITE 706.
KELAPA GADING PERMAI,
JAKARTA 1420
INDONESIA
PHONE: +62 21 29375692
PHONE: +62 21 29375693
FAX: +62 21 29375696

ITALY - ALGHERO
VIA MILANO 150
20093 COLOGNO MONZESE
(MI), ITALY
PHONE: 3902-25 3751
FAX: 3902-25 37560

JAPAN - AMAGASAKI
TERAMOTO UNYU SOKO CO.,
LTD 17
MINAMIHATSUSHIMA-CHO,
AMAGASAKI, 660-0833 JAPAN
PHONE: 81-3-3643-4501
FAX: 81-3-3643-2951

MALAYSIA - KUALA LUMPUR
LOT 37631-37632 JALAN 6/37A
TAMAN BUKIT MALURI
INDUSTRIAL AREA
KEPONG 52100,
KUALA LUMPUR, MALAYSIA
PHONE: 603-6277-9575
FAX: 603-6277-4645

NEW ZEALAND - TAURANGA
91-111 OROPI ROAD
GREERTON
TAURANGA
NEW ZEALAND
PHONE: +64 7 5411 221
FAX: +64 7 541 1310

NORWAY - LIERSTRANDA
P.O. BOX 593
3412 LIERSTRANDA, NORWAY
PHONE: 47-32-857300
FAX: 47-32-857301

PUERTO RICO - SAN LORENZO
URB. APONTE #5
SAN LORENZO, PUERTO RICO
00754
PHONE: 787-736-4221
FAX: 787-736-53133

SAUDI ARABIA - DAMMAM
1ST INDUSTRY CITY, 28TH
STREET
P.O. BOX 1050
DAMMAM 31431,
KINGDOM OF SAUDI ARABIA
PHONE: +966 3 847 3044
FAX: +966 3 847 3689

SOUTH AFRICA - JOHANNESBURG
8 CRESSET ROAD
MIDRAND INDUSTRIAL PARK
JOHANNESBURG,
SOUTH AFRICA
PHONE: 27-11-2545500
FAX: 27-11-310-2872

SOUTH KOREA - BUSAN
43-1, JINYOUNG-RI
JINYOUNG-EUB
KIMHAE-CITY, 621-800
KYOUNGSANGNAMDO, KOREA
PHONE: 82-55-343-6441/5
FAX: 82-55-343-6414

THAILAND - BANGKOK
1/11 BANGCHAN INDUSTRIAL
ESTATE
SOI-SERI-THAI 54,
KANNAYAO, BANGKOK 10230
PHONE: +662 906 3042-3
FAX: +662 906 3044

TURKEY - BURSA
ALI OSMAN SONMES CAD.
NO:4
BURSA, DOSAB 16369 TURKEY
PHONE: 90-224-261-0537

UAE - DUBAI
P.O. BOX 3034
DUBAI, UAE
PHONE: 971-4-347-0460
FAX: 971-4-347-0242

USA - DAYTON
95 AIRPARK VISTA BLVD.
DAYTON, NV 89403
PHONE: 775-246-0760
FAX: 775-246-0763

USA - GREEN BAY
614 ELIZABETH ST
GREEN BAY, WI 54302
PHONE: 920-437-6561
FAX: 920-437-8546

USA - LAKE CHARLES
900 OPELOUSAS STREET
LAKE CHARLES, LA 70601
PHONE: 337-433-0605
FAX: 337-439-0380

USA - LOUISA
321 DUKE ST.
LOUISA VA 23093
PHONE: 540-967-5119
FAX: 540-967-5120

VENEZUELA - VALENCIA
URBANIZACION INDUSTRIAL
"EL TIGRE"
AVENIDA PRINCIPAL
GALPON "H"
VALENCIA EDO. CARABOBO
VENEZUELA
PHONE: 58-245-4000400
FAX: 58-245-5642011

