



## **The ANDRITZ GROUP**

Company presentation May 2017

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# 1.1. ANDRITZ GROUP overview

## Company profile

Worldwide leading position in four business areas



### ANDRITZ Hydro



Product offerings:  
electromechanical  
equipment for  
hydropower plants  
(turbines, generators);  
pumps; turbo generators  
Order intake **1,500.3**  
Employees 7,260

### ANDRITZ Pulp & Paper



Product offerings:  
equipment for  
production of all types of  
pulp, paper, tissue, and  
board;  
energy boilers  
Order intake **1,919.5**  
Employees 7,522

### ANDRITZ Metals



Product offerings:  
presses for metal  
forming (Schuler);  
systems for production  
of stainless steel,  
carbon steel, and non-  
ferrous metal strip;  
industrial furnace plants  
Order intake **1,551.5**  
Employees 7,608

### ANDRITZ Separation



Product offerings:  
equipment for  
solid/liquid separation  
for municipalities and  
various industries;  
equipment for  
production of animal  
feed and biomass  
pellets  
Order intake **597.5**  
Employees 2,772

Employees are abt. 25390

# 1.1. ANDRITZ GROUP overview

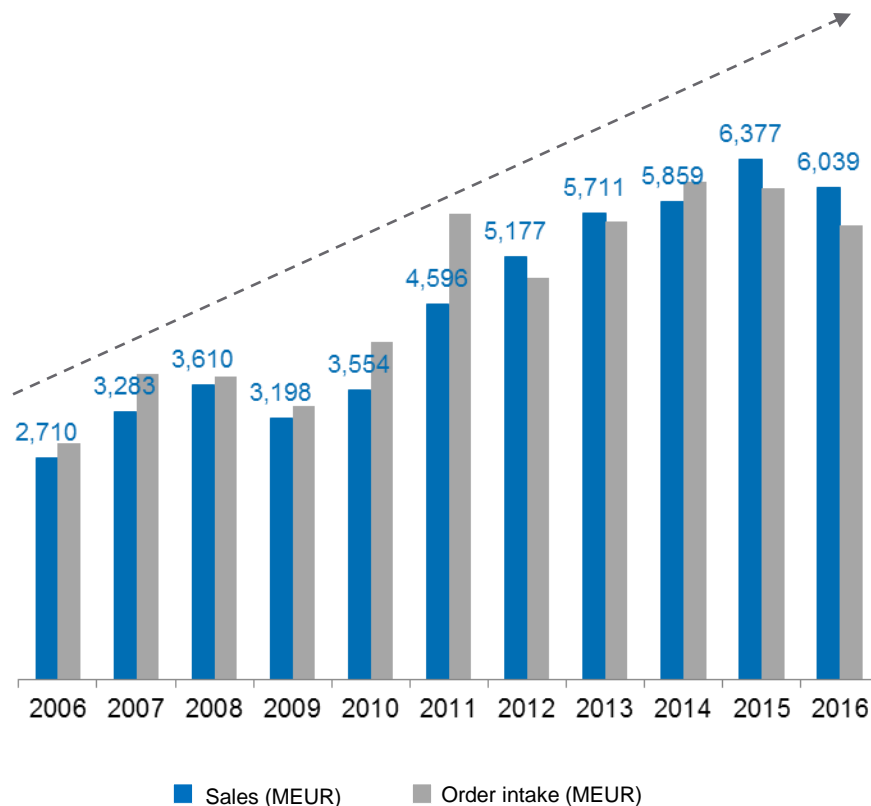
## Strengthening of market position

Growth through organic expansion and acquisitions

### Acquisitions by business area since 1990

<b>HYDRO</b>		
2006	VA TECH HYDRO	2012 AES
2007	Tigép	2013 MeWa
2008	GE Hydro business	2015 Euroslot
2008	GEHI (JV)	2016 SHW Casting Technologies
2010	Precision Machine	
2010	Hammerfest Strøm (59%)	<b>METALS</b>
2010	Ritz	1997 Sundwig
2011	Hemicycle Controls	1998 Thermtec
		2000 Kohler
		2002 SELAS SAS Furnace Div.
		2004 Kaiser
		2005 Lynson
		2008 Maerz
		2012 Bricmont
		2012 Soutec
		2013 Schuler (> 95%)
		2013 FBB Engineering
		2014 Herr-Voss Stamco
		2016 Yadon (51%)
		2016 AWEBBA
<b>PULP &amp; PAPER</b>		
1990	Sprout-Bauer	
1992	Durametal	
1994	Kone Wood	
1998	Kvaerner Hymac	
1999	Winberg	
2000	Ahlstrom Machinery	
2000	Lamb Baling Line	
2000	Voith Andritz Tissue LLC (JV)	
2002	ABB Drying	
2003	IDEAS Simulation	
2003	Acutest Oy	
2003	Fiedler	
2004	EMS (JV)	
2005	Cybermetrics	
2005	Universal Dynamics Group	
2006	Küstors	
2006	Carbona	
2006	Pilão	
2007	Bachofen + Meier	
2007	Sindus	
2008	Kufferath	
2009	Rollteck	
2010	Rieter Perfojet	
2010	DMT/Biax	
2011	AE&E Austria	
2011	Iggesund Tools	
2011	Tristar Industries	
2011	Asselin-Thibeau	

### Compound Annual Growth Rate (CAGR) of Group sales 2006-2016: +8% p. a. (thereof approximately half organic growth)





# 1.1. ANDRITZ GROUP overview

## ANDRITZ share

### Performance since IPO

(June 2001):

- ANDRITZ: +1,683%
- ATX: +129%

### Performance

Q1 2017:

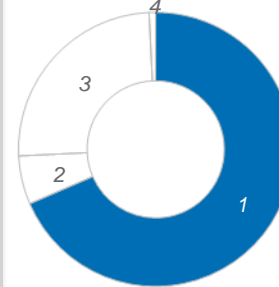
- ANDRITZ: -1.7%
- ATX: +8.0%

### Market capitalization

(as of March 31, 2017):

4.9 billion euros

### Shareholder structure (as of March 31, 2017)



1: Free float (~68.5%), thereof  
Fidelity Management & Research (5.01%)  
The Capital Group Companies (3.96%)  
BlackRock, Inc. (3.90%)

