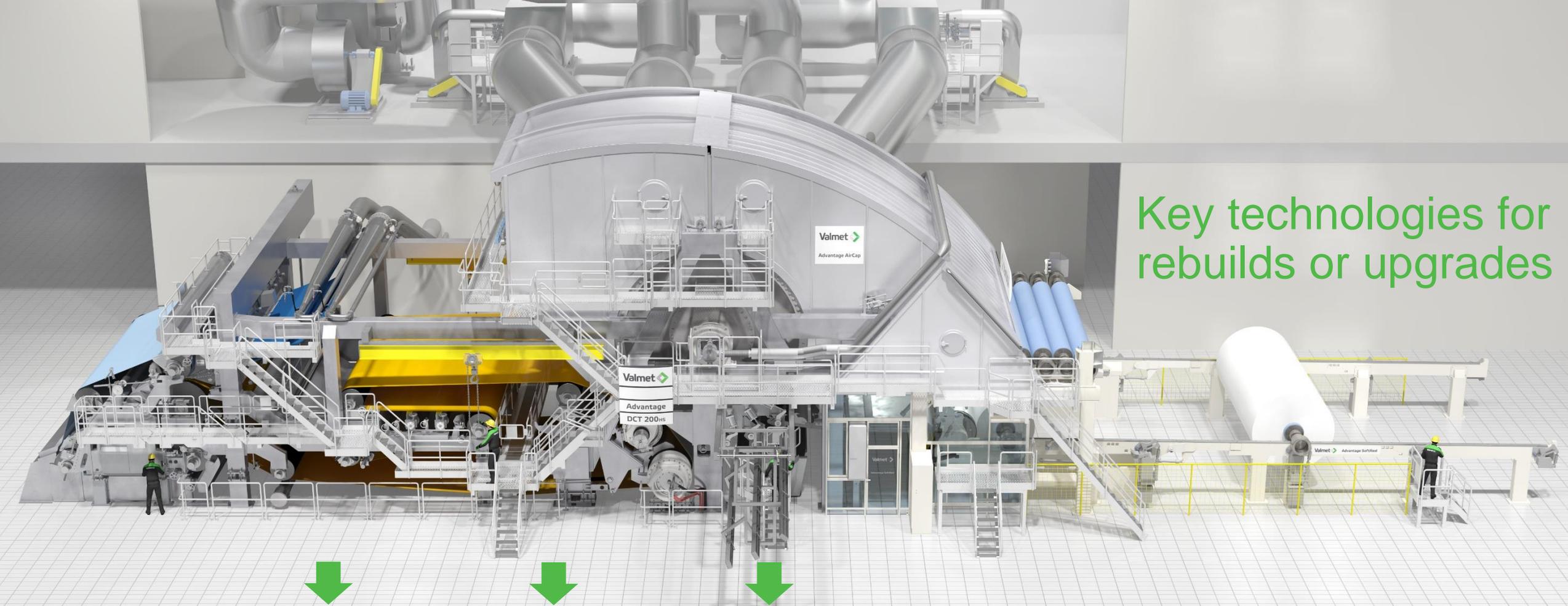




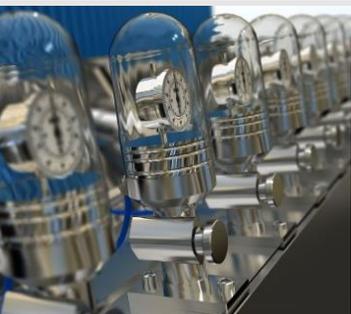
Sustainable rebuild opportunities

Heikki Luoma

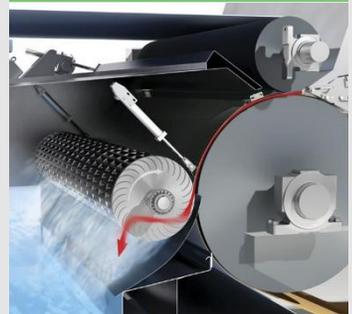


Key technologies for rebuilds or upgrades

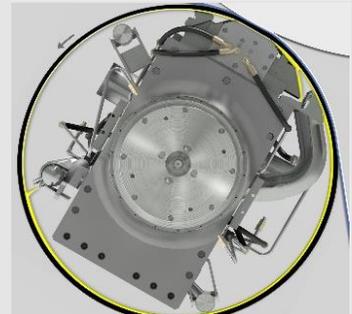
OptiFlo II TIS headbox



Advantage ReTurne energy recovery



Advantage ViscoNip press



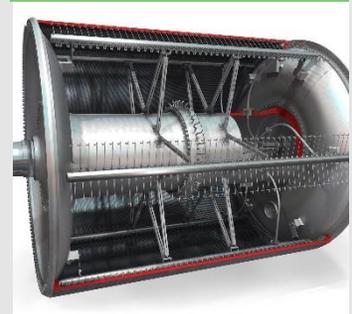
Advantage ReDry web heater



Advantage AirCap helical hood

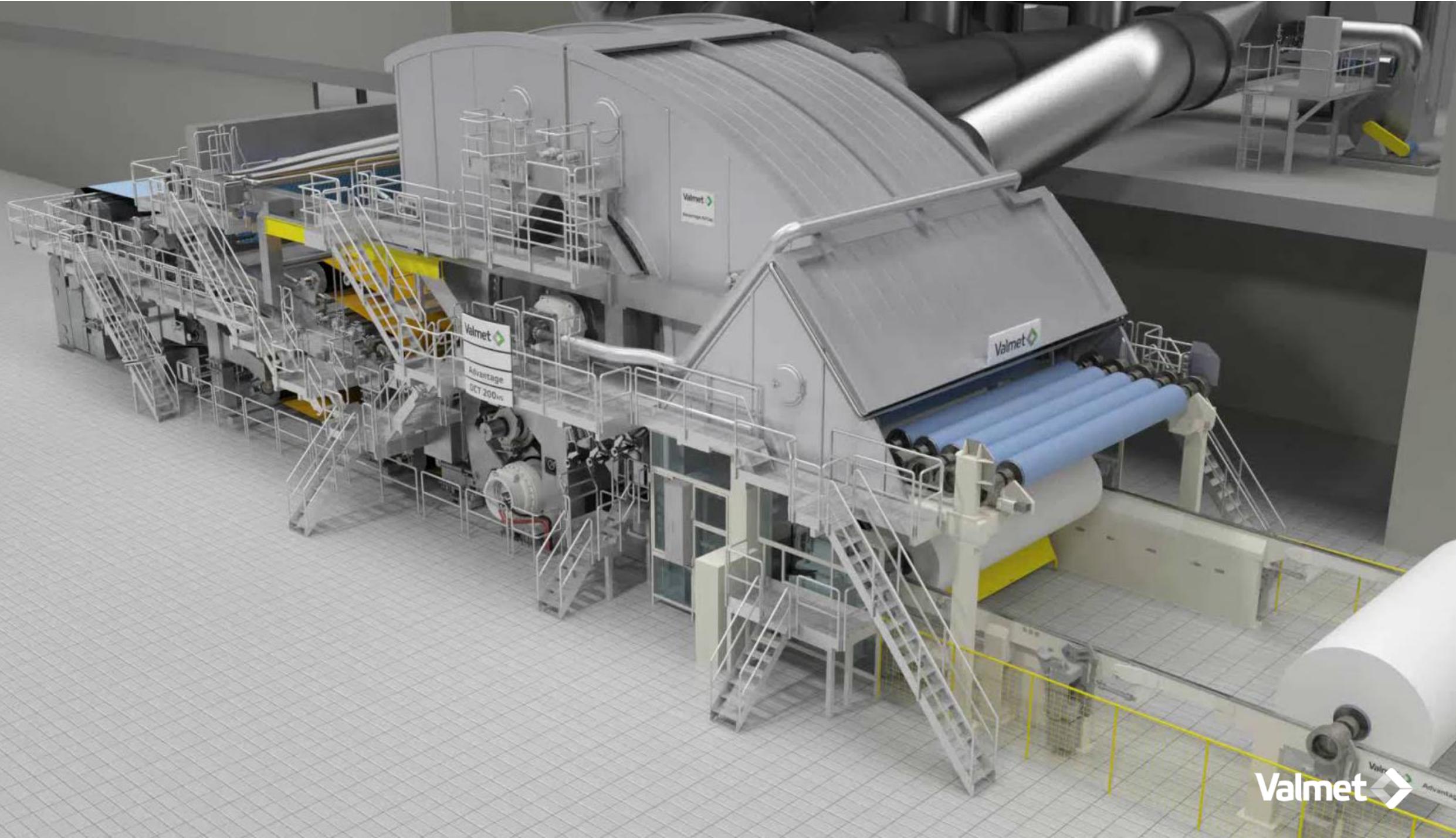


Advantage Yankee dryer cast & steel

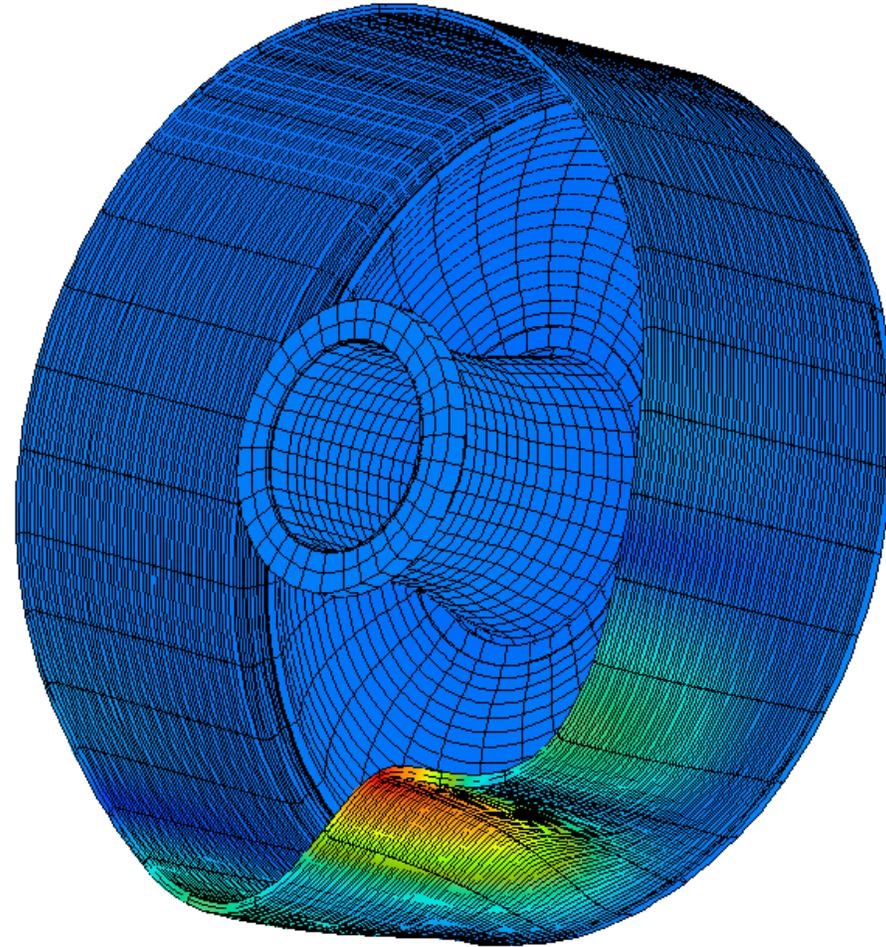


Advantage SoftReel reel A, P, L & belted

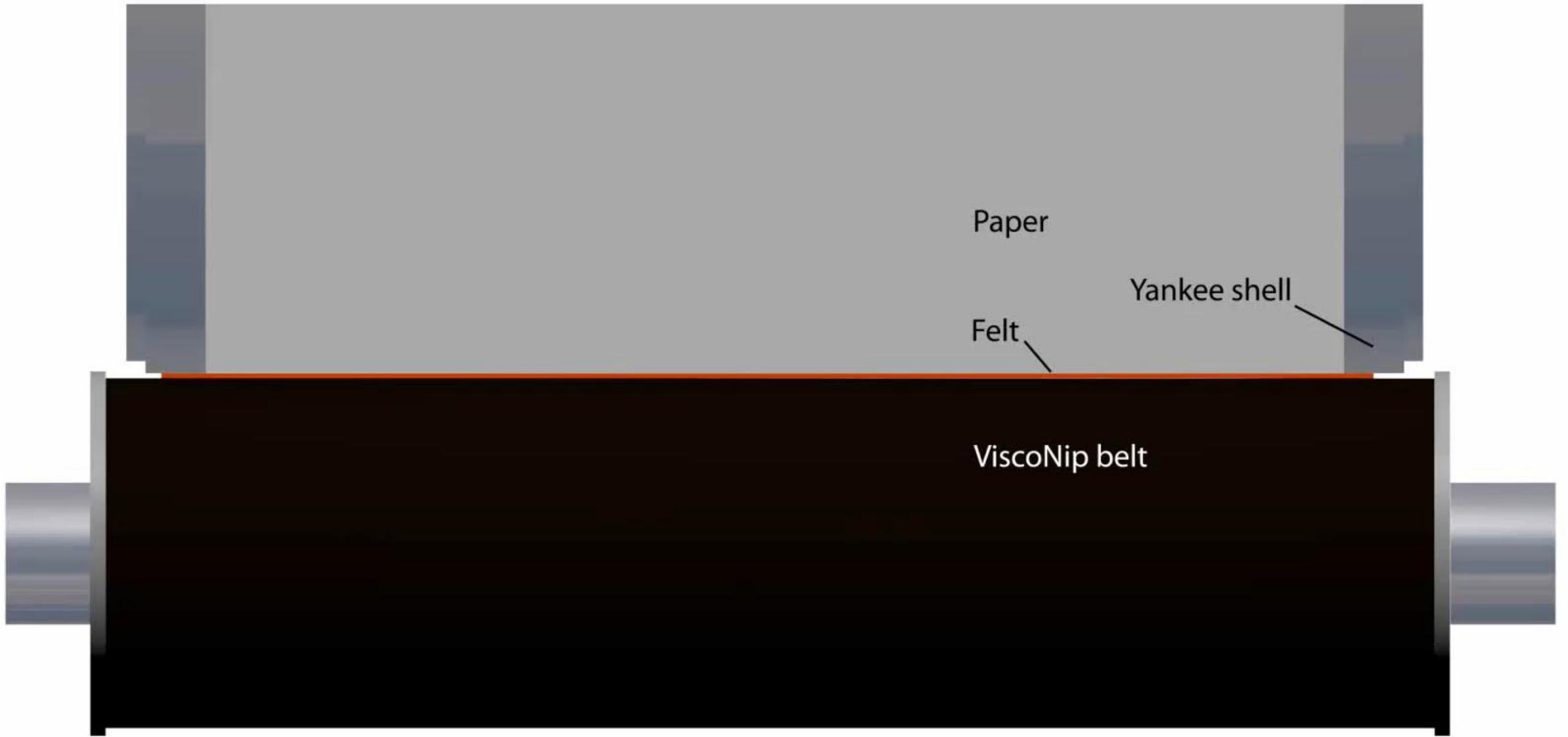




Yankee Dryer Deformation



SUCTION ROLL
79 kN/m (450 pli)



