



# Valmet Fabrics

March 21, 2017

Jari Stålhammar  
Vice President, Fabrics

# Services business line in 2016

Fabrics is part of Valmet's Services Business

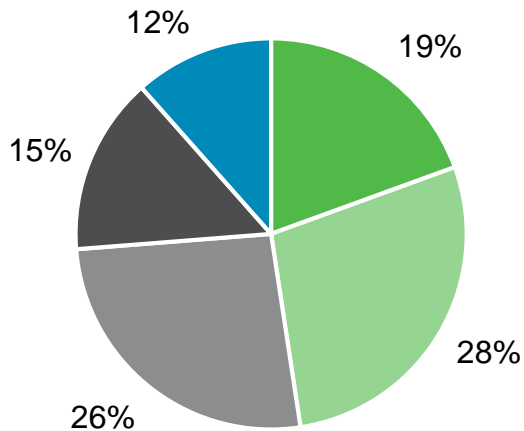
**Orders received**  
EUR 1,182 million

**Net sales**  
EUR 1,163 million

**Employees**  
5,339

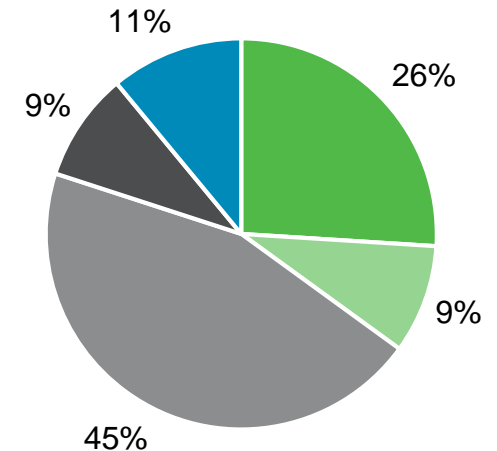
**Market position**  
#1-2 Services

Orders received  
by business



- Rolls
- Mill Improvements
- Performance Parts
- Fabrics
- Energy and Environment

Orders received  
by area



- North America
- South America
- EMEA
- China
- Asia-Pacific

# Valmet Services offering

Comprehensive services offering; widest in the industry



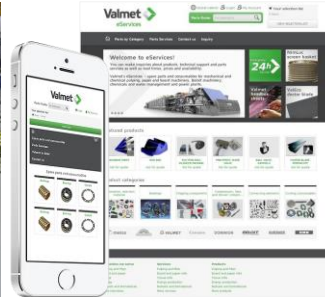
Rolls and Workshop Services

- Rolls
- Roll covers and maintenance
- Workshop services



Mill Improvements

- Upgrades
- Components
- Expert services
- Extensive field service offering



Performance Parts

- Original equipment manufacturer (OEM) spare parts
- Consumables



Fabrics

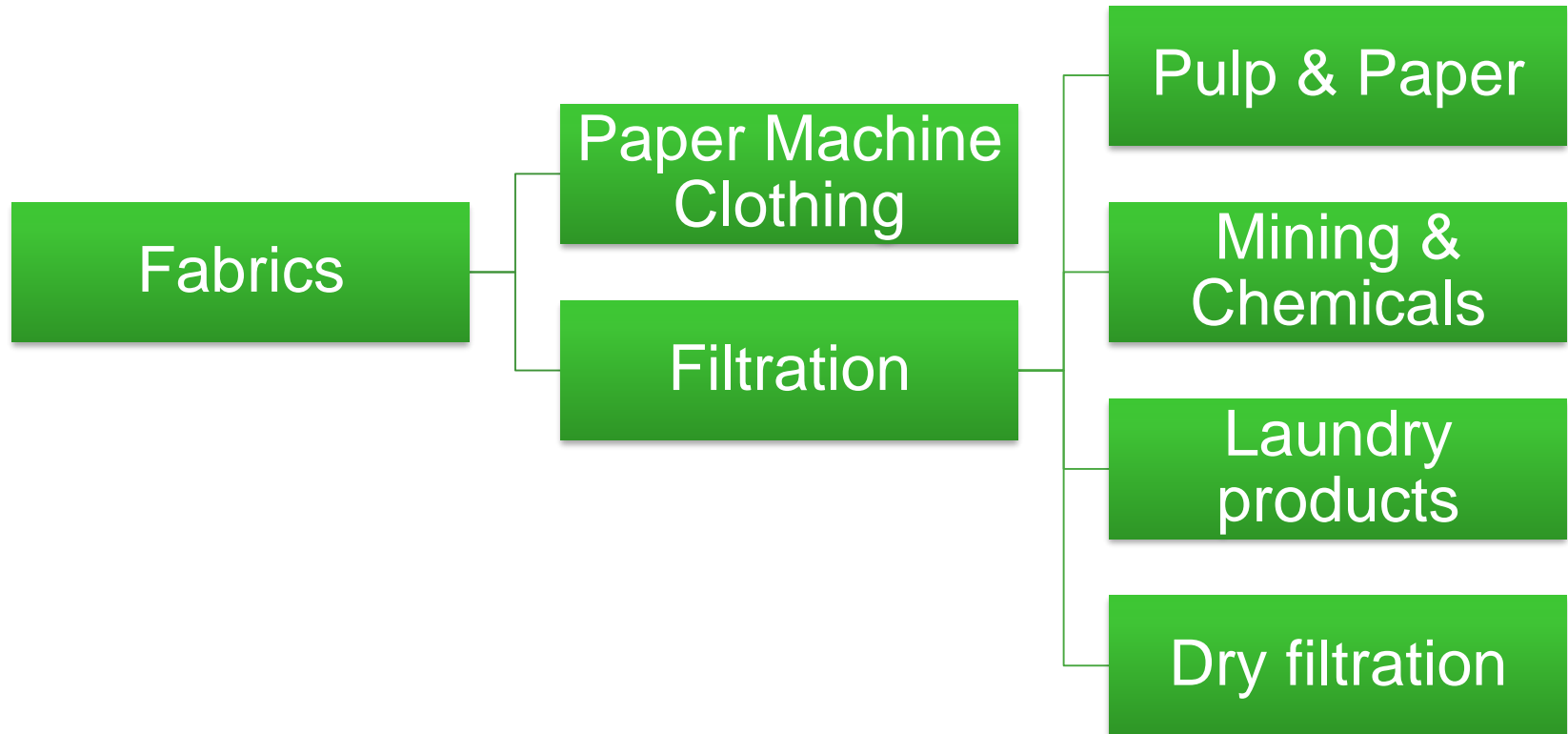
- Paper machine clothing
- Filter fabrics



Energy and Environmental

- Services for evaporation plants, power and recovery boilers and environmental equipment