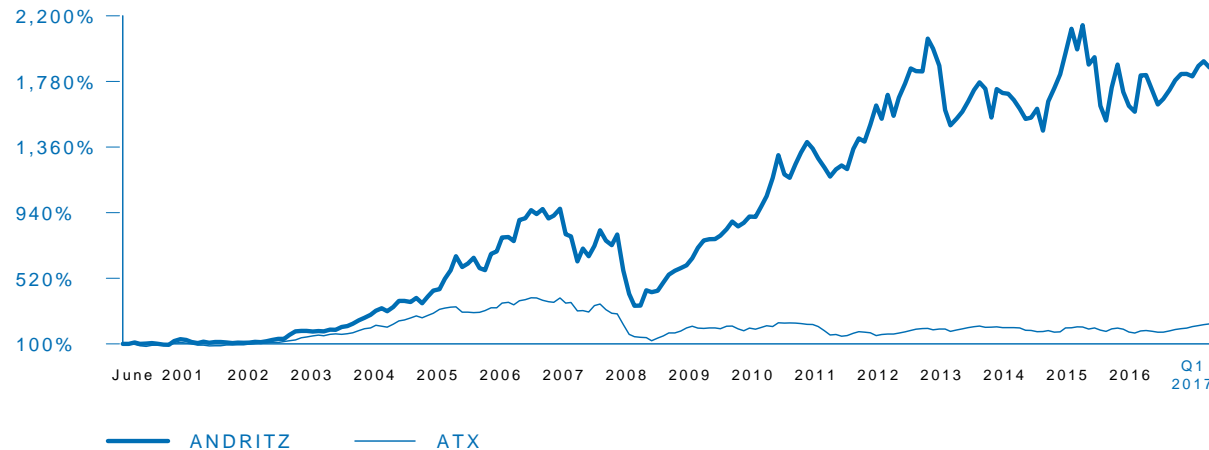
2: Certus (5.72%)

3: Custos (25% + 1 share)

4: Cerberus (0.77%)

CEO  
Wolfgang Leitner

Relative price performance of the ANDRITZ share compared to the ATX since IPO (source: Vienna Stock Exchange)



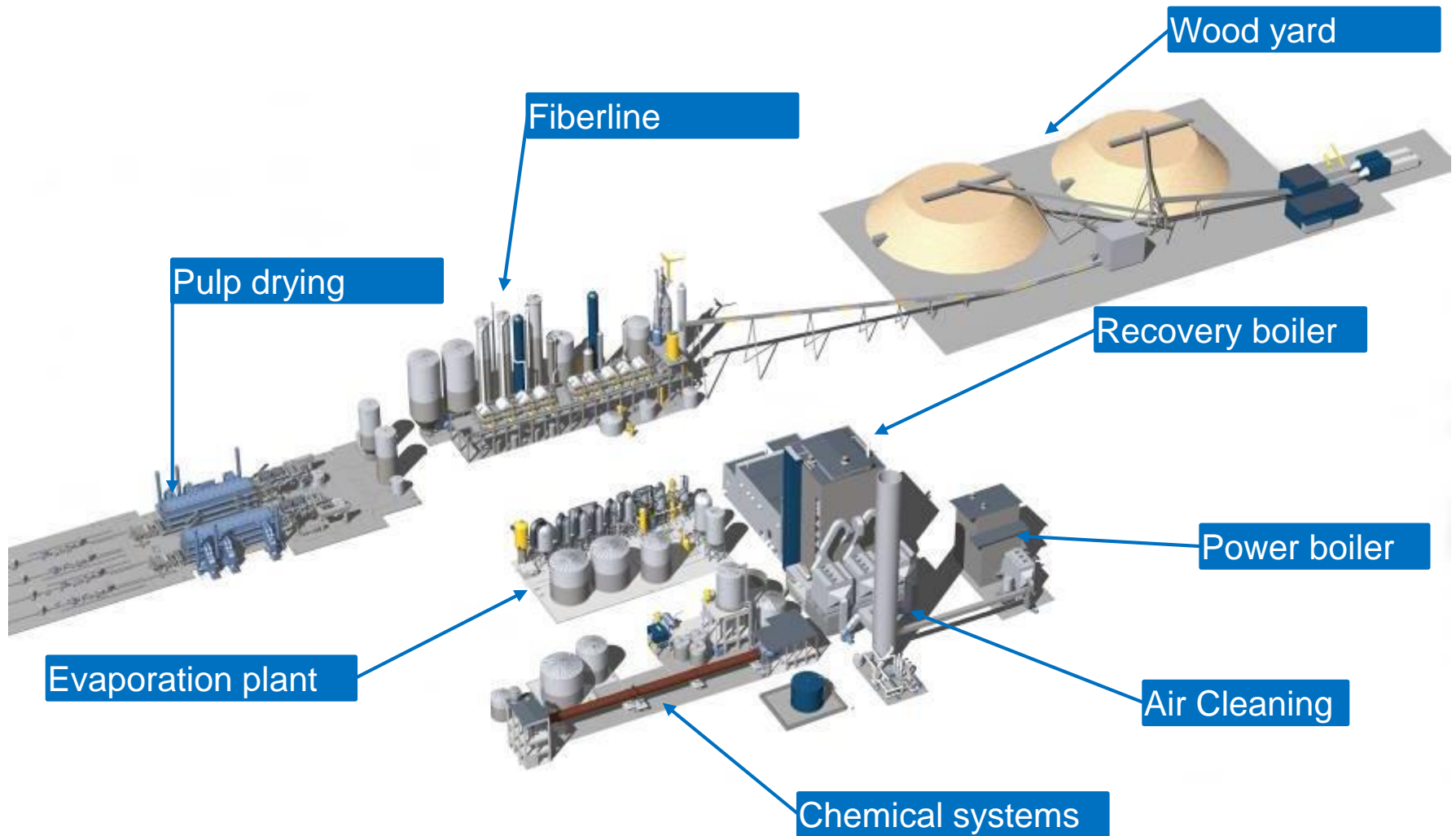
## 1.2. The main products of Andritz Pulp and Paper division

Complete "green field" Pulp Mills



## 1.2. The main products of Andritz Pulp and Paper division

Pulp mill in nutshell – Andritz scope of supply



## 1.3. Some showcases

### Greenfield pulp mill

Metsä Fibre Äänekoski, Finland

#### Highlight

New 1,300,000 t/a bioproduct pulp mill – 800,000 tons of SW and 500,000 tons of HW.

In take of round wood 6,500 000 m<sup>3</sup>

**The bioproduct concept:** mill utilizes 100 % of all side streams.

Start-up took place 15<sup>th</sup> of August 2017

#### Scope of supply

- A complete **wood processing** plant . Three debarking lines have the biggest capacity in the world (470 m<sup>3</sup> sob/h)
- A softwood and hardwood **fiberline**. The softwood capacity of this line will be the highest in the world (3,900 tons per day).
- The world's most energy-efficient black liquor **evaporation** plant with the highest capacity in Europe (1,650 tons/hour).
- The largest **recausticizing** plant in Europe (white liquor production of 16,000 m<sup>3</sup>/day).