Paper

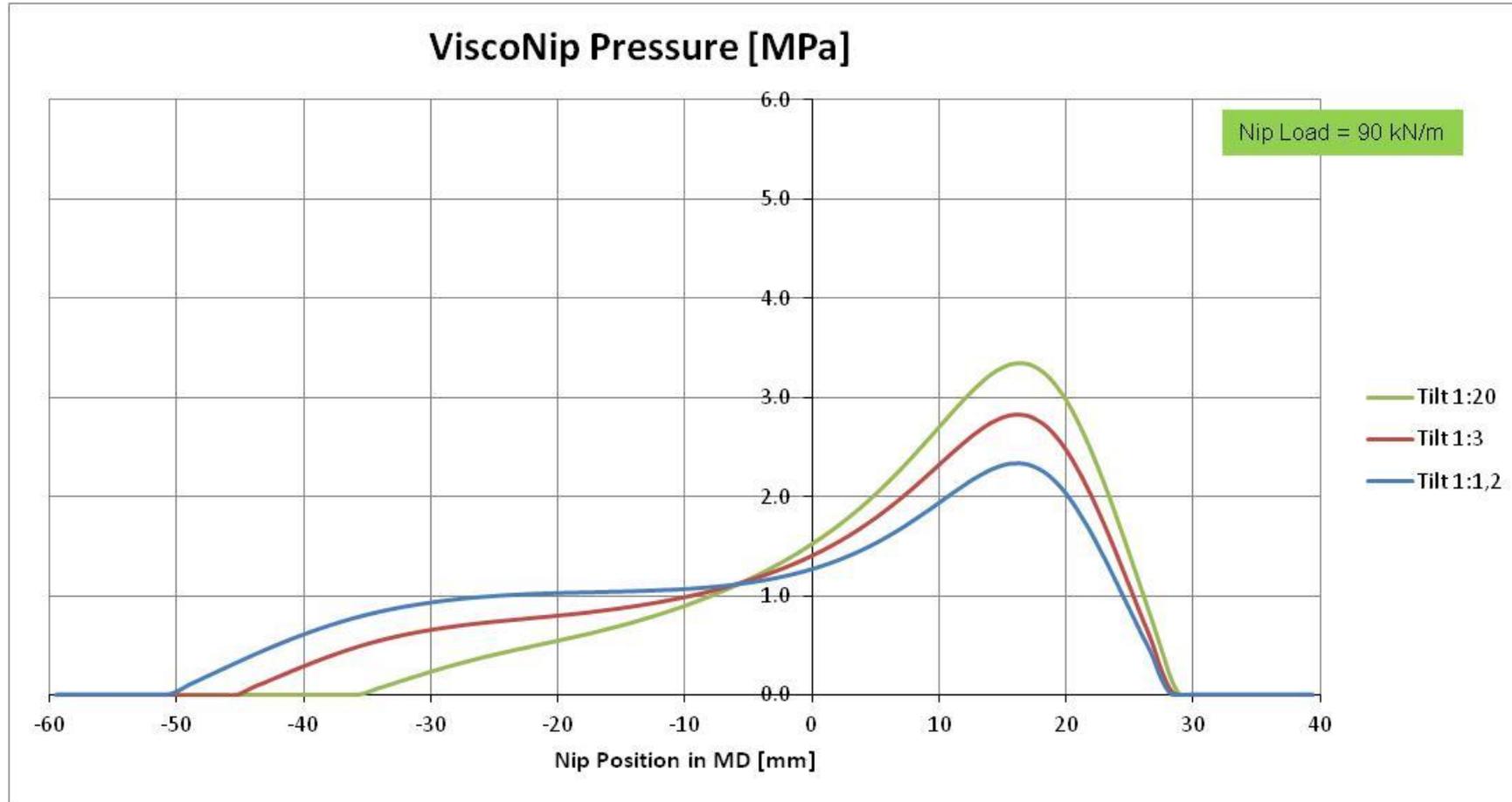
Yankee shell

Felt

ViscoNip belt

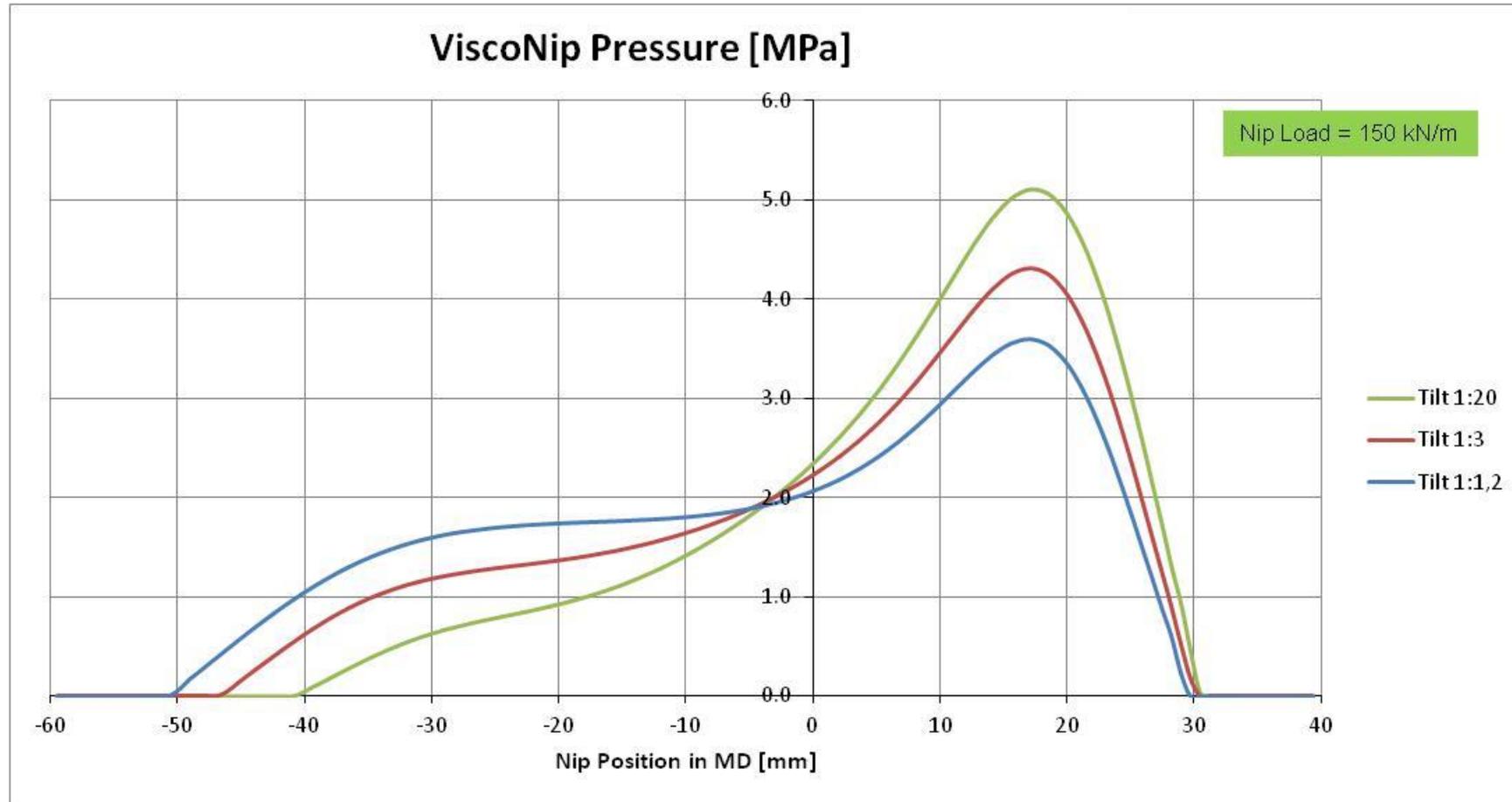
Pressure curves

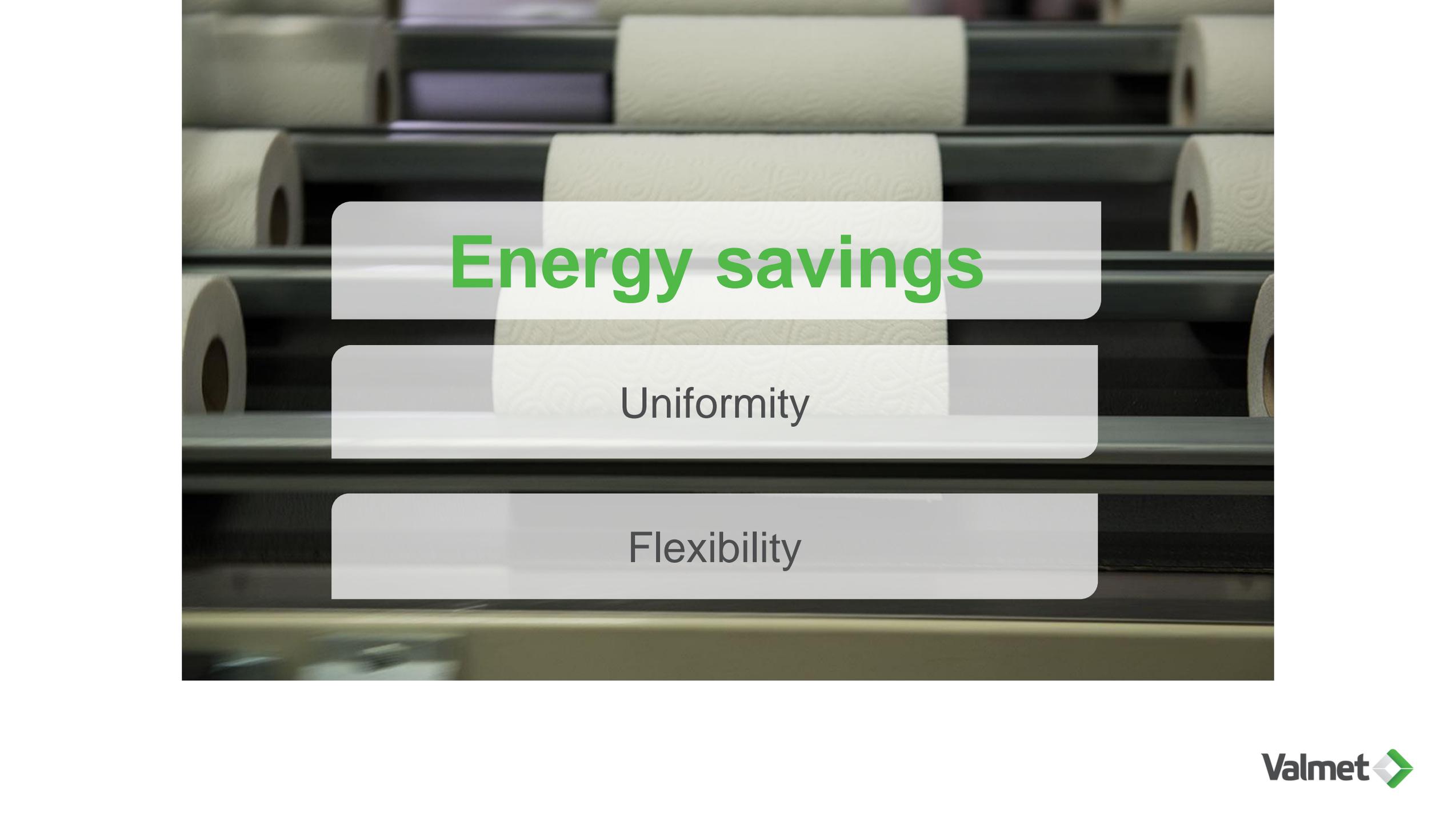
90 kN/m at 3 different pressure ratios between Chamber 1 and 2



