

SHOGUN

- Tissue Felt Presentation -



Pressing is Our Specialty

Ichikawa Europe GmbH

Düsseldorf, Germany

イチカワ株式会社



- World Wide and European Network
- Supply List Europe
- Success at P&G Neuss
- Design Features “Shogun”
- Technical Features
- Performance
- Technical Service
- Distribution Network Europe
- Packing



World Wide Activity

Ichikawa Europe
Office: Düsseldorf, Germany



Ichikawa China Corporation
Office: Shanghai, China

Ichikawa North America Corp.
Office: GA. Atlanta, United States

As of Sept 07

Customer	Machine #	Machine Type	Wire Width (Felt Width)	Grade	Speed (mpm)	Nip Loading (KN/m)	Felt B.W. (gsm)	Life (days)
Metsä Tissue Katrinefors (Sweden)	PM35	Valmet Crescent Former	3530	Toilet (15-40gsm)	1750 (Max.) 1800 (Design)	1P: 80 2P: 80	1300	48 (Av.) 57 (Max.)
Metsä Tissue Katrinefors (Sweden)	PM36	KMW PeriFormer	3400	Toilet (17-30gsm)	1600 (Max.) 1700 (Design)	1P: 80 2P: 80	1300	60 (Av.)
Metsä Tissue Nyboholm (Sweden)	PM5	Voith Andritz Crescent Former	(2950)	Toilet, Towel (16-19gsm)	1050 (Max.)	1P: 80	1300	30-40
Swedish Tissue Kisa (Sweden)	PM3	Single Wire	(2850)	Napkin, Sanitary (16-40gsm)	1300 (Max.)	1P: 80 2P: 80	1300	30-40
Swedish Tissue Kisa (Sweden)	PM4	Valmet Crescent Former	(2850)	Napkin, Sanitary (14-29gsm)	1400 (Max.)	1P: 80 2P: 90	1300	30-40
Rexcell Skapafors (Sweden)	PM1	Valmet Crescent Former	4570	Colored Napkin (14-38gsm)	1470 (Max.)	1P: 90 2P: 90	1270	60 (Av.) 120 (Max.)
Rexcell Skapafors (Sweden)	PM2	Valmet Crescent Former	4570	Colored Napkin (14-38gsm)	1470 (Max.)	1P: 90 2P: 90	1270	60 (Av.) 120 (Max.)
SCA Hygiene Edet (Sweden)	PM5	Beloit Suction Breast	3660	Toilet (17-27gsm)	1100 (Max.)	1P: 70 2P: 80	1270	65 (Max.)
SCA Hygiene Edet (Sweden)	PM8	Valmet Crescent Former	(3790)	Towel, Napkin Wiper (19-29)	1700 (Max.) 1800 (Design)	1P: 80 2P: 80	1270	40-42 (Av.) 50 (Max.)
SCA Hygiene Jonkoping (Sweden)	PM4	Valmet Crescent Former	(3400)	Toilet, Napkin (15 ~ 17.3g)	1150 (Max.) 1200 (Target)	1P: 80	1270	45-50
Metsä Tissue Mänttä (Finland)	PM9	Valmet Cresent Former	(3600)	Tissue (16-25gsm)	1570 (Max.)	1P: 80-85 2P : 90	1270	90
Metsä Tissue Mänttä (Finland)	PM10	Beloit Suction Breast	(5200)	Tissue (16-24gsm)	1150 - 1420	1P : 60 2P : 70	1270	75
Smurfit Sunland Eker (Norway)	PM6	Escher-Wyss Tisco Former	2960	Toilet, Kitchen (16 ~ 28g)	1400 (Max.)	1P: 90 2P: 100	1250	Waiting for installation
SCA Neuss (Germany)	PM1	Crescent Former	(5620)	Toilet, Poket Tissue (14 ~ 17g)	1730 (max)	1P : 80 2P : 90	1280	60
SCA Neuss (Germany)	PM2	Twin Former	5450	Toilet, Napkin (15 ~ 17.3g)	2000 (Max.)	1P : 80 2P : 90	1280	60
SCA Witzenhausen (Germany)	PM1	Beloit C-Wrap	2950	Toilet, Kitchen (15.8 ~ 18.5g)	1800 (Max.)	1P : 90 2P : 90	1260	35