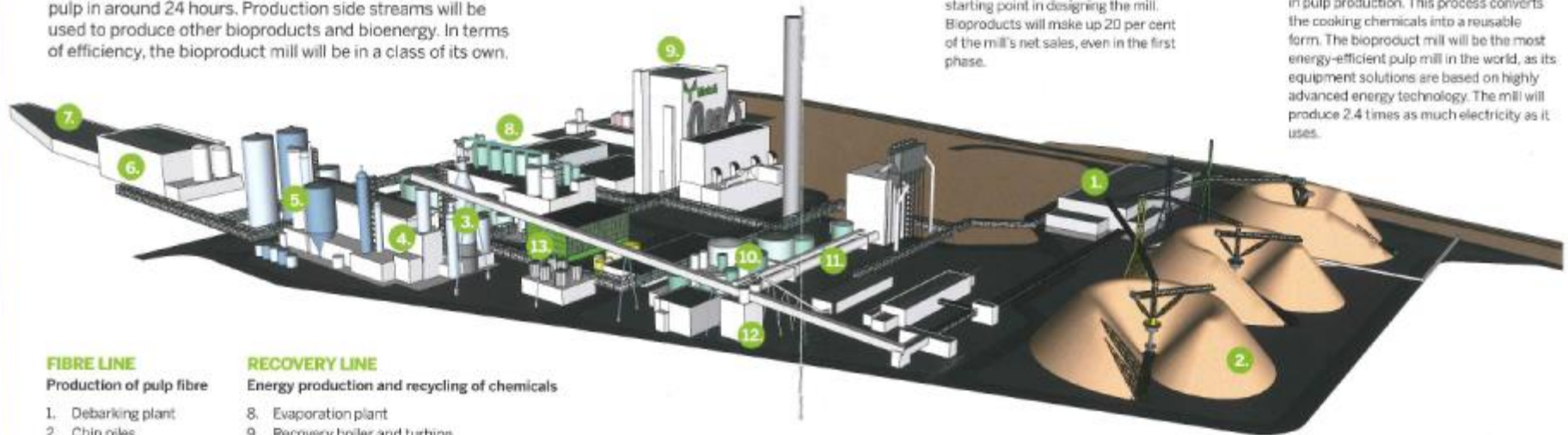


## 1.3. Some showcases

### Metsä Fibre Äänekoski, Finland

#### ÄÄNEKOSKI BIOPRODUCT MILL

The bioproduct mill's fibre line will process wood chips into pulp in around 24 hours. Production side streams will be used to produce other bioproducts and bioenergy. In terms of efficiency, the bioproduct mill will be in a class of its own.



##### FIBRE LINE

###### Production of pulp fibre

1. Debarking plant
2. Chip piles
3. Digester
4. Washing
5. Bleaching
6. Drying
7. Pulp storage

##### RECOVERY LINE

###### Energy production and recycling of chemicals

8. Evaporation plant
9. Recovery boiler and turbine
10. Causticising
11. Lime kiln
12. Gasification of bark
13. Mill office



##### MORE THAN A PULP MILL

The bioproduct mill will use 6.5 million cubic metres of pulpwood per year to produce 1.3 million tonnes of softwood and birch pulp. Making full use of wood and production side streams was the starting point in designing the mill. Bioproducts will make up 20 per cent of the mill's net sales, even in the first phase.



##### THE MOST EFFICIENT RECOVERY BOILER IN THE WORLD

A significant share of all renewable energy produced in Finland is generated when black liquor, consisting of wood and cooking chemicals, is combusted in a recovery boiler in pulp production. This process converts the cooking chemicals into a reusable form. The bioproduct mill will be the most energy-efficient pulp mill in the world, as its equipment solutions are based on highly advanced energy technology. The mill will produce 2.4 times as much electricity as it uses.



##### FOSSIL-FREE PRODUCTION PLANT

The bioproduct mill will not use any fossil fuels, as it will generate all of the bioenergy that it needs from wood. The fossil fuel for the lime kiln will be replaced with producer gas from gasified bark.

## 1.3. Some showcases

### Pulp mill modernization

SCA Östrand, Timrå, Sweden

#### Highlight

One of the largest industrial investments in Sweden –  
double the pulp production from 430,000 to 900,000 t/a

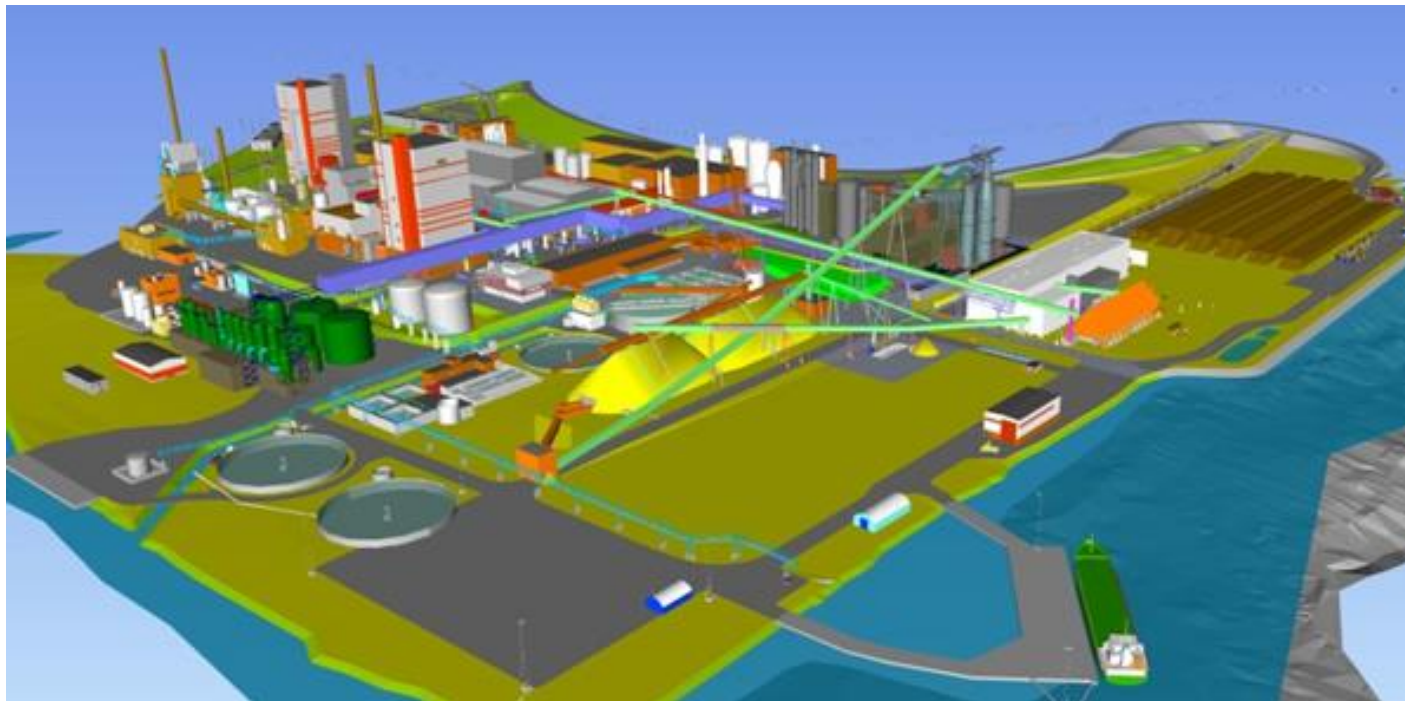


## 1.3. Some showcases

### SCA Östrand, Timrå, Sweden

#### Scope of supply

- **Woodyard** equipment designed for cold climates, with debarking drums and HHQ-Chippers
- A **pulp dryer**, including a boiler exhaust energy recovery system, fine screening, a twin wire dewatering system, sheet dryer, cutter, and two baling lines
- **Recovery boiler** rebuild to 50% increased capacity
- A major upgrade of the white liquor plant with new **recausticizing** machinery, including new white and green liquor filters
- Capacity increase of the existing bio-gas **fuelled lime kiln with LimeFlash** technology