# Fabrics business





# Shared Journey Forward

Valmet's way to serve

## Our core commitments

Safety  
comes first

Close to you

Solutions to  
your needs

People you  
can trust

## Services offering

### Reliability

- Spare parts and components
- Maintenance and shutdown management
- Outsourcing services

### Performance

- Production consumables
- Process support and optimization

### New Technology

- Process and automation upgrades
- Automation projects
- Industrial Internet and remote solutions

## Shared Journey Forward

Valmet's way to serve

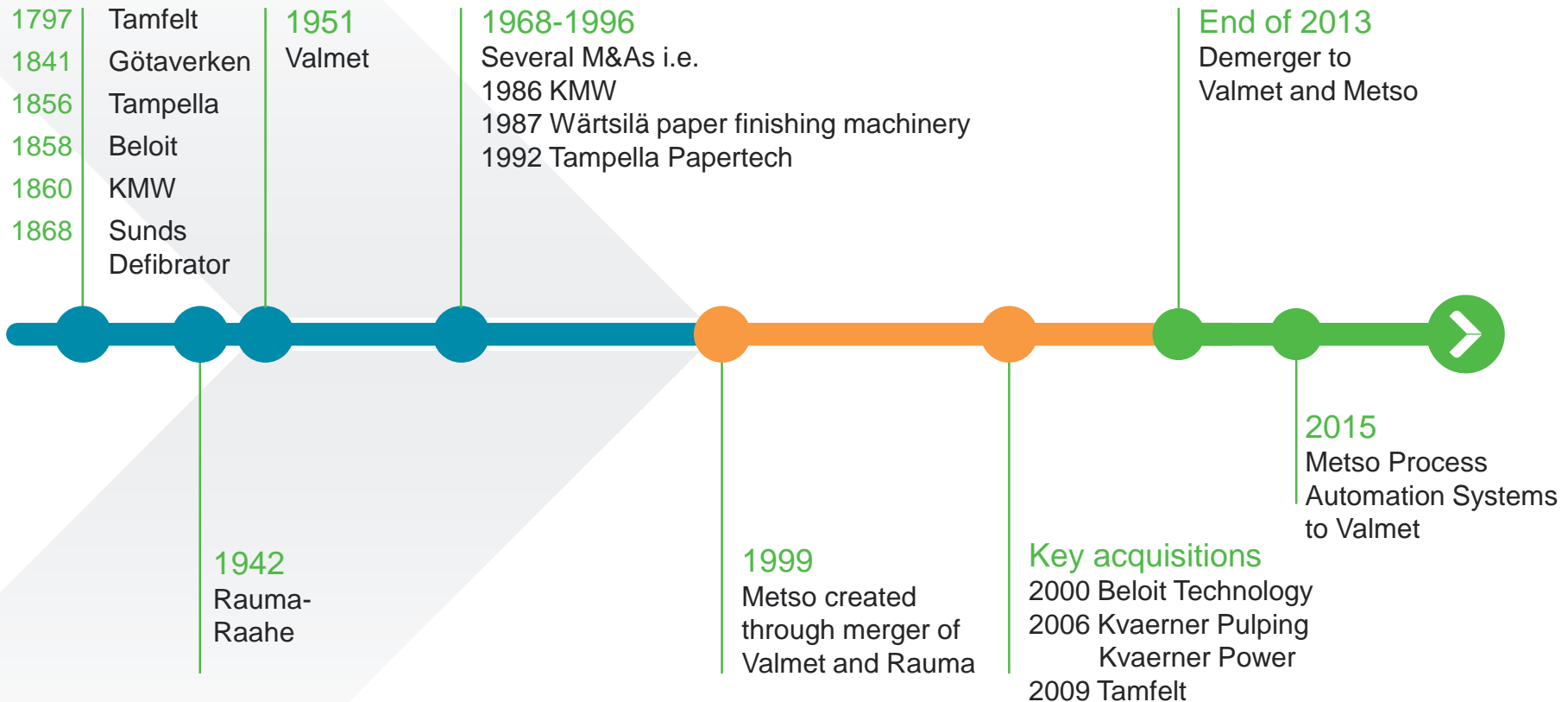
**Committed to moving your performance forward**



# Meet the tailors and the bespoke fabrics

Valmet's Fabrics business

# Valmet: over 200 years of industrial history





# Fabrics - A strong history for a bright future

- 1797 Jokioisten Verkatehdas established
- 1869 Tampereen Verkatehdas Osakeyhtiö established
- 1882 Manufacturing of papermaker's felts
- 1965 Filter fabric manufacturing
- 1981 Company name changed to Tamfelt
- 1984-2008 Acquisition of Viira Oy in Juankoski and Fanafel in Portugal
- 2006-2008 Chinese operations established
- 2010 Tamfelt part of Metso
- 2014 Fabrics business part of Valmet



# 220 years in the making

From then to tomorrow

First paper machine felt  
order in December, 1882



Spearheading tomorrow's  
technology for continuous  
improvement

# Valmet's broad know-how and installed base

12,000 professionals  
working close to our  
customers

Over 120 service  
centers for  
continuous support

Over 3500 R&D  
professionals ensuring  
solutions to customer  
needs



# Quality has its origin

Special facilities for special solutions

## Tampere, Finland



- Press felts
- Dryer fabrics
- Shoe press belts
- Wet filtration media

## Juankoski, Finland



- Forming fabrics

## Tianjin, China



- Forming fabrics
- Dryer fabrics
- Wet filtration media

# Quality has its origin

Special facilities for special solutions

## Ovar, Portugal



- Filtration service technology center
- Wet and dry filtration media, industrial textiles for the laundry industry

