

Slovene Paper Days

22. – 23.11.2017

Technical Highlights of Conversion of a Fine Paper Machine into a Specialty Board Machine



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The next 25 minutes...

- Back ground Kotkamills
- Machine set up follows specific requirements
- Final results



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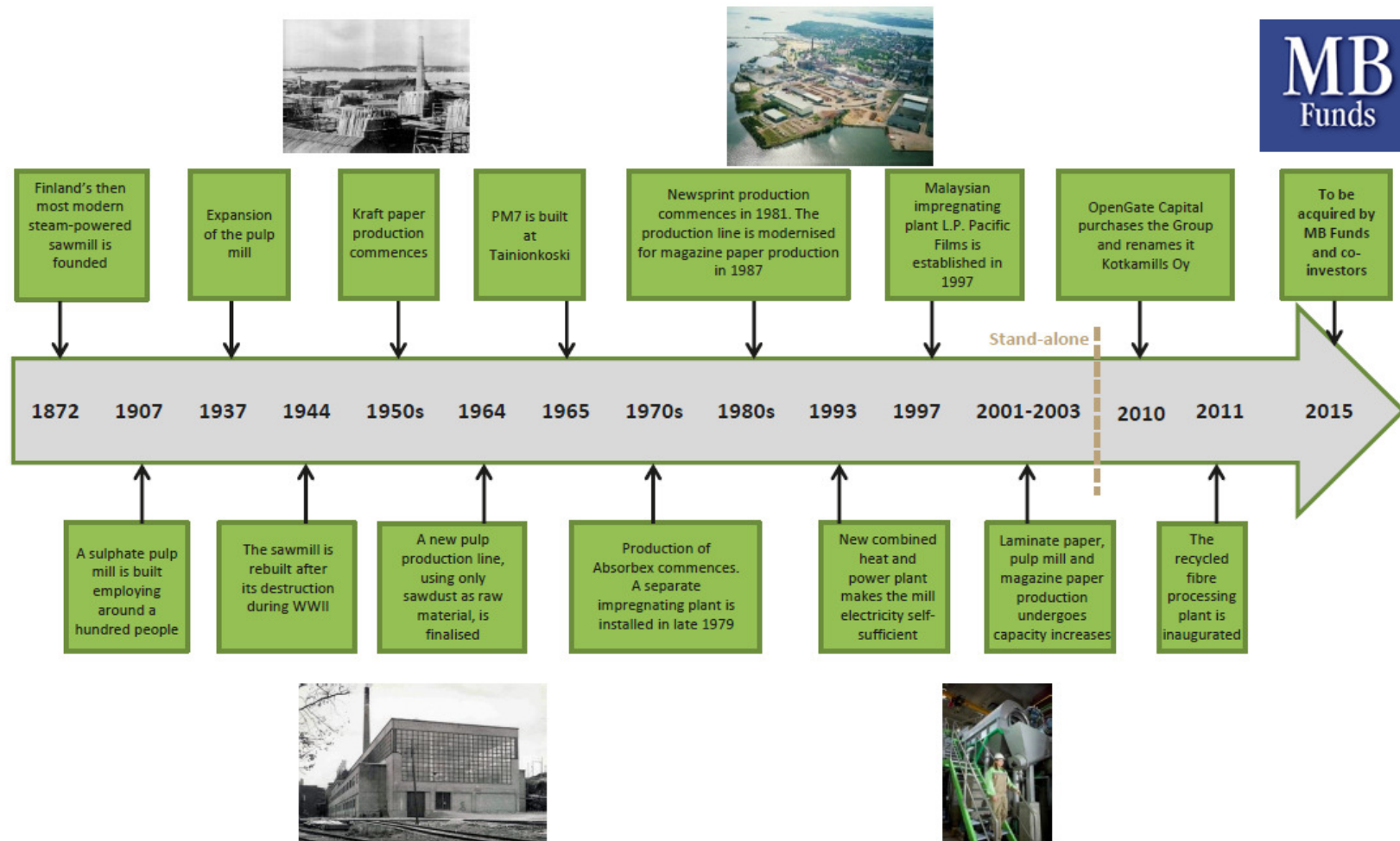


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The history of Kotkamills



KOTKAMILLS 11



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Flying Eagle (FE2) Targets

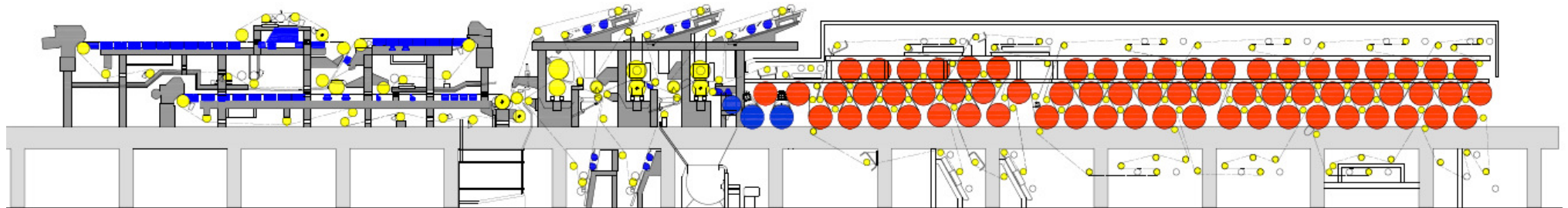
- **FBB 150 – 550 g/m²**
- **400.000 t/year**
- **Efficiency 80 % beginning of 2018**
- **Start-up curve better than budget**
- **Fast matching of quality targets**
- **Future launch of new and innovative packaging products**
- **Effective and fast training of mill personnel into high-skilled board making specialists**



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Base board machine (by Bellmer-Vaahto)