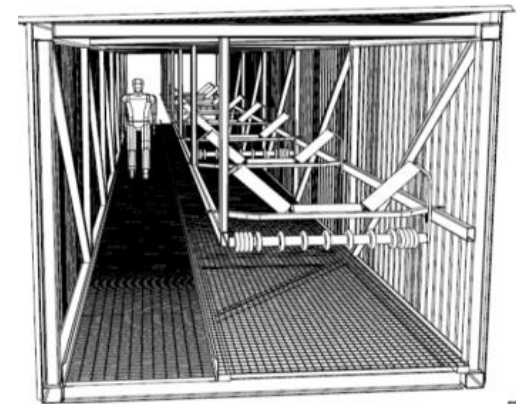


**2. Our sub-contractor net on Baltic Area and the demands of ANDRITZ to the sub-suppliers**



## 2.1. Sub-contractor net of ANDRITZ on Baltic area

- Andritz Oy started build up sub-contracting net in Estonia abt. **25 years** ago – when Estonia got back independency.
- So far we have visited **more than 100 companies** in Estonia and abt 200 in Baltic Area
- Today, We have about **35 to 40 active sub-suppliers in Baltics**, in Estonia abt. **20**
- Our purchasing volume in Estonia was last year over **30 million €**
- Why we are interested in of Estonian companies:
  - Easy to communicate, language is easy to us
  - Easy to travel, small country, short distances
  - Estonia is very close of us, only Tallinn is only 80 km from Helsinki
  - Estonian price level is less than the one in Finland
  - Quality is reasonable even good
  - We like Estonian people, with them is easy to co-operate



## 2.2. How You can find ANDRITZ or other Finnish partner

Take care of following "hints"

- Make **proper and honest WEB-pages** of your company, languages EN / FIN:
  - Products what you really can manufacture
  - Machinery you have available
  - Valid certificates
- Make **proper presentation** of your company in English
- Participate the **fairs**:
  - Tallinn Instrutech, Estonia
  - Alihankinta, Tampere, Finland
- Create your **own network**: engineering, manufacturing, component supply, logistics, assembly & installation
- **Contact us directly**:
  - Juha Leinonen, ANDRITZ Oy, Askonkatu 9G, 15100 Lahti, Finland
- Make your **registration to our SRM** – system:
  - **This is the best way**
  - <https://www.andritz.com/group-en/suppliers/portal>



## 2.3. From 1st contact to strategic supplier

### Actions to make

- Send company presentation to us.
- Invite us to come and meet you on your own workshop
- Take care that you have suitable equipment to manufacture those products what you keep as priority product
- You must have good surface treatment facilities: surface cleaning and wet painting
- Create working network around you
- Make SRM registration into system of Andritz
- 1st visit audit
- Test inquiry => price level
- Test order
- Basic audit
- Frame contract

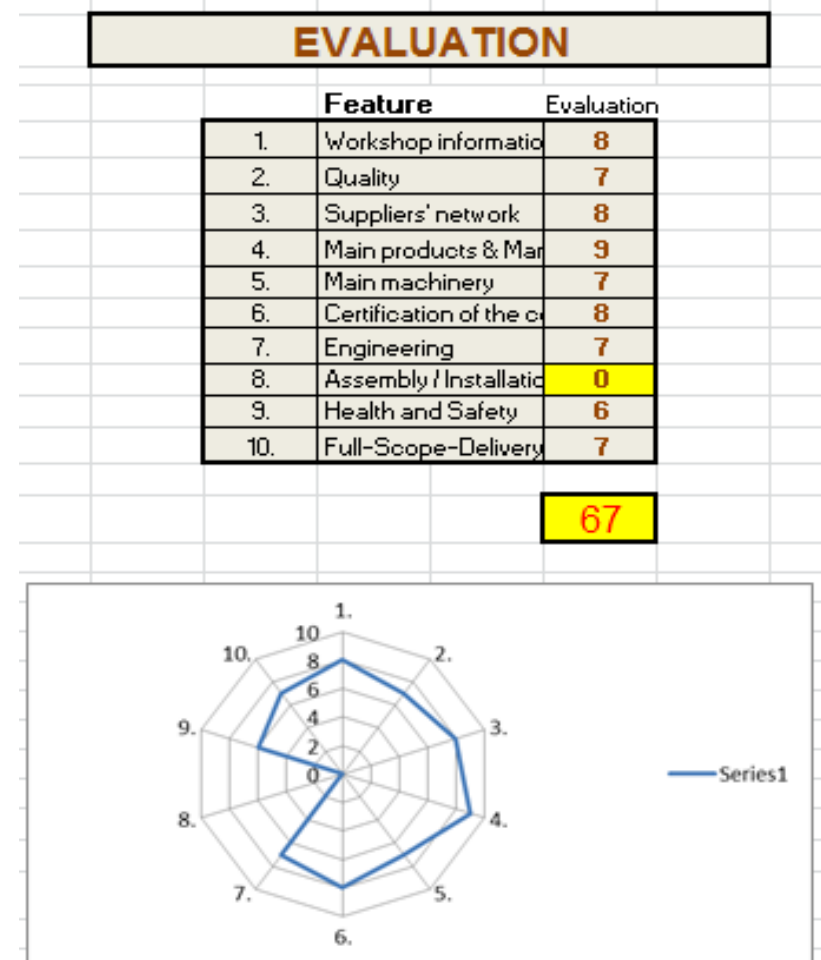


## 2.4. General demands to the supplier

### 1st visit audit process

In our 1st visit audit process the following things are studied

- **Sufficient Workshop**
  - Workshop distance to harbor (km)
  - Covered area (m2)
  - Cranes lifting capacity (tns)
  - Hook height (m)
  - Door sizes (m)
  - Production and stock areas (m2)
  - Employees (number)
- **Adequate Surface treatment facility**
  - Blasting and wet painting
- **Quality** (NDT Testing methods)
  - VT, PT, MT, RT, UT
- Professional and good quality **Supplier network** and Subcontracting partners





## 2.4. General demands to the supplier

### 1st visit audit process

- **Suitable products and manufacturing methods** for Andritz requirements
- **Sufficient machinery for manufacturing** the main products.
- **Adequate Certification**
  - ISO 9001
  - EN 1090-2
  - EN 3834-2
  - ISO 14001
  - ISO 45001 (OHSAS18001)
- **Own Engineering department and software that is compatible** with Andritz engineering. Andritz is mainly using AutoCAD, Tekla and Inventor programs. Solid Works is also in use.
- **Erection and installation services**
- **Health and safety facilities** in good order (including supplier code of conduct and ethics.)
- Supplier must have adequate **ERP system** to handle all project phases - especially the time schedules. Project progress will be followed by enclosed schedule template.