## Belo Horizonte, Brazil



- Wet filtration media

## Aiken, SC, USA



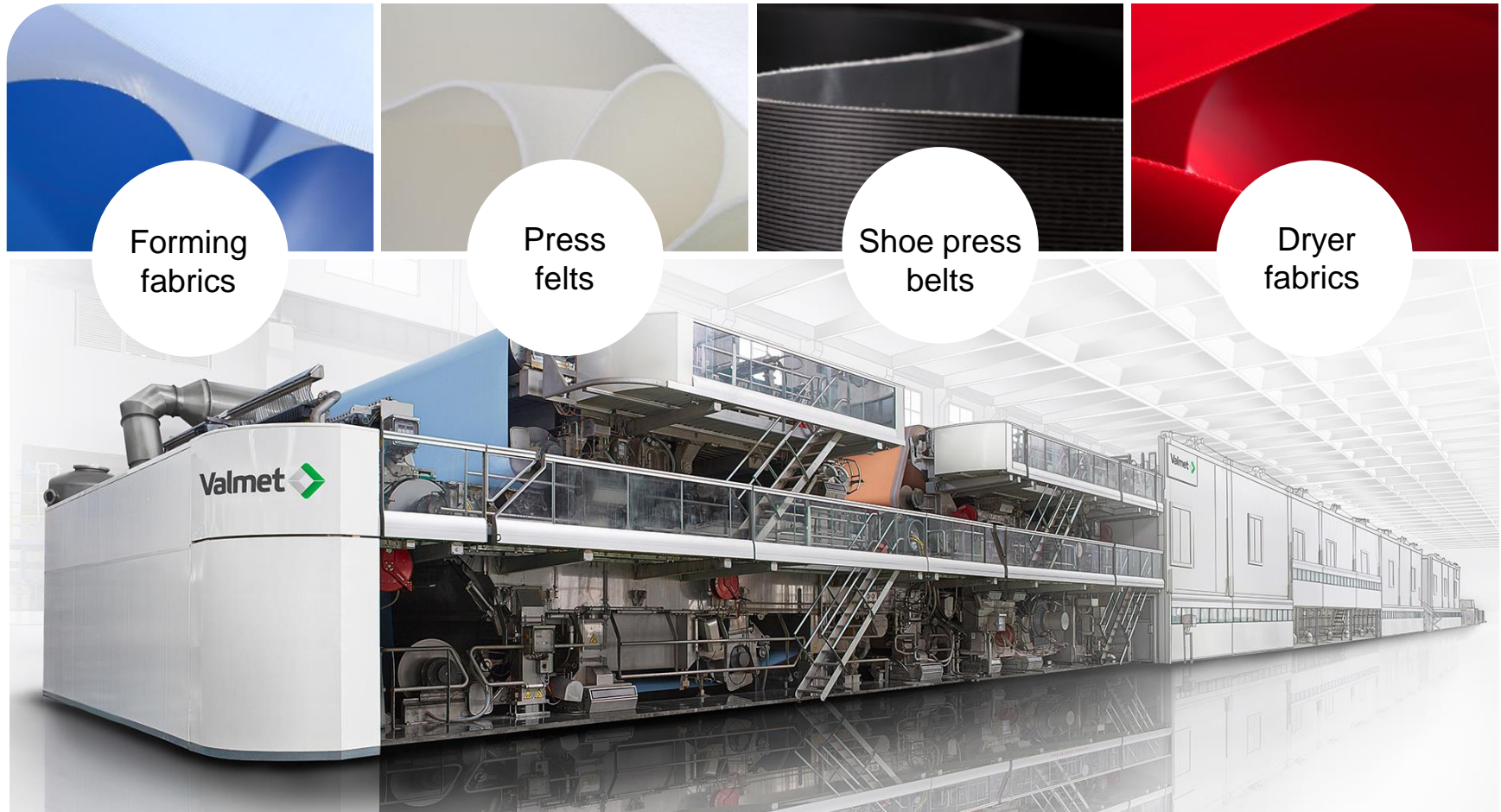
- Wet filtration media



A full line, for all  
conditions

# A full line of paper machine clothing

For all parts of the process



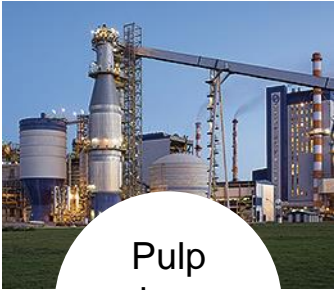
# The most extensive filtration products range on the market



Mining industry



Chemical industry



Pulp and paper industry



Energy industry



Laundry industry



Environmental solutions



It's the  
experience  
that makes  
the difference



# Expertise to help you improve performance

## Research and development

### Research

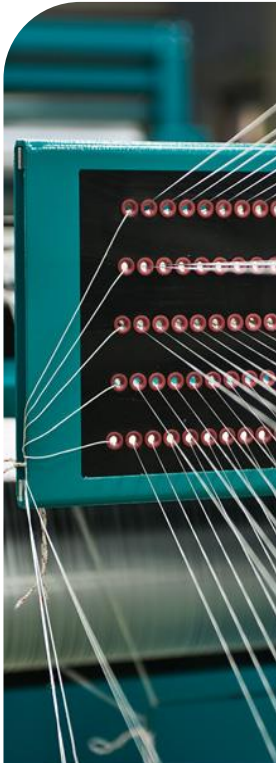
- Extensive set of pilot facilities
- Close cooperation with papermakers and other process industry customers
- Work with universities and research institutes
- Modern paper testing and textile laboratories in Finland and Portugal

### Development

- Extensive intellectual property portfolio with a large number of protected innovations
- Continuous development and troubleshooting in cooperation with customers