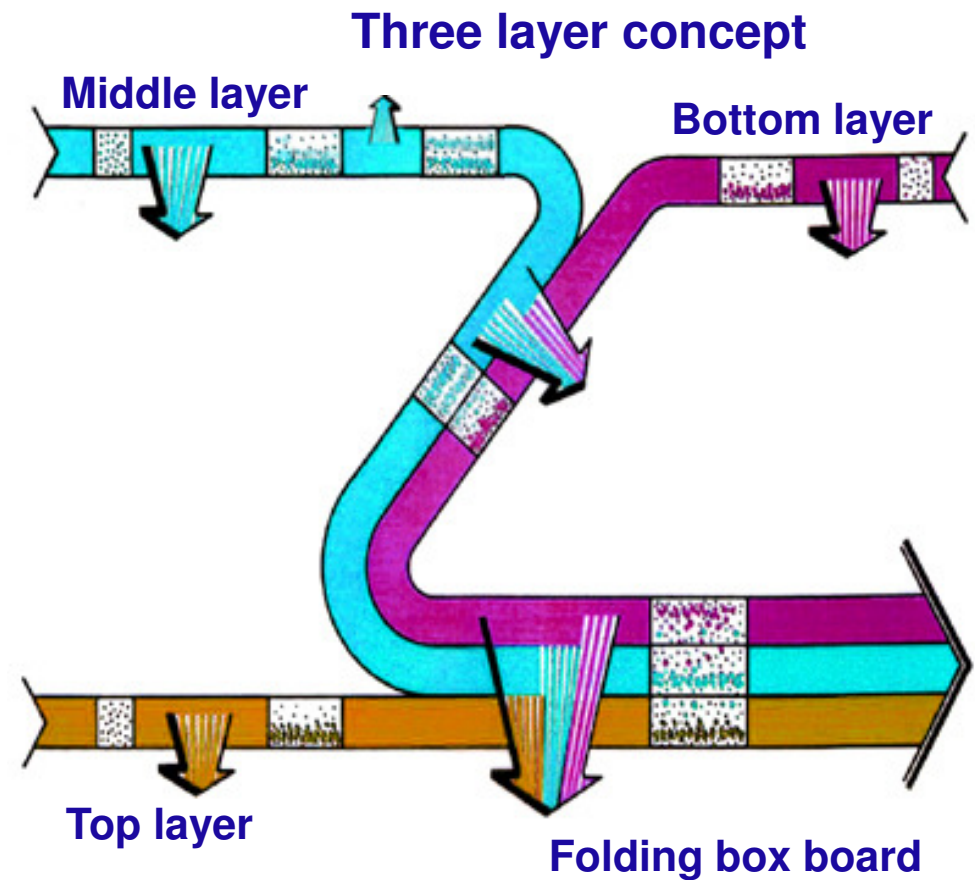


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Wire section: 3 or 4 layers?



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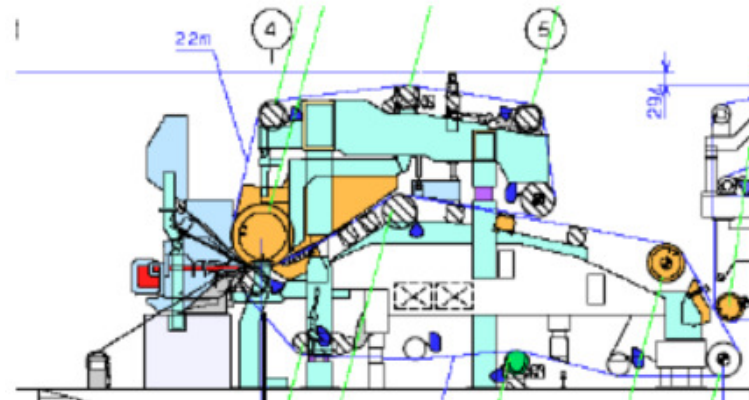
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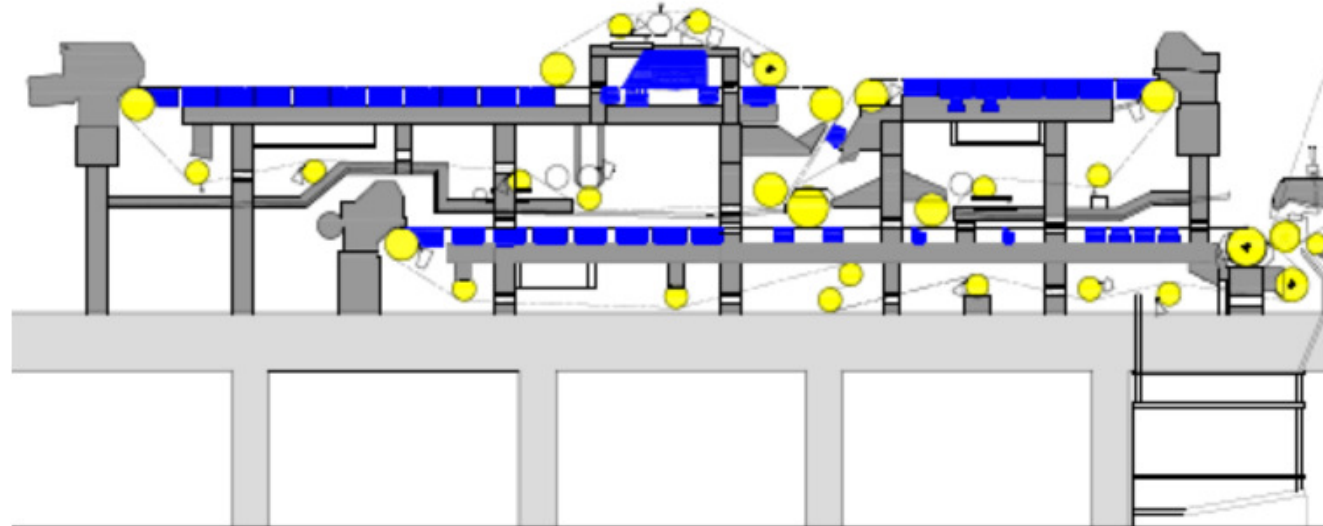
Production program defines wet end concept(s):

C) three layer foudrinier - best invest

PM2 wire section before



BM2 wire section after conversion



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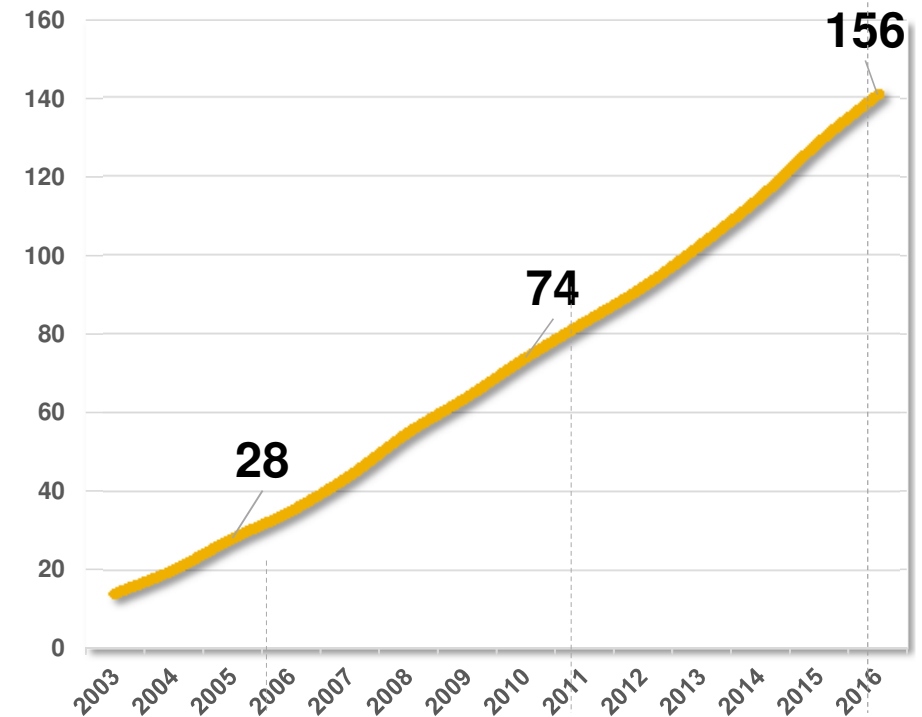
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More than 100 successful head box start-ups in the last 10 years !