## 2.4. General demands to the supplier

### 1st visit audit process

We require that suppliers shall follow the production and delivery schedules

#### 1.5 DRAWING UP A MANUFACTURING SCHEDULE AND PROGRESS REPORTS

The sub-supplier shall send to the purchaser and quality control of Andritz KFT/WP a manufacturing schedule, which naturally has to be based on the terms given in the order. A manufacturing schedule is drawn up for all the deliveries unless otherwise agreed with the purchaser. The manufacturing schedule is to be delivered within 10 days from the order, unless otherwise agreed.

The following schedule form is used, unless otherwise agreed.

Pulp Factory, Sweden C-02-812345-023					<b>ANDRITZ</b>																														
Weekly Report					Please send this progress report on <b>Friday</b> of each week to address unless otherwise instructed <a href="mailto:pekka.vainikka@andritz.com">pekka.vainikka@andritz.com</a>																														
Supplier Name / Manufacturing location(s):					Steelboys, Estonia																														
Plant (RB = Recovery Boiler, PB = Power Boiler, EV = Evaporator, WP = Wood Processing)					WP																														
Delivery scope:					see Purchase Order																														
Purchase order no:					450012345																														
Delivery date(s) (acc. to the PO):					16.8.2013																														
Delivery term:					FCA Tallinn, Estonia																														
Contact person / phone no / e-mail address:					billy.boss@steelboys.com																														
Mandatory fields, Supplier to fill					Report date: 17.05.2013																														
Planned Schedule					Calendar Week No.																														
Progress line					2013																														
Equipment / 1849 Item, Flight Chain Conveyor	Progress %	Start date	End date	Actual/change d End date	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35						
DELIVERY TOTAL PROGRESS:	31 %	27.03.2013	16.08.2013																																
Order Received (actual)	100 %	27.03.2013	27.03.2013																																
Design	100 %	27.03.2013	13.04.2013																																
Material Purchasing	100 %	13.04.2013	27.04.2013																																
Materials Received	100 %	18.04.2013	11.05.2013																																
Prefabrication	75 %	29.04.2013	31.05.2013																																
Fitting	10 %	27.05.2013	28.06.2013																																
Welding	0 %	17.06.2013	11.07.2013																																
Assembly	0 %	08.07.2013	20.07.2013																																
Test -run	0 %	22.07.2013	22.07.2013																																
xxxxxx	0 %																																		
Finishing Works	0 %	29.07.2013	09.08.2013																																
Final Inspection	0 %	07.08.2013	08.08.2013																																
Packing	0 %	08.08.2013	16.08.2013																																
Remarks/Deviations																																			

## 2.4. General demands to the supplier

### BASIC audit process

In Andritz BASIC audit process also the following activities are studied. (We are using The questionnaire developed by PSK Standard Association Prosessiteollisuuden Standardoimiskeskus, <http://www.psk-standardisointi.fi>)

#### ▪ 1 Business

- 1.1 Business management
- 1.2 Customer focus
- 1.3 Personnel management
- 1.4 Safety management
- 1.5 Quality management
- 1.6 Environmental management
- 1.7 Procurement principles

#### ▪ 2 Production

- 2.1 Production planning and control
- 2.2 Delivery related objectives and indicators
- 2.3 Skills
- 2.4 Product design and planning of services
- 2.5 Quality control
- 2.6 Product management
- 2.7 Implementation of purchases

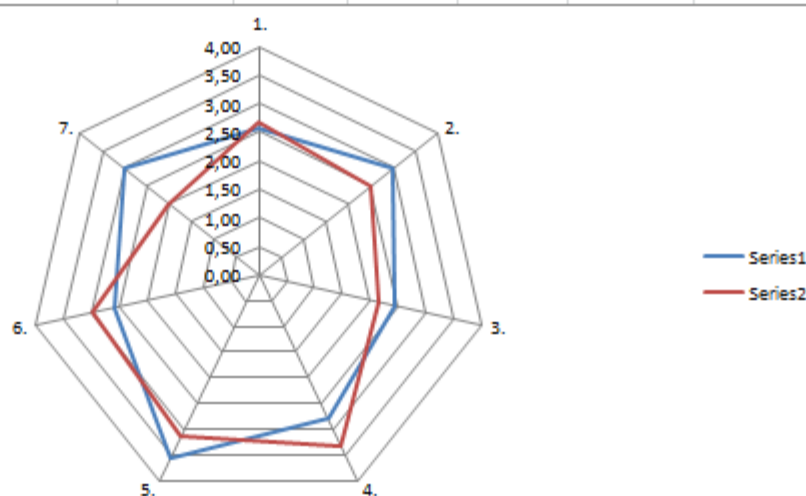


# BASIC Audit Score

Enterprise operations		Production	
	Point		Av. Point
1. Business management	2,56	Production planning and control	2,67
2. Customer focus	3,00	Production related objectives and inc	2,50
3. Personnel management	2,44	Skills	2,14
4. Safety management	2,80	Product design and planning of serv	3,33
5. Quality management	3,57	Quality control	3,14
6. Environmental management	2,6	Product management	3,00
7. Procurement principles	3,00	Implementation of purchases	2,00
Max points 28	19,97		18,79

## Basic Audit SCORE

Result of Enterprise operations is	71,3	% from maximum
Result of Production is	67,1	% from maximum





## 2.4. General demands to the supplier

### SRM registration

**Certain milestones must be reached before real cooperation between our companies can be considered:**

- The new company must be **SRM registered**
- Suppliers will be audited
  - **1<sup>st</sup> visit audit or Basic Audit done.**
- **Confidentiality agreement** signed
- **Sustainability document** signed
- **Financial status** of the new company must be **on good level**. The latest **Economic data report** will be checked from Suomen Asiakastieto Oy (<https://www.asiakastieto.fi>)
- We also have our own instructions for procurement activities. They are summarized in Andritz Blue Book.



