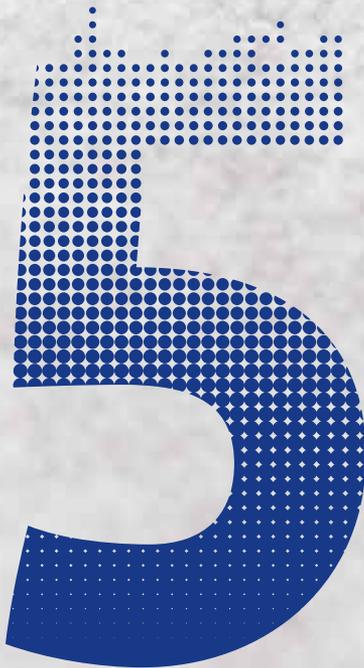**Reicofil**

REIFENHÄUSER GRUPPE
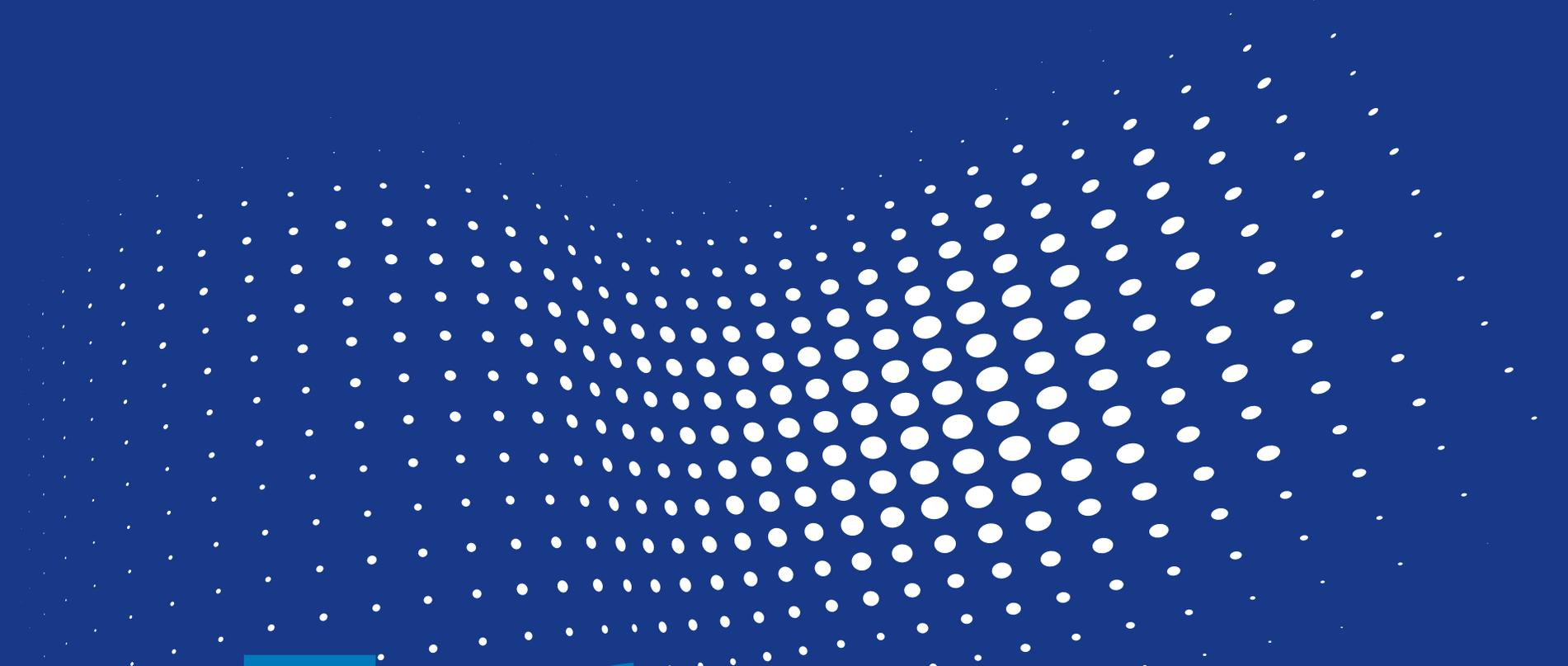
RF5 Technology

Future.
Flow.
Fascination.

RF5 – Your Technology for
Next Level Nonwovens.

Futu re.

Venture into the digital world where intelligent machines guide you to best qualities and the most reliable process.