As of Sept 07

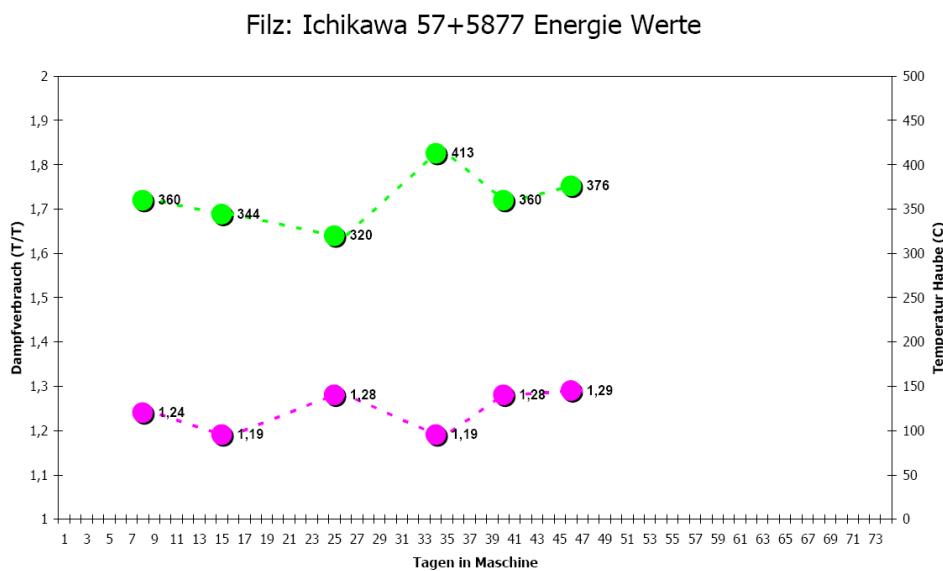
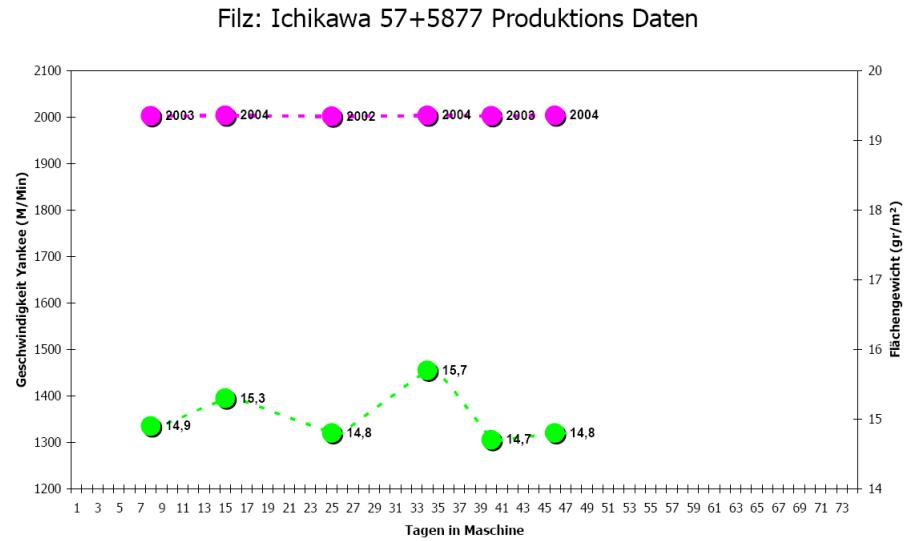
Customer	Machine #	Machine Type	Wire Width (Felt Width)	Grade	Speed (mpm)	Nip Loading (KN/m)	Felt B.W. (gsm)	Life (days)
Metsä Tissue Raubach (Germany)	PM1	Er-we-pa & Voith Single Flat Wire	2660	Toilet Napkin (15-18gsm)	1150 (Max.) 1200 (Design)	1P: 90 2P: 90	1280	35-40
Metsä Tissue Raubach (Germany)	PM3	Over Meccanica Twin Wire	3030	Toilet (16-18gsm)	1400 (Max.) 1500 (Design)	1P: 90 2P: 90	1280	30-60
Metsä Tissue Stotzheim (Germany)	PM1	Toscotec Crescentformer	2850	Color Napkin (16-17gsm)	1500 (Max.)	1P: 80 2P: 90	1250	60
Kimbarly Clark Koblenz (Germany)	PM1	Escher-Wyss Tisco Former	3770	Bath Tissue (17.5gsm)	1450(Max) 1800(Design)	1P: 85 2P: 85	1260	35
Wepa Tissue Giershagen (Germany)	PM5	Crescent Former	2650	Kitchen, Toilet (15-45gsm)	1500 (Max.)	1P: 80	1260	50
Wepa Tissue Giershagen (Germany)	PM7	Tiscoformer	3000	Kitchen, Towel (18-20gsm)	1750 (Max.)	1P: 90 2P: 90	1270	80
Wepa Tissue Sachsen (Germany)	PM3	Crescent Former	2650	Kitchen, Toilet (15-45gsm)	1500 (Max.) 1600 (Design)	1P: 120 2P: 120	1300	50
Wepa Tissue Sachsen (Germany)	PM9	Crescent Former	5400	Toilet (17-30gsm)	1850 (Max.) 1900 (Design)	shoepress 170	1300	60
Wepa Tissue Arnsberg(Germany)	PM6	Tiscoformer	2700	Toilet (17-30gsm)	1800 (Max.) 1700	1P : 90 2P : 100	1250	30
Wepa Tissue Arnsberg(Germany)	PM8	Crescent Former	2700	Toilet (17-30gsm)	2000 (Max.) 1900 (Design)	1P : 90	1270	30
SCA Mannheim (Germany)	WM5	Twinformer	5580	Kitchen, Toilet (15-22gsm)	1900 (Max.)	1P: 80 2P: 90	1300	30
SCA Mannheim (Germany)	WM3	Twinformer	5500	Kitchen, Toilet (14-23gsm)	1500 (Max.)	1P: 80 2P: 90	1270	40
SCA Kostheim (Germany)	PM3	Fourdrinier	2750	Krepp, Handtowels (39- 57 gsm)	750	1P: 80 2P : 90	1250	35
SCA Stembert (Belgium)	PM2	Twinformer	5500	Toilet, Facial (15 - 21g)	1750	1P : 80 2P : 80	1270	Waiting for installation