**srm@ANDRITZ**

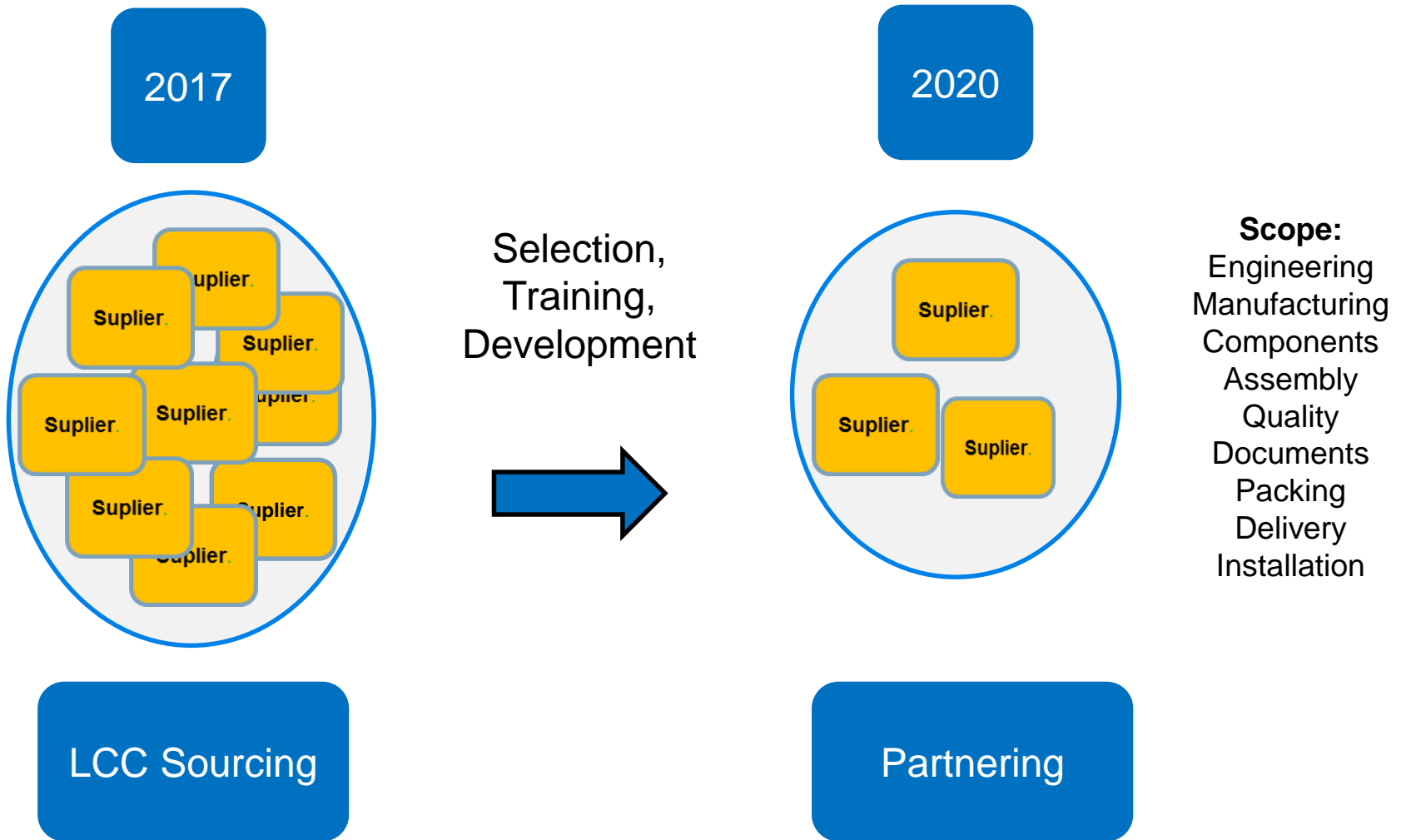
srm@ANDRITZ Andritz  
Supplier Portal . Follow link for  
details.