Number of
References
[#]

TURBO Vaahto Jetter References



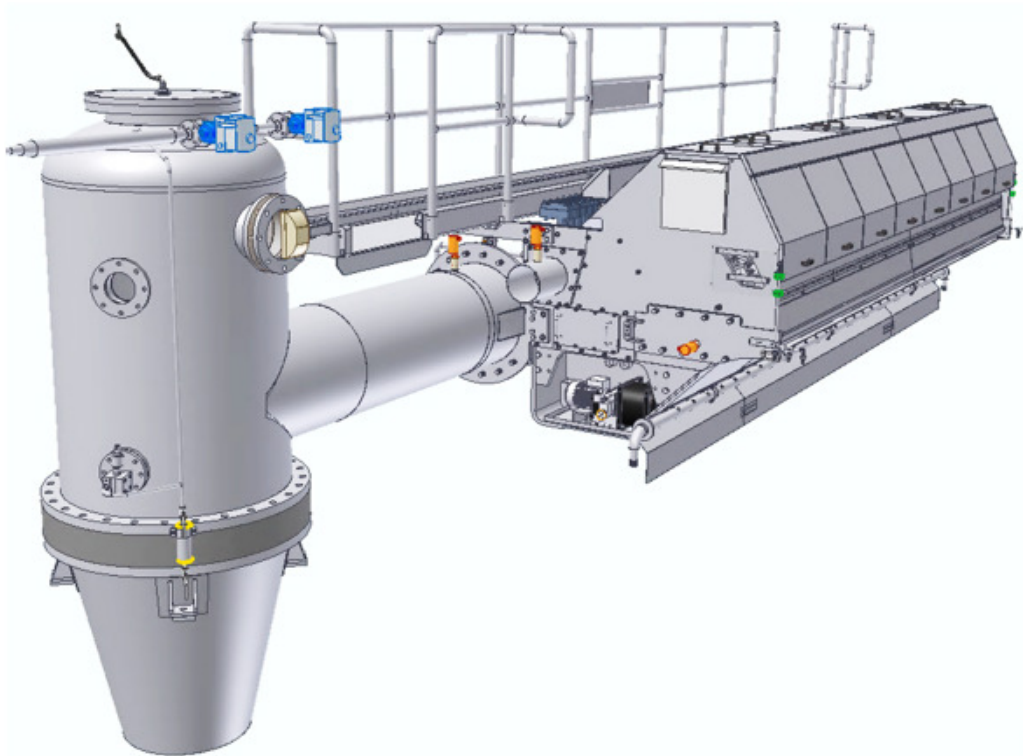
year



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Top & bottom headbox **TURBOVaaho Jetter**



- ▶ Hydraulic headbox with tank attenuator
- ▶ Layer grammage 25 - 50 g/m²
- ▶ Flow range 25000 – 48000 l / min
- ▶ Consistency range 0,25 – 0,35%

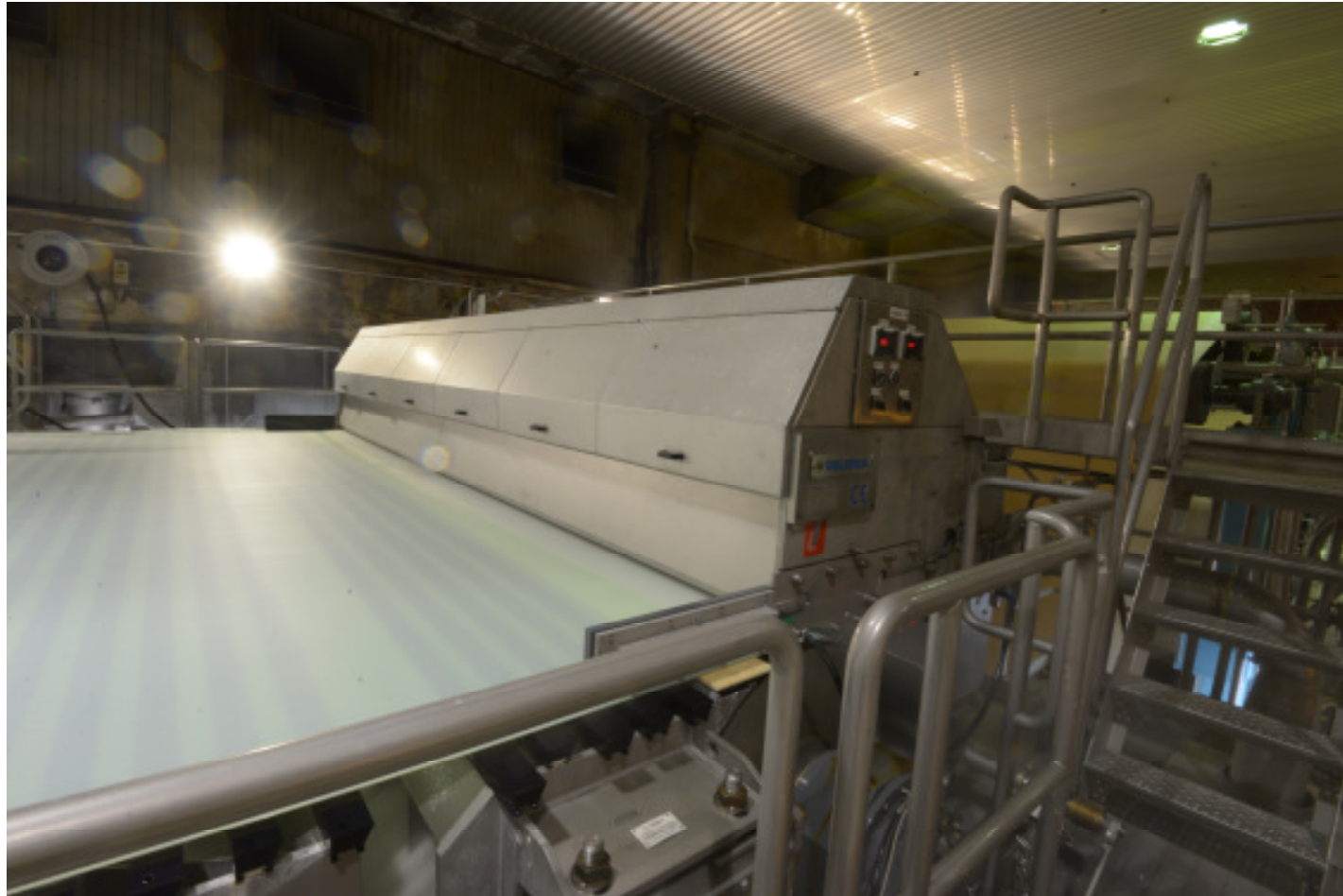


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Hydraulic Headbox *TURBOVahtoJetter*



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Hydraulic Headbox *TURBOVahtoJetter*

