



FIRE SECURITY

Lifetime extension, repair and fire protection of electrical cables

OIL & GAS INDUSTRY



Last updated September 2021



FIRE SECURITY



Fire Security is a Norwegian company offering cable life extension, repair, and fire protection of electrical cables for the oil & gas industry worldwide. We conduct turnkey projects

for an extensive client base both onshore and offshore, including rigs, FPSO, LNG vessels and petrochemical refineries.

Our clients each have their unique requirements for high-quality products and a professional delivery with a minimum of interruption to their operations. Fire Security's coating systems have obtained type approval certificates from the world's leading international classification societies.

Ole Tom Eidjord
Chairman



FS CABLE COATING SYSTEMS

FS cable coating systems have been tested worldwide for decades with impressive results. An investment in the longevity of electrical cables is an investment in secure performance and insurance against production/operation shutdown.

The main advantages:

CABLE LIFE EXTENSION

The FS coating system can upgrade your cables and extend the lifetime by up to 3 times. No other fire protective cable coating is approved to be as resistant to UV, water, mud, oil, and a wide variety of damaging chemicals.

CABLE REPAIR

We repair cable sheaths that are damaged by UV, oil, mud, and mechanical stress. The coating restores the cable value, prevents future damage to cables and cable jackets, and eliminates the need for large-scale replacement.

FIRE PROTECTION

No other cable coating system has equal or better fire protection properties. Our coating provides superior fire protection compared to standard cables and can upgrade existing cables to the highest fire technical standard.

Saving costs – saving assets – saving lives.



CABLE LIFE EXTENSION

The historical background for our lifetime extension program

FS coating has protected cables for more than 30 years onboard ships and in the oil and gas industry. Initially, only fire protection was performed, but over the years, more benefits and a broader scope of work have been added as our cable life extension program. We experienced that FS coated cables came out looking far better than uncoated cables in the same environment.

Fire Security's coating systems extend the lifetime of the cables at the same time to upgrade the cables fire technically.

We conduct the work scope without any shutdown required, thus offering huge flexibility when maintaining or upgrading an existing installation.

In the mid-1990's we did our first lifetime extension projects. Mobil Oil company, now Exxon Mobil, had experienced outer sheath cracking on their asset in the North Sea, Lancelot, Guinevere, and Excalibur. Fire Security completed a successful lifetime extension campaign of these cables in 1996.



When Perenco, in the year 2010, invited us to visit these platforms that were now a part of their asset portfolio, we were delighted to see how well the cable life extension program had worked. The cables that were experiencing cracking in 1996 and was treated by Fire Security was still (2010) in excellent condition.

Since then, Fire Security has performed numerous such projects, always with results that exceed ours and the clients' expectations.

Fire Security's Class approved coating systems are perfect for repairs and environmental protection in high-risk areas in both offshore and land-based industries and lately on numerous LNG carriers and refineries.

We conduct cable surveys with no commitments from your side

We are always available for consultations with our experts if your company has assets that may outlive the cables normal lifetime or if the cables are aging prematurely.

Fire Security offers to conduct surveys of cables in high risk areas of your rig, vessel or plant, after which we deliver a detailed report with suggestions to what we can do to extend the lifetime of vital cables, what you will gain, and a price quote.

The FS program for extension of cables' operational life, consists of:



- Ozone protection
- UV protection
- Increase of the dielectric strength



- Mud protection
- Oil protection
- Chemical protection

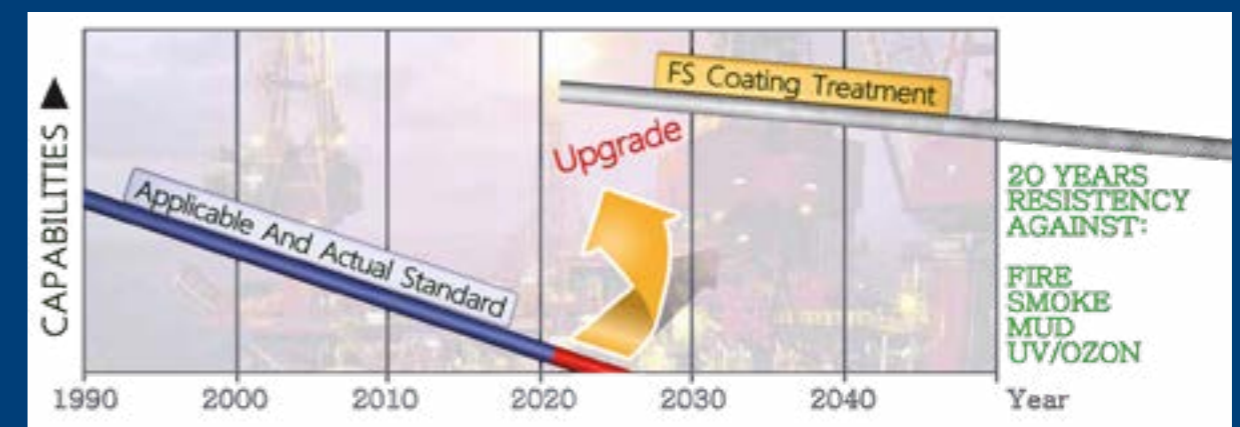


- Bring back, upgrade insulation properties
- Repair cables where the outer sheath is damaged



- Bring back, upgrade fire protection
- Upgrade cables smoke class
- Prevent short circuit in a fire situation

Are your cables damaged by mechanical stress or environmental influence?



Cable lifetime extension is a cost-effective solution to premature aging of electrical cables. Changing or rerouting the cables is a costly operation, so why not choose Fire Security to execute the repair of damaged cables and protect them from fire, smoke, mud, UV, ozone and chemical damage for many years to come.



CABLE REPAIR

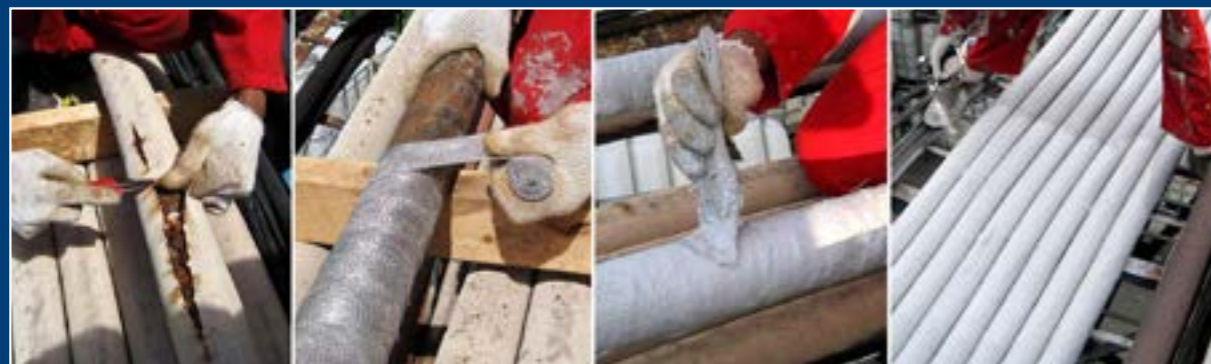
We offer cable repair and protection with our FS cable coating systems to all electrical cables onboard your unit, eliminating the need to change or reroute cables. Not only will our cable coating systems repair existing damage, but also prevent future damage to cable jackets.



Our cable coating system is unique: it can repair damaged cables and offer fire protection in one operation. Failing to repair damaged cables can leave your rig, vessel, or industrial plant severely impaired.



FS cable repair system fixes cable damages such as:
Cracks, UV damage, Oil, Mud, Water, and Mechanical Destruction.



FS coating system for cable repair, lifetime extension, and fire protection can save millions compared to replacing old cables, here from a project at an industrial plant.