Pressure curves

150 kN/m at 3 different pressure ratios between Chamber 1 and 2





Energy savings

Uniformity

Flexibility

Advantage ViscoNip performance in DCT200

confidential - north america

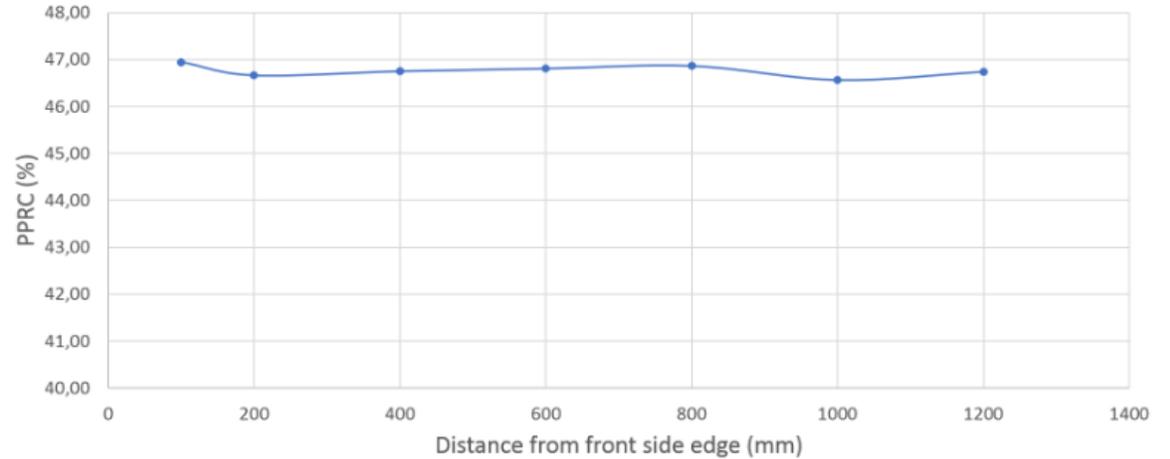
**Advantage
ViscoNip**

130 kN/m

press dryness 46,8% with
± 0,2 %-units Peak to Peak

12,6 gsm on Yankee

fiber: 85% DIP, 15% virgin



confidential - china

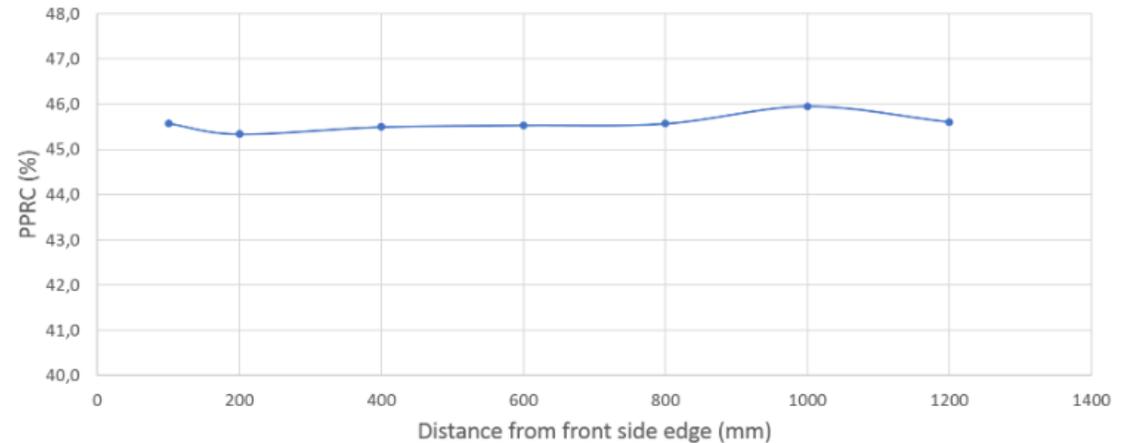
**Advantage
ViscoNip**

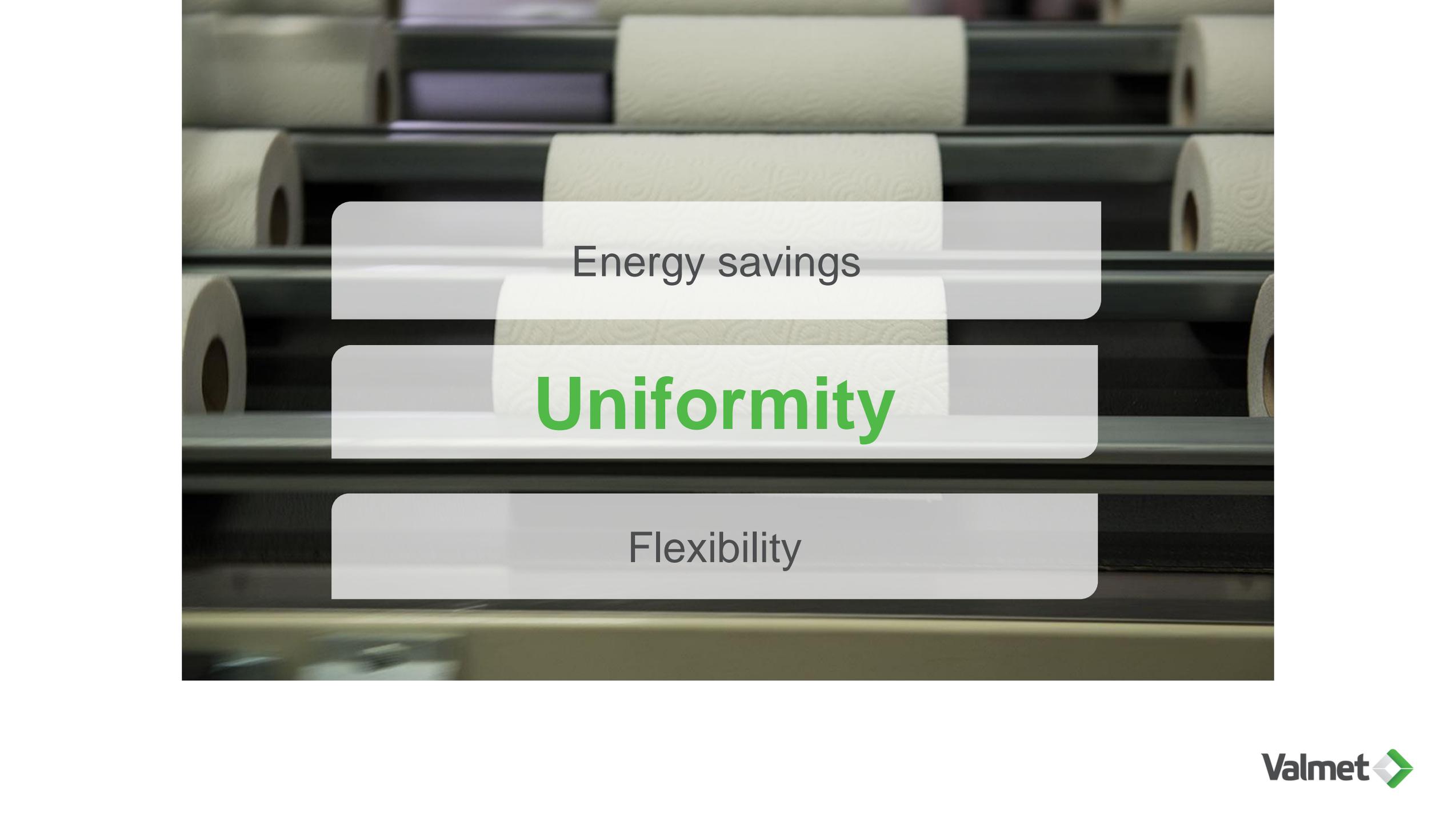
140 kN/m

press dryness 45,6% with
± 0,3 %-units Peak to Peak

14 gsm on Yankee

fiber: 100% virgin





Energy savings

Uniformity

Flexibility

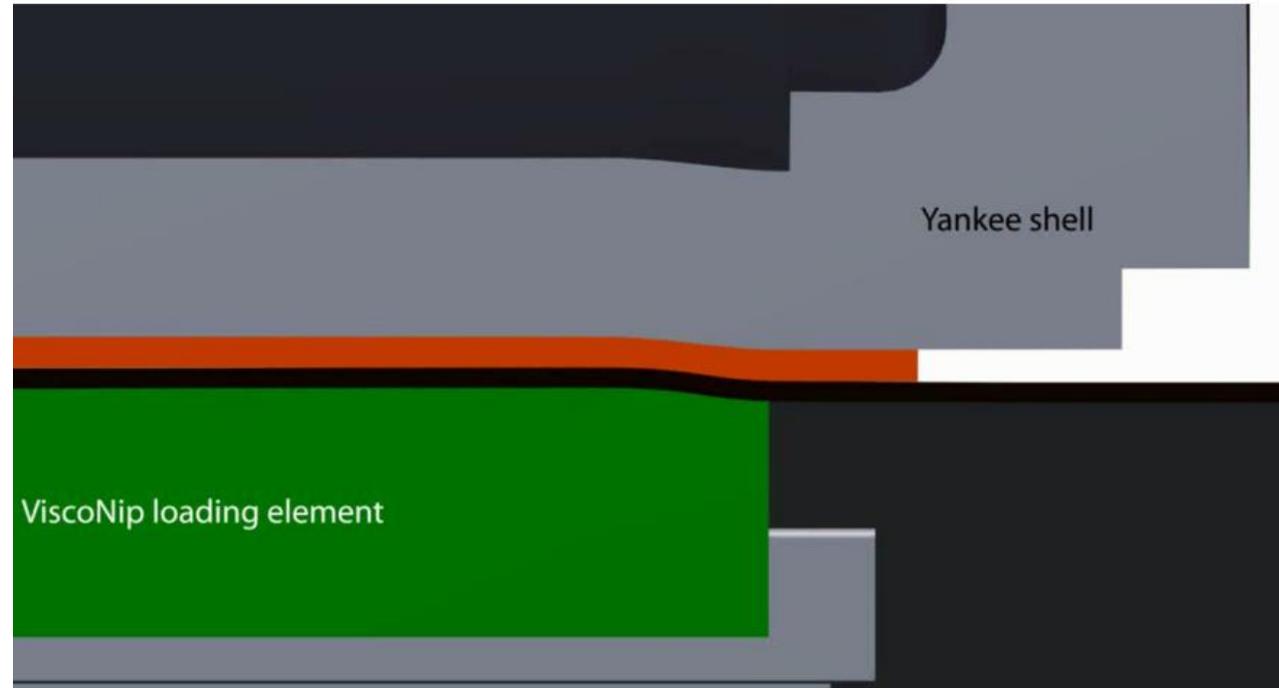
Uniformity

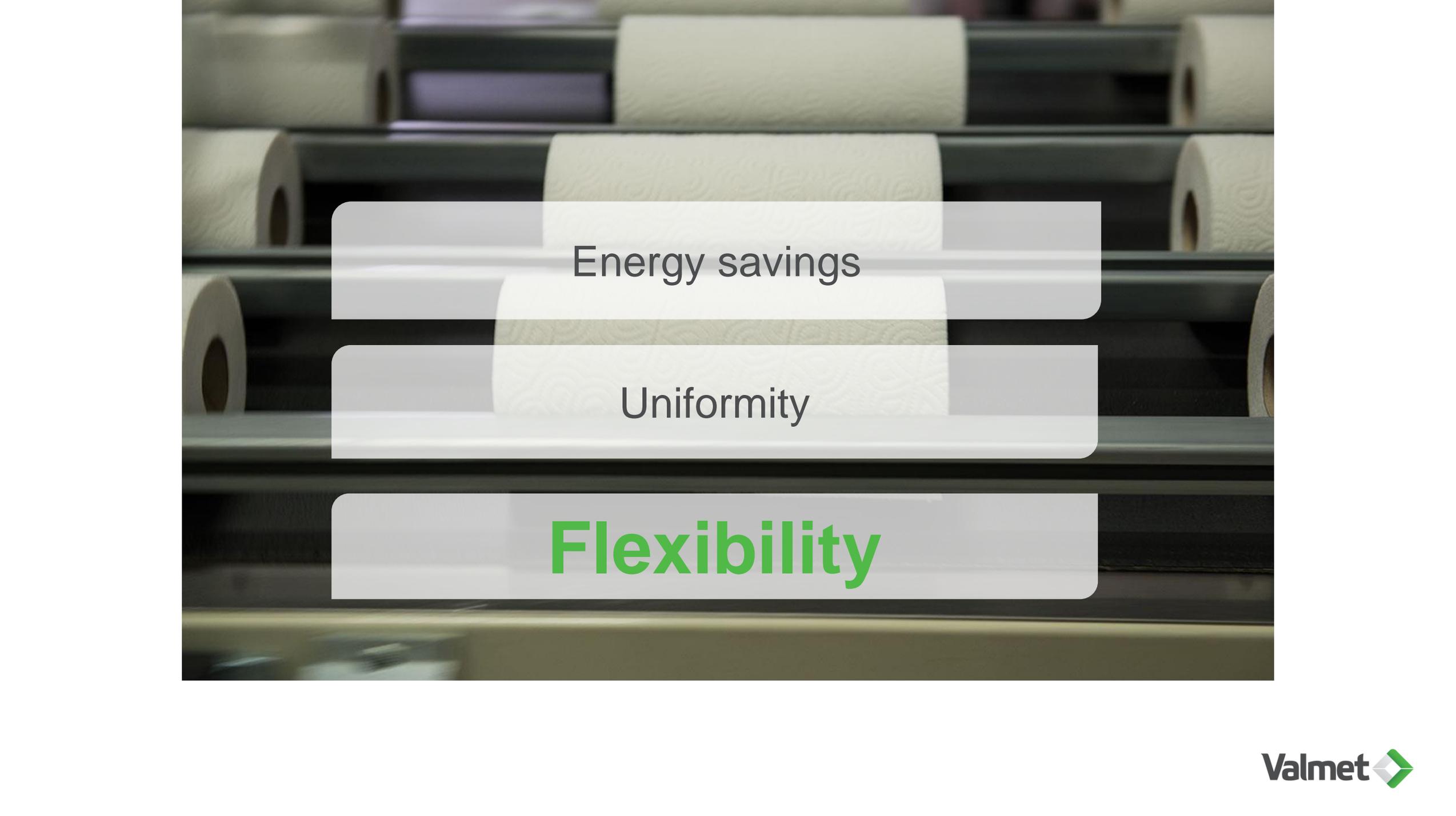
