

## COMPLETE LINER FLUTING 5.150 MM PAPER MILL



### Stock Preparation Line

Recycled paper stock preparation line with capacity of 935 TPD. Stock preparation line is composed of two pulping lines, two stage coarse screening, reject handling line, fractioning, fine screening line and thickening. Stage-by-stage view of specific equipment is following:

#### Pulping & Cleaning

- Two Voith AP-40 pulpers, with conveyer and 355kW motor
- Two Voith CM21 contaminex pumps
- Two Voith IntensaMaxx IM15 Detrashers
- Cleaner bank HC Centrifugal Cleaners Valmet HC300
- Cleaner bank MC Cleaners HGH SL4500

#### Coarse Screening:

- Four Voith ATS -31 Turbo-separators with 250kW and 325kW motors
- MC Cleaner bank Voith



#### Light & Heavy reject

- Two Voith Combisorters CS11
- Beltec Press
- Valmet TAP50
- Beltrix separator

#### Fine Screening

- Valmet TAP450 screen
- Valmet TAP200 screen
- Valmet Delta T6 screen
- AFT Maxsaver
- Valmet Delta

#### Fractioning:

- Two Voith MSM08/05 fractionators

#### Thickening:

- Two Valmet Tamdeck TD200/4 thickeners
- Valmet 150/4 thickener
- Simon Holder thickener
- Voith 120x300 thickener

### **Paper Machine PM2**

PM2 is a single ply paper machine, with fourdrinier and dilution headbox.  
Currently PM2 is producing brown paper for containerboard:

- 50% High Performance Fluting
- 15% Waste Based Fluting
- 5% Test Liner 1
- 30% Test Liner 3

Weight range between 90 and 200 gsm.

The following are the main PM characteristics for PM2:

- Operating speed up to 600 m/min
- Max drive speed 650 m/min
- Design speed dryer section 1000 m/min
- Max saleable width after rewinder 5150 m/min
- Production 380 Tpd



PM2 was built in 1972 by ERWEPA.

There have been several rebuild, the major:

- New press section + Shoe press Beloit ENP-C
- S&C system rebuild by K&J
- Size Press Upgrading by OverMeccanica
- Machine drives rebuild by AS Drives and Kuehne&Vogel
- New oil lubrication system for dryer can bearings and gearboxes by AS Drives
- Elongation of fourdrinier and installation of new dilution headbox by Bellmer Vaahto
- Vacuum System Rebuild by Runtech
- Heat recovery rebuild by Tip 95
- Automatic pope reel by Bellmer
- Winder rebuild by Bellmer

Headbox is 5550 mm in width, hydraulic type with dilution profiler, 72 actuator zones, automatic dilution control. Supplier is Vaahto Bellmer.

The table length is 24 m, and the size of the wire is 48,7 m x 5,65 m.

Wire section is with cantilever, with foil, low and high vacuum suction boxes, automatic tension and guide control by IBS, steam-box, guide, and wire drive and couch roll.

### **Press Section**

The press section is composed by single nip press and extended nip press with press load;

1st nip 110kN/m

2nd nip 1050kN/m

Solid content after the press section is around 50%.

The press section has 4 endless felts + belt for shoe press:

Pick Up Felt

1st bottom felt

2nd top felt

2nd bottom felt

### **Dry Section**

The first dryer group is slalom felt design. Other dryer groups are in double tier arrangement. Dryer fabric tension control, felt guiding systems, web stabilizers, dryer fabric cleaning systems are part of dryer section.

Design speed is 1000m/min.



The dry end is composed by 41 drying cylinders:

- Diameter of drying cylinders 1500mm
- Number of pre-dryer cylinders 23
- Number of after dryer cylinders 18

**Drying rate specification:**

- Available steam pressure 5 bar, ata
- Spec. drying rate pre-dryer section 27 kg H<sub>2</sub>O/m<sup>2</sup>-h (contact area)
- Spec. drying rate after dryer section 27 kg H<sub>2</sub>O/m<sup>2</sup>-h (contact area)

Machine drives are mainly AC drives from Siemens. They have been rebuilt over the years in several phases. DC drives are still running 1st DG, 2nd DG and size press. There is a limit on size press drive speed on 650m/min, but other drives have design speed of 750m/min.

There are separate oil lubrication stations for dryer can bearings and gearboxes, installed in 2013 and 2015 by AS Drives.

**Size Press**

The size press is fully inside the dry end hood, and it was installed in year 1998 by Over Meccanica. During the years structural upgrading have been made, especially in starch collectors and loading change from pneumatic to hydraulic.

The size press is a pond type. The main rolls have diameters of 1280 and 1270 mm.

A pulper under the size press is in place. The following are the main size press data:

- Paper dryness before size press 82 - 85 %
- Starch coat weight 6,0 g/m<sup>2</sup> BD
- Starch consistency 8 - 12 %

Starch cooking system is included in the equipment for sale.  
Size press pulper has automatic level and consistency control.



## QCS

ABB 800xA for machine direction and cross direction control of basis weight and moisture content of the paper. Its composed of;

- Scanning platform ABB NP1200 with basis weight and moisture sensor.
- Dilution xp by ABB with 72 actuator zones
- Steambox by VIB
- Air water profiler by ABB with actuator zones

## Pope Reeler

Fully automated drum type reeler, with spool transfer from spool magazine, paper roll removal and reeling hardness control by three curves. Manufacturer Bellmer. Spool magazine has capacity for four empty reels.

Design data:

- Design speed 1000m/min
- Basis weights 90 – 250g/m<sup>2</sup>
- Max reel weight 23t

## Winder

Two drum Winder with automatic slitter section. Major rebuilds in terms of safety and capacity done in 2019. Scope of rebuild was new drum roll, rider roll system, all new guide rolls, new slitter section, hydraulic system and trim removal system.

Design data:

- Max speed 1.500m/min
- Max parent roll diameter 2.500mm
- Max width trimmed parent roll 5.100mm
- Customer Reel diameter 1.400mm
- Customer reel width 700-2.800mm



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**Consultoría de Tecnologías Papeleras, s.l.**  
Rambla Salvador Samà, 95, 2º 1ª  
08800-Vilanova i la Geltrú  
ESPAÑA  
Teléfono 93 815 99 20  
[www.ctpaper.com](http://www.ctpaper.com)





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