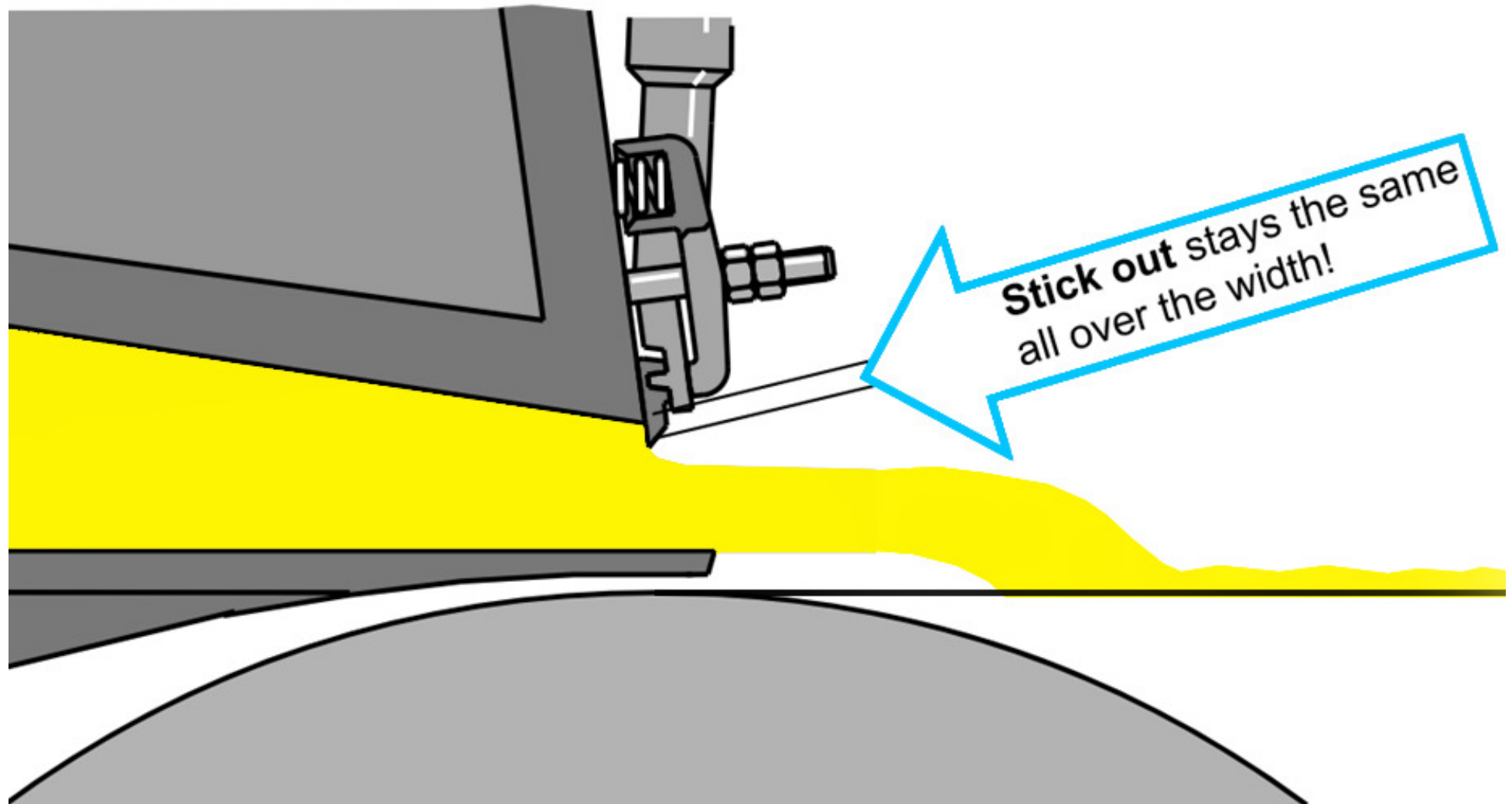


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Advantage of the Macro Adjustment

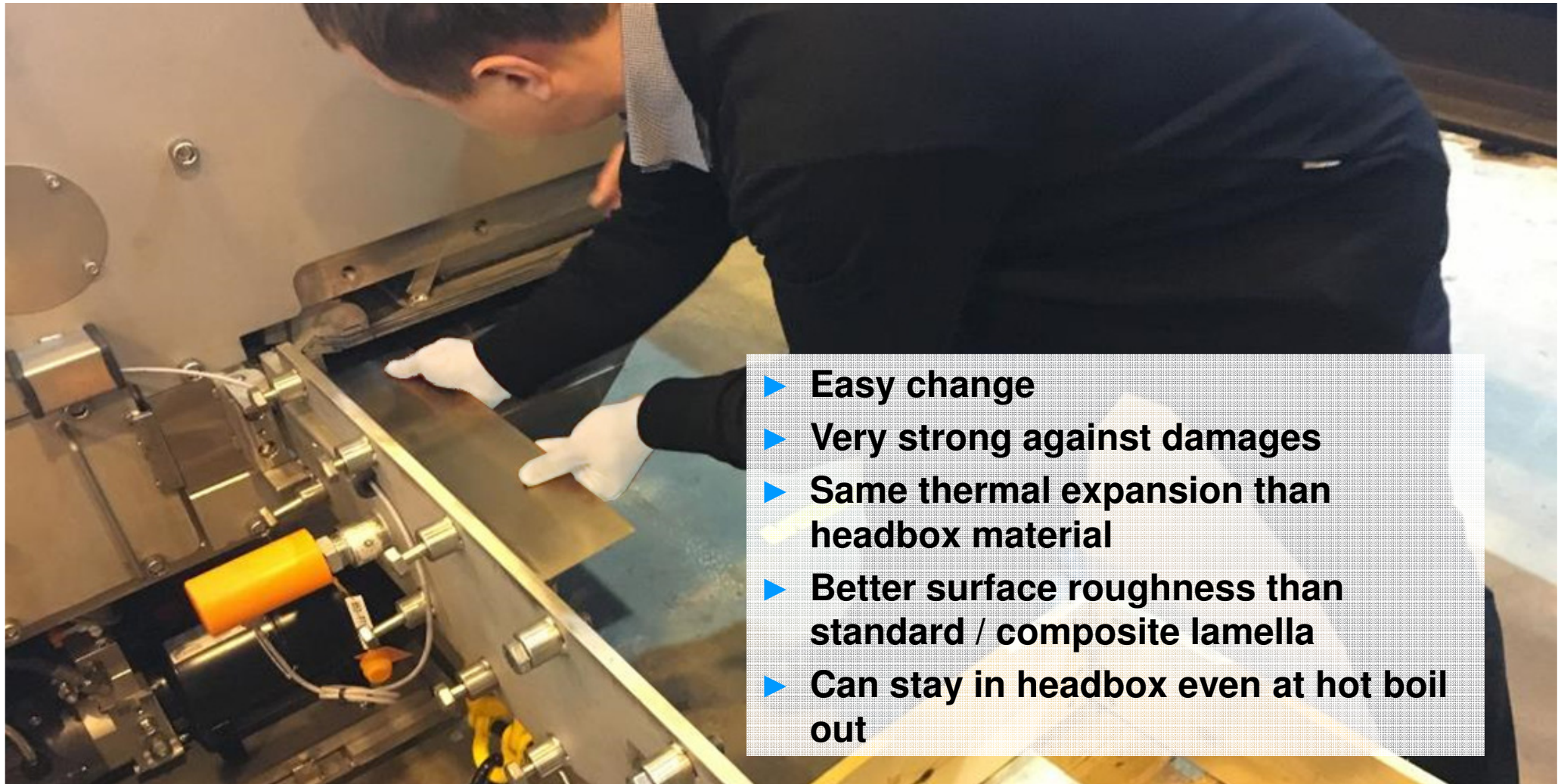


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> 15 years great experience with long life stainless steel lamella



- ▶ Easy change
- ▶ Very strong against damages
- ▶ Same thermal expansion than headbox material
- ▶ Better surface roughness than standard / composite lamella
- ▶ Can stay in headbox even at hot boil out