# Quality every step of the way

The typical production process



Warping



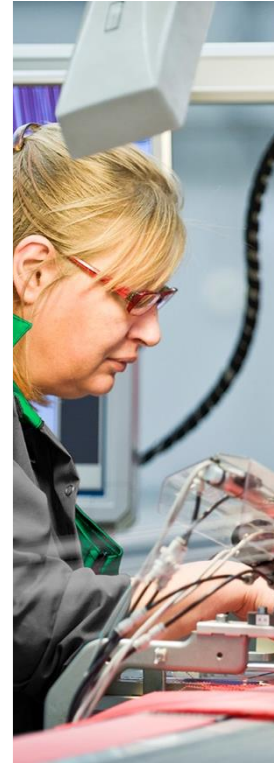
Weaving



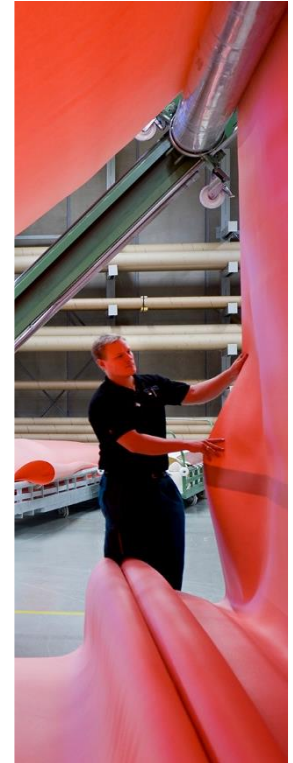
Heat setting



Needling



Seaming and sewing



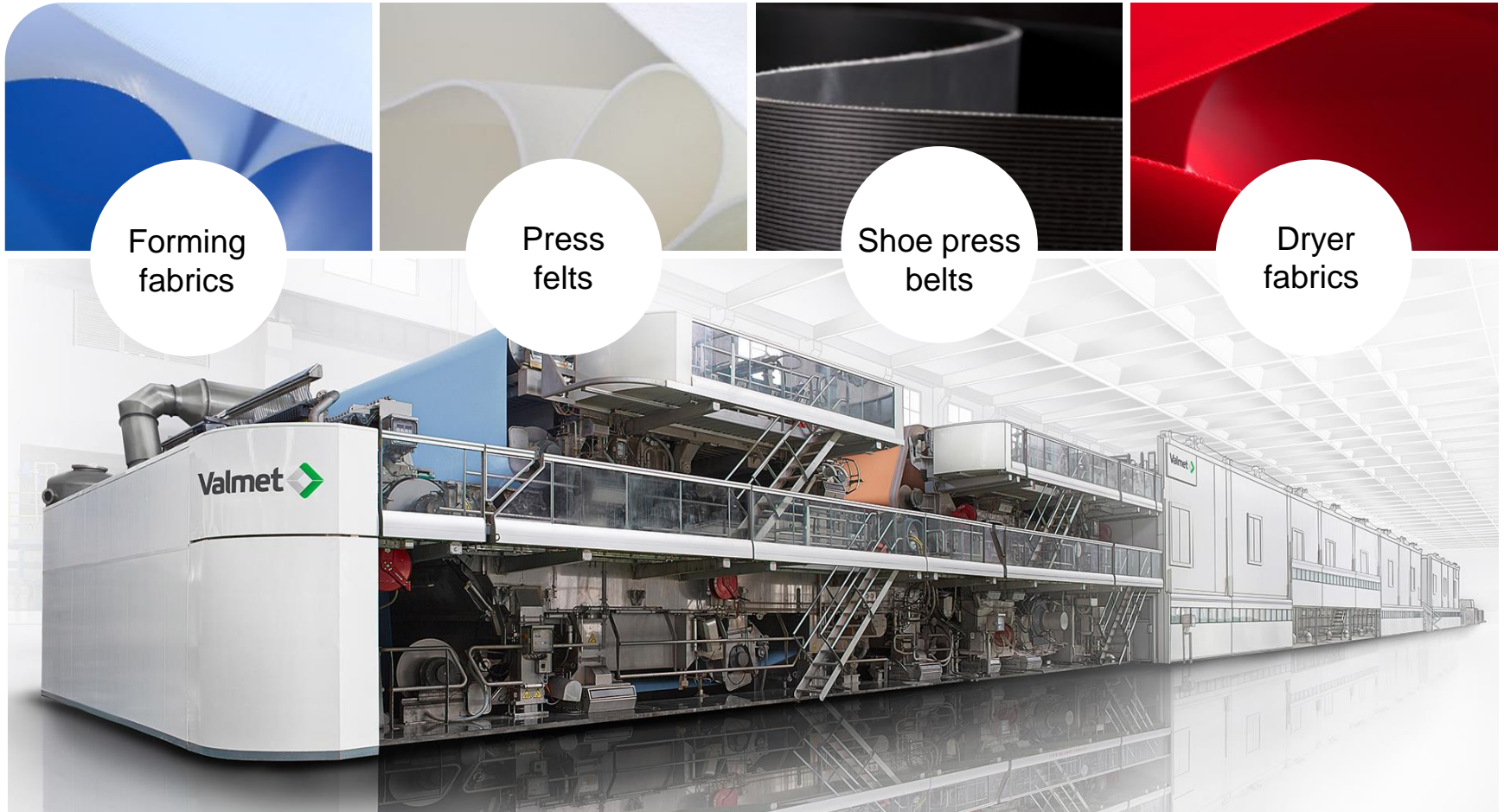
Inspection and packing



# PMC technology unit Paper Machine Clothing

# Bespoke solutions for a EUR 2bn global market

For all parts of the process



Forming fabrics

Press felts

Shoe press belts

Dryer fabrics

**If you move at  
2,000 meters per minute,  
you need clothing that fits.**

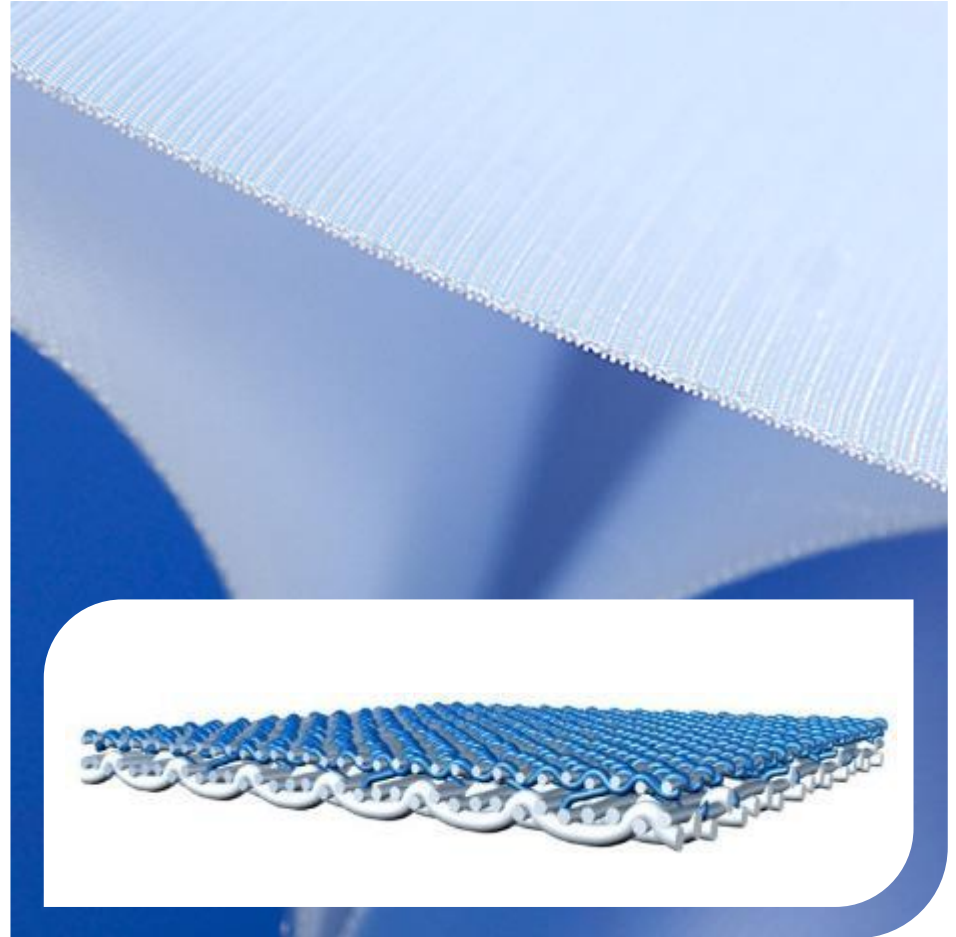
# Valmet's forming fabrics

For high-quality end product

## Benefits

- High wear resistance
- Long running life
- Good paper profiles
- Good retention
- Low marking
- Smooth runnability