ViscoNip fully adapts to
Yankee shape

press dryness profile

Peak to Peak
 $\pm 0,3$ %-units

uniform transfer to Yankee
same coating conditions in
CD giving even crepe →
improved paper





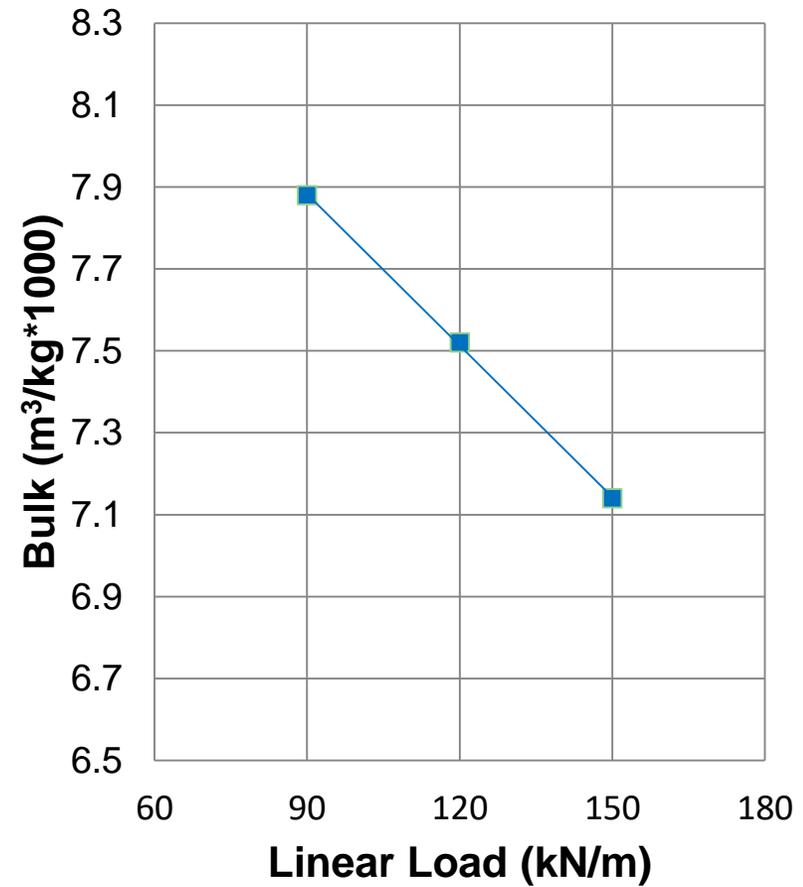
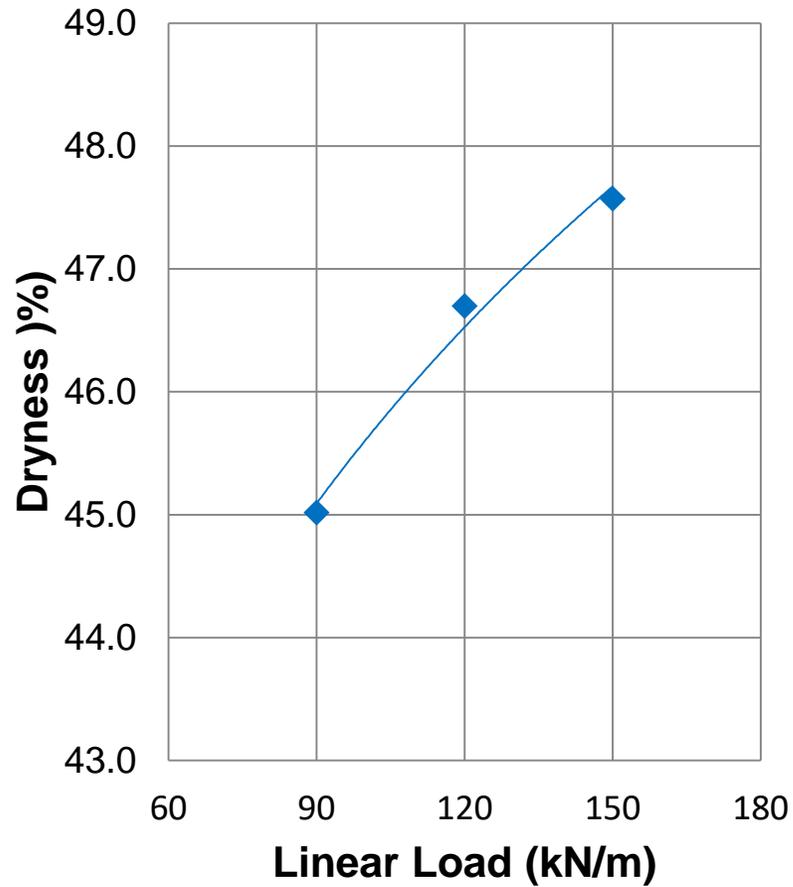
Energy savings

Uniformity

Flexibility

14.5 gsm 1600 m/min, CR 19%

Press dryness and bulk

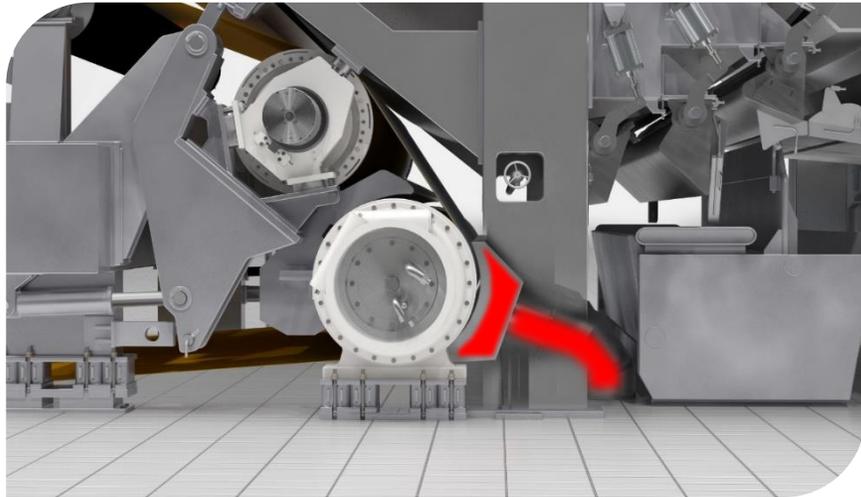


A close-up photograph of a stack of white paper towels. The towels are layered, showing their soft, fibrous texture. On the left side of the image, there is a large, bright green arrow graphic pointing towards the right. In the center of the image, there is a white rectangular box with rounded corners containing the text "Advantage ReDry".