As of Sept 07

Customer	Machine #	Machine Type	Wire Width (Felt Width)	Grade	Speed (mpm)	Nip Loading (KN/m)	Felt B.W. (gsm)	Life (days)
Kartogroup Linpaper 2 (Italy)	PM2	Crescentformer	2900	Toilet, Napkin (12,5-19g)	1850	1P: 85 2P: 90	1270	70
Kartogroup Porcari K1 (Italy)	PM1	Twinformer	2900	Toilet, Napkin (12,5-19g)	1800	1P: 85 2P: 90	1270	35
ICT Monzone (Italy)	PM5	Twinformer	2800	Kitchen, Industrial (15-24gsm)	1650	1P: 85 2P: 100	1270	35
SCA Lucca (Italy)	PM1	Twinformer	3000	Handy, Toilet (15-16gsm)	1700	1P: 80 2P: 90	1270	55
Delicarta Porcari (Italy)	PM3	Twinformer	5500	Handy, Toilet (15-17gsm)	1700	1P: 80 2P: 90	1270	50
Sofidel Monfalcone (Italy)	PM1	Metso Crescent former	3000	Toilet, Facial (15-23gsm)	1800		1270	50
ICT Zaragoza (Spain)	PM21	Twinformer	5500	Toilet Kitchen (17- 21gsm)	1700	1P : 90	1270	waiting for installation
Georgia Pacific Allo (Spain)	PM1	Twinformer	5500	Toilet Kitchen (17- 30gsm)	1400	1P: 80 2P: 90	1260	80
Georgia Pacific Allo (Spain)	PM2	Cresent Former	5500	Toilet Kitchen (17 - 30gsm)	1750	1P: 80 2P: 90	1260	60
Kartogroup Buriana (Spain)	PM2	Ricard Crescentformer	(2900)	Toilet (16 - 20g)	1800	1P: 80 2P: 90	1260	35
Jofel Viritisu (Spain)	PM2	Toschy Crescentformer	2900	Toilet Kitchen (17 - 20gsm)	1500	1P: 95	1270	80
Renova (Portugal)	PM6	Beloit Twin former	3050	Toilet Kitchen (14 - 26gsm)	1800	1P: 90 2P: 90	1270	30







