

Firma Maria Roboter GmbH Paper mill service
,Technology for Resource Efficiency ADD: Germany
P.O.Box :Bahnhofstraße 19 A,48691 Vreden. T +49
(0)25648177151 FAX : +49 (0)25648179767 MO :+49 (0)
17644463658 E-Mail:sohaibalosman@mariroboter.com

Complete waste-based stock preparation system with fractionator and modern rewinder.

Operation 100% recycled fibre paper machine producing mainly RFM for local consumption. Has produced lwt recycled linerboard in the past. Drive on left side from the flowbox. Drive DC installed 1982/89. Mill 1982.

Mill condition is excellent with all well-maintained equipment.

Mill in operation until 18 12 2024 All to be dismantled and removed from site May 2025

Budget production for a year is around 82,000 to 83,000t depending on grade mix. 2023 production was around 78,600 t mainly due to issues after the winder upgrade.

Typical annual production:

112GSM RFM	34,200 t
140-150GSM RFM	30,272 t
Core stock 220 GSM	5,600 t

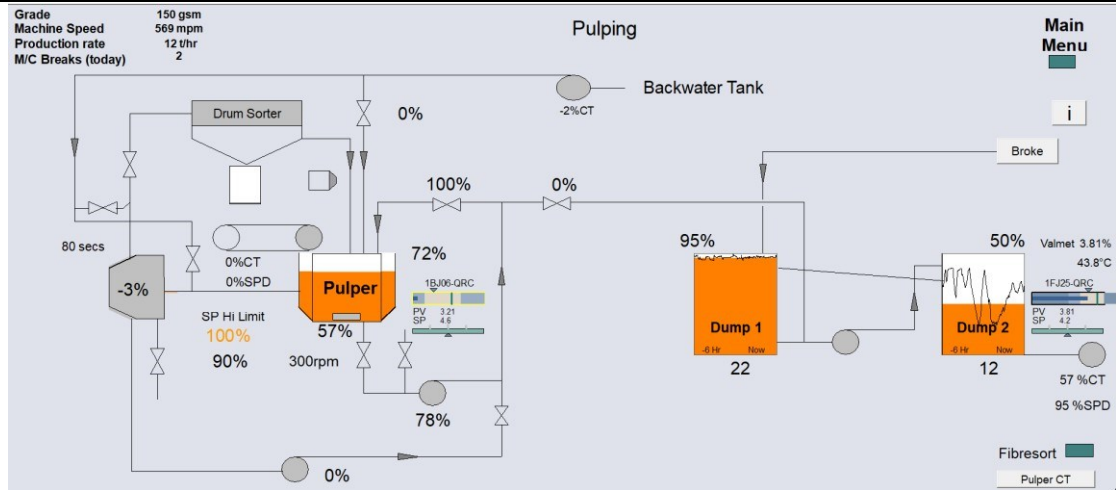
The remaining production is a mixture of remaining RFM grades 120, 160,170 & 175.

- Fibre furnish is OCC (such as supermarkets) mixed waste paper sourced from North Island There is a small amount of "glass-out" kerbside MXD.

2024 Approximate Fibre budget (tonnes)

OCC	59,324
MXD	28,357
Kerbside MXD	9,961
Total Fibre	97,642
Saleable Product	83,000
Trash and Waste	14,642
Waste to landfill proportion	15%

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Stock Preparation

DCS: Emerson Delta-V with Siemens S7 PLC
 (Some I/O is still Siemens S5)

Pulper



Escher-Wyss ST6, 300 rpm
 Screenplate Holes 16mm dia.
 Upgraded with Voith Deflector
 Input Power: 280 kW @ 990 rpm.
 Drive: Siegling/Extremultus Flat Belt, 380mm wide x 9400 long.
 Escher Wyss Junk Remover (No ragger)

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Fiberizer: Voith



Model:F1.T-S
Screenplate: Holes 12mm dia.
(Open Area approx. 44%)
Speed: 530 rpm
Input Power: 90 kW @ 1480 rpm.

Drumsorter



Voith/Escher-Wyss
Model: ZTR 15/30
Drum/perforations: Holes 16mm diameter.
Speed: approx. 25 rpm
Input Power: 2 x 2 kW @ 1480 rpm.

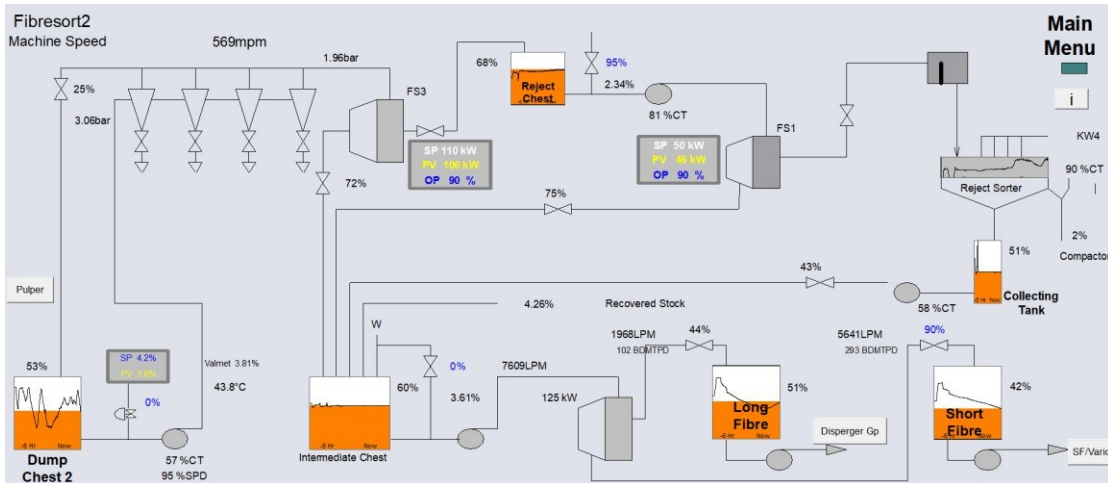
Dump Chest 1

Concrete construction
Volume: 120 m3
Agitator: Escher-Wyss P1250K

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Dump Chest 2
 Concrete construction
 Volume: 100 cu.m
 Agitator: Escher-Wyss P1250K



HD Cleaners



Escher-Wyss, Model DICS. Four installed.

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Compactor



Escher-Wyss
Model FS3B
Speed: 400 rpm
Input Power: 200 kW @ 1480 rpm.
2.6mm holes, 38% open area

Reject Chest
Stainless Steel construction
Volume: 3 cu.m
No Agitator

Fibersorter (1st Stage)



Escher-Wyss
Model FS1
Speed: 400 rpm
Input Power: 75 kW @ 1480 rpm.
Drive: Siegling/Extremultus Flat Belt, 140mm wide x 5173 long

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Screenplate: 2.6mm holes, 31% open area