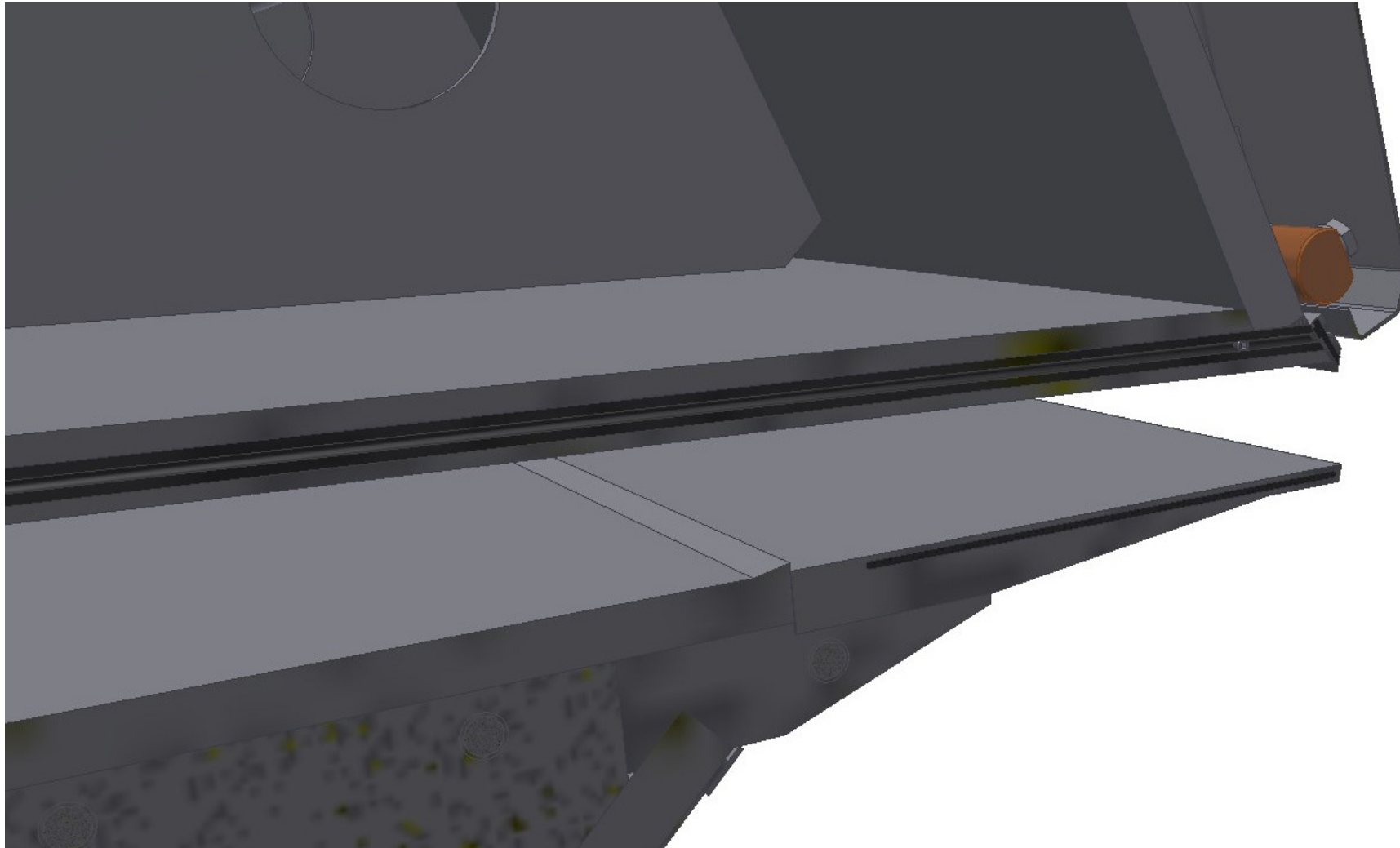


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Jump bottom apron for less streakiness



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Middle ply headbox **TURBOVaaho Jetter Pro**



- ▶ Hydraulic headbox with inbuilt attenuator
- ▶ Layer grammage 68 - 310 g/m²
- ▶ Flow range 39.000 – 72.000 l/min
- ▶ Consistency range 0,65 – 1,00 % DS

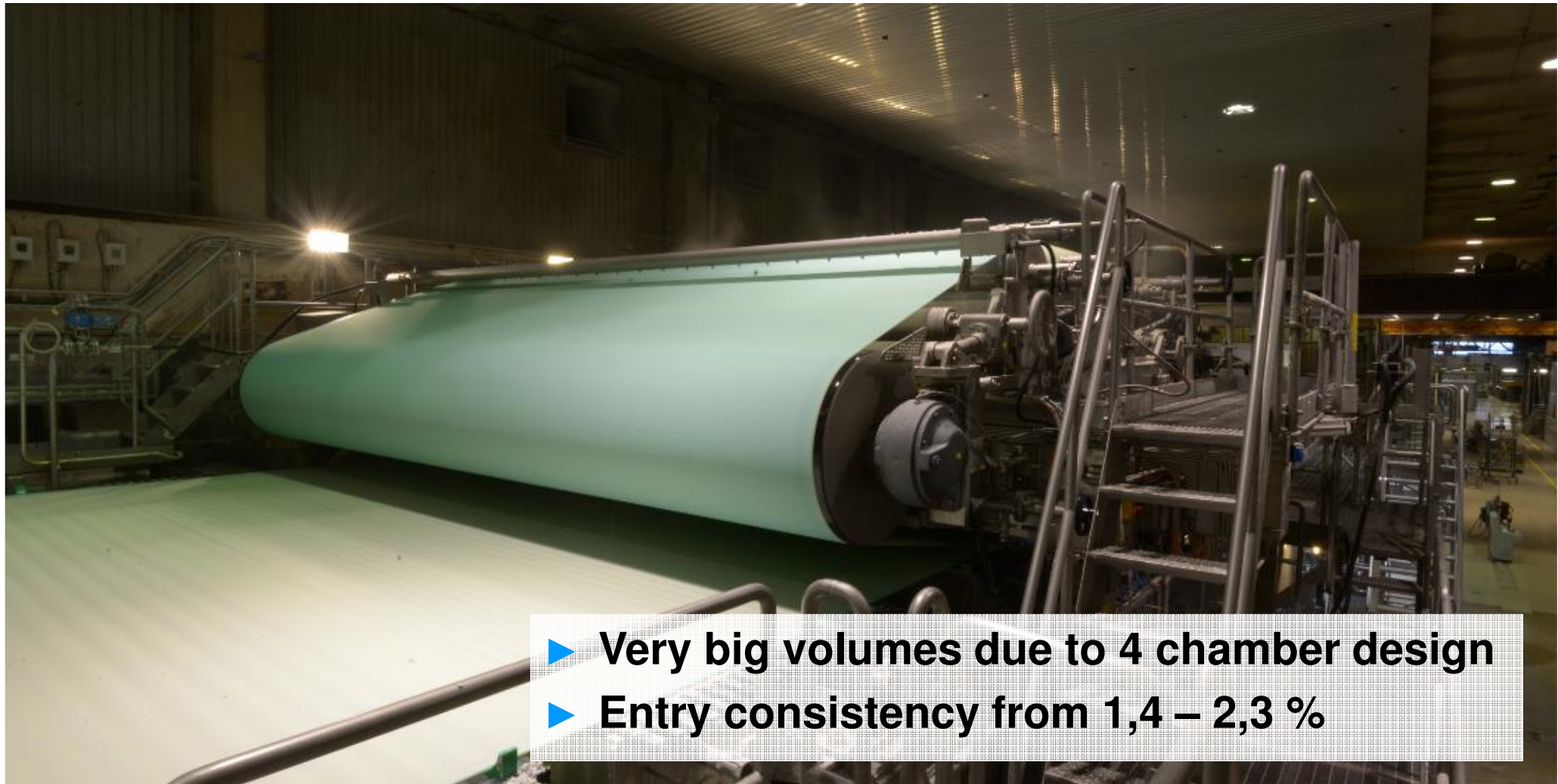


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High capacity TURBOVaaho Former Pro



