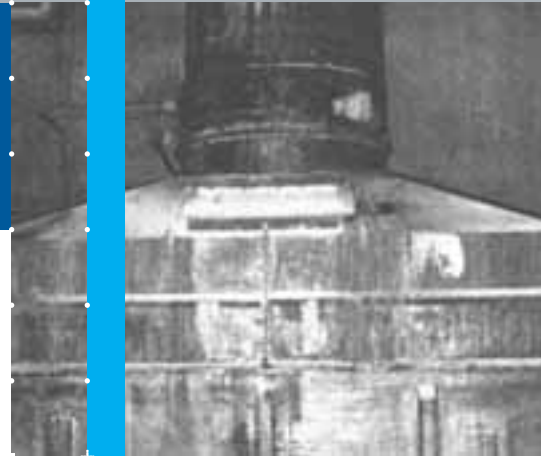


Solving corrosion problems

Kopparfors pulp factory, Sweden

The pulp industry in Scandinavia, faced with severe corrosion problems from the various processing solutions and effluents, were among the first users of Atlac GRP tanks, pipes and ducting in the early sixties.



KOPPARFORS PULP MILL

The Kopparfors pulp mill, with an annual production of 180,000 ton bleached and unbleached sulphate pulp, first tested an Atlac 382 GRP stack in 1965, manufactured by Sulmu, a Finnish fabricator.

After evaluation of the findings, a plan was made how best to proceed.

THE NEXT STEP

In 1977 the entire scrubber made of stainless

steel was replaced by a GRP construction based on Atlac 382, supplied by Syrabruk AB, Stockholm.

The replacement scrubber is 4.4 m square and 8.45 m high. Between these dates many other parts of the plant were replaced by Atlac GRP constructions.

For example in 1971, Syrabruk installed an Atlac water lock on top of the original scrubber to prevent possible vacuum shocks in the stack and



SUMMARY

> Various applications including:

- Gas scrubbers
- chlorine inlet
- gas stack
- washer hoods

OPERATING CONDITIONS

> Various severe corrosive environments

- temperatures up to 65°C
- Chlorine dioxide

ATLAC SOLUTION

> Atlac 382 bisphenol A polyester resin
IN SERVICE

> The plant is in service since the early sixties. In 1987 the company became a part of the StoraEnso group

BENEFITS

- > Corrosion free
- High temperature resistance
- Easy workability

REMARKS

> The proven corrosion resistance performance history, has lead to an extensive use of Atlac for various applications

damage to the scrubber and other equipment.

In 1975 the connection between the electrostatic precipitator and a second scrubber located on the roof was replaced by Syrabruk again using Atlac 382 based GRP.

KOPPARFORS TODAY

Kopparfors now operates as a part of Stora Enso Timber's Nordic Production Group.

Kopparfors is located on the Swedish coast 250 km north of Stockholm. Recently the sawmill invested in modern technology including new equipment for further processing. Today the mill has a yearly production of 300.000 m³. The mill, together with one of Stora Enso's pulp mills, owns the harbour next to the sawmill, a convenient shipping point for most customers.

BLEACH WASHER

Another successful application of Atlac 382 at Kopparfors was the replacement of the pulp inlet in a bleach washer by Syrabruk in 1973. The incoming pulp has a temperature of around 40°C, a PH of around 3 and contains 250 mg chlor dioxide per litre. For many years, pulp washer hoods have been fabricated from Atlac bisphenol-A resin.

Technical details

Application	various applications
Medium	Chlorine dioxide
Conditions	temperatures up to 65°C
Construction details	various constructions
Resin	Atlac 382 bisphenol-A polyester resin
Commissioning	first part commissioned in 1965, continued till 1977
Inspected	No information
Manufacturer	Syrabruk AB, Stockholm
End user	Kopparfors pulp mill, now StoraEnso, Sweden.
Location	Kopparfors:250 km north of Stockholm
Remarks	The proven corrosion resistance performance of Atlac resin plus the development of more sophisticated fabrication techniques has led progressively to a more extensive use of Atlac GRP for other equipment

About DSM

DSM Composite Resins is the largest producer of unsaturated polyester resins in Europe. With production facilities in many different European countries, DSM Composite Resins offers a wide range of resins, matching every conceivable processing and end-use requirement, in the most diverse applications. Local Sales offices and Technical Service laboratories enable close cooperation and partnerships between customers and DSM Composite Resins. Central Research & Development is fully equipped to develop and test new resins and to tune systems for optimal results in specific processing techniques. The development, service and manufacture of composite resins are certified according to ISO 9001.

About Atlac

For several decades Atlac resins have proven themselves highly suitable in applications where chemical and thermal resistance in combination with high mechanical properties are required. Atlac resins have outstanding corrosion resistance to a wide range of organic and inorganic acids, alkalines, solvents and bleaches. They are widely used for fibre-reinforced applications such as storage tanks, vessels, pipes and ducts. The Atlac resins can be processed by means of a wide range of fabrication techniques, including filament winding, hand layup, spray-up, and polymer concrete.

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