



SKOGHALL PAPER MILL, SWEDEN

CASE STUDY

Four Alimak elevators provide access to various parts of the paper mill in Skoghall

Access anytime, anywhere

ALIMAK



An ALIMAK SE-5 elevator in stainless steel provides access to the digester.

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Process industries have to run continuously without interruption. Alimak elevators provide quick and easy access for inspection and preventive maintenance, ensuring that machinery performs accurately and smoothly and turning downtime into uptime.

Alimak has been associated with the pulp and paper industry since 1966, when the first Alimak rack & pinion access elevator was installed on a digester in Sweden. Numerous plants around the world have chosen to use our elevator systems to monitor and service their processes since then.

THE PAPERMAKING PROCESS

The papermaking process is very old. History has it that it was invented in China in the second century A.D. and reached Europe in the 12th century.

The Chinese began with mulberry tree and bamboo, transforming it into a paperlike material. Although modern technology has changed the speed and scale of paper production, the fundamentals remain the same. Wood chips are cooked to produce pulp. Next, the pulp is cleaned and bleached, and then it is dewatered and dried. After the paper is formed it goes through a series of finishing processes to prepare it for its intended application.

A MODERN PAPER MILL

The Skoghall mill in Sweden belongs to the Stora Enso Group, a major global producer of forest products. Stora Enso has 47 production facilities, with around 45,000 employees in more than 40 countries.

The Skoghall mill has two board machines, a KM7 and a KM8, for the production of packaging board. With a total annual capacity of 550,000 tonnes, the mill produces liquid packaging board, coated kraft back, and white top liner.

FOUR ALIMAK ELEVATORS

Skoghall installed its first Alimak rack and pinion elevator on a digester in 1968. Today, four Alimak elevators provide access to various parts of the plant.

The digester has six access levels for inspection and maintenance of valves, thermometers, motors, etc. The digester must work around the clock without interruption.



The green liquor filter building.



The 1200-kg capacity ALIMAK SE-12 waits at a bleach tower landing.



The top landing of one of the bleach towers.

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Engineering and maintenance staff use the elevator a few times per shift for accessing the different levels. The elevator on the digester is an ALIMAK SE-5. It is installed externally without an elevator shaft. It has a lifting height of 61 m and a speed of 0.7 m/s. The stainless steel car has a 500-kg load capacity. Frequent access to various levels of the Skoghall plant's two bleach towers is required in order to monitor instruments and processes, repair leaking pipe joints, etc. The 50-m and 56-m high structures are equipped with external access elevators with stainless steel cars. Somewhat larger than the car on the digester, they feature capacities of 1000 kg and 1200 kg respectively.

The fourth Alimak elevator was installed in 1994 and serves a green liquor filter building. It has a lifting height of 21 m.

MADE FOR INDUSTRIAL USE

Alimak industrial elevators are available with extruded aluminium or stainless steel cars, ensuring long service life in even the toughest environments. The drive unit is located on top of the car, which climbs on a self-supporting mast, requiring no supporting elevator shaft or separate machine room. The mast is made of galvanised steel. The erection of the elevator mast takes place from the car itself. If installed early

in the construction process, the elevator can often be used in the actual construction of the building on which it will then remain as a permanent lift.

The design and modular construction of Alimak elevators enable specific user requirements to be met from fully standardised components. Capacities range from 300 kg to 2,400 kg. Elevators are available in single- or twin-mast configurations and with travel speeds up to 1.0 m/s. The largest Alimak elevator built and delivered so far is a 24,000-kg capacity unit guided on four mast towers.

Lifting heights well in excess of 250 metres are possible with Alimak rack and pinion elevators.

ELEVATOR DETAILS

Location:	Skoghall paper mill, Sweden
Application:	Liquor filter building, two bleach towers, and a digester
Elevator types:	Alimak SE-12, Alimak SE-5 and Alimak Scando Mini 10/19
No. of elevators:	4
Capacity:	Varies from 500 kg–1200 kg
Lifting height:	21 m, 50 m, 56 m and 61 m



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