M-real Kyro

Your reliable partner in wallpaper base
M-real as part of Metsäliitto Group

Metsäliitto Group

- Sales 8.5 billion €
- 25,000 employees
- 131,000 private forest owners
- 5.3 million hectares of forests
- 48% of all Finnish private forests

Metsäliitto Cooperative
- Wood Supply
- Wood Products
- Industry

Metsä-Botnia
- Pulp
- 3.8 million tons
- In Finland and South America

M-real
- Paper and Board
- >5 million tons
- In Europe

Metsä Tissue
- Tissue and Cooking Paper
- >0.5 million tons
- In Europe
M-real business portfolio

**Consumer Packaging**

- Sales 2006: 971 m€
- EBITDA 2006*: 131 m€

**Publishing**

- Sales 2006: 887 m€
- EBITDA 2006*: 114 m€

**Commercial Printing**

- Sales 2006: 1 504 m€
- EBITDA 2006*: 74 m€

**Office Papers**

- Sales 2006: 727 m€
- EBITDA 2006*: 69 m€

* Excluding non-recurring items

MAP Merchant Group sold in July 2007
M-real Consumer Packaging
Total capacity 1.3 mil tons

Folding boxboard 765 000 t
- Tako 205 000
- Kyro 145 000
- Äänekoski 200 000
- Simpele 215 000

White-top kraftliner 370 000 t
- Kemi 370 000

Paper 152 000 t
- Kyro 100 000
- Simpele 52 000
Key milestones of Kyro

1870  Mill founded
1957  BM1 started
1958  Start up of wallpaper production on PM3
1989  ISO 9002 certification
1994  BM1 rebuild
1995  Kyro forest industry activities acquired by Metsä-Serla (M-real)
2002  PM 3 rebuild
2007  Acquisition of Kyro Power
M-real Kyro today

- **Annual capacity** 245 000 t
  - Board 145 000 t
  - Paper 100 000 t
- **Products**
  - Coated folding boxboard (FBB)
  - Wallpaper base
- **Turnover** 170 m€
- **Exports** 99 %
- **Personnel** 280
- **Power plant** 60 MW
- **Wood consumption** 300 000 m³
Structure of wallpaper base products

Cresta M
(80-120 g/m²)

Cresta D
(120-150 g/m²)

Cresta D1
(120 - 150 g/m²)

Cresta D2
(120 - 165 g/m²)

Cresta NG2
(150 g/m²)

Mechanical pulp
Chemical pulp
Coating
Wood handling and debarking
- 300 000 m³/a or 6 200 trucks/a
Groundwood pulping

From debarking plant

Grinding stones

Storage

To BM1

For BM1

35 000 t/a mechanical pulp

65 000 t/a mechanical pulp
Chemical pulp

Hardwood 70 % Birch
45 000 t/a

Softwood 30 % Pine
40 000 t/a

Chemical pulp storage

Ground-wood pulp storage

To BM1 and PM3 headboxes
Paper machine PM3

Capacity 100 000 tn/a

Machine width 3 600 mm

Maximum speed 860 m/min

Personnel 4 persons/shift

Construction
- 3 wires, 2 head boxes
- single layer and double layer papers
- surface sizing unit
- double blade coating on one side

Grammage range 80 - 165 g/m²
Wire section

Each headbox sprays a steady stream of diluted pulp stock onto a continuous wire mesh.

Along the wire the moisture content decreases from 99 % to 80 %.

Features:
• even formation
• excellent consistency
Press section

Paper web is pressed between the rolls to remove water.

The felt carries the excess of water from the web.

Moisture content decreases from 80 % to 50 %.
Size press and coating section

Coating:
One or two coating layers are applied on the top side of the paper to improve printing result.

Size press:
A starch-based solution is added to paper to decrease dusting tendency.
Reel winder

The winder cuts the reels according to customers’ requirements.

Built 1984
Design speed 2 000 m/min
Personnel 2 persons/shift
Fully automatic packaging line

- Started: 1995
- Capacity: 1,900 reels/24 h
- Personnel: 1 person/shift
Laboratory - Testing and analysing

Production and quality control
- Calibration data for on-line sensors
- Standard measurements
- Manual and automated testing around the clock

Specific tests and analyses
- Development of improved or new products
- Wallpaper properties (hangability, light fastness, printability, washability, etc.)
Development of M-real’s wallpaper base production 1997-2006

[Bar chart showing production from 1997 to 2007, with years on the x-axis and production on the y-axis, differentiated by Kyro, Äänekoski, and Kangas.]
Investments at M-real Kyro

- 2002  Paper machine rebuild        37 m€
- 2004  Effluent treatment plant    2 m€
         enlargement
- 2006  Groundwood washing          3 m€
- 2007  Purchase of Kyro Power      13 m€

Annual operative investments        2 m€/a

TOTALLY IN LAST 5 YEARS             65 m€
Paper sales by market (Estimate 2007, tons)

- W Europe: 55%
- CIS: 25%
- Far East: 15%
- Others: 5%
Paper sales by grade  (Estimate 2007, tons)

- **Simplex**: 53%
- **Duplex (incl. PTW)**: 47%
To be noted for mill tour

• Mill tour in groups of 10 persons
• You will get the number of your mill tour group in the bus
• Groups leave for mill tour with 10 minute intervals
• Your guide will collect the group
• You will be provided with safety vests and ear plugs
• Please take comfortable shoes
• Photographing is not allowed in production area
• Please follow the safety instructions given!
Safety instructions for visitors

• Please do not touch anything
• Floors may be slippery, please be careful
• Beware of forklift trucks operating in the area
• Do not go under the loads of the overhead cranes
• Please follow your guide at all times
• Smoking is allowed only in the designated areas
• Ear protection and reflective vests must be worn while in the production area.
• Your guide will inform you in case of an emergency

These instructions are for your safety!
Welcome!
Tervetuloa!
Välkommen!
Willkommen!
Bienvenue!
Benvenuto!
Welkom!
Velkommen!
to M-real Kyro!