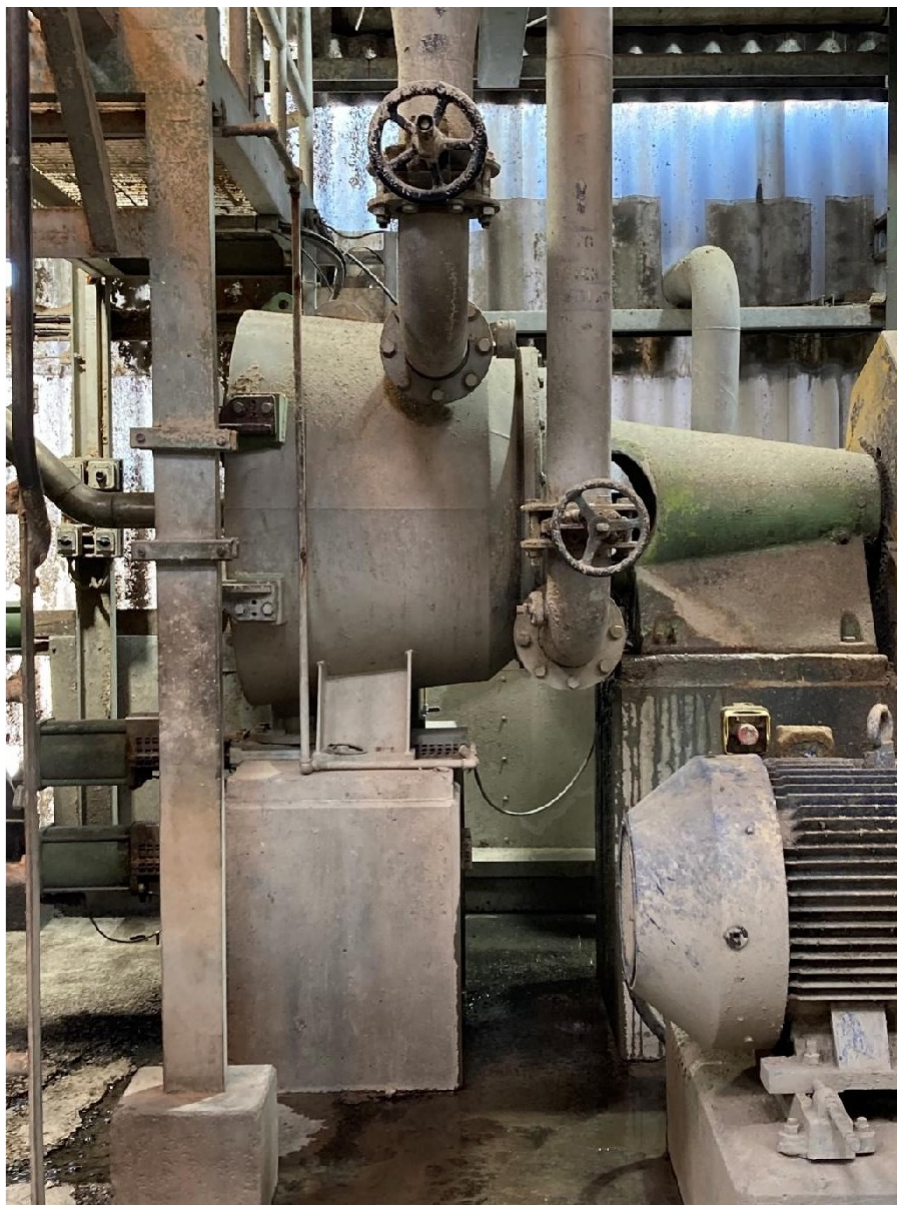
Intermediate Chest

Concrete construction

Volume: 60 cu.m

Agitators: Escher-Wyss P1000K

Fibresorter (2nd stage)



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Rejectsorter



Escher-Wyss
Model RS2B
Speed:1190 rpm
Input Power: 55 kW @ 1480 rpm.
2.6mm holes, 44% open area

Compactor



Trumag
Model KRI 60
Input Power: 15 kW @ 31 rpm.
Collecting Tank
Stainless Steel construction
Volume: 3 cu.m
No Agitator

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Fractionation:



Fiberfractor
Escher-Wyss
Model FF3B
Speed: 400 rpm
Input Power: 160 kW @ 1480 rpm.
1.67mm holes, 25% open area

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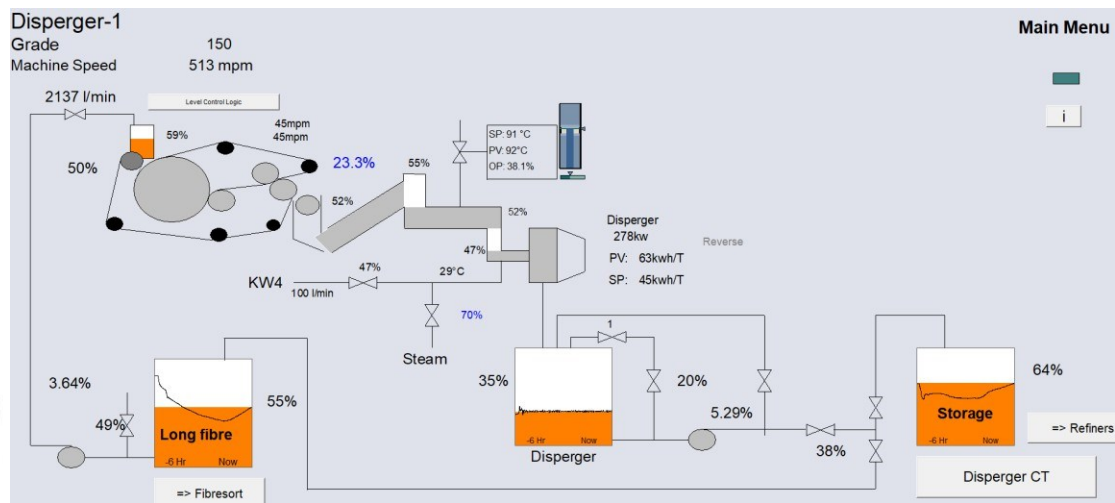
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Long Fibre Chest

Stainless steel construction
 Volume: 100 cu.m
 Agitators: Escher-Wyss ECONOMIX 1-1250

Short Fibre Chest

Stainless steel construction
 Volume: 200 cu.m
 Agitators: Escher-Wyss ECONOMIX 2-1600



Long Fibre/Dispersion Line



Wire Press
 Escher-Wyss SP2C
 Upgraded in 1988 with new dewatering roll
 Speed: ~45 rpm
 Input Power: 160 kW @ 1480 rpm.

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Breaking Screw/Ascending Screw/Heating Screw

Disperger



Escher-Wyss HD2 Disperger, (see following sheet)

Model: HD2

Input Power: 3.3kV, 500 kW @ 1470 rpm.

