

PPG PITT-CHAR® NX

Next generation flexible passive fire protection

A major advance in PFP technology that is safer, tougher, thinner, lighter and faster.



Next generation flexible passive fire protection

PPG PITT-CHAR NX is our next generation flexible epoxy intumescent coating system, designed to resist the most severe hydrocarbon hazards – pool fires, jet fires and explosions. Ideally suited to both onshore and offshore environments in the oil, gas and petrochemical industries, PPG PITT-CHAR NX substantially reduces both the thickness and weight of Passive Fire Protection (PFP) coating allowing for lower costs and significantly faster application.

Extremely tough, yet uniquely flexible, PPG PITT-CHAR NX is designed to eliminate the risk of cracking and delamination during fabrication, transportation and construction. This toughness provides dependable performance against weathering and outstanding corrosion protection throughout the asset's entire lifetime.



Building on proven technology and expertise

Owners and operators of oil, gas and petrochemical facilities require durable and effective fire protection solutions that can be relied upon to provide the required protection throughout the operating life of the plant. For over 35 years PPG's PITT-CHAR technology has been trusted to safeguard personnel and equipment in hazardous environments around the world.

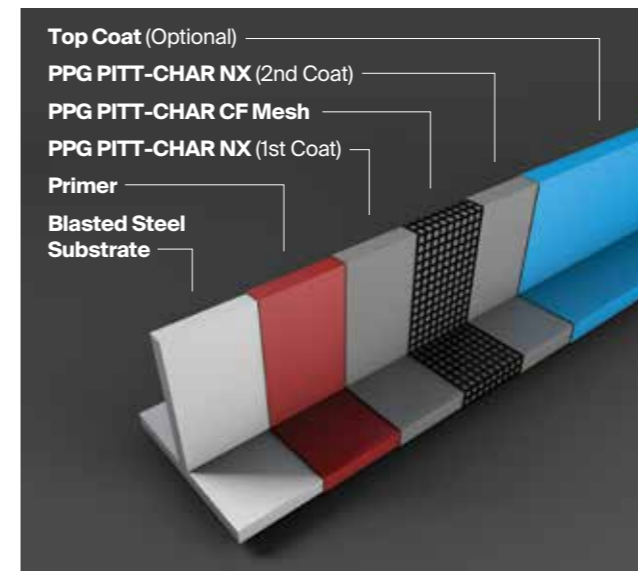
Building on this track record and developed in our state-of-the-art laboratories, PPG PITT-CHAR NX will continue to help protect lives and valuable assets, while bringing value and efficiencies to your project.

Meeting the challenges of today's project requirements

The oil and gas industries are facing ever more complex fire scenarios that can potentially involve pool fires, jet fires and explosions in both onshore or offshore environments. These projects also demand fast throughput during fabrication and application to maximize efficiency.

Additionally, modular off-site fabrication is quickly becoming the popular approach for construction. While this is generally more cost-effective, it does add unique challenges. Before they are assembled on-site, pre-fabricated steel sections travel long distances, sometimes across continents, and in vastly varying climatic conditions. Any damage to the PFP coating can impact its ability to perform effectively when the structure is in service or result in expensive repairs and potential delays to start-up.

PPG PITT-CHAR NX offers the solution. Not only is it fast to apply and capable of protecting against the full range of hydrocarbon hazards, its flexibility prevents the cracking and delaminating issues associated with traditional PFP coatings such as concrete, "lightweight" cementitious systems and rigid epoxy coatings. This unique flexibility also reduces impact and abrasion damage during installation and commissioning. Once in service, it provides long-term durability, even under severe temperature cycling and mechanical stresses, ensuring its performance is maintained throughout the life of the asset.



PPG PITT-CHAR NX System

PPG PITT-CHAR NX system: How it works

When exposed to the high temperatures of the fire, PPG PITT-CHAR NX expands to form a robust, insulating char that significantly reduces the rate of heat up of the protected item. The insulation maintains steel integrity, and hence buys crucial time for personnel to escape and equipment to function on demand.



When exposed to high temperature in the event of fire, PPG PITT-CHAR NX system forms an insulating char

By utilizing carbon fiber PPG PITT-CHAR® CF mesh, the coating system turns into a composite, greatly enhancing its toughness and significantly improving its fire resistance performance under extreme and accidental load conditions.

The incorporation of the carbon fiber mesh not only reduces the weight of the coating system, but also improves the crack and damage resistance throughout all phases of the project, making the system even safer and tougher in the harshest environmental conditions.

Safer, Tougher, Thinner, Lighter and Faster

Developed in our dedicated and UL-certified Global Fire Protection Technology Center, PPG's unique new patent-pending technology brings major advantages to owners, engineers, fabricators and applicators.



Safer

We designed PPG PITT-CHAR NX to protect against the full range of hydrocarbon hazards. You no longer need to choose between jet fire or pool fire protection for the optimized PFP solution – this product does both and is proven to resist severe explosions and impact without affecting performance.

For further peace of mind, this system is comprehensively tested and certified to comply with internationally recognized fire test standards, such as UL1709, BS 476 hydrocarbon fires and ISO 22899-1 jet fires, for all types and sizes of structural steel and safety-critical equipment. PPG PITT-CHAR NX is also tested and certified to the IMO FTP Code and the latest ISO 20902 standard for fire rated divisions such as decks and bulkheads.