- ▶ Very big volumes due to 4 chamber design
- ▶ Entry consistency from 1,4 – 2,3 %

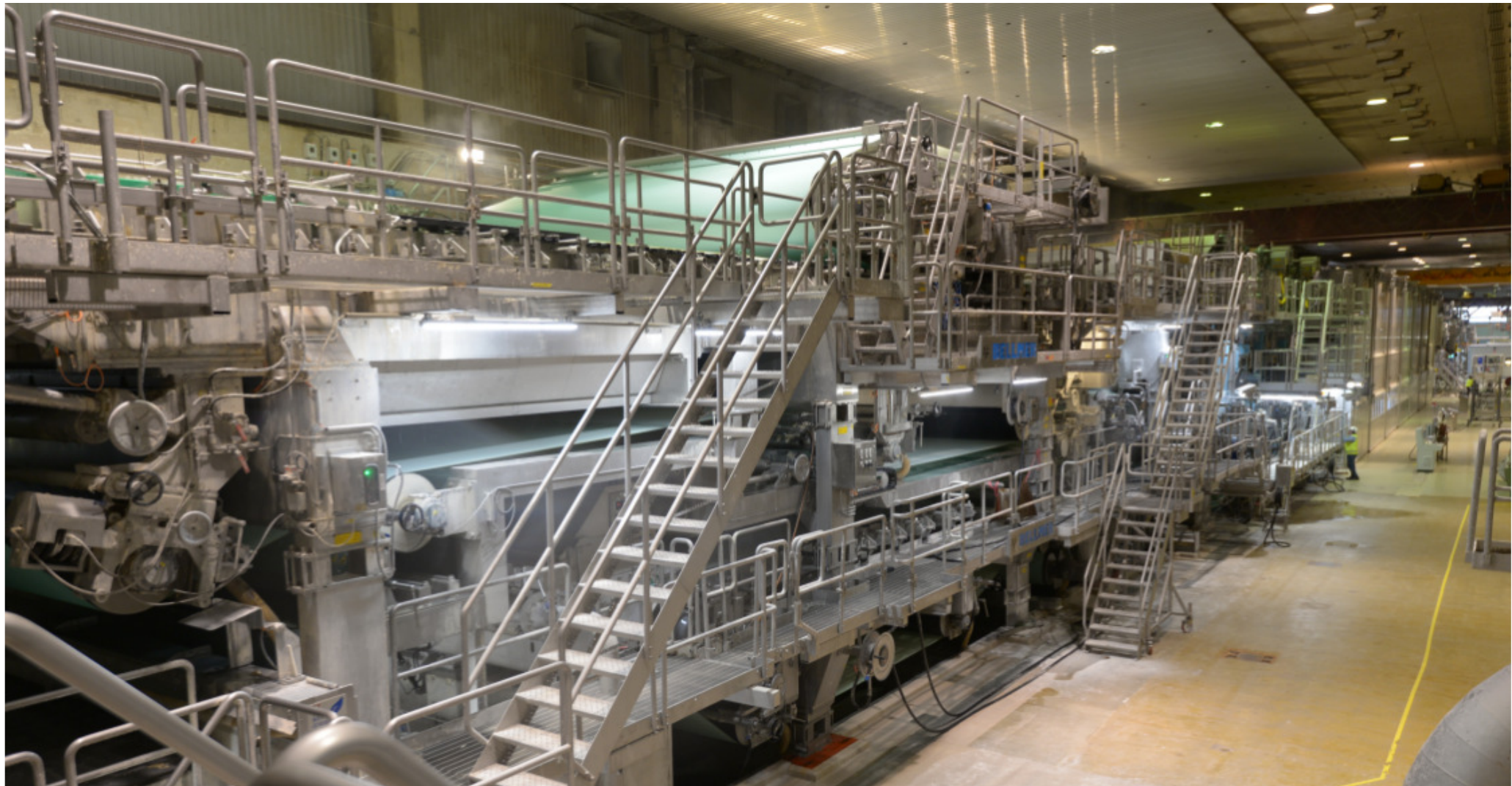


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Local pulp still dewaterers REALLY good...

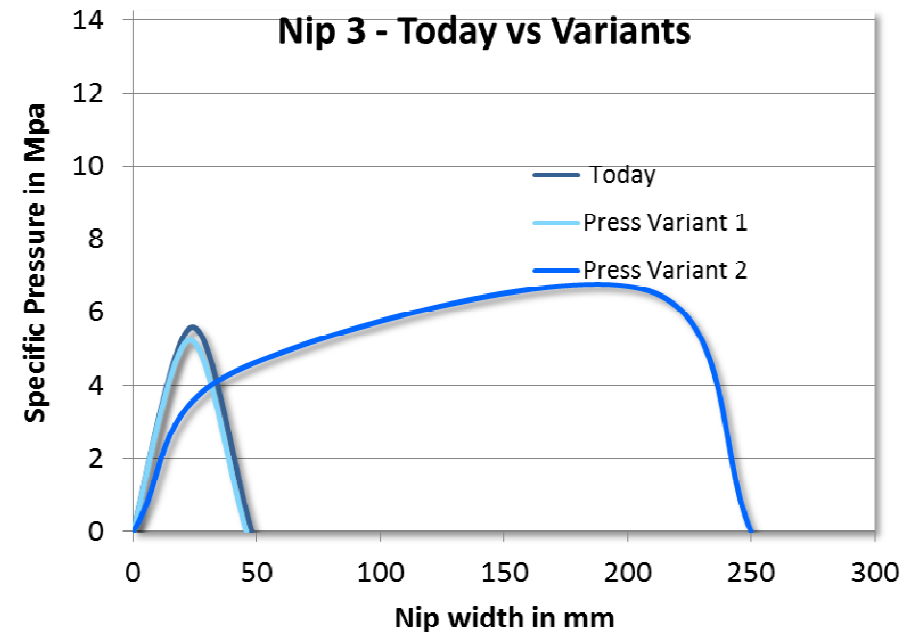
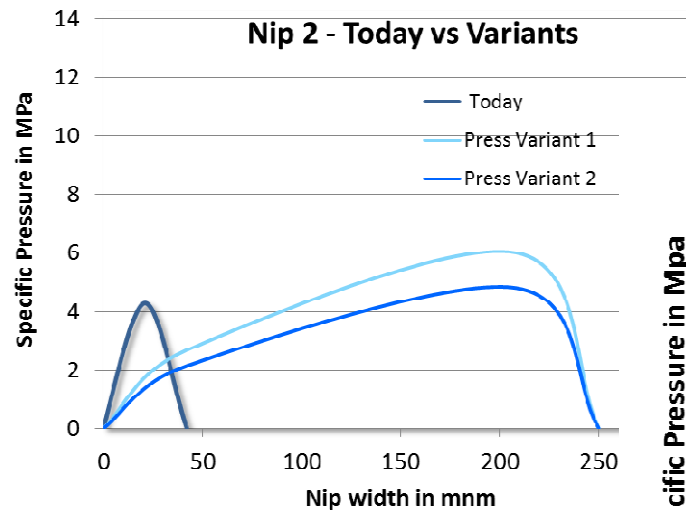
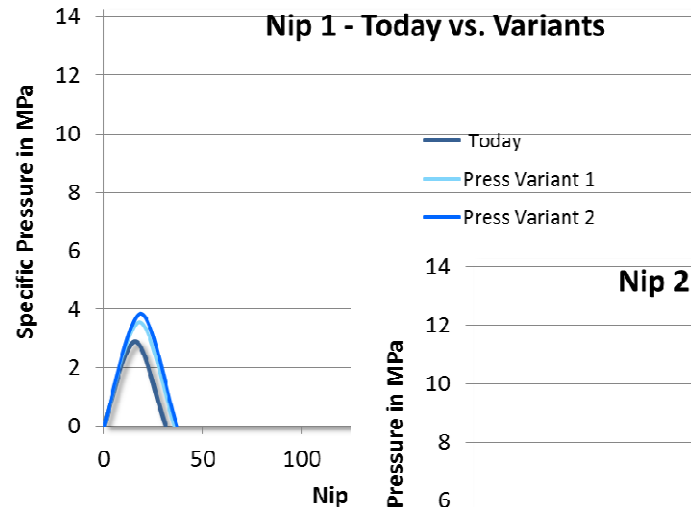