Disperger Chest

Stainless Steel construction

Volume: 8 cu.m

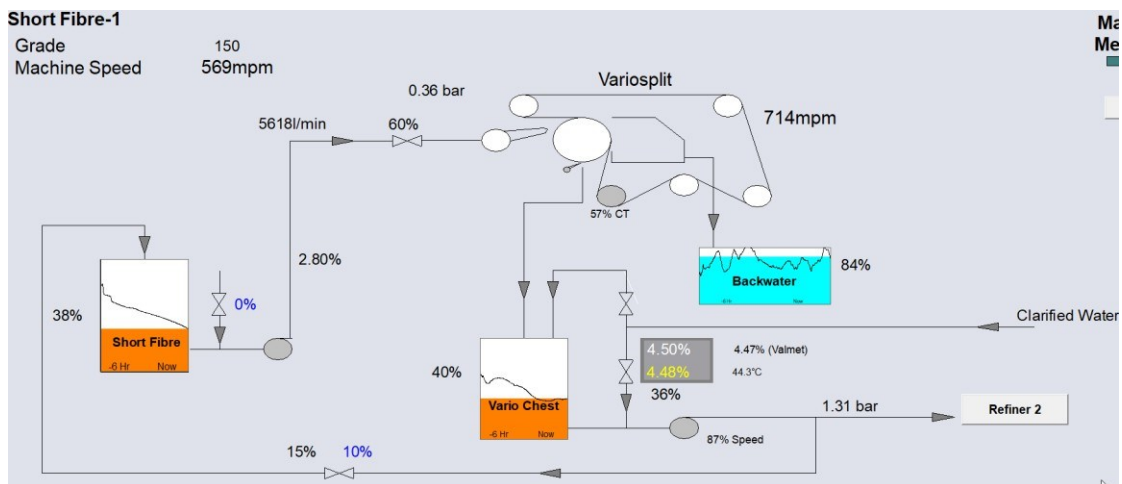
Agitator: Escher-Wyss P600K

Storage Chest

Concrete construction

Volume: 60 cu.m

Agitator: Escher-Wyss P1000K

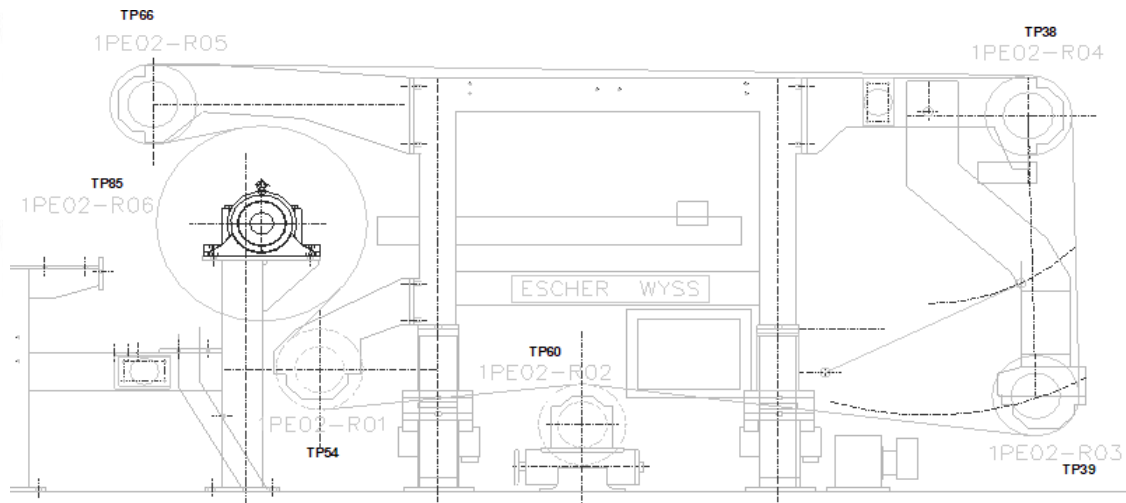


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Short Fibre Line
 Variosplit Washer
 Voith/Escher-Wyss VA1C
 Speed: 700 mpm nominal
 VSD: ABB ACS500, 125A
 Input Power: 45 kW @ 1480 rpm.
 Input Drive: Santasalo Gearbox, Model 1KC320; 2.5:1 Ratio



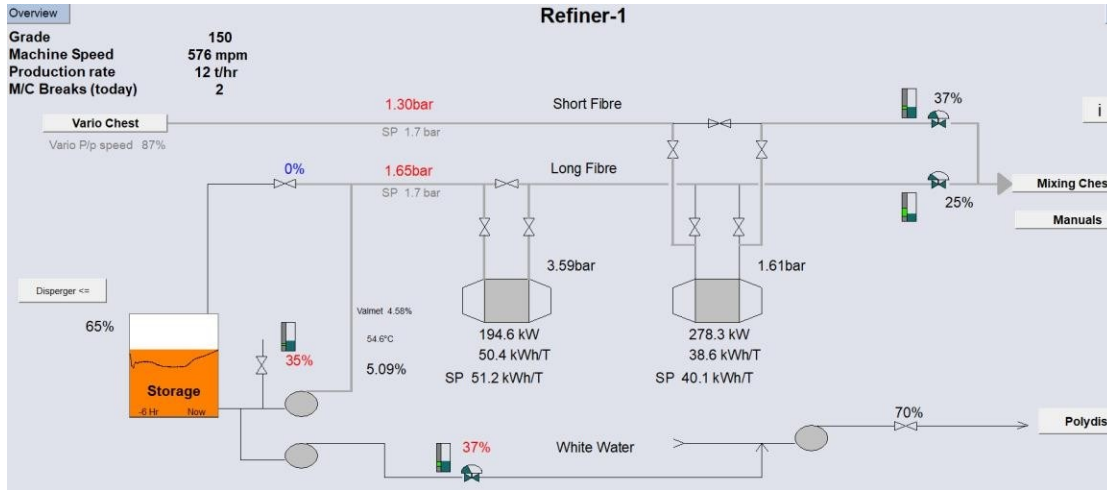
Roll Func.Location	TP ID	Cover
5003-1PE02-R01	TP54	<u>BlackStone S</u> Roll 01,Variosplit Drive roll,dia 423mm
5003-1PE02-R02	TP60	<u>BlackStone S</u> Roll 02,Variosplit bot guide roll
5003-1PE02-R03	TP39	<u>BlackStone S</u> Roll 03,Variosplit bot tension roll
5003-1PE02-R04	TP38	<u>BlackStone S</u> Roll 04,Variosplit top return roll above
5003-1PE02-R05	TP66	<u>BlackStone S</u> Roll 05,Variosplit,Top return roll above

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5003-1PE02-R06 TP85 CERAGUIDE BRoll 06,Variosplit Main Roll,dia 1024mm
 Ceramic covered Main roll

Vario Chest
 Concrete construction
 Volume: 60 cu.m
 Agitator: Escher-Wyss P1000K



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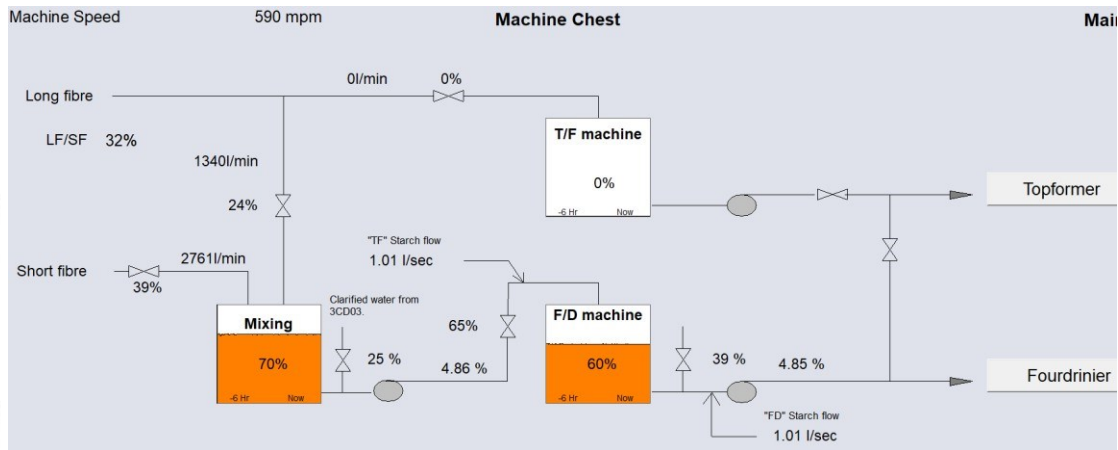
Refiners

Escher-Wyss

Model: DSR2 B3 M2 with gearmotor load adjustment

Size: 26" (660 mm)

Input Power: 3.3 kV, 400 kW @ 740 rpm.