**12 different styles with many variations for different customer demands**



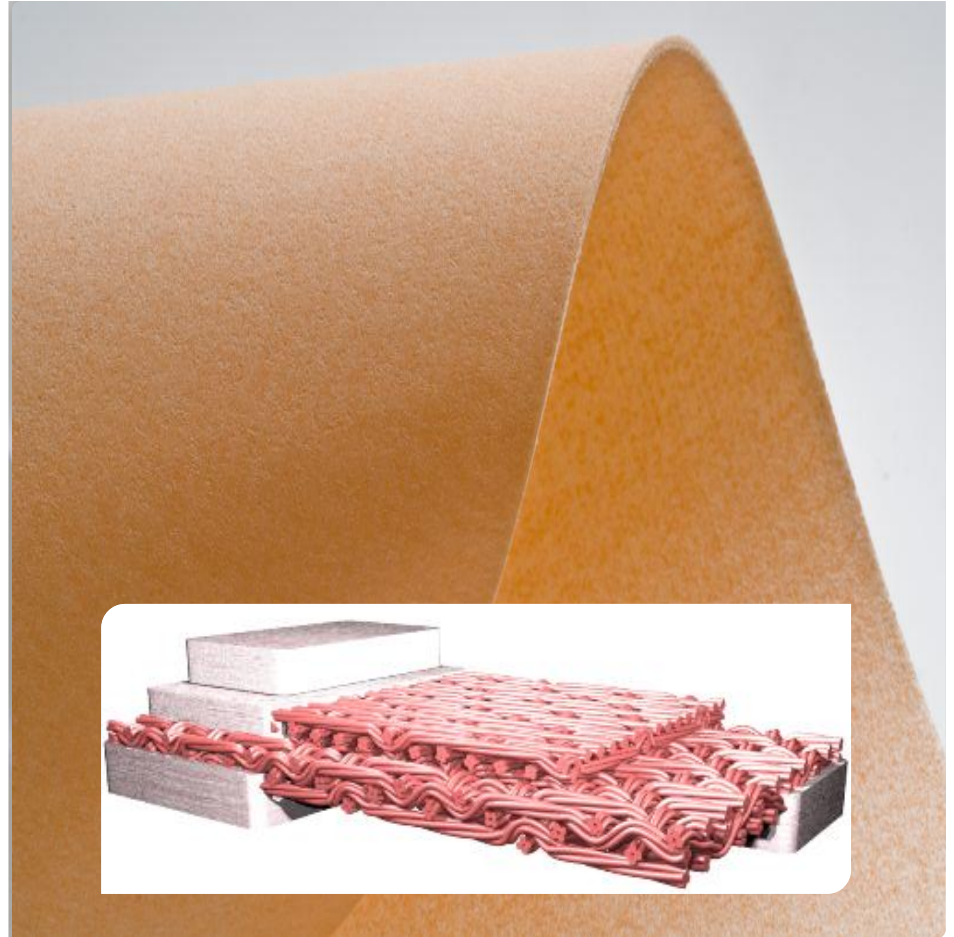
# Optimizing water removal

## Press fabrics and felts

### Benefits

- High dry content
- Energy savings
- No marking
- Fast start-up
- Excellent runnability
- Improved paper properties

**23 different styles with many variations  
for different customer demands**





# Trouble-free running life

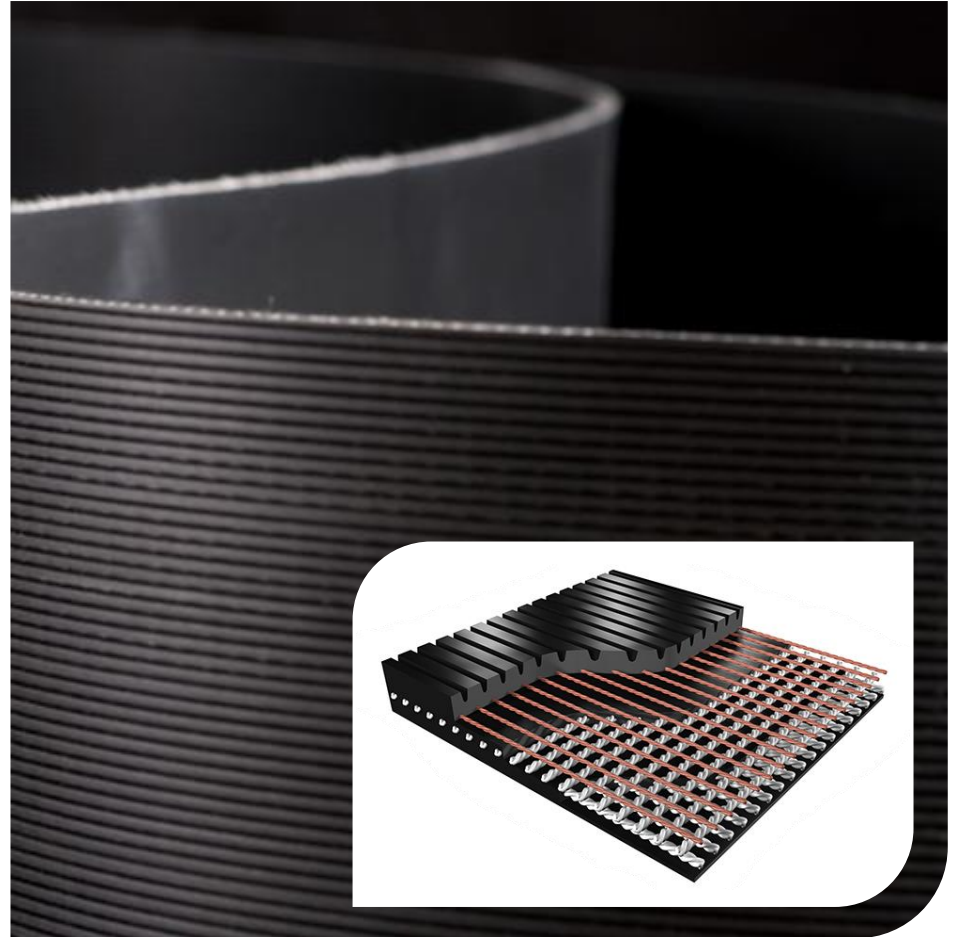
## Shoe press belts

### Benefits

- Excellent wear resistance
- Stable structure
- Roll type running
- Long running time
- Efficient dewatering

### Surface options

Grooved (V), Discontinuous grooves (DG),  
High density grooves (HD), Smooth (S)