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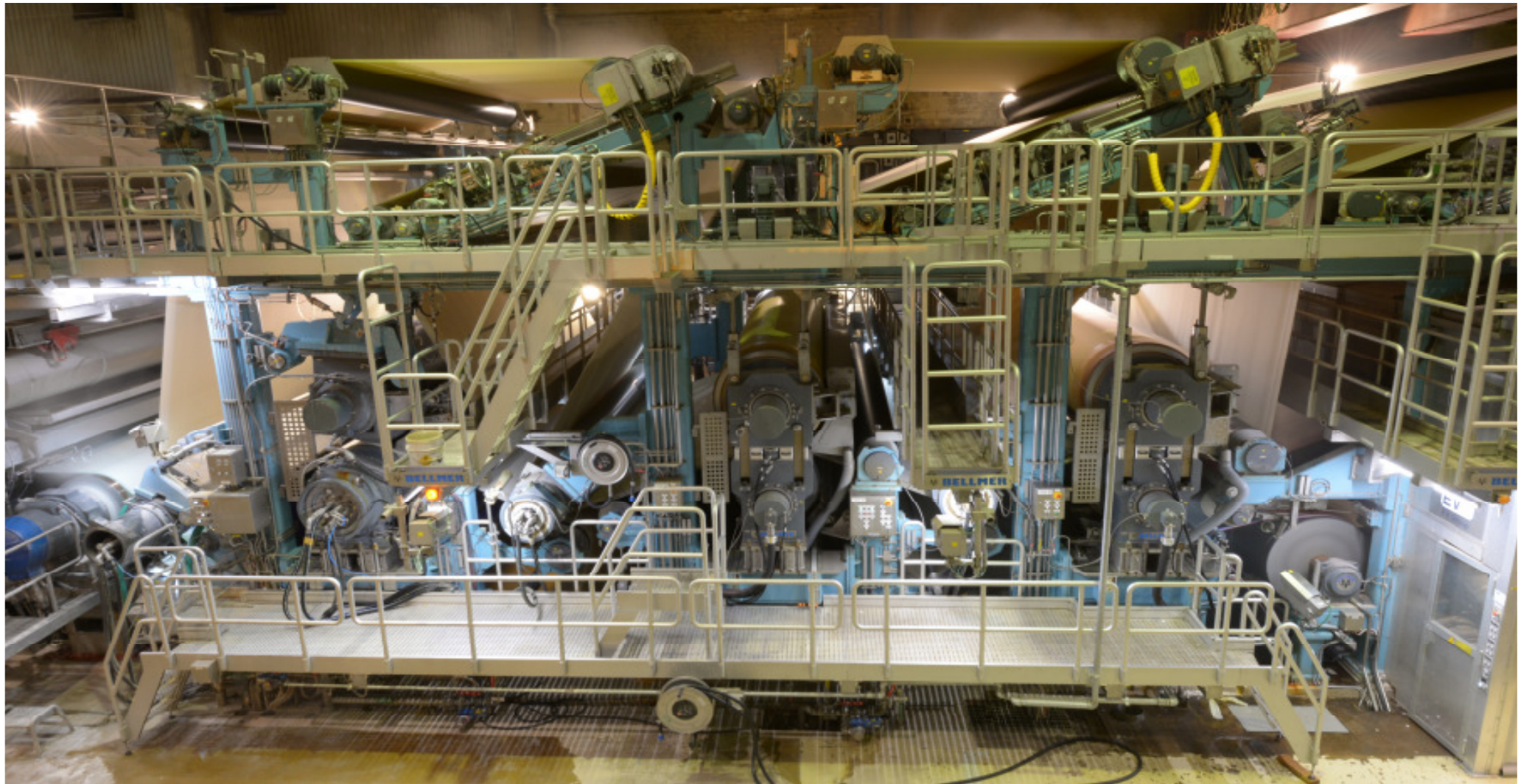
Nip impulse comparison different concepts



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Final press section with two TURBOPresses