Mixing Chest

Concrete construction

Volume: 60 cu.m

Agitator: Escher-Wyss P1000K

F/D Machine Chest

Concrete construction

Volume: 60 cu.m

Agitator: Escher-Wyss P1000K

F/D Machine Chest Consistency Meter:

Valmet MCA (Microwave)

Topformer Chest

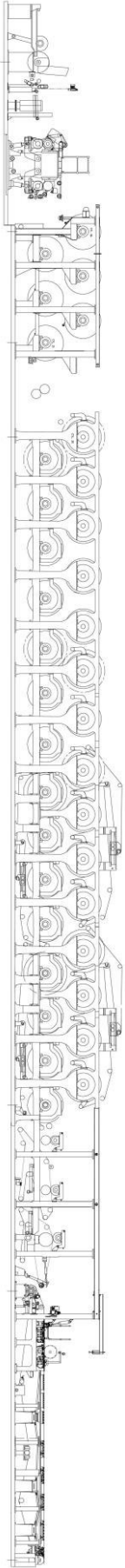
****Used as overflow from Broke Tank****

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Concrete construction
Volume: 60 cu.m
Agitator: (None Fitted)

Rotoflex 1200 Filter generates superclear filtrate.



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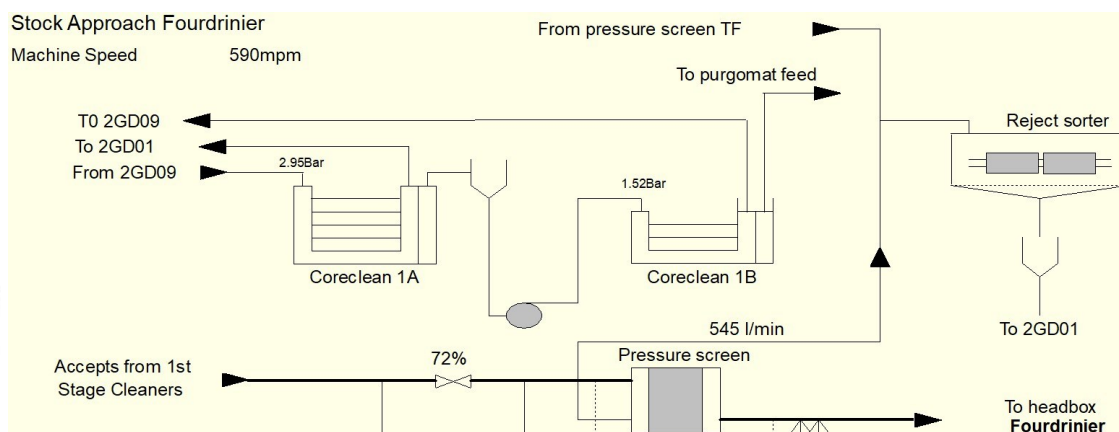
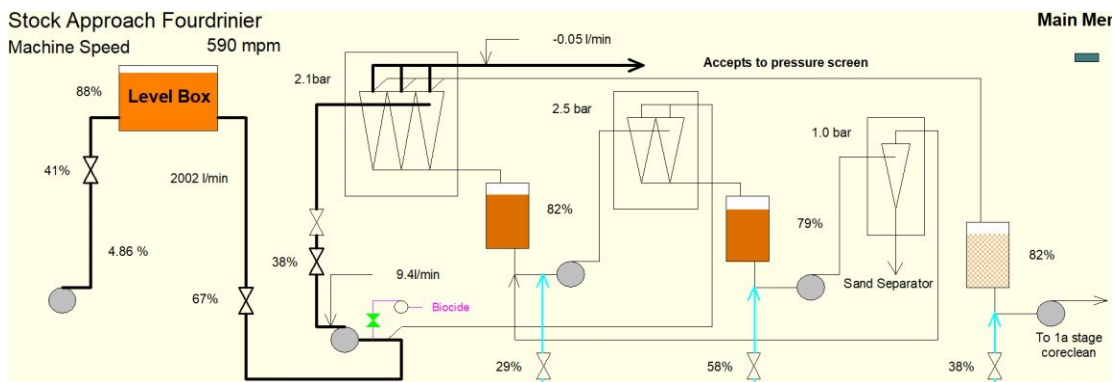
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Stock Approach

(Schematic below is for Fourdrinier. Topformer is almost identical apart from the number of 1st stage cleaners)



Fourdrinier

Fan Pump:

Sulzer ZRS-40

Motor: 355kW, 4 pole with VSD

Three stage heavy-weight cleaner system

First Stage Centri-cleaners

7" Bird Tri-cleaner

16 cleaners installed

Second Stage Centri-cleaners

7" Bird Cyclean

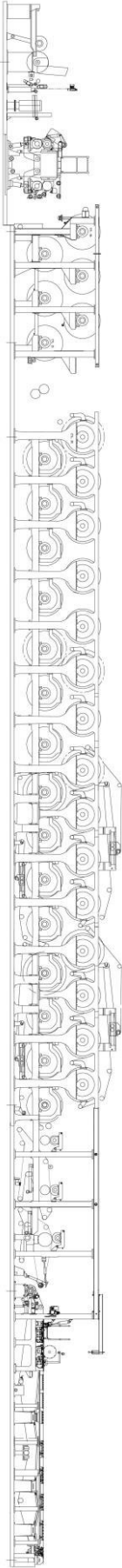
2 cleaners installed

Third Stage Centri-cleaner

7" Bird Cyclean

1 cleaner installed

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Two stage Light-weight cleaner system
Voith Cyclean
1st Stage: 14 cleaners installed
2nd Stage: 2 cleaners installed



Stock Approach Rejectsorter (common with Topformer Approach flow)
Escher-Wyss
Model RS2B
Speed: 1190 rpm
Input Power: 55 kW @ 1480 rpm.
2.6mm holes, 44% open area

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Fourdriner Pressure Screen



Bird Escher Wyss Model 50 Centriscreen
 Baskets: 316L stainless; 0.4mm slot
 Blind inner basket
 foil speed 243rpm
 motor 90kW/1000 rpm nominal speed.

NOMINAL DETAIL	
Flows	- inlet 11200 lit/min
	- accept 10800 lit/min
	- reject 400 lit/min
Consistencies:	- inlet 1.04%
	- accept 0.99%
	- reject 1.05%
Freeness	200 CSF

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Stock Approach

Topformer manual slice control. Year 1989.

Fan Pump:

Ahlstrom U-350

Motor: 355kW, 4 pole, fixed speed

Three stage heavy-weight cleaner system



First Stage Centri-cleaners

7" Bird Tri-cleaner

14 cleaners installed

Second Stage Centri-cleaners

7" Bird Cyclean

2 cleaners installed

Third Stage Centri-cleaner

7" Bird Cyclean

1 cleaner installed

Two stage Light-weight cleaner system

Voith Cyclean

1st Stage: 12 cleaners installed

2nd Stage: 2 cleaners installed

Top Former Pressure Screen

Bird Escher Wyss Model 50 Centriscreen

Baskets: 316L stainless; 0.4mm slot

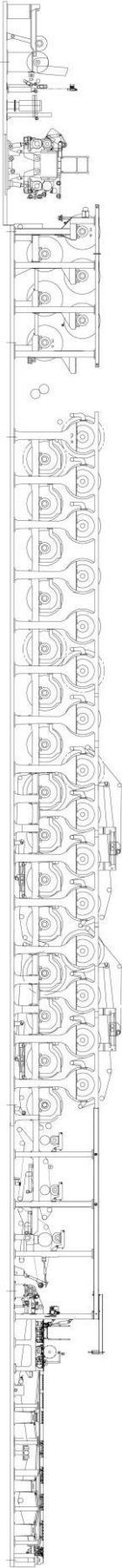
Blind inner basket

foil speed 243rpm

motor 90kW/1000 rpm nominal speed.

