

CASE STUDY

Saudi Aramco Shell Refinery, Saudi Arabia



PROJECT



شركة مصفاة أرامكو السعودية شل
Saudi Aramco Shell Refinery Company

SASREF is a joint venture between **SAUDI ARAMCO** of Saudi Arabia and **SHELL** of U.S; SASREF Company has been operating the oil refinery in Jubail for the last 25 years. It was one of the most modern refineries in the world with a refining capacity of more than 300,000 b/d.

Project data

- Project
Saudi Aramco Shell Refinery
- Location
Jubail, Saudi Arabia
- Owner
SASREF Co.
- Installer
Binzagr Co.
- Product(s)
Promatect® -H, Promaseal® Silicone Sealant
- Application(s)
Cable Tray encasement

CHALLENGES

According to **SASREF** representative there are three major fire incidents in their refinery which resulted in property loss and shutdowns. The safety department along with the fire engineering designers did the risk assessment and identified fire hazardous areas in the refinery. Emergency shut-down systems such as cables are identified and as the unprotected zone. The loss control team indicated the need for a longer protection rating against the existing requirement of minimum 30 minutes. The ultimate requirement is to make the cables operational during hydrocarbon fire up to 60 minutes. According to the client specification, the fire protection system should meet the below minimum mandatory requirements.

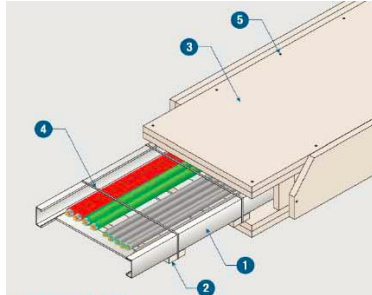
- Tested in accordance with UL 1709 or its equivalent
- Minimum fire resistance of 60 minutes from hydrocarbon fires
- Product should be resistant to moisture, chemicals & dust
- Should not release toxic gas & smoke during the event of fire
- Installation without any interruption in the plant operation
- Impact resistance.
- System should be easy to repair damaged cables and upgrade existing cables.
- Demountable and relocatable
- Durable and environmental friendly
- Easy and quick installation system



Technical Description

Cable coatings and Endothermic wraps not able to meet the requirements of SASREF. Calcium Silicate board encasement system proposed by Promat became the best solution.

1. Cable Tray
2. Promatect-H support member
3. Promatect-H 2 x 25mm
4. Steel banding support strip
5. Cladding fixings



Solving the case

The requirement of SASREF is fulfilled with two layers of 25mm thick Promatect-H calcium Silicate board. The proposal is based on BS 476: Part 20: 1987 and Warrington Fire Assessment report No. 303579. The existing electrical cable trays are supported by "L" angles at a maximum width of 600mm. Two layers of 25mm thick Promatect-H board is encased over the cable tray with cladding fixings and tightened with unistrut "C" channel for stiffness. The gaps are sealed with Promaseal Silicone Sealant.



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