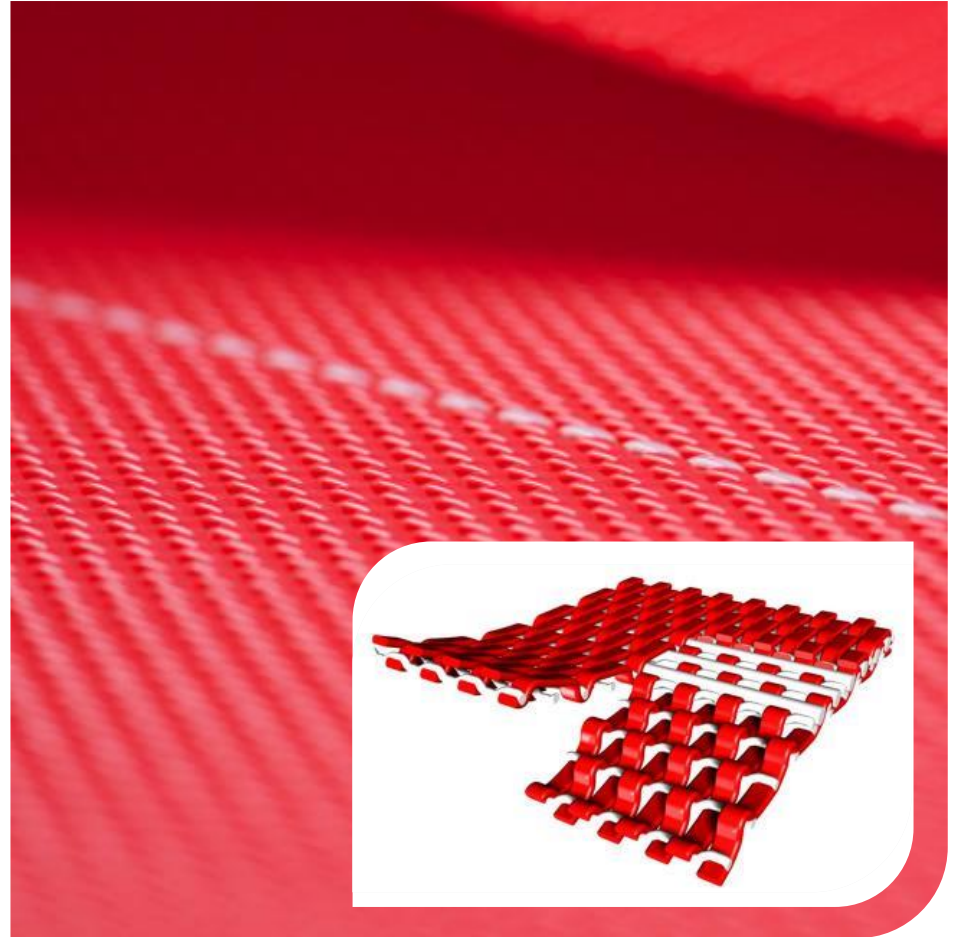
# Optimizing water removal

## Dryer fabrics

### Benefits

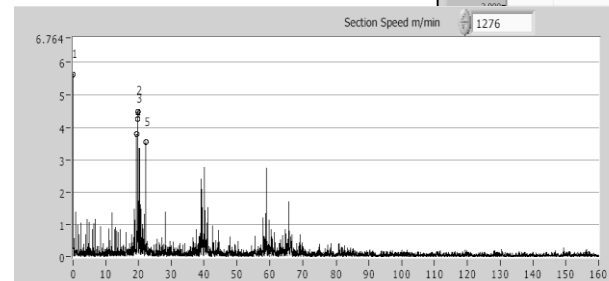
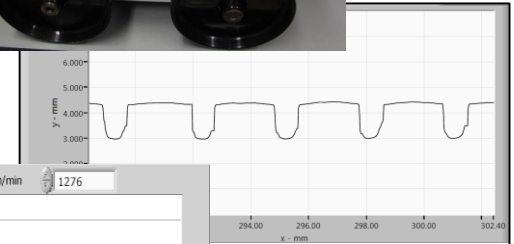
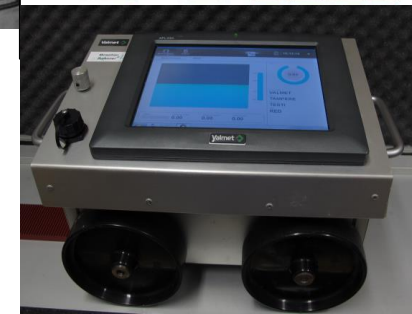
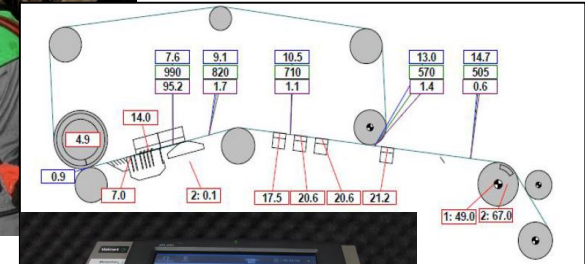
- Large contact surface
- Increased drying rate
- Enhanced paper quality
- Durable fabric
- Good shape retention
- Strong non-marking seam
- Easy to clean


9 different styles with many variations  
for different customer demands



# Technical customer service

- Advisor services
- Trouble shooting
- Shut down service
- Fabrics monitoring with measurement and analysis
- Fabric repair