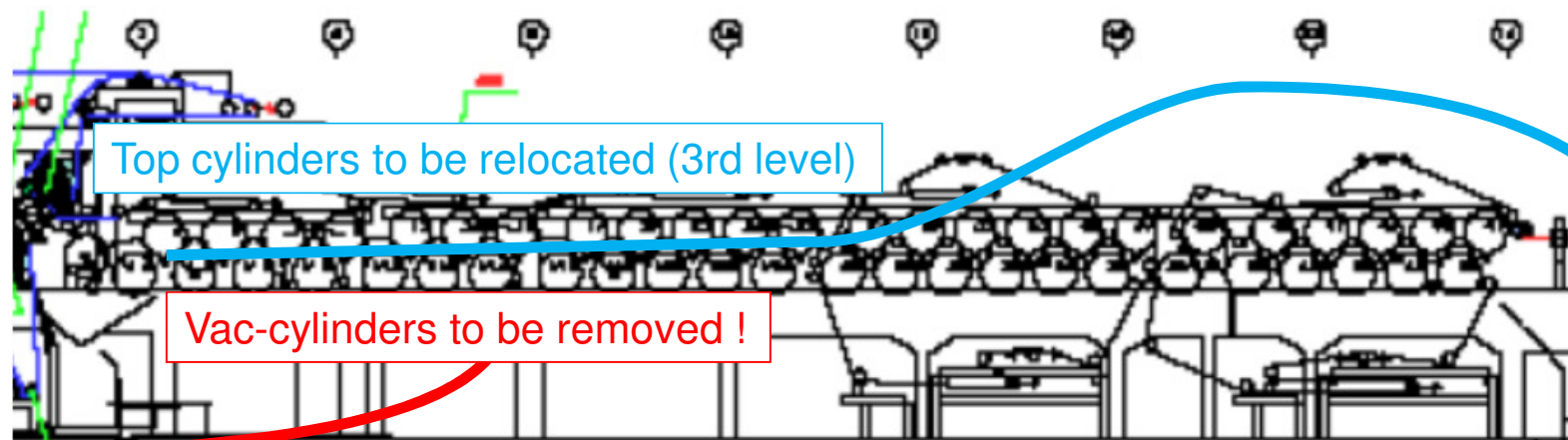
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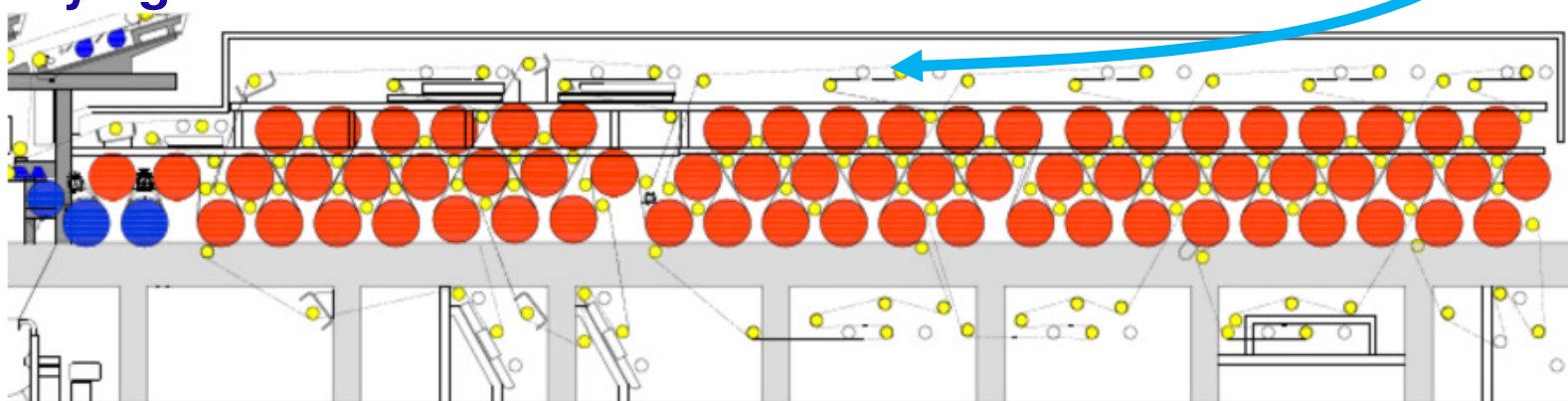
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Board is different from paper...

PM2 Drying section before



BM2 Drying section after conversion



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Drying concept



- ▶ Cylinders in three layer
- ▶ Most efficient drying capacity
- ▶ Drive concept with "Silent Drive" system
- ▶ Problems in tail threading & runnability were feared due to 3-tier, but they did not materialize
- ▶ With efficient pocket ventilation and heat recovery system



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Drying in 3 rows...



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Pulper systems



- ▶ Seven new TURBOPulpers™
- ▶ Fast broke recirculation back to the process
- ▶ Energy efficient
- ▶ Design for high consistency and low water amount in the system
- ▶ Equipped with a ventilation system



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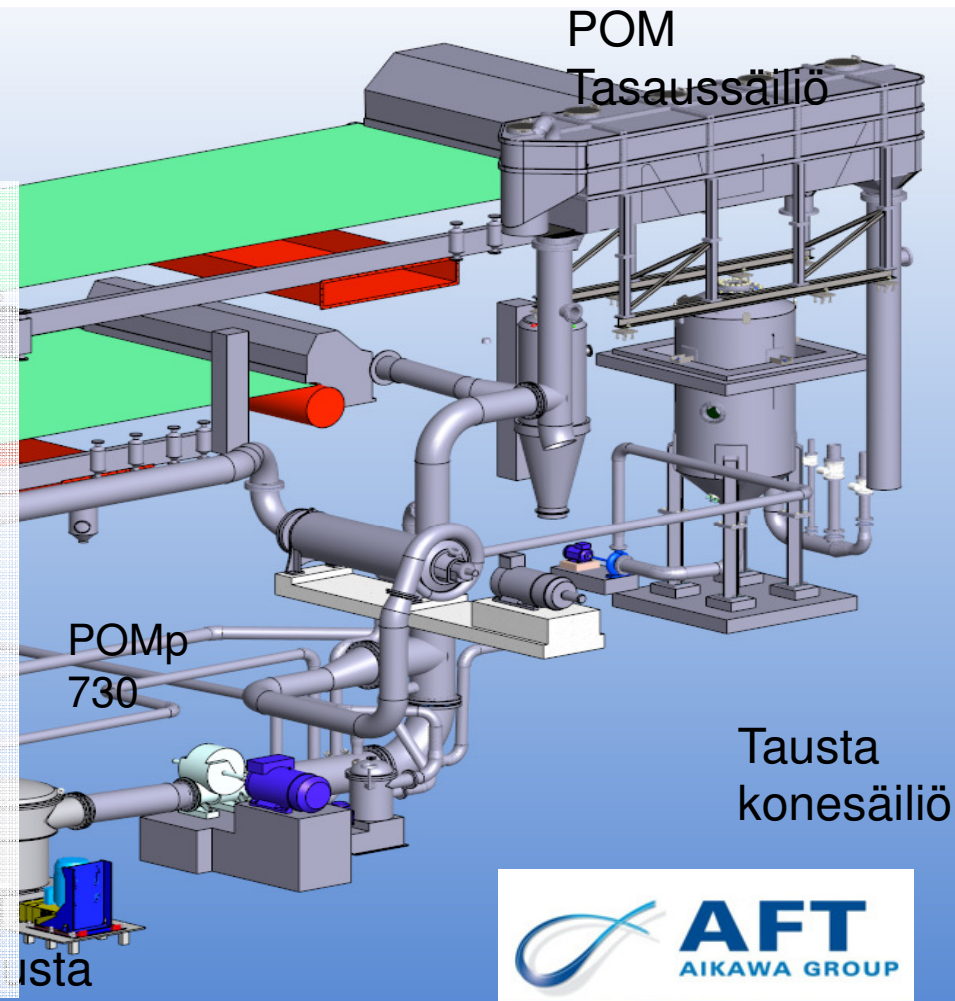
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Approach flow short circulations for high flexibility

- ▶ Short loops for stock feeding to the headboxes
- ▶ Water collection and return to system
- ▶ Air removal from the stock
- ▶ Energy efficient and clean systems
- ▶ No traditional wire pits
- ▶ Fast grade change

(POMLock)

Tausta
konesihti



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Project results

- Project fulfilled expectations absolutely
- Machine is extremely flexible
(we put in all the tools we need...)
- Even small orders turn out efficiently
- our converters love board from BM2 ...😊



Food Service Board

Product Benefits

- Recyclable, repulpable, renewable
- Product includes the protection layers required to prevent grease, liquids or moisture from absorbing into the package
- Versatility of the board is increased by its heat sealing capacity, cleanness, lightness and first-class printing surface



Product Applications

- Cold and Hot Cup applications, plates and trays

Product Details

- On-line dispersion coating
- Liquid and grease barriers to suit end-use applications



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Recyclable Repulpable Renewable.

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„With this machine I can produce any packaging grade, it's so flexible...!“



Philip Sundholm
Production Director



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Flying Eagle BM2

The Winning Team!



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