Advantage ReDry

Advantage ReDry

Exhaust heat from Yankee hood for dryness improvement

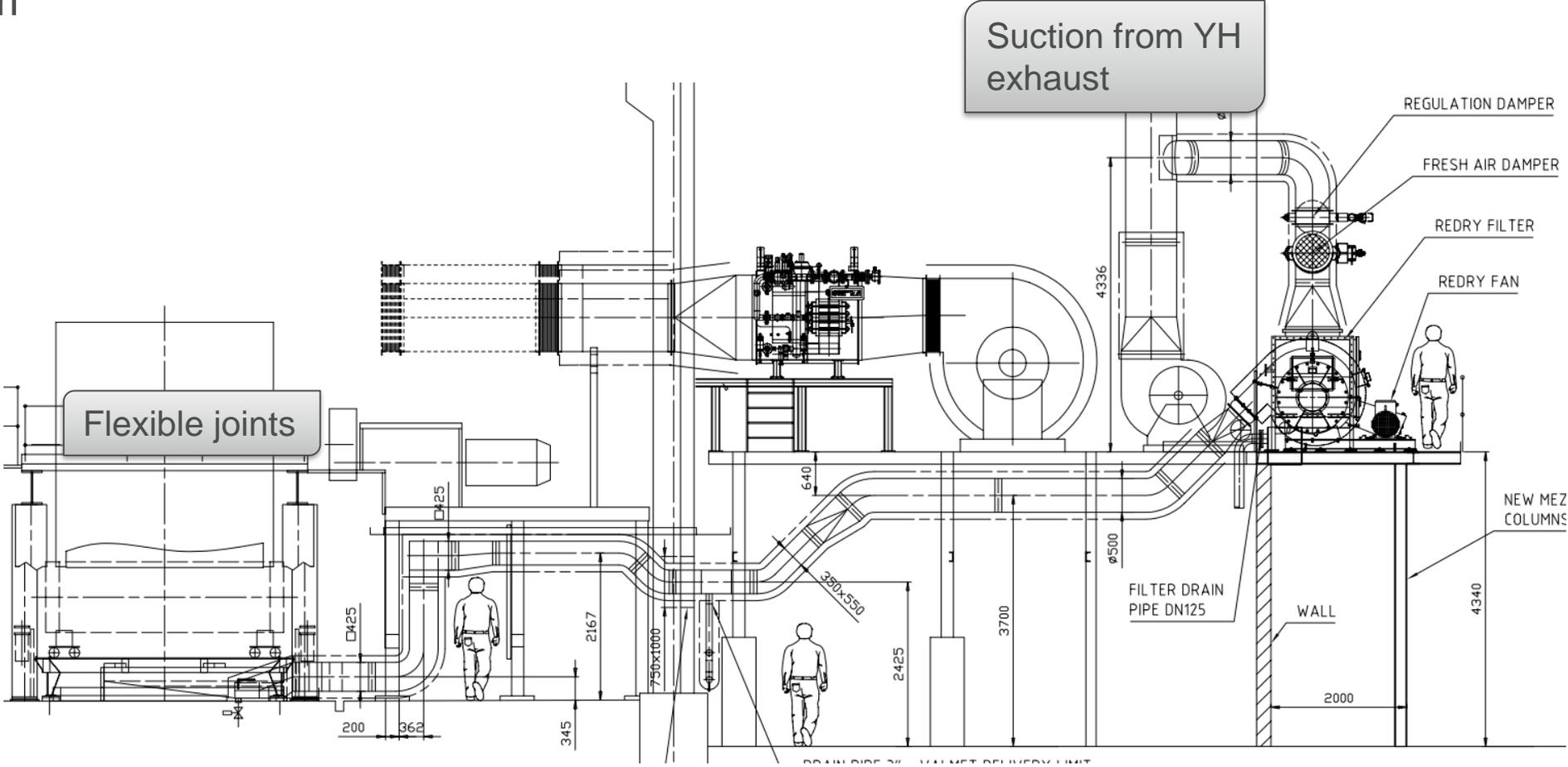


ReDry:

- Located at suction turning roll
- Same wrap angle as suction roll suction zone
- Supply air temperature 150 - 200°C
- Amount of airflow is same or less than suction roll airflow
- Supply air fan and air is taken from AAC exhaust air duct
- Equipped with retraction system

Advantage ReDry

Air system



Flexible joints

Suction from YH exhaust

REGULATION DAMPER

FRESH AIR DAMPER

REDRY FILTER

REDRY FAN

NEW MEZ COLUMNS

WALL

FILTER DRAIN PIPE DN125

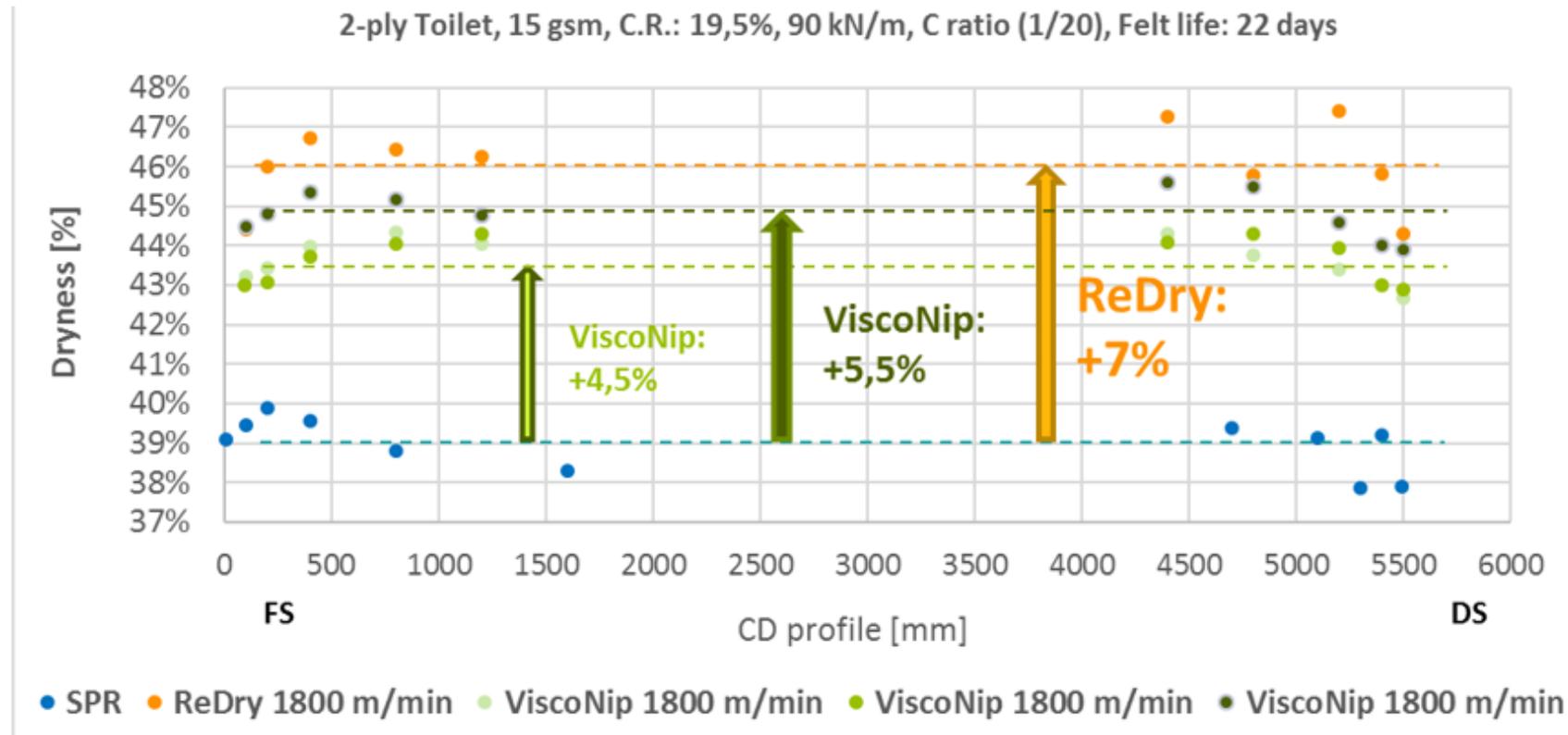
Main header and ReDry blow box

Insulated ductwork

2-ply Toilet, 15 gsm CR 19,5%, 1800 m/min

Before rebuild SPR 90 kN/m; After rebuild ViscoNip 90 kN/m

With / Without ReDry



Advantage ReDry

Why should I install it?

By recovering part of the exhaust air, the dryness at the press increases up to 1.5% with the Advantage ReDry, with no interference on machine functionality.