IK Easy Installation

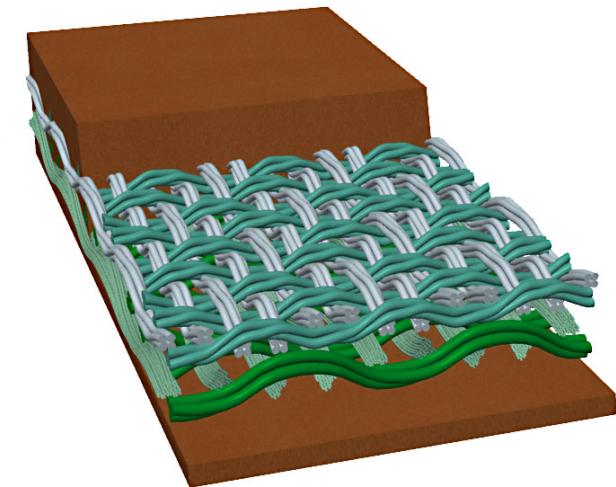
- Softer Property (Peculiar Base Material and Construction)
- Flexible Property (Ichikawa Own Chemical Treatment)

IK Quick Start-Up

- Optimum Density (Pre-compaction and Enhanced Needling)
- Hydrophilic Property (Ichikawa Own Chemical Treatment)

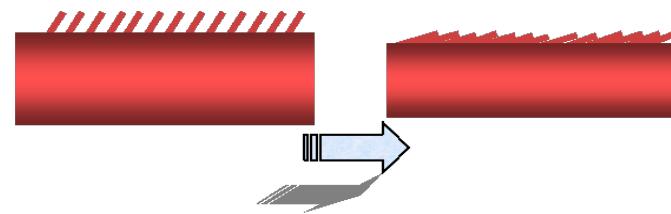
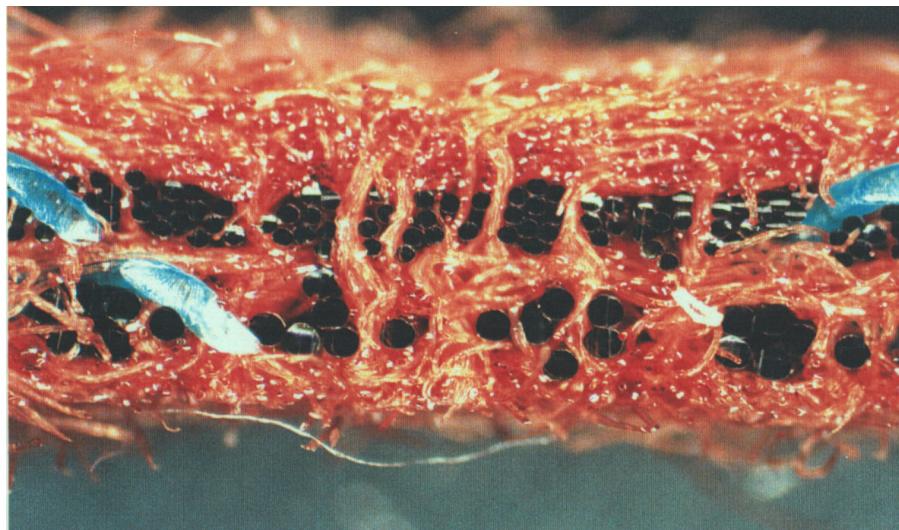
IK Excellent Performance