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NOMINAL DETAIL	
Flows	- inlet 11200 lit/min
	- accept 10800 lit/min
	- reject 400 lit/min
Consistencies:	- inlet 1.12%
	- accept 0.90%
	- reject 1.18%
Freeness	200 CSF

Vacuum System

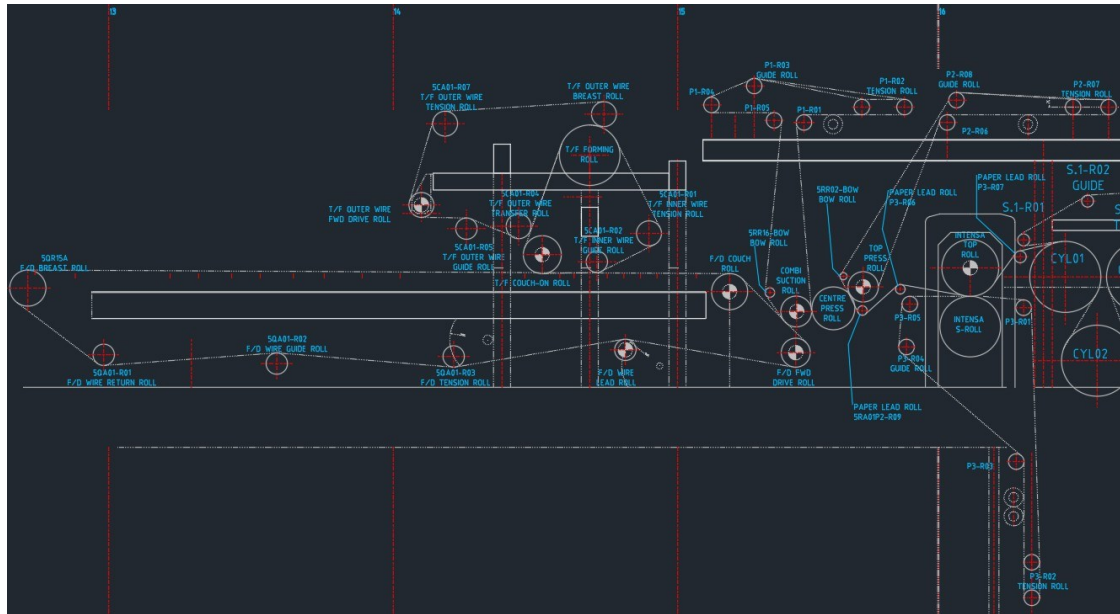
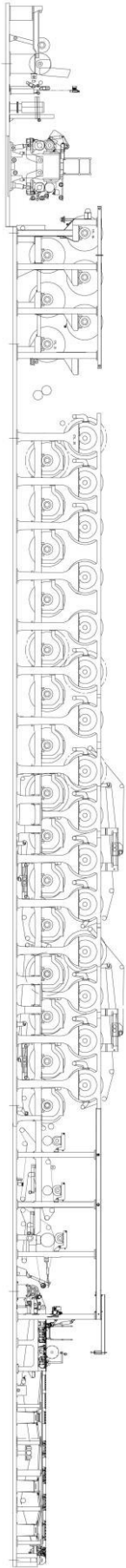
FIMA two-stage vacuum blowers for Fourdrinier and Topformer
 Motors: 55kW 2 pole

Bell Vacuum Pumps

Pump,Vacuum 3rd Nip Felt Run	BELL E16/35; 132kW, 6 pole
Pump,Vacuum Combi Roll	BELL E16/50; 160 kW, 6 pole
Pump,Vacuum Couch Roll	BELL E16/50; 132 kW, 6 pole
Pump,Vacuum 1st Press,Vac Foils,Suct Box	BELL E13/40; 55 kW, 6 pole
Pump,Vacuum 2nd Pressfelt	BELL E13/40; 55 kW, 6 pole

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PAPER MACHINE

- 112-220gsm
- 740-370 m/min at the wire
- 770-384 m/min at the reel
- Sheet width at wire: 2500 mm
- Sheet width at reel: 2340 mm

FOURDRINIER HEADBOX



(Originally Installed In 1982 And Upgraded In a major rebuild in 1988)
Escher-Wyss/Voith Step-diffusor Headbox
Model 220-01 with PE Tank
Fitted with seventeen Valmet IQ Slice adjusters (New in 2015)
Slice Width: 2500mm
Wire Width: 2650mm

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TOPFORMER (NEW IN 1988)



HEADBOX

Escher-Wyss/Voith "TwinTop N" Gapformer
Fitted with nine Katsa manual Slice adjusters
Slice Width: 2500mm
Wire Width: 2650mm

Roll Func.Location		Cover	Roll Func.Location		Cover
5003-5QR15A	Roll,F/D Breast Roll	CERAGUIDE B	5003-5RA01P1-R01	Roll 1,1st Press,Return Roll	
5003-5QA01-R01	Roll,F/D 1,Wire Return Roll	HA 400	5003-5RA01P1-R02	Roll 2,1st Press,Tension Roll	HA 400
5003-5QA01-R02	Roll,F/D 2,Wire Guide Roll	CERAGUIDE B	5003-5RA01P1-R03	Roll 3,1st Press,Guide Roll	BLACKSTONE S
5003-5QA01-R03	Roll,F/D 3,Tension Roll	Voith Germany cover 2002	5003-5RA01P1-R04	Roll 4,1st Press,Return Roll	BlackStone S
5003-5QR03	Roll,F/D Wire Helper Roll	MagnaRock II	5003-5RA01P1-R05	Roll 5,1st Press,Return Roll	CERAGUIDE B
5003-5QR01	Roll,F/D,Suction Couch Roll		5003-5RR16	Roll,Combi Suction Press Roll	Aqualis
5003-5QR15	Roll,F/D Forward Drive Roll	POLYDRIVE			
			5003-5RR02A	Roll,Central Press Roll	TERRASPEED
5003-5CA01-R01	Roll,T/F IW 1,Tension Roll	BlackStone S	5003-5RA01P2-R06	Roll 6,2nd Press,Return Roll	BlackStone S
5003-5CA01-R02	Roll,T/F IW 2,Guide Roll	CERAGUIDE B	5003-5RA01P2-R07	Roll 7,2nd Press,Tension Roll	BLACKSTONE S
5003-5CA01-R03	Roll,T/F IW 3,Couch On Roll,Dia 800		5003-5RA01P2-R08	Roll 8,2nd Press,Guide Roll	BLACKSTONE S
5003-5CA01-R09	Roll,T/F IW 9,Forming Roll		5003-5RR02	Roll,Top Press,Blind Drilled Roll	
5003-5CA01-R04	Roll,T/F OW 4,Transfer Roll	CERAGUIDE B	5003-5RA01P3-R01	Roll 1,3rd Press,Return Roll	
5003-5CA01-R05	Roll,T/F OW 5,Guide Roll	CERAGUIDE B	5003-5RA01P3-R02	Roll 2,3rd Press,Tension Roll	
5003-5CA01-R06	Roll,T/F OW 6,Forward Drive Roll,Dia 525	BLACKSTONE S	5003-5RA01P3-R03	Roll 3,3rd Press,Return Roll	CERAMIC, TerraDry G Express
5003-5CA01-R07	Roll, T/F O/W Tension Roll	BlackStone S	5003-5RA01P3-R04	Roll 4,3rd Press,Guide Roll	
5003-5CA01-R08	Roll,T/F OW 8,Breast Roll	BlackStone S	5003-5RA01P3-R05	Roll 5,3rd Press,Return Roll	
			5003-5RR17	Roll,Intensa Top Press Roll	MagnaRock II

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Machine Clothing

WIRE, FOURDRINIER; NOMINAL 35.375Mx2.65

WIRE, TOPFORMER INNER; 9.92Mx2.7

WIRE, TOPFORMER OUTER; 12.54Mx2.65

FELT; 1ST PRESS, NOM, 17.95 x 2.7M, 1675GSM

FELT; 2ND PRESS, NOM, 16.3 x 2.65M, 1725GSM

FELT; 3RD PRESS, NOM, 16.5 x 2.64M, 1620GSM

BLANKET, INTENSA; DIA 1.27xWx3.15M,DBL LAY

Ceramic Drainage Elements:

Foils

Vacu-foils

Suction boxes / Vacuum

Suction Couch Roll

Stainless steel shell

1 suction zone, vacuum.