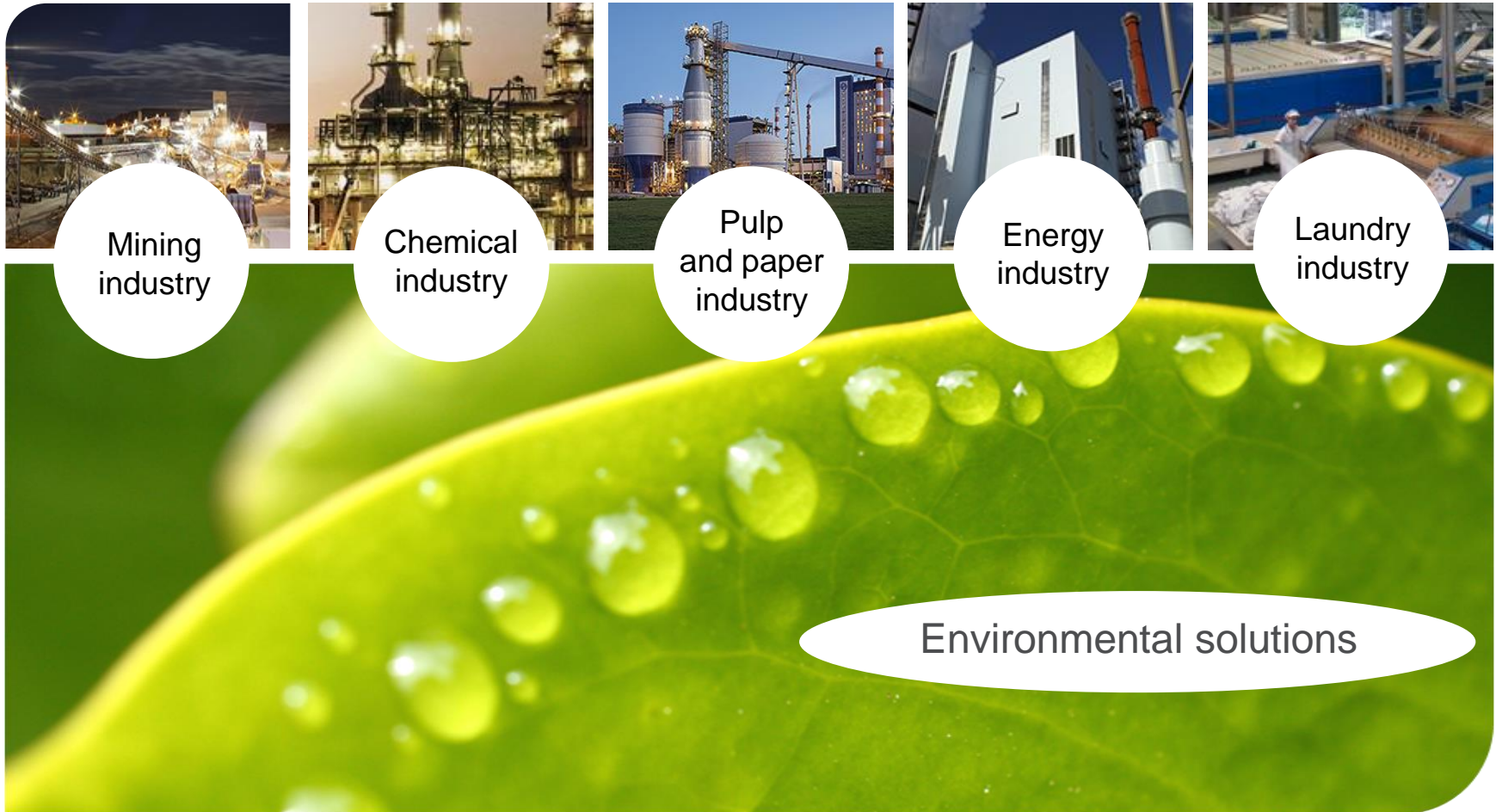




# Filtration technology unit

# Most extensive range of filtration products

A global market of EUR 3 billion



High temperatures, complex chemical environments and sludge varieties set a high bar for requirements.

# Extreme durability for tough environments

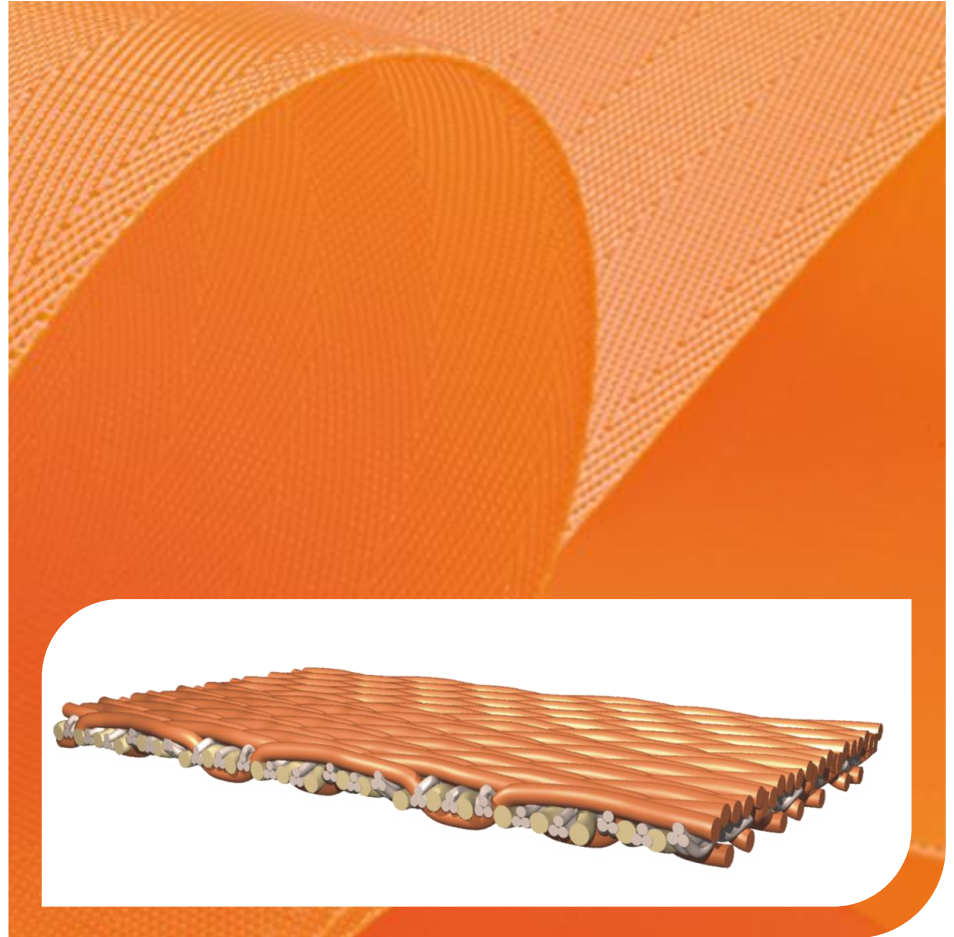
Mining and chemical industries

## Benefits

- Easy installation
- Accurate fit
- Highly wear-resistant
- Excellent filterability
- Minimized need for shutdowns

### Fabrics for:

Disc filters, Tower press filters,  
Drum filters, Press filters, Belt filters



# Tailor-made for the best fit

Pulp and paper industry

## Benefits

- Easy installation
- High capacity
- Good filtration clarity
- High dry solids content
- Operational reliability

### Fabrics for:

Recausticizing processes, Disc filters,  
Drum filters, Twinwire presses





# Quality filtration to help reduce pollution

Energy industry

## Benefits

- Easy installation
- High capacity
- Durable, high-quality fabric
- Reduces emissions
- Minimizes pollution

### Fabrics for:

Bag houses, Biofuel production,  
Coal burning



Valmet is also the world's leading supplier of industrial textiles and accessories for the laundry industry.