**ANDRITZ**  
Group Procurement Management  
**THE BLUE BOOK**

July 2017

## 2.5. Subcontracting on LCC and BCC areas

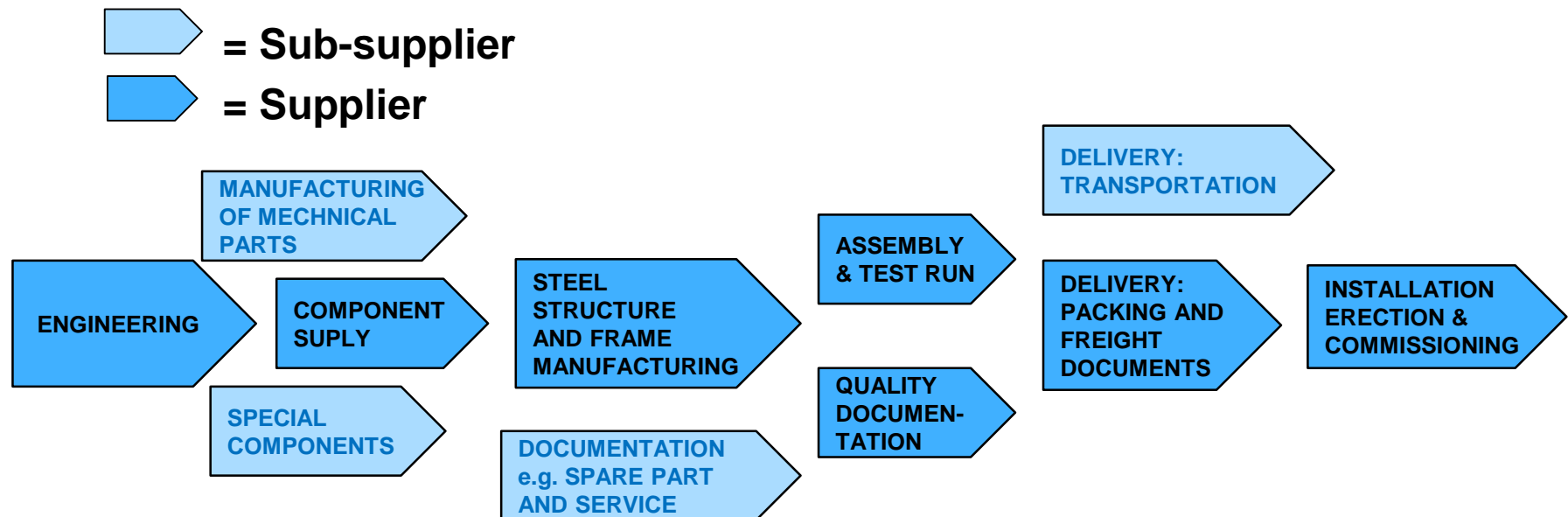
Developing existing supplier network



## 2.6. FULL-SCOPE-concept

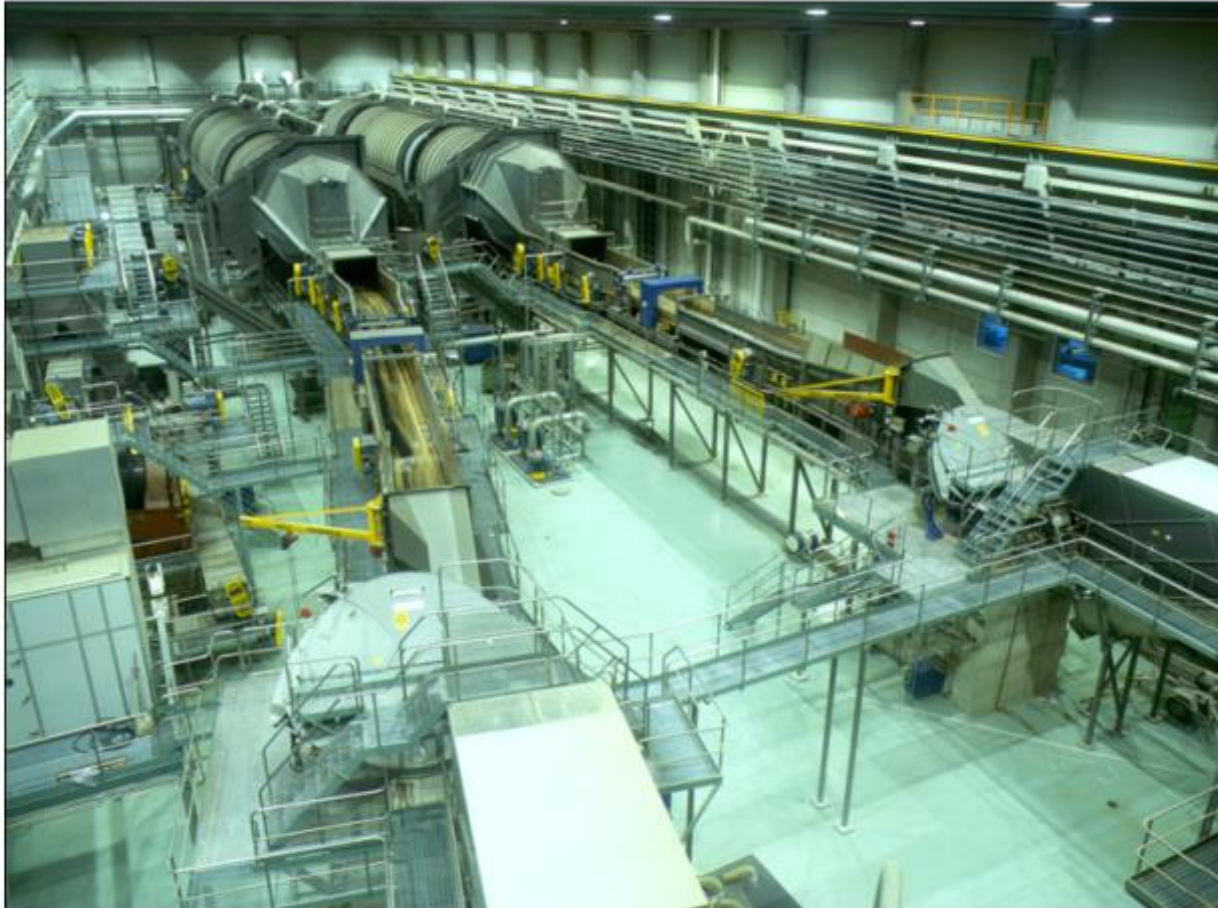
Are You ready for FULL-SCOPE-concept ?

For selected products we are looking for suppliers, who can do as complete deliveries as possible, including all work phases from engineering to final installation and commissioning on the site of Andritz main customer.



## 2.7. Training of suppliers

# SUB-SUPPLIER'S MANUAL





## 2.7. Training of suppliers


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# Training of suppliers



## 2.7. Training of suppliers

	<b>Packing Standard</b>	<b>AWN</b>
		<b>112.101</b>
<b><u>Index</u></b>		
Introduction	Page 2	
General Terms and Conditions	Page 2	
Classification of goods	Page 3	
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## 2.8.What we do not want to see

Wrongly packed container load



## 2.8. What we do not want to see

### Mondi, Syktyvkar, Service platforms





## 2.8. What we do not want to see

- Mondi, Syktyvkar, Service platforms



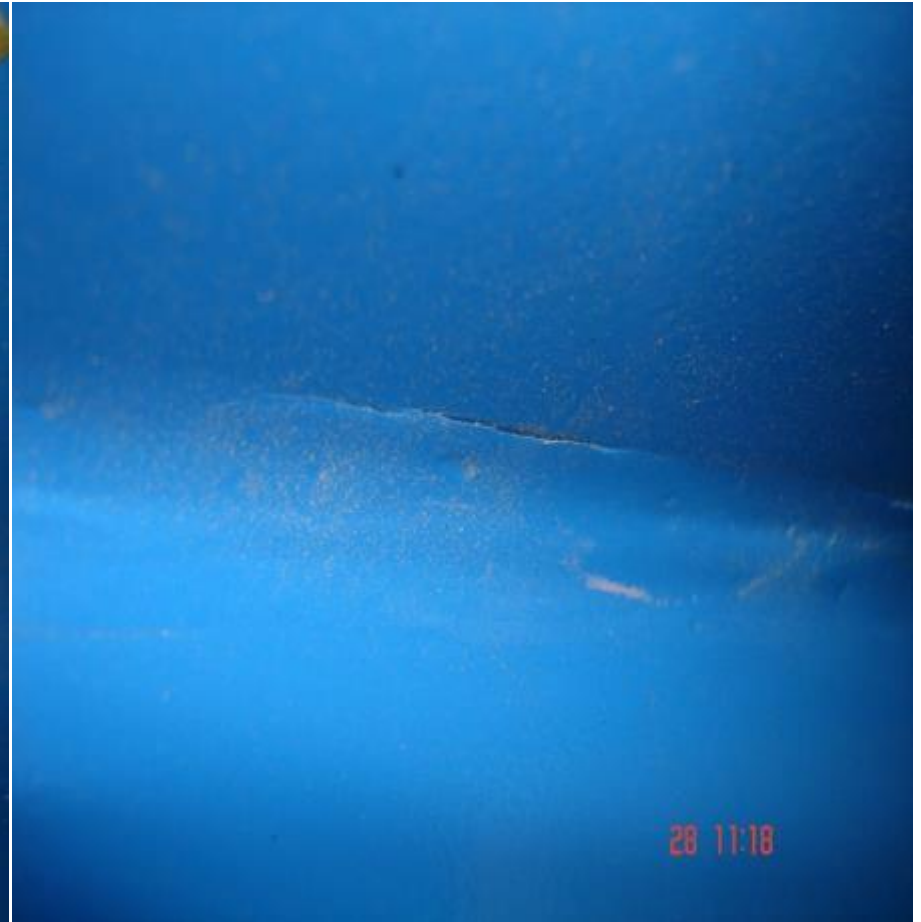
## 2.8. What we do not want to see

**Tack welding, one month outside**  
**Continuous welding required in our drawings**



## 2.8. What we do not want to see

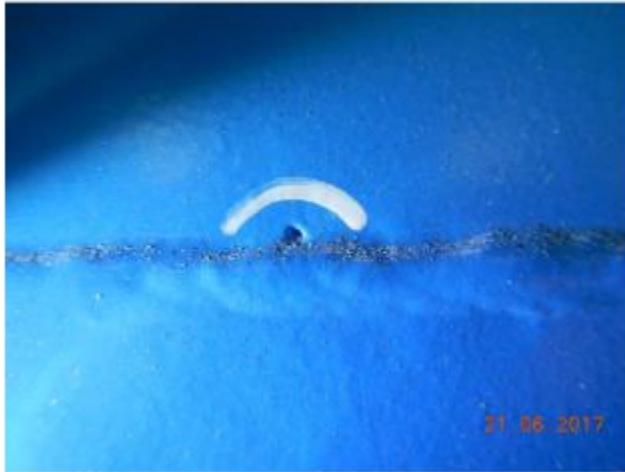
Filling mass (“silicon”) seams in Drum bases.