Tougher

We have formulated PPG PITT-CHAR NX with patent-pending technology to achieve the most durable PFP solution currently available on the marketplace. This toughness comes from the coating's flexibility, enabling it to withstand stresses and strains without cracking or delamination during fabrication, erection, transportation and construction in vastly varying climatic conditions.

Once in service, PPG PITT-CHAR NX will provide dependable performance throughout the asset's entire lifetime. It will not only flex with the steel structure, but also resist vibration, impact and extreme environmental conditions.*

Testing has proven that this product is suitable for industrial, marine and offshore exposure without any degradation in fire resistance. It is extensively tested by third parties to the toughest and latest standards from ASTM, ISO, NORSOK and UL**.

- NORSOK M501 Revision 6 – System 5a
- UL 2431 Category I-A Outdoor, Heavy Industrial
- ISO 12944-9: 2018 Category CX
- ISO 20340 Category C5-M



The unique flexibility of PPG PITT-CHAR NX resists cracking

Thinner Lighter

PPG PITT-CHAR NX is also noticeably thinner and lighter than all alternative PFP systems. For example, based on our UL 1709 two-hour fire rating, PPG PITT-CHAR NX is 7.98mm (314 mils) thin. The coating system is at least 15% lighter than ANY alternative epoxy PFP system. So-called "lightweight" cementitious systems are actually three times heavier.

In addition to the substantial material savings from using PPG PITT-CHAR NX, the reduction in PFP weight on topsides and steel structures also reduces both transport and construction costs.



PPG PITT-CHAR NX is only 7.98mm (314 mils) thin for 2 hour UL 1709 applications

Faster

Thanks to the thinness, excellent sagging resistance and fast cure characteristics of PPG PITT CHAR NX, the complete coating system can typically be applied in just one day, offering up to 60% savings in application time. This greatly enhances productivity, increasing throughput and reducing construction schedules and application costs – whether applied on-site or off-site.

Class-leading thinness and lightest PFP Based on UL 1709 two-hour fire rating

- Average weight savings of at least 15% versus any alternative PFP system
- 1/3rd the weight of "lightweight" cementitious PFP materials
- Can be applied in single coat operation
- Significant savings, even over mesh-free or metal mesh systems

Pool Fire Resistance

Hydrocarbon Pool Fires UL 1709 Rev. 5

- Fully tested to the very latest revision 5 of the ANSI/UL 1709 standard
- UL certification XR 658 Design
- Fire rating from 30 minutes to 300 minutes
- Environmental resistance to UL 2431

All types of structures and fire ratings – Multi-temperature/ Multi-section

- Tested to hydrocarbon fire curve per BS 476-20 Annex D/ EN 1363-2/ ISO 834-3 standards
- By section type:
 - Open sections (I & H shaped beams and columns, channels and angles)
 - Hollow sections (CHS, SHS, RHS)
- By size:
Largest range of section sizes from 30/m to 340/m Hp/A
- By duration:
Wide range of fire protection durations: 15, 30, 45, 60, 90, 120, 150, 180, 210, 240, 270 and 300 minutes

Hydrocarbon Rated Divisions – Decks & Bulkheads

- Independently tested to hydrocarbon fire curve per BS476/ EN 1363-2/ ISO 834-3
- Tested in accordance with IMO FTP Code 2010 per Resolution MSC.307(88)
- Tested in accordance with new ISO 20902-1: 2018 standard
- Decks up to H-180 Class; Bulkheads up to H-120 Class
- Fully satisfies requirements for resistance, integrity and insulation (REI)

Jet Fire Resistance

- Fully tested to the ISO 22899-1: 2007 standard
- Jet fire tested for over 3 hours
- Erosion factors for full range of CCT's: 200°C to 600°C (392°F to 1112°F)
- Erosion factors for jet fires up to 3 hours duration
- Erosion at 60 to 120 minutes has been tested at only 2 to 3 mm (80 to 120 mils)

Explosion Resistance

- Capable of withstanding over-pressure and drag-loads generated by explosions
- Withstands any deflection stresses and strains of the item being protected as well as withstanding potential impact from debris
- Tested on full range of substrates:
 - Structure I section for beams and columns
 - Tubular section for pipes, vessels and hollow structural sections
 - 5mm and 10mm plate for bulkheads and decks

PPG PITT-CHAR® NX

A major advance in passive fire protection technology

Summary

Safer

Protects people and assets against extreme hydrocarbon hazards, including pool fire, jet fire and explosion, in both onshore and offshore environments. Tested to comply with the latest internationally recognized fire test standards.

Tougher

Increased durability through patent-pending technology, which is tested to per UL 2431 and NORSOK M501 Rev 6 standards, without topcoat. Unique flexibility allows the PFP coating to withstand stresses and strains without cracking or delamination during construction, transportation and in service.

Thinner

Only 7.98 mm (314 mils) required to meet two-hour UL 1709 fire rating.

Lighter

At least 15% lighter than alternative epoxy PFP systems; and less than 1/3rd the weight of "lightweight" cementitious systems.

Faster

The complete coating system can typically be applied in a single shift, providing up to 60% savings in application time for greater productivity.



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