# Top-of-the-line laundry products

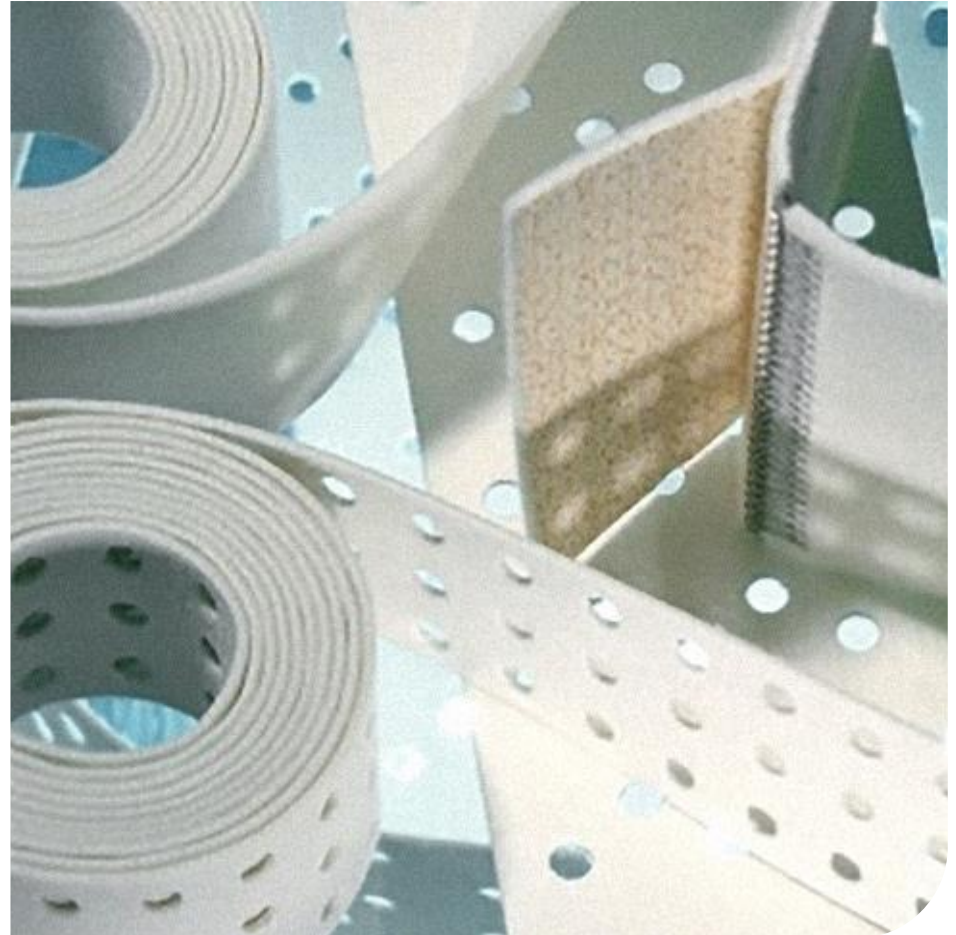
Laundry industry

## Benefits

- Easy installation
- High heat, abrasion and moisture resistance
- High permeability
- Good moisture absorption
- Non-marking finishing

## Products for:

Ironers, Feeders, Stackers



# Fabrics for optimized dry filtration processes

Power plants, Incinerators, Cement plants, Asphalt plants

## Filtration process benefits

- Excellent filtration efficiency
- Meeting emission standards
- Easy dust cake release allowing highest air flow at a low and stable pressure drop
- Dimensional stability of bags
- Cost effective dedusting process
- Operational reliability



# Optimized filter performance

See measureable results with Valmet's tailor-made products



Clearer  
filtrate

Higher  
capacity

Lower  
moisture

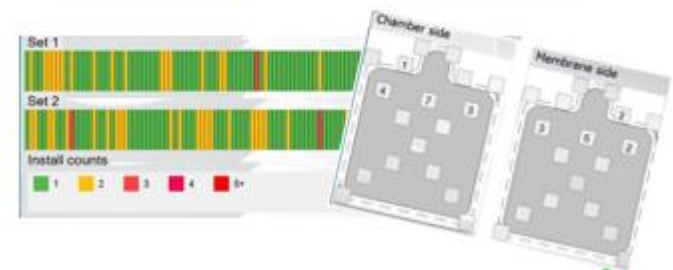
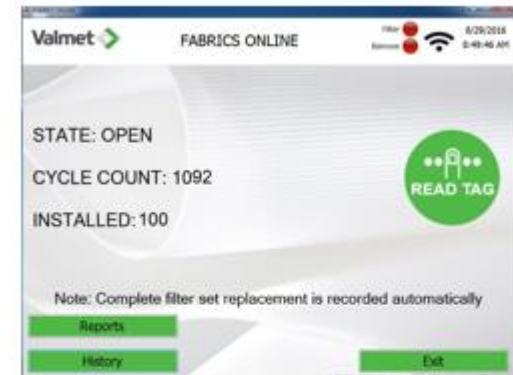
Longer  
lifetime

Improved  
reliability

# Savings in filtration processes

Industrial internet application for optimizing filter cloth performance

- An equipment that records the lifetime of the filter cloth and a program that gathers and analyzes the data and provides informative visual reports
- On-line information about cloth performance and the reasons for cloth changes
- The application enables our filtration experts to provide remote support.



# Fabrics today

- World's fastest paper and board machines provide strong references
- The leading filter fabric supplier to recausticizing processes and mining industry
- The leading supplier of disc filter bags to the paper and pulp industry
- Production in six countries
- Main markets: Europe, North America, South America, Asia
- Innovative product development, several patents
  - R&D in co-operation with customers, filter producers, universities and research centers
  - High-class laboratories for textile, paper research and filtration
- Personnel 1250



# Important notice

It should be noted that certain statements herein which are not historical facts, including, without limitation, those regarding expectations for general economic development and the market situation, expectations for growth, profitability and investment willingness, expectations for company development, growth and profitability and the realization of synergy benefits and cost savings, and statements preceded by “anticipates”, “believes”, “estimates”, “expects”, “foresees” or similar expressions, are forward-looking statements. Since these statements are based on current decisions and plans, estimates and projections, they involve risks and uncertainties which may cause the actual results to materially differ from the results currently expressed. Such factors include, but are not limited to:

- 1) general economic conditions, including fluctuations in exchange rates and interest levels which influence the operating environment and profitability of customers of the company or economic growth in the company’s principal geographic markets.
- 2) industry conditions, intensity of competition situation, especially potential introduction of significant technological solutions developed by competitors, financial condition of the customers and the competitors of the company,
- 3) the company’s own operating factors, such as the success of production, product development and project management and the efficiencies therein including continuous development and improvement
- 4) the success of pending and future acquisitions and restructuring.