- Constant Excellent Compressibility (Peculiar Base Material and Construction)
- Constant Air-permeability (Higher Base Fabric Ratio)
- Excellent Even Nip Transmission Ability (Fine Surface)
- Excellent Anti-Abrasion Property (Peculiar Base Material)



Ichikawa Pre-Compaction with heat roll

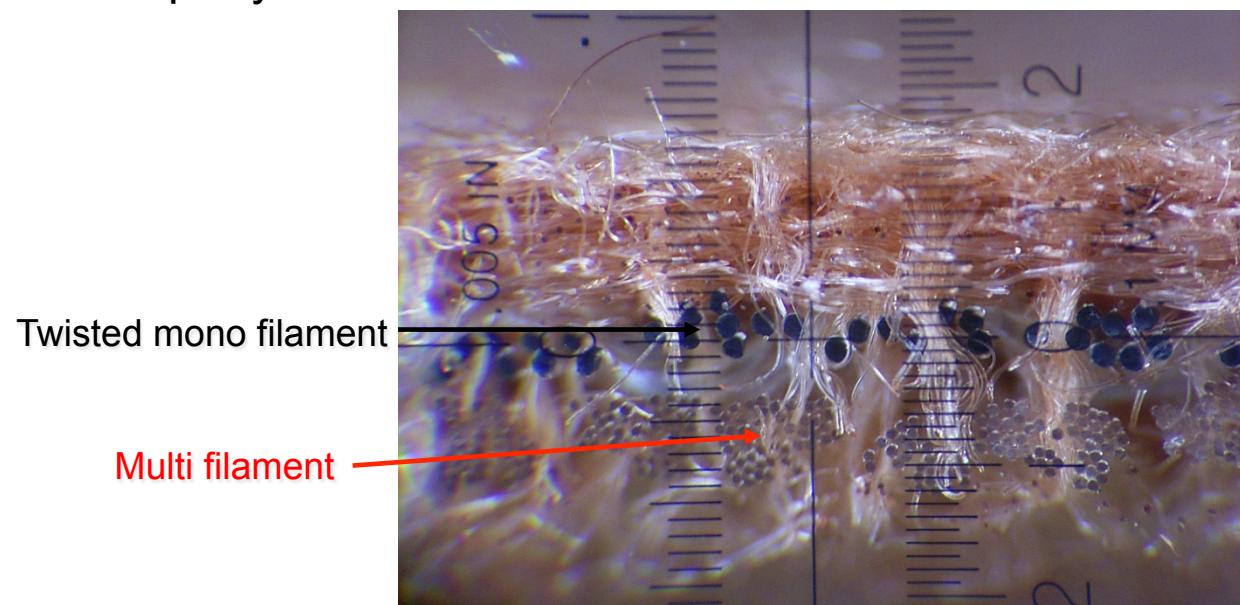
- Optimum Density
- Optimum Air-permeability
- Even Nip Transmission Ability



Tension controlled Super Fine Cabled Multi Filament

with heat set for base fabric dimensional stability

- Softer Property
- Optimum Density
- Constant Excellent Compressibility
- Excellent Anti-Abrasion Property