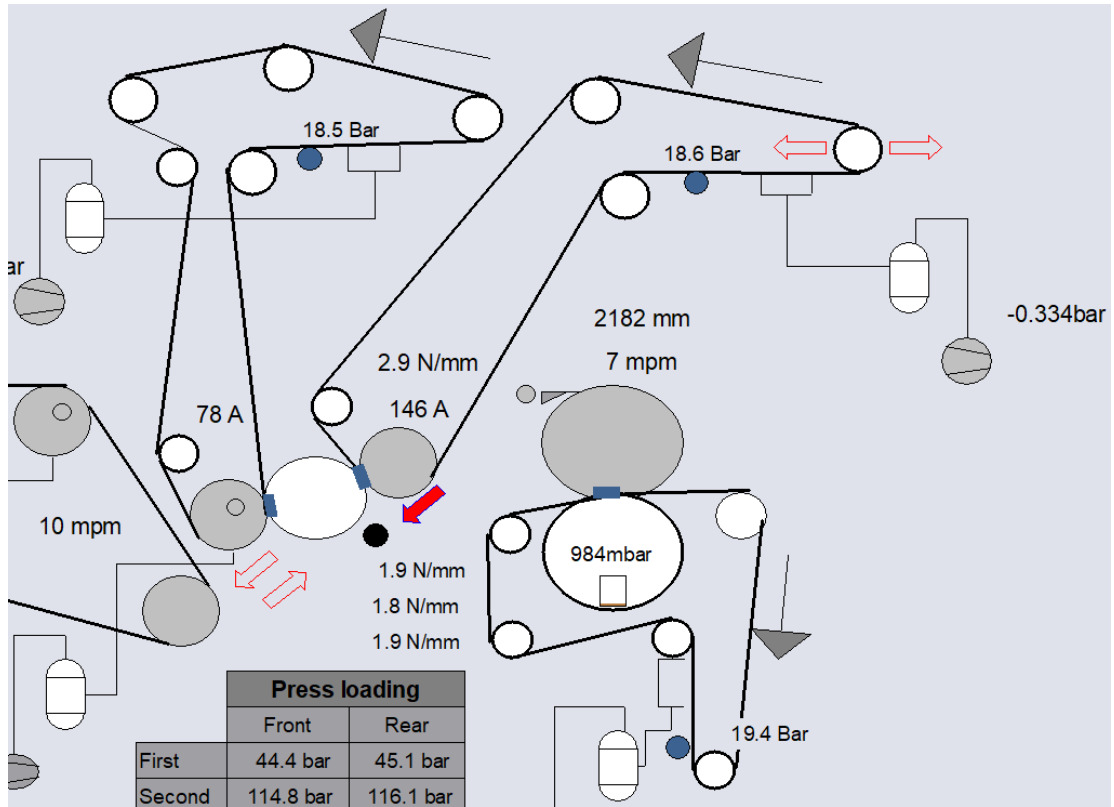
Fitted with Kadant Double DST-type Doctor of Stainless Steel construction

****Some rolls with Ceramic Covers****

- Typical Dryness @ Couch Roll 20-23%
- Typical Dryness ex-Combi Press 38-42%
- Typical Dryness ex-Intensa Press 46-49%
- (Typical Dryness at Reel 92.4%)

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Combi Press
 Combi-Suction Roll,
 Sandusky Alloy 86 Stainless Steel shell with Voith Aqualis or Solarflow cover
 2 suction zones, vacuum.
 Fitted with GL&V Double DST-type Doctor of Stainless Steel construction

Ceramic Covered Central Press Roll
 Fitted with Kadant Double DST-type Doctor of Stainless Steel construction

Blind-drilled and Grooved Top Roll

1st Press, Normal loading 57 N/mm Max. Loading 63 N/mm
 2nd Press, Normal loading 85 N/mm Max. Loading 90 N/mm

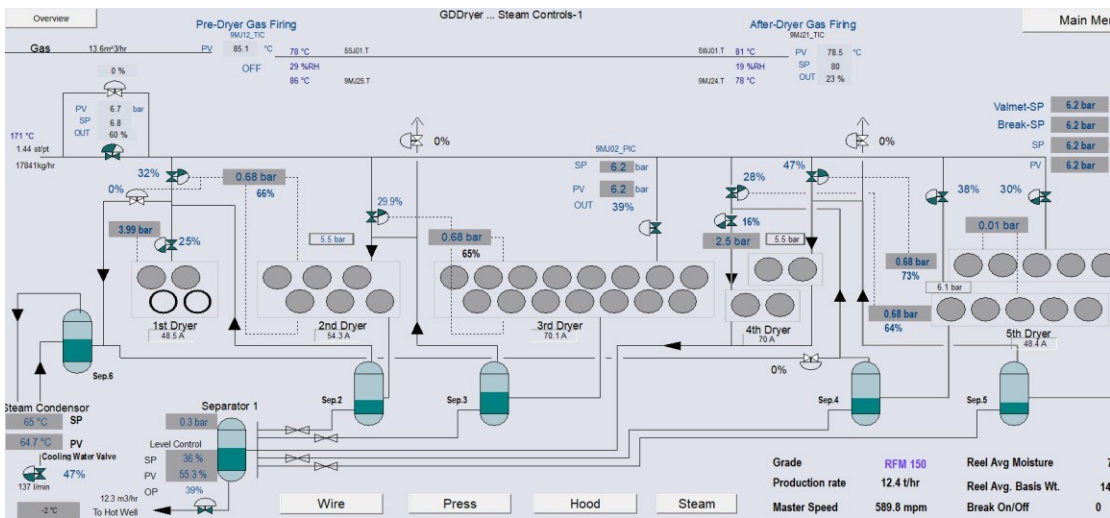
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3rd Press
 Voith Intensa Press
 Normal loading 900 N/mm Max. Loading 1000 N/mm
 Intensa Press Top Roll
 Fitted with Kadant Double DST-type Doctor of Stainless Steel construction

Grammage, speed at wire and speed at reel:

Row Labels	Average of Wire Speed-Filtered	Average of Reel Spd-Filtered	Average of STEAM FLOW TO DRYER	Average of CUR. REEL PROD RATE
112	740.5	768.4	15793.3	12.1
120	715.7	741.2	16340.2	12.5
140	612.1	633.8	17660.5	12.5
150	567.6	587.7	17654.5	12.3
175	451.7	461.9	16911.8	11.5
220	370.8	384.4	16073.6	11.8
Grand Total	620.3	642.5	16920.5	12.2



Dryer



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39 Dryer cans
1500mm diameter
Rated at 7 bar
Split into 5 sections

1st Section is a Uni-run fitted with Kadant Uniflex doctors on cylinders 1,3 and 5
Cylinders 2 & 4 and not heated
All other cylinders fitted with Turbulator bars
Cascade steam system with 2.5" Johnson L-NARQ 2600 rotary joints.
Rotary syphons fitted.