Cable restoration by Fire Security has benefits like cost savings, damage prevention, and fire protection.

Fire Security industrial cable coating is designed to repair damaged or brittle LV to HV cables without shutdown or loss of production in the offshore and marine, oil and gas, power generation/distribution, and heavy industry sectors. We pride ourselves on zero business interruption as we efficiently find a solution to repairing your industrial cables' cracks and leaks.

After manually rebuilding the damaged sheaths and restoring insulation and mechanical integrity with our coating system, your industrial cables are repaired and protected against both environmental stress and fire. Your cables are ready to continue their operation with a warranty backed application.



Cable upgrade benefits

- Your cables comply with international qualification standards.
- An upgrade eliminates the need for costly large-scale cable replacements.
- An investment in cable upgrade is an investment in the security of your operation and prevention of unexpected future costs.
- We do cable repair, cable life extension, and fire protection in a turnkey solution with specially trained personnel.

Contact Fire Security for a consultation or an onsite cable survey.





Fire Security has 30 years of experience serving the oil & gas industry worldwide with the best cable repair and protection solutions.





FIRE PROTECTION

Cable fire protection worldwide

FS coating is used for fire protection on electrical LV/ HV and signal cables.

Fire Security has more than 30 years of experience in cable fire protection and we are the only cable coating producer offering application as a turnkey solution worldwide.

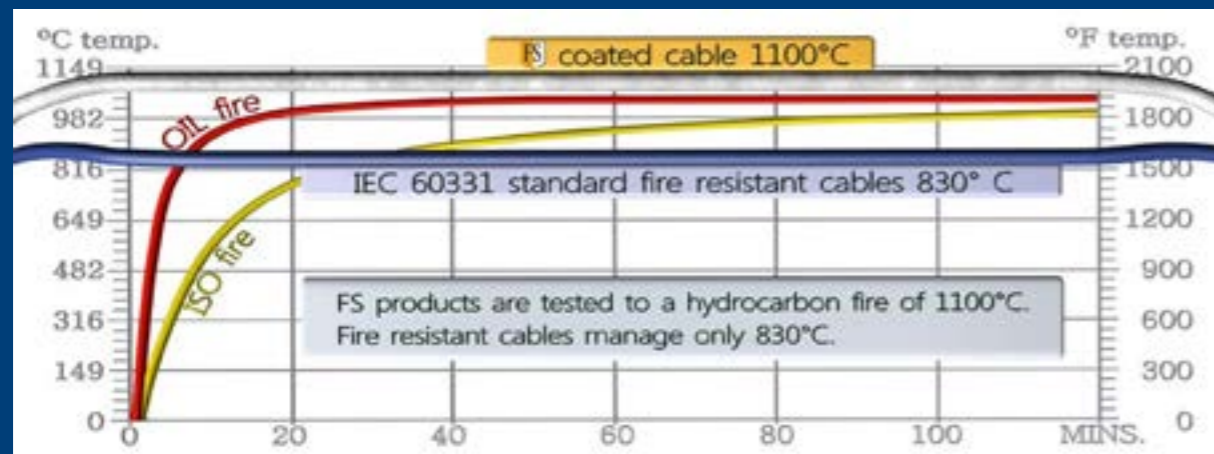


During a fire, the coating expands and protects the cables from fire damage and also prevents the fire from spreading via the cable trays. FS coated cables function during a fire, and if the fire is ceased within a reasonable time, there will be no need for cable replacement.



FS coated cables can survive a hydrocarbon fire for 60 mins.

The yellow curve below shows the temperature of an ISO fire, which is a fire in a typical room or a building. The red curve represents the temperature of a hydrocarbon fire, up to 1100° C, the temperature to which Fire Security tests our coatings.



In a fire situation, our systems prevent:

- Ignition of the cable insulation.
- Release of toxic fumes from the cable insulation.
- Release of poisonous gas (HCL) from the cable insulation.
- The cable tray from melting and collapsing.

