



Passive Fire Protection

Intumescent Vs. Lightweight Cementitious

FIRETEX®

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The refinery environment exposes assets to highly flammable commodities, corrosive chemical attack, high pressure, and a broad range of operating temperatures from cryogenic to elevated. To mitigate the risk of loss of life, assets and production from a rapid rise hydrocarbon fire, an investment in FIRETEX® epoxy intumescent fireproofing will provide asset owners with long life protection with little or no maintenance, which is a business necessity.

For decades, the standard approach to fire protection has been with cementitious fireproofing. Oil and gas processing facilities have recognised that this approach proves to be of high maintenance, short life cycle, provides little to no corrosion protection, and conceals corrosion under fireproofing (CUF). Lightweight cementitious fireproofing requires continued maintenance every three to five years. The porosity of concrete and cracks provide avenues for moisture and contaminants to penetrate leading to degradation of the asset and a compromised fireproofing system.



Remove the unnecessary risks! There is a better, proven way to maintain your fireproofing – one that prevents corrosion rather than contributing to it. Sherwin-Williams' world-respected FIRETEX® series of intumescent coatings is formulated with high quality corrosion-resistant resins. The number one permanent solution for anti-corrosion passive fire protection is no further than your nearest Sherwin-Williams Protective & Marine coating representative.

FIRETEX® intumescent epoxy coatings provide asset owners with peace of mind, knowing they have fireproofing fully performance-tested to fire case scenarios in a wide surface temperature range. These coatings have endured extensive independent fire testing, assessment and certification by

Lloyd's Register, Det Norske Veritas, ABS and UL. You can be confident that FIRETEX® products meet the most stringent industry test standards for jet fire, pool fire, boiling liquid, expanding vapour explosion, and blast resistance.

FIRETEX® epoxy coatings offer a high performance system that will last the design life of the asset with minimal maintenance.

In addition to a desirable aesthetic finish, FIRETEX® intumescent epoxy coatings come without the continued maintenance costs common with lightweight cementitious fireproofing. With minimal field work required because 90-95 percent of the fireproofing is applied in the shop, total installed costs are equivalent to cementitious, or lower.



The table outlines some of the performance advantages of an epoxy intumescent versus lightweight cementitious, as described in the American Petroleum Institute’s report, “Fireproofing Practices in Petroleum and Petrochemical Processing Plants” (API 2218 Chapter 7). Just compare:

| Sherwin-Williams FIRETEX® Intumescent Epoxy Coatings | VS | Lightweight Cementitious Fireproofing |
|---|----|--|
| FIRETEX® provides a polymeric barrier and rust inhibitive protection from CUF | | Susceptible to CUF, relying only on a thin primer coating with potential for holidays, as the only corrosion barrier |
| FIRETEX® resists absorption of moisture and moderate chemical attack; in 15-year salt water immersion tests, coating retains these properties | | Surface defects and absence of finish coats allow moisture and contaminants to penetrate the cement and promote corrosion |
| FIRETEX® is durable against mechanical damage, typical freeze/thaw cycles, expansion and contraction, vibration and/or flexing | | Potential for cracking and spalling as a result of corrosion, mechanical damage, freeze-thaw, expansion-contraction, vibration and/or flexing |
| FIRETEX® requires very low maintenance and will perform extremely well against fire and corrosion without a finish coat (only required for UV resistance) | | Continual inspection and maintenance required including caulking, repairing cracks, crevices and finish coats |
| FIRETEX® is easily inspected to ensure the asset is protected from both fire and corrosion | | Core samples must be taken to determine the corrosion level in any specific location |
| FIRETEX® has excellent bond strength and resistance to blast, jet fire and hose stream | | Potentially can crack or disbond depending on installation design, lath, and the degree of CUF present |
| FIRETEX® has lower applied weight per square foot, reducing transportation costs for prefabricated structures | | One load of bare steel I-beams delivered to contractor yard to be fireproofed = 5-7 truckloads to job site |
| FIRETEX® offers ease in both shop and field application | | More site congestion to build forms |
| FIRETEX® expands and contracts with the steel structure, so is more durable in transport from steel fabricator to job site | | Does not move with the structure, which makes significant repair work at the job site more likely |
| With FIRETEX®, necessary block-out areas are smaller and more fireproofing can be applied in the shop, with faster return to service | | Allowances for blockouts must be larger, and more field work will be required, increasing the overall installed cost for shop-applied projects significantly |



SW Oil & Gas App allows you to explore the best Sherwin-Williams coating for each area of an oil refinery, shale drilling or offshore site. From tanks to piping, cooling towers to rail tank cars, Sherwin-Williams has your coatings needs covered. With comprehensive coating specifications for every aspect of your equipment, the SW Oil & Gas App is interactive, fast and easy-to-use.

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What else would you expect from a world leader in protective coatings, linings, and fire protection?

It starts with a complete line of time-tested, high-performance products and some of the most innovative and greenest technologies in the coatings industry. But we know that it takes more than product alone to be a world leader in protective coatings and linings, and so do the customers that rely on us every day as we help them protect their business.

That's where nearly 150 years of coatings industry experience comes in. Add to that a NACE-trained workforce with a combined 3,700 years of experience in corrosion control. And the market-specific knowledge that our experts provide to evaluate, recommend and deliver the highest-performance coatings and linings that protect our customers' assets.

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