Kofra Closed Hood

With Steam heating coils and Gas-fired air heating on the Pre-Dryer and
With only Gas-fired air heating on the After-Dryer and

Dryer Clothing:

SCREEN, DRYER; 1ST,NOM 28.75x2.55M
SCREEN, DRYER; 2NDTOP&BTM, NOM 28.75x2.55M
SCREEN, DRYER; 3RDTOP&BTM, NOM 35.4x2.55M

SCREEN, DRYER; 4TH BTM, NOM 32.6x2.55M
SCREEN, DRYER; 4TH,TOP, NOM 28.7x2.55M

SCREEN, DRYER; 5TH BTM, NOM 37x2.55M
SCREEN, DRYER; 5TH,TOP, NOM 28.7x2.55M

Impact Infra-red Dryer

Installed on Cylinder 39

Upgraded in 2024 with new high-efficiency TAPS emitters from Compact Engineering

Calender



Hunt & Moscrop, two roll stack with kuster roll.
Installed but not operational

QCS System

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Valmet IQ

New in 2015 and upgraded to current model sensors

Measures moisture, Basis Weight, Colour and Ash

Controls the IQ-slice profilers on the Fourdrinier Headbox and the Impact Infra-red Dryer modules (located on Dryer Cylinder 39)

Pope Reel



Escher-Wyss/Voith

Reel Drum 1000mm diameter

Produces Jumbo rolls 3010mm diameter x 2340 width

Reel Spools

360mm diameter with Polyurethane covers

TUSA tape turn-up system

Dry Broke Pulper

Located under Pope Reel

Escher-Wyss/Voith

Model ST4

280 rpm

Screenplate: Holes 20mm dia.

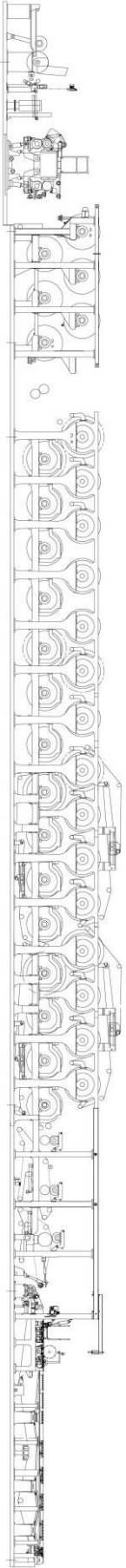
Input Power: 132 kW @ 990 rpm.

Drive: 5V/2360 Vee Belts

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Paper Machine Drive System
Ansaldo DC Drive

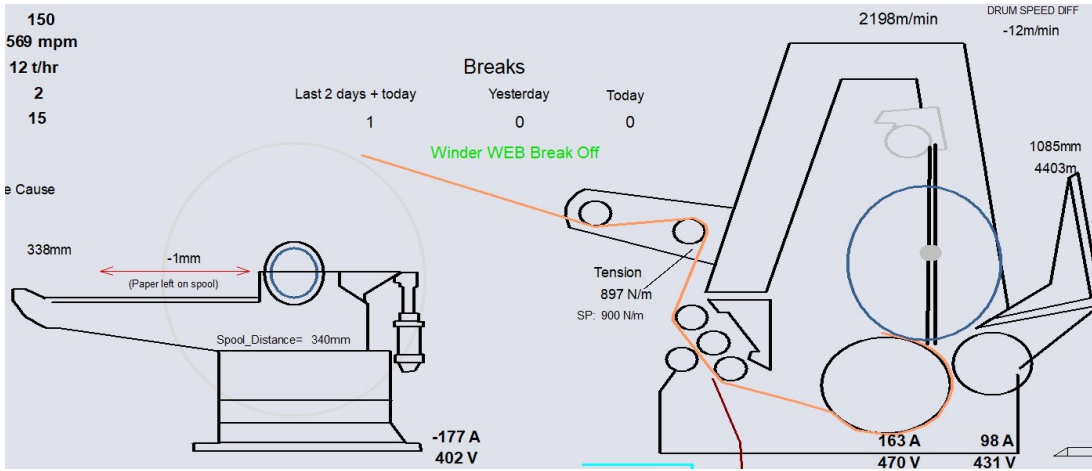


DC			
Motor,ANSALDO,57kW	G3C182JAA27000		TF Outer Wire Fwd Drive
DC Motor,Ansaldo,57kW	G3C180S		TF Inner Wire Couch-On
DC			
Motor,Ansaldo,21.0kW			FD Wire Lead Roll
DC			
Motor,ANSALDO,144kW			Suction Couch
DC			
Motor,ANSALDO,260kW	DM250SK		FD Forward Drive Roll
DC			
Motor,ANSALDO,96kW	G3C180L		Combi-Press
DC			
Motor,Ansaldo,144kW	CH250SB		Top Press
DC			
Motor,Ansaldo,250kW	DM250/S		Intensa Press
DC Motor,Ansaldo,57kW	G3C 180S		1st Dryer
DC Motor,Ansaldo,57kW	G3C 180S		2nd Dryer
DC Motor,Ansaldo,57kW	G3C 180S		3rd Dryer
DC Motor,Ansaldo,57kW	G3180S		4th Dryer
DC Motor,Ansaldo,57kW	G3C-180S		5th Dryer
			Gearbox, Calendar Top
DC Motor,Siemens,98kW	1GH5 204 ONF40		Roll
DC Motor,Ansaldo,57kW	G3C 180S		Reel

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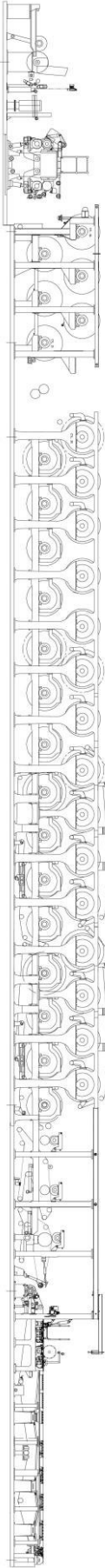
Rewinder



Jagenberg
 Model Vari-Step 43-15
 New in 1988
 Rebuilt Drive and control system in 2023 by ABB
 Control System: ABB 800xA
 DC Drives: ABB DCS880 with STO
 AC Drive (for slitters) ABB ACS880
 Maximum speed: 2200 m/min
 Acc/Dec. Rates: 40 m/min/s
 Motors and Gearboxes (See table below)

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Penrose Mill - Winder Drive Upgrade													
Metres/Minute													
0		2200											
Section		Roll Dia.	NRL	RDC	Installed	Motor		HELLWIG & OFFERMANN GMBH					
						Type	Type	Serial No.	Design	Rating	Ratio	M/C Builders	Overall
		(mm)	[kW]	[kW]	[kW]	[A]				[kW]			
16AG01	Main Drive 1 (North)	750		136	316	Siemens 1GH5 222-0NF90-Z	E-180	Kom Nr 2.2295/88	RH Assy	120	2.317	1.0000	2.317
16AG02	Main Drive 2 (South)	500		136	316	Siemens 1GH5 222-0NF90-Z	E-180	Kom Nr 2.2296/88	LH Assy	120	1.545	1.0000	1.545
16AG03	Regenerative Backstand - Empty Spool	350		123	355	Siemens 1GH5 314-7ZC90-Z	E-320	Kom Nr 2.2250/88	LH Assy	123	2.293	1.0000	2.293
		598											
16AG03	Regenerative Backstand - Full Reel	3010											
Slitter Motors (Four installed)					0.22								

Winder Pulper
 Escher-Wyss/Voith

Model ST4

280 rpm

Screenplate: Holes 20mm dia.