The difference between standard cables and FS coated cables

- Uncoated cables experience a short circuit after less than 2 minutes in our oil fire test.
- FS coated cables function up to 1 hour without a short circuit.
- Uncoated cables could leave your installation in danger under a fire incident and will most likely cause a costly shutdown, including the rerouting of cables.
- Vital cables for your operations and critical emergency systems will operate in a fire situation if they are protected with FS coating. In most incidents, there will be no need for cable replacement.



Our coatings are water-based and have been approved by the world's leading classification societies and authorities.

Fire Security has offices in Norway, UAE, Indonesia, USA, Mexico, and Brazil. We have representatives in South Africa, Kenya, South Korea, Vietnam, Malaysia, and China.



Certificate issued on a cable repair project for ConocoPhillips UK



Recommendation received after a lifetime extension project for TOTAL



FIRE SECURITY

CERTIFICATE

For Cable Repair on

BRITANNIA MAIN PLATFORM

ConocoPhillips UK

Fire Security is a Norwegian company specializing in cable repair, protection and life time extension.
Our systems are available for application worldwide with specially trained personnel.

We confirm that we have repaired below mention cables with our approved FS repair system.

HV Cable: 22421963 BLP HV Feeder Cable
LV Cables: 22428026 EDB-5223-07B & EDB-5225-06Y Lighting cables

Work completed 8th of March 2018


 Jim Sollesvik
 Technical Department


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TOTAL

Exploration & Production

DGEP/TDO/TEC/ELE

March 15, 2008

Fire Security
For the attention of Mr Leif Harald Tveitnes
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To whom it may concern:

Total Exploration & Production, a branch of TOTAL Group, has used since 1998 Fire Security expertise in cable protection and repair on various sites ranging from the North Sea through Middle East to Indonesia.

Fire Security has been involved in several projects where cables already damaged by UV, oil and chemicals, early ageing, have been repaired and upgraded fire technically.
This has effectively extended the lifetime of the cables and contributed to significant cost savings.

It is our experience that the cables repaired and protected 6 and 8 years ago are still in good working condition, cables in some cases were 25 years old at the time they were repaired.

Among all the projects Fire Security has performed for us, there has never been any accident or lost time incident, nor has been any shutdown of production required as a result of their work.

We are pleased to give Fire Security and their coating systems our best recommendation.

Best Regards


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Here are some of our clients within the oil & gas industry

Transocean	Equinor	Statoil
Shelf Drilling	Petronas	Technip
Petrobras	Gasco	Total
Pemex	Egypt Drilling Company	Zadco
ConocoPhilips	Gasco	Petroleum Development Oman
BP	Kuwait Oil Tanker Company	Chevron
ExxonMobil	ADNOC	American Exploration
Seadrill	Pertamina	Chevron Indonesia
Shell	Alliance Refining Company	CNOOC China
Bazan Refineries		Kumho Petrochemical
Britannia Oil Operator	Cameron LNG	Maersk Oil & Gas
COSL	Dolphin Drilling	MOL
Elf	Freeport LNG	ONGC
Maersk Drilling	Japan Vietnam Petroleum Co.	Saudi Aramco
LG Chem	Mobil UK	SBM
National Drilling Company	Norsk Hydro	Japan Drilling
Saipem	Samsung Heavy Industries	Stena drilling
Shell Brunei	Inpex	Teekay
Shell Sarawak	Smedvig	Vermillion
Talisman	Vår Energi	
Woodside		



FIRE SECURITY

Our products have been approved by leading classification societies and authorities:
U.S. COAST GUARD, Lloyd's Register, Achilles, Bureau Veritas, DNV, RINA, NMA, ABS, FM, UL



SUSTAINABLE SOLUTIONS

Fire Security protects and extends cable life using non-toxic materials.

SAVING LIVES, COSTS and THE ENVIRONMENT

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