+1.5% more dryness at the press

=

**Gas energy
saving
- 15-20%**

**More drying
capacity
about + 6%**

**Higher
quality,
more
bulk**

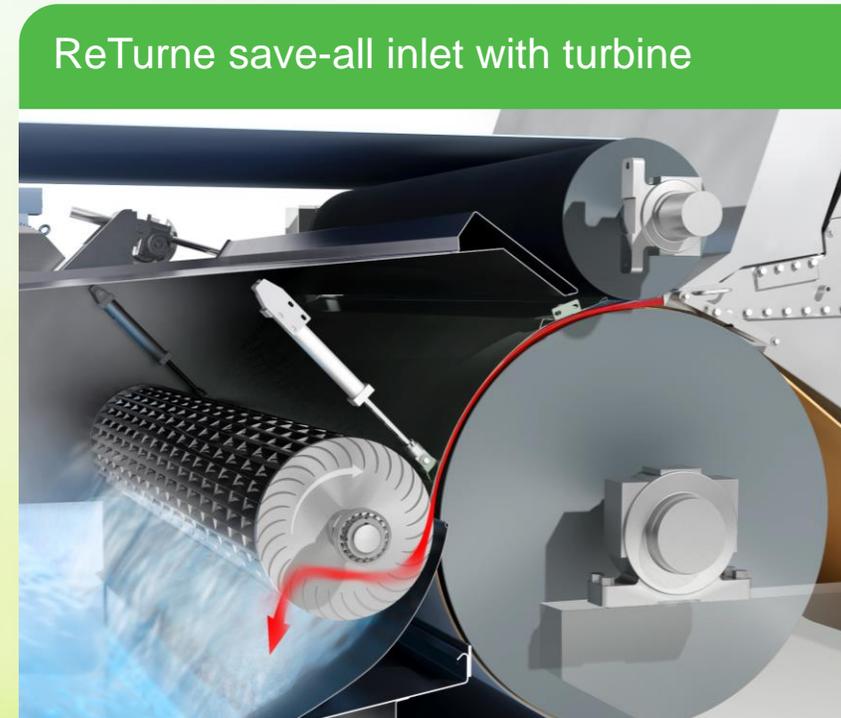
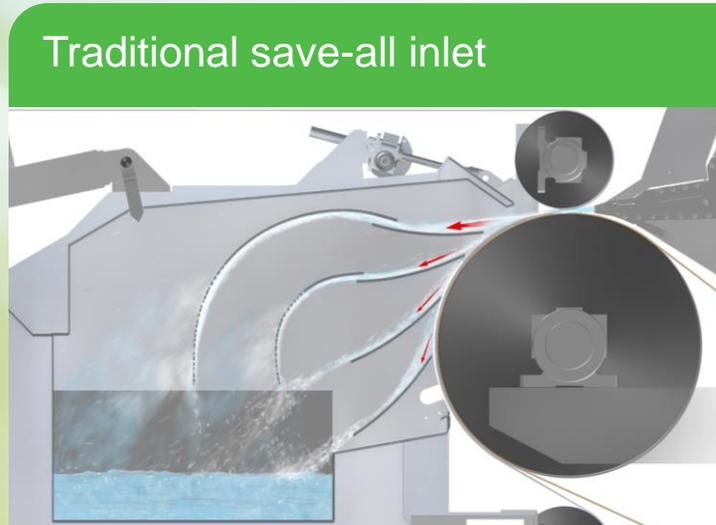


The background of the image consists of several rolls of white toilet paper, some partially unrolled, creating a textured, layered effect. On the left side, there is a large, bright green graphic element that resembles a stylized arrow or a double-headed arrow pointing towards the center. In the center of the image, there is a white rectangular box with rounded corners containing the text "Advantage ReTurne".