## 2.8. What we do not want to see

### Poor welding quality, surface damages



11. NC2: Weld defect with 1109 trough



12. NC4: Paint damages with 1109 frame

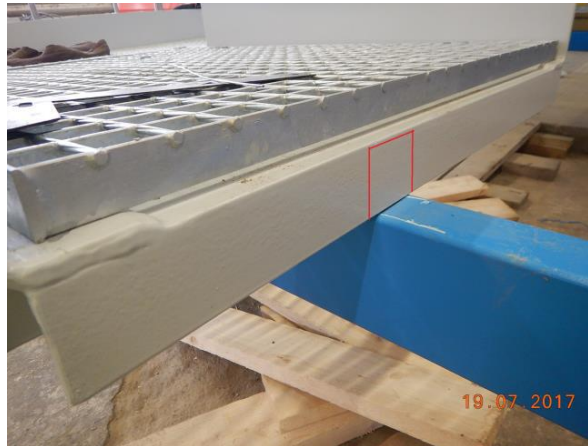


7. Weld defect with conveyor



8. Weld spatters to remove

## 2.8. What we do not want to see



Platform end plate needed cut/modification to fit



11. Weld defect (crater pipes, pores) with platforms



12. Paint defect (sagging)



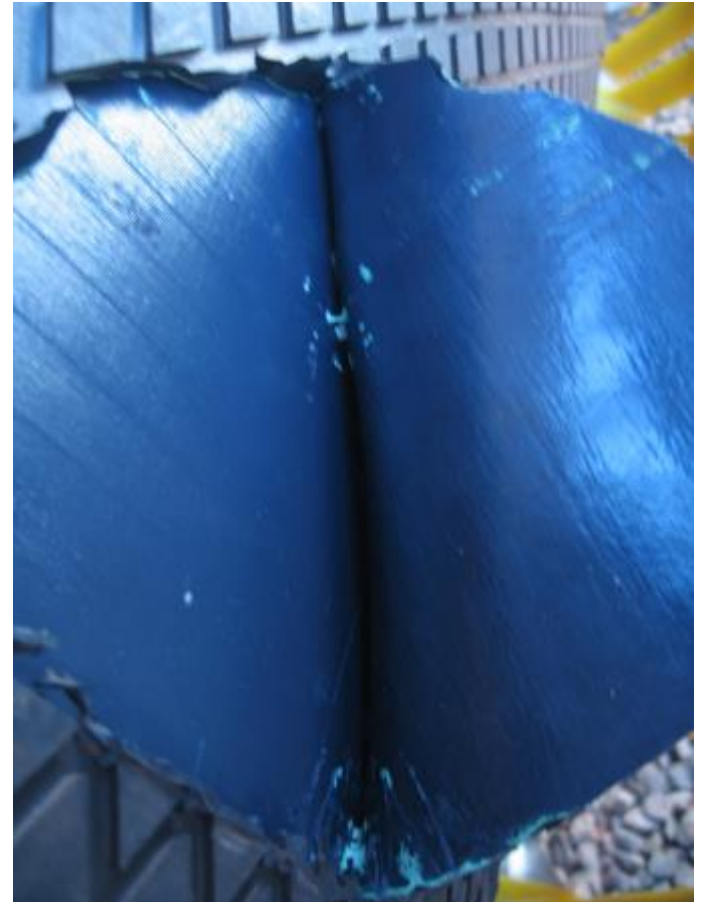
# What we do not want to see

## Poor surface treatment and packing during transportation



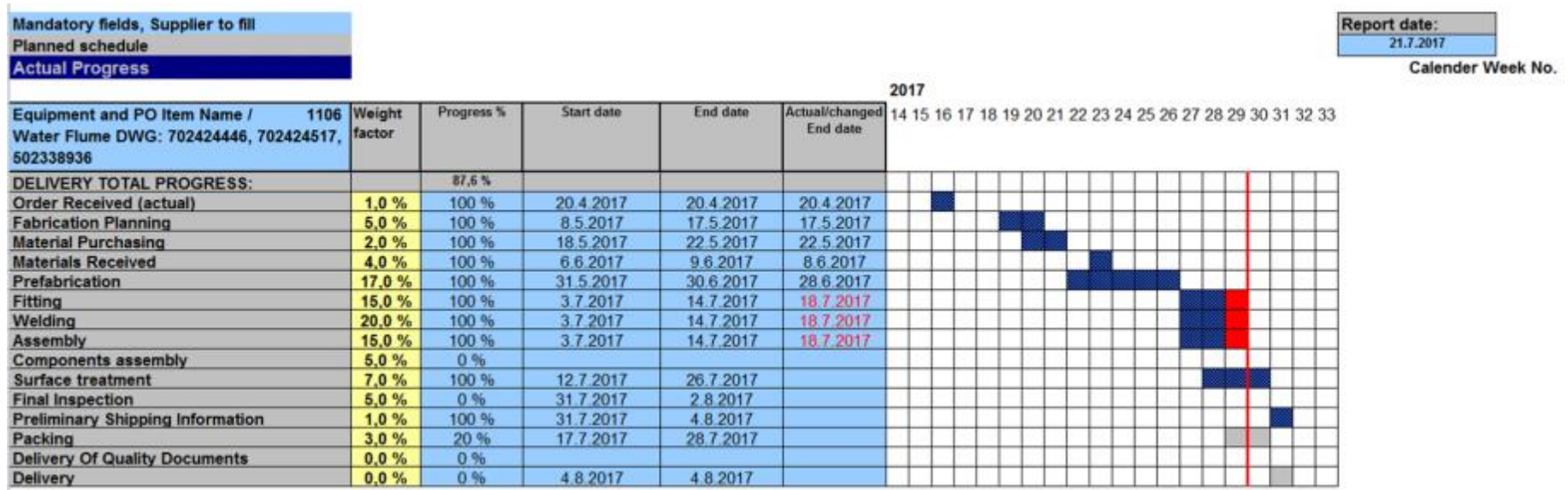
# What we do not want to see

Drive end roller rubber surface was  
Poorly vulcanized



## 2.8. What we do not want to see

### Delayed deliveries



# **ANDRITZ**

## **Pulp & Paper**

### **Fiber Technologies Division**

Any questions?

For further information  
please contact:

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**+358 20 450 5555**

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