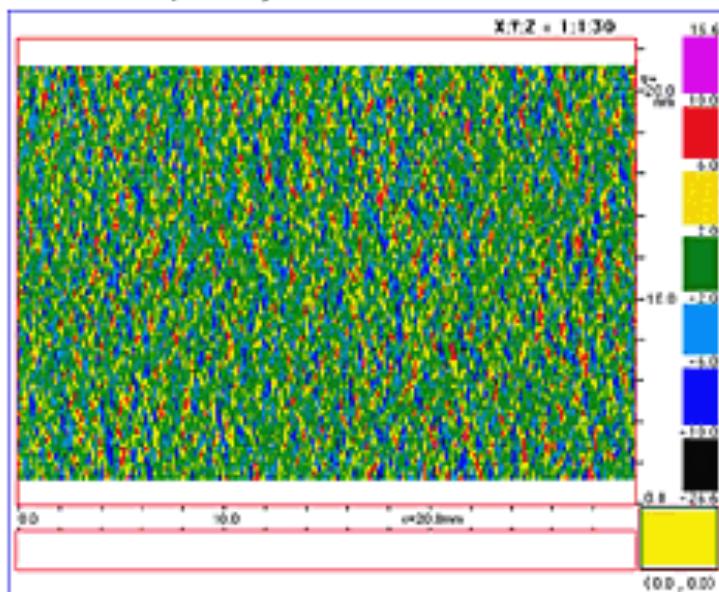
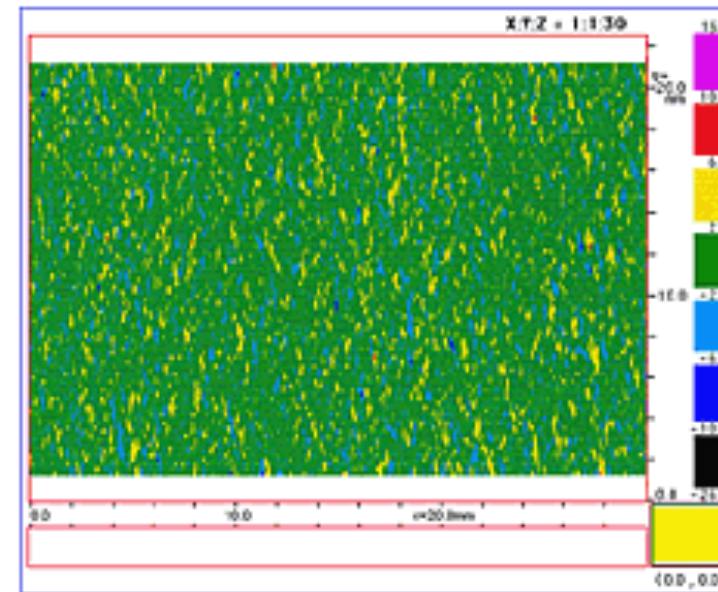
Ichikawa's Proprietary Chemical Treatment (Resin for Hydrophilic Property)

- Improved Flexibility
- Improved Hydrophilic Property



Ichikawa Super Fine Batt Fibers & Fine Flat Base fabric

-Uniform Nip Transmission

Ordinary Felt**"SHOGUN" Tissue Felt**

* 3D Roughness Comparison

Break in Time: 8~24 h <= 24~48 h

- Grade: Bleached Wiper 25gsm
- Speed: 1271mpm => 1352mpm

- Optimum Density (Pre-compaction and Enhanced Needling)
- Hydrophilic Property (Ichikawa Own Chemical Treatment)

75mpm faster machine speed

Grade	Before Ichikawa	After Ichikawa
Towel(DIP 100%) 37.5gsm	870mpm	900mpm
Kitchen rolls 28gsm	1300mpm	1360mpm
Ultimatic 24gsm	1365mpm	1440mpm
Toilet 17gsm	N/A	1750mpm

9% higher machine efficiency

	Production Efficiency
Average before Ichikawa	70.50%
Competitor V	71.11%
Competitor H (Best)	76.00%
Ichikawa	79.45%

17% lower energy consumption

	Supplier X (Past Regular Supplier)	Ichikawa (Laminate Ace)
Machine Speed	1,475mpm	1,500mpm
Steam Pressure	5.5bar	5.0bar
Temperature, hood	495°C	484°C
Steam Consumption	5.8Gj/tonne	4.8Gj/tonne

**Feltperformance Comparison Tissuemachine:
Steamconsumption / Production 2004**