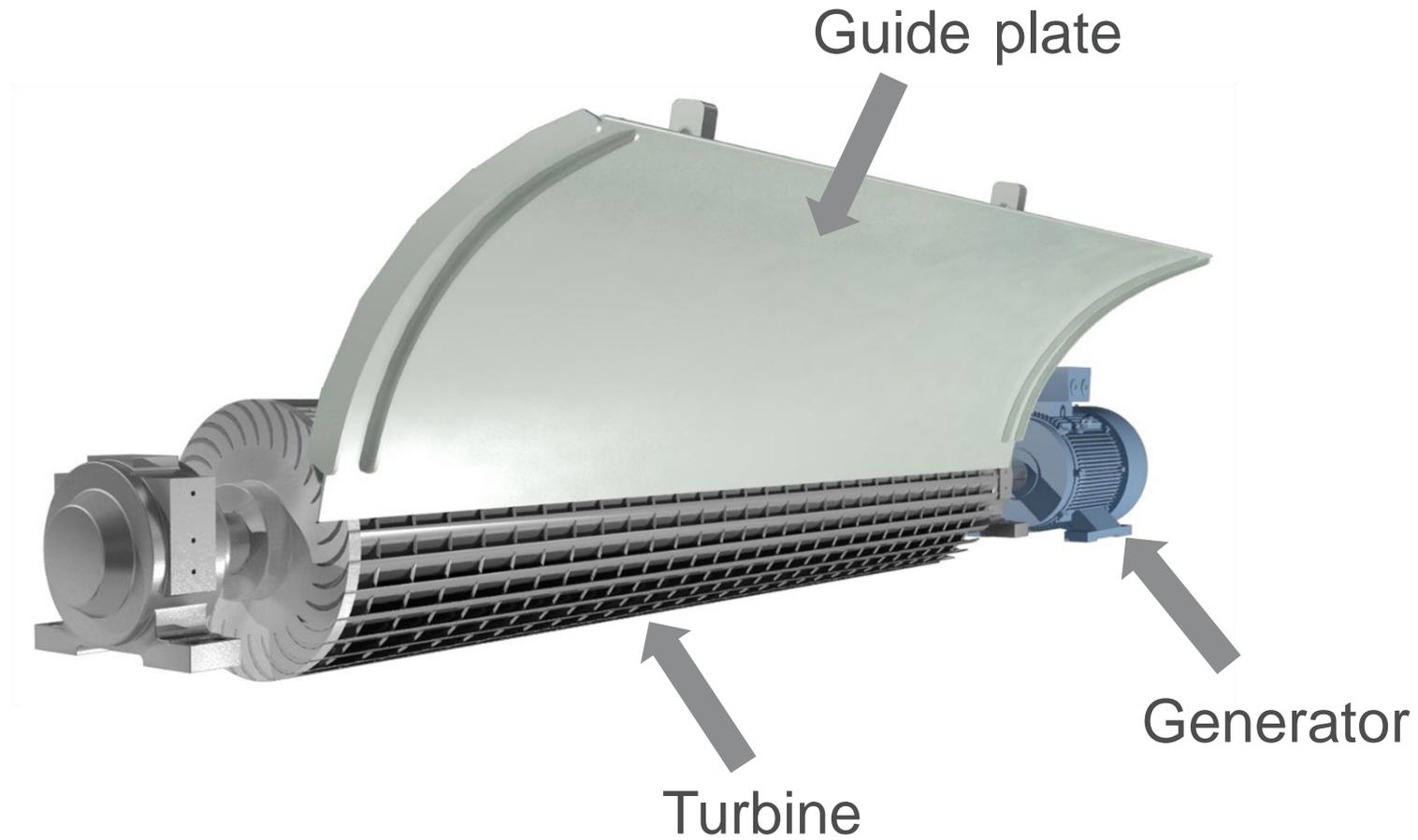
Advantage ReTurne

Recover 50% of headbox jet energy

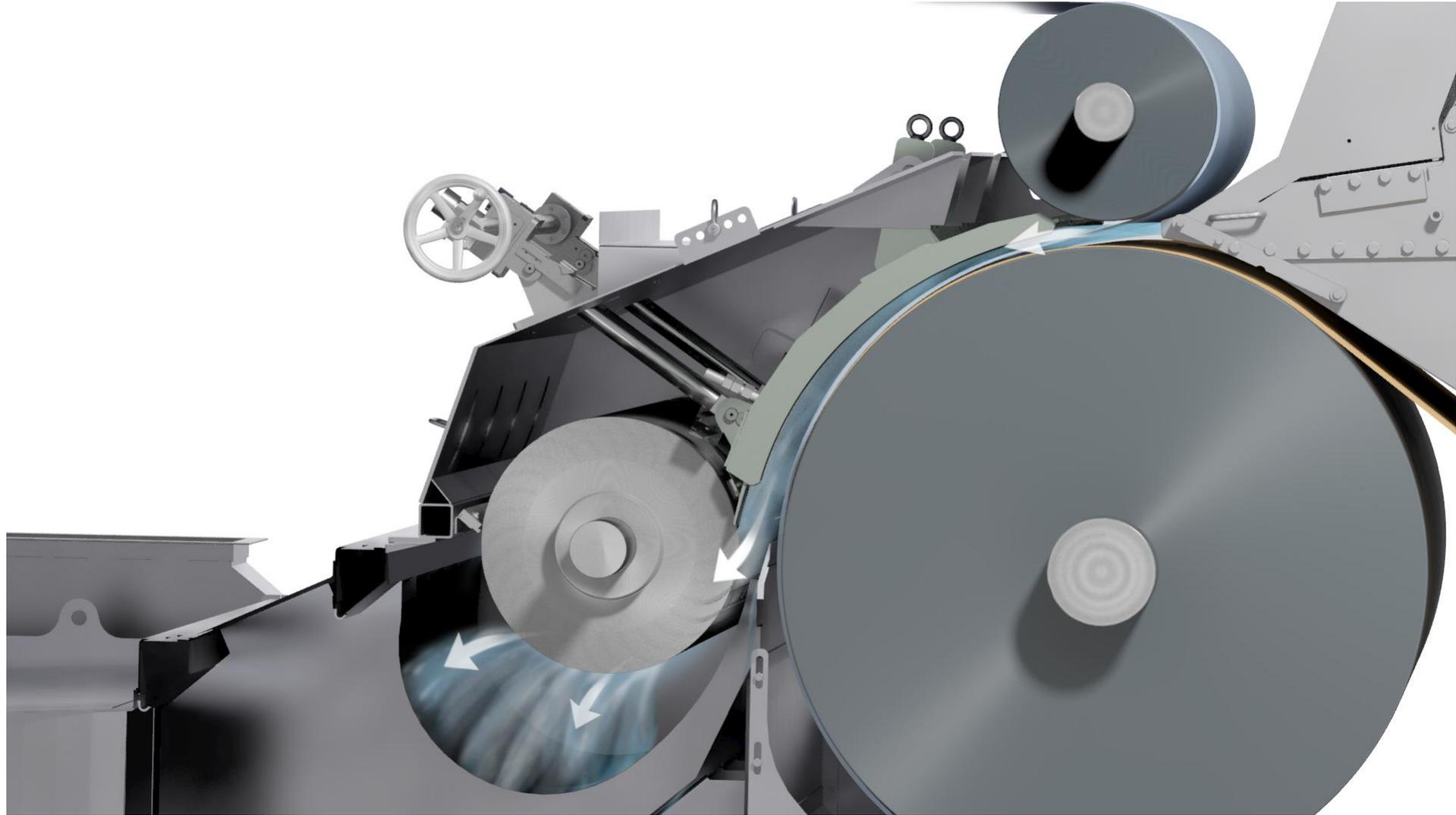
Turbine located in the save-all inlet



ReTurne major components

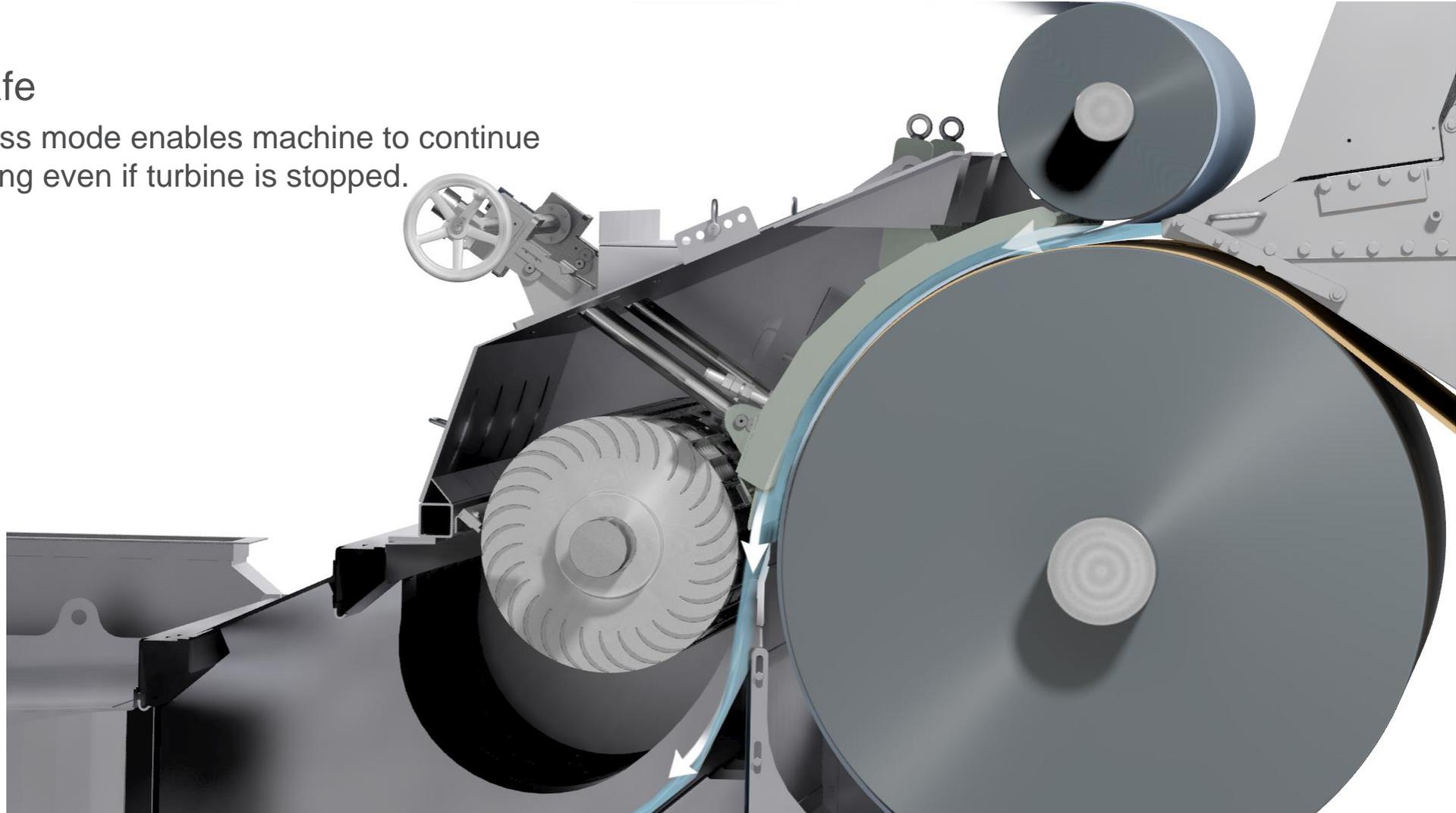


Recovery mode



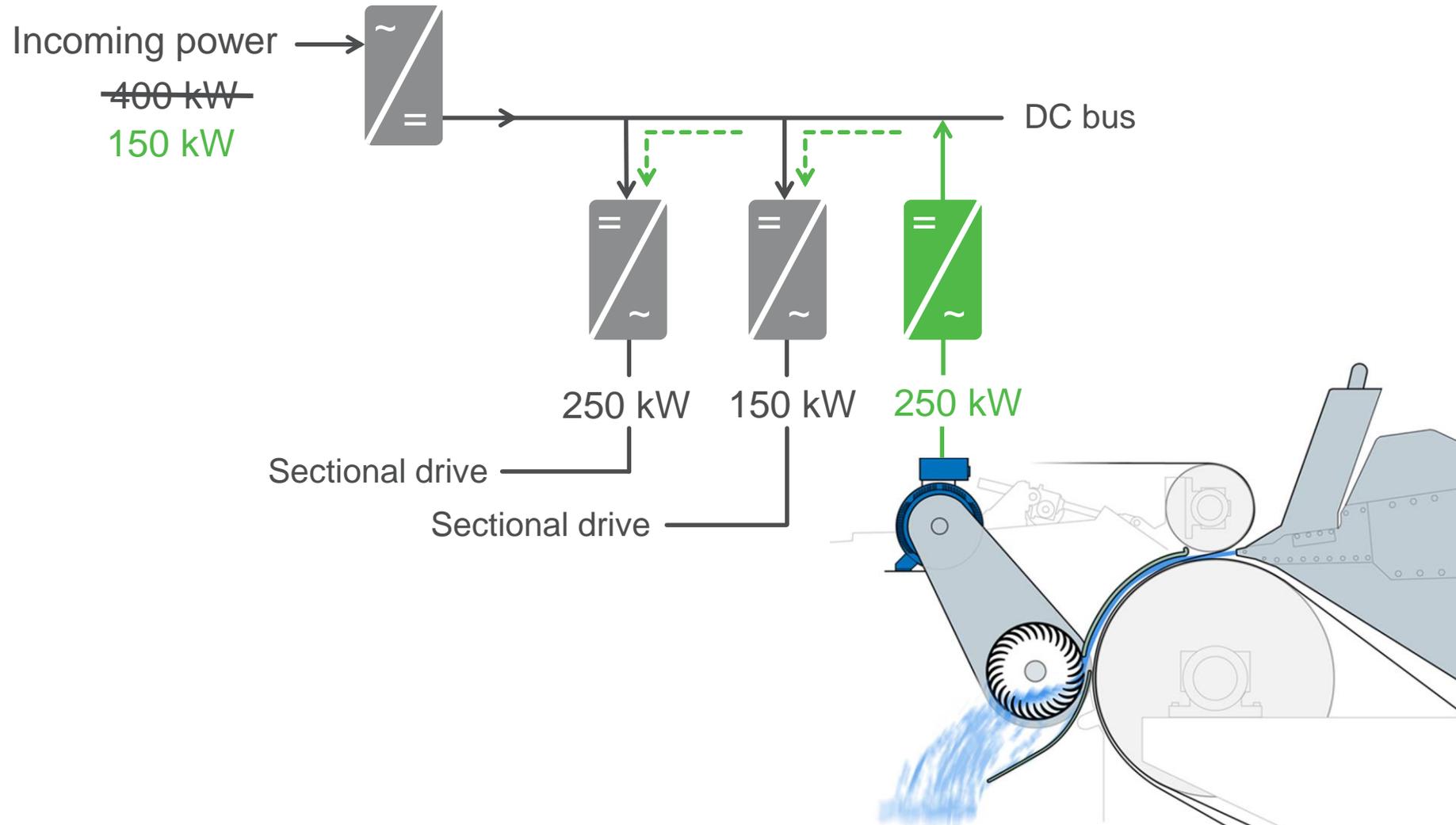
Bypass mode

- Fail safe
 - Bypass mode enables machine to continue running even if turbine is stopped.



