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Data sheet

3 Roll-tandem-Calender

Technical datas
Product data

Paper web weight	49 - 220	g/m²
Paper web width	3455 - 3607 136" – 142"	mm
Paper web temperature, approximate	70	°C
Paper web moisture, approximate	6	%
Paper web tension	0,33 – 1,16	N/mm

Machine Data

Face width	3810	mm
Center bearing distance	4660	mm
Linear pressure in three roll opreation	10 - 350	N/mm
Linear pressure in two roll operation	10 - 250	N/mm
Speed (construction)	670	m/min.
Speed (production)	150 - 670	m/min.
Distance from machine center to center of rope pulley	1955	mm

Temperatures

Surface temperature of heated chilled roll, max	200	°C
Surface temperature of covered roll, max.	110	°C

Weights (all data approximate)

Total weight of calender of each pair of frames	46000	kg
Foundation load per side		
static	23000	daN
dynamic	34500	daN
Rolls including roll bearing		
PERITHERM ROLL	11500	kg/piece
SWIMMING ROLL	7400	kg/piece

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Driving Power

Driving power of calender rolls of each calender unit	255	kW (NRL)
PERITHERM ROLL	99	kW (NRL)
SWIMMING ROLL	78	kW (NRL)
GUIDE ROLL	1,5	kW (NRL)
SPREADER ROLL	2,6	kW (NRL)

The specified drive outputs (NRL) refer to the design speed. We recommend that the motor output to be installed (RDC) be increased by about 25%.

Energy and consumption data

Cooling water temperature, maximum (Pressure 2,5 bar)	25	°C
Ambient temperature, maximum	35	°C
Ambiente temperature control box/control desk	5 - 40	°C
Air moisture for ambiente control box/control desk	30 - 90	%
Instrument air pressure	6	bar
Compressor air pressure for edge zone blowing	3	bar
Required cooling water for heat exchanging unit for the PERITHERM ROLL	17	m^3/h
Hydraulic system Swimming Roll	16	m^3/h
Required instrument air Simming Roll	16	m^3/h @ 5,5 bar
SWIMMING ROLL Drive via toothed belt and intermediate gear Rotating speed at drive journal	981,8	min^{-1}
PERITHERM ROLL Driven directly via roll journal Rotating speed at drive journal	300,4	min^{-1}
SPREADER ROLL Drive via V-belt and intermediate gear Rotating speed at drive journal	1523,0	min^{-1}
GUIDE ROLL Driven directly via roll journal Rotating speed at drive journal	666,5	min^{-1}
Sound pressure level Leq	< 85	dB (A)

Swimming Rolls:

All six swimming rolls are covered with Voith Safir-S covers. The new cover thickness is 0.652" on a Kusters nominal shell outer diameter of 21.063" (535mm). This results in a nominal newly recovered roll outside diameter of 22.367". Voith lists the nominal minimum diameter for this roll cover at approximately 21.750". Therefore as shown on the existing diameter chart below all six of the rolls are still well above recovering diameter.

Roll No.	Existing Diameter (inches)
1040	22.359
1041	22.252
1042	22.297
1043	22.289
1044	22.281
1045	22.215

Thermo Rolls:

Kusters lists the nominal new thermo roll diameter at 27.95" (710mm). Therefore as shown on the existing diameter chart below all three rolls are still larger than this as new diameter.

Roll No.	Existing Diameter (inches)
1046	28.199
1047	28.037
1048	28.155

Layout:

Regarding the space required to install the 10PM Soft Nip Calender the following three drawings shoud represent the layout requirements for the stack itself as well as the hot oil, hydraulic and lubrication units located in the paper mill basement. These drawings are:

Kusters No.	Domtar No.	Description
300.01-146.0 Rev -	45445-C	Sole Plates (and elevation)
300.50 - 867.0 Rev A	45446-C	Equipment Arrangement (basement)
541.207.0 Rev B	45463-C	Roll - Tandem - Calender