Input Power: 90 kW @ 990 rpm.

Drive: 5V/2360 Vee Belts

Reel Strapper

complete with strap dispenser

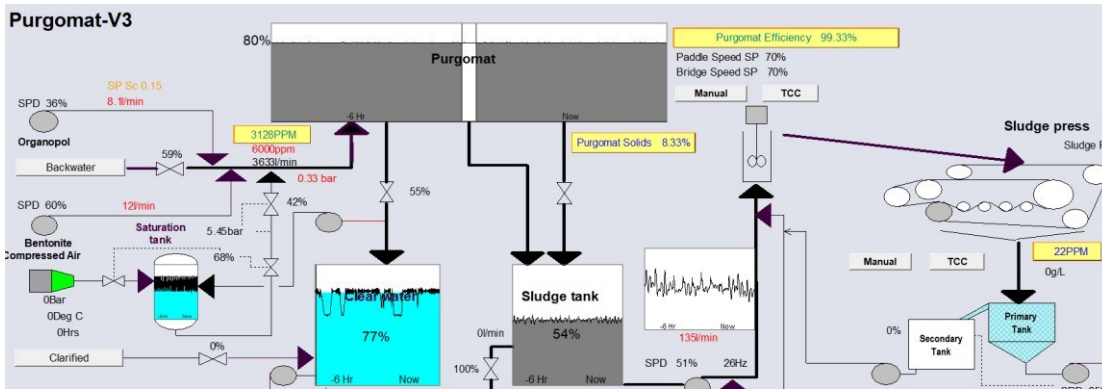
Signode

Model: M20-RMF,PSM M20-1/2"

1/2" steel strapping with clips

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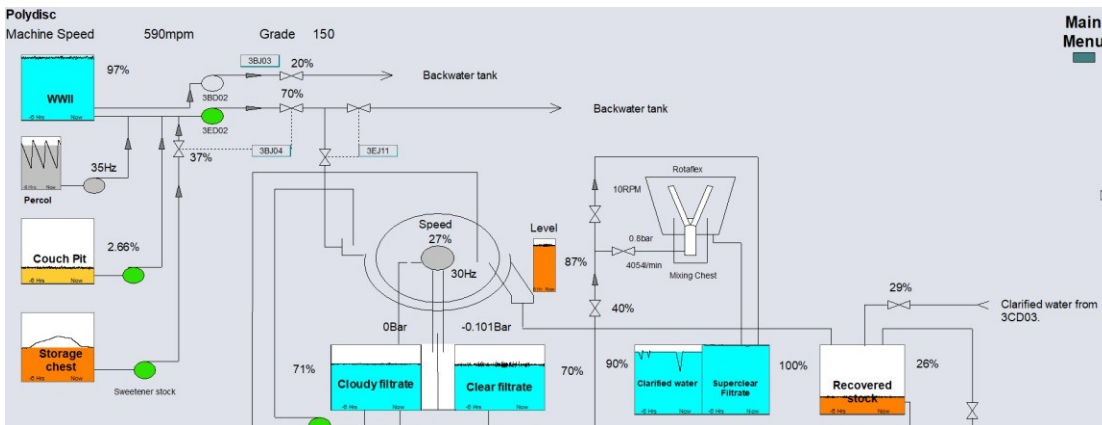
Water System



Purgomat PU66
 Escher-Wyss
 6600mm diameter



Sludge press
 Andritz
 Model: ANDRITZ CPF M 1200



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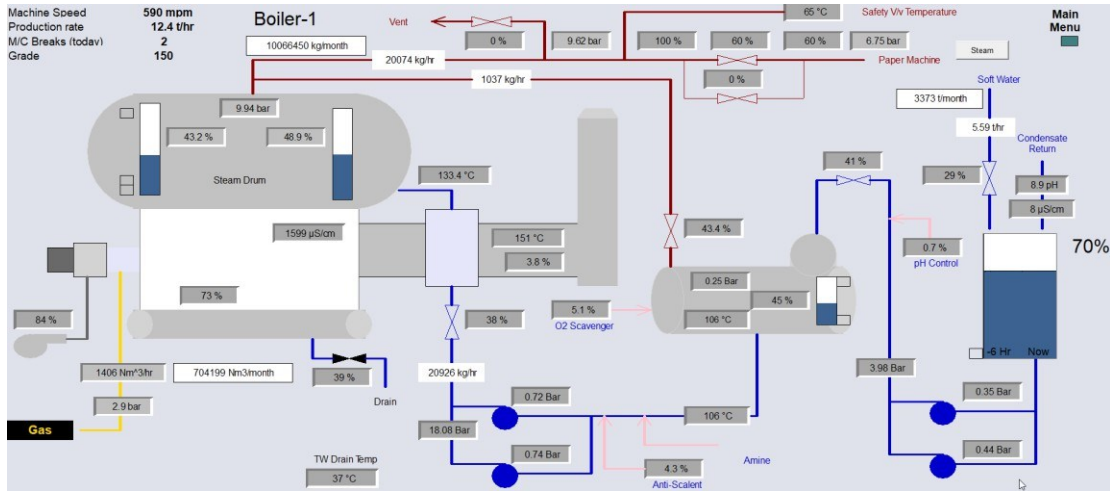
Polydisc Filter
Beloit Italia
12'6" Diameter,6 disk
Fitted with Wiretech S/S sectors
With Repulper

Bore Filter



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Boiler



20MW (27t/hr dry saturated at 11barg)
 Rated at 12.5 bar, runs at 10 bar
 Manufactured by RCR Energy (Now Windsor Energy) in New Zealand
 Natural Gas fired
 Unattended operation
 New in 2015
 Capable of conversion to liquid fuel or duel fuel by means of burner replacement
 Cannot be converted to woodwaste or pelletised biofuel
 Has associated water softening plant, /letdown station, condensate recovery system.

Rating:

1.2 Operating Data

The **Steampac™ WT** boiler is suitable for operation at the following conditions:

Maximum Continuous Steam Output	30,700 kg/hr (@ 11 Barg & Feedwater Temperature of 105°C), 20MW
Normal Working Pressure	11 barg
Normal Steam Temperature	Saturated
Safety Valve Blow Off Setting	12.5 and 12.7 barg

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Package boiler style, can easily be relocated
Boilerhouse and stack were also new in 2015.

Video of the paper mill in operation available on request.
Mill is well maintained and is supported well with spares.

Voltage 415v, 3 ph and 50cyls.
Size press removed and replaced by four additional dryers.
Size press frames and rolls are available if required.

**FOR YOUR GENERAL INFORMATION WE HAVE TO INTIMATE
THE FOLLOWING TO YOU:**

This schedule has been prepared solely for the guidance of prospective purchasers and does not constitute (and at no time shall be deemed to constitute) an offer or contract or any part of an offer or contract. Additionally, no warranty is given to the accuracy of any measurements, specifications or other details whatsoever given within this schedule.

Whilst every reasonable effort has been made to verify any statement, description, or comment made within this schedule, for the avoidance of doubt it is emphasised that the purchaser must make their own enquiries and satisfy themselves.

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