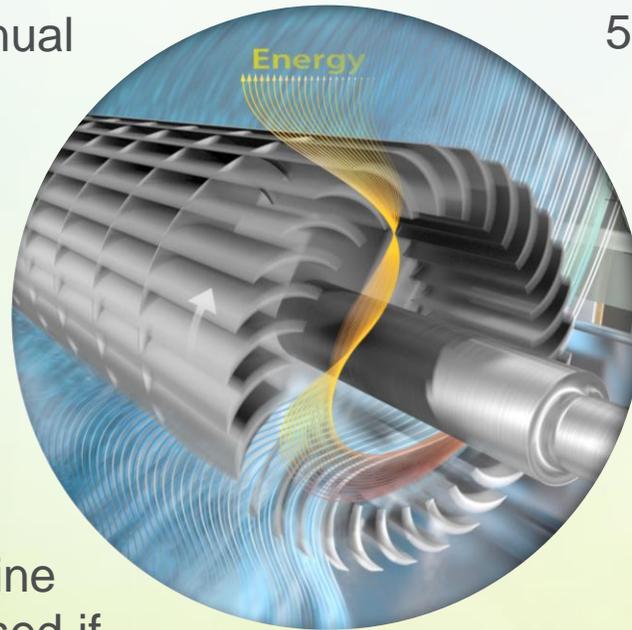
Return the electrical power

Electrical installation



ReTurne summary

Recover 50% of Headbox jet power
– significant annual saving



Rebuilds and new installations up to 5.5 meter width

Fail safe – turbine could be bypassed if needed

No influence on tissue process and sheet properties