What will producers and processors wish for in the future? In which direction will end products and raw materials develop? Which mega trends will influence our industry tomorrow? When developing new technologies, we pay attention to a far wider range of issues than just questions regarding the ideal filament speed or the diffusor geometry. As a technology provider, it is our aim to help you keep all your options open for the best possible future. We are convinced that digitalization offers us the greatest potential in this respect. Can you imagine that the production lines of the future will automatically know how to manufacture the perfect nonwoven? We can see it happening.

Flow.

Benefit from enhanced production processes and innovative solutions by ongoing joint developments.

Our industry is continually evolving. To us this means staying open to changes developments, criticism and fresh impulses – even in the middle of a development process. We are thinking in different directions – always searching for challenges that require a solution and for partners who are able to support us in the realization of their ideas. There is one thing that we have learned in all our years of industry experience: Large achievements are possible only with the correct data flow, information flow, knowledge flow and mind flow.

Fascination.

Experience progress that arises when people with passion work on technical solutions for perfect nonwovens.

When we develop technologies we think about the perfect nonwoven and have a sense of fascination for design, process engineering, polymer chemistry and aerodynamics. We are constantly searching for new possibilities to take nonwoven manufacturing to the next level. Our passion for the subject helps us to transform ideas into measurable benefits.

RF5
Technology

Setting the new standards for spunbond and composite nonwovens

Forward-looking ideas, a flow of ongoing development and fascination for perfect nonwovens – that's RF5. Our latest machine generation delivers nonwoven quality never seen before. It is the most productive, most reliable and most efficient line technology we have ever engineered. And above that: with its all new digital tools it paves the way for intelligent production. Discover the fascinating possibilities.
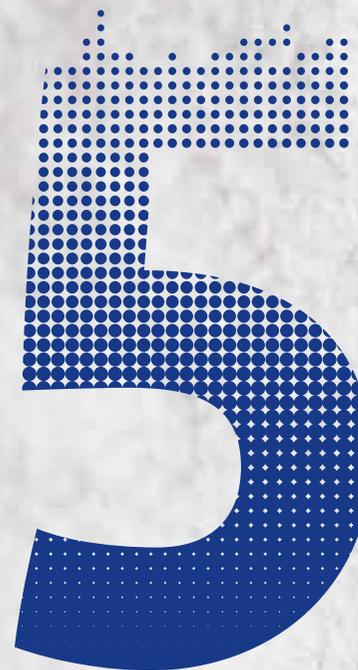
RF5 Technology

Future.
Flow.
Fascination.

RF5 Technology
Welcome to Next Level Nonwovens

Since our first Reicofil spunbond line was put into service in 1985, we have become known for our high quality standards. Since that day, our determination to always offer perfect solutions has not changed. Our technologies, however, have. With our latest RF5 line generation we are taking quality output, uptime and effiency to a new level.

Up to

90%

less hardpieces

Bye bye hardpieces
Another step toward the perfect nonwoven.

We cannot guarantee a hardpiece-free nonwoven. But with the new RF5 technology we are getting close. For production using standard raw materials, hardpieces are reduced by up to 90 percent in comparison to RF4 nonwovens.

More Output
Faster production even for higher fabric weights.

True to the motto more is more, we have significantly raised the output bar. Up to 270 kg per hour and meter width for spunbonded fabric and up to 70 kg per hour and meter width for meltblown is the measure of things to come. Take advantage of maximum speed even for higher grammages.

Up to

270kg

spunbond throughput per hour per meter width

Up to

70kg

meltblown throughput per hour per meter width

Up to

35%

increase of output

Higher Speed
Previously unheard production speeds.

The RF line is getting even faster: 1200 m/min is our new record. And even better: This value is the actual speed on the conveyor belt and can therefore be fully utilized in production. Effectively this means a 30 percent increase in line production speed.

1.200
m / min

Max. production speed on the belt

30%

Increase of production speed

More Uptime
Anything but downtime

Almost all the improvements to RF5 have a positive effect on uptime, both directly or indirectly. In addition to this, we took another close look at maintenance time: Quench chambers and secondary air gaps can now be cleaned much faster. The result is decreased downtimes and increased productivity.

Up to

15%

less composite energy consumption

Up to

20%

higher meltblown quality

Increased
Hydrohead
Keep it flexible

RF5 Meltblown offers the biggest process window ever available on our platform. Immediately enjoy greater flexibility when it comes to quality and productivity. You can decide whether to use the maximum output capacity and increase productivity by up to 35 percent, or to produce absolute premium quality at the present throughput levels.

Energy Efficiency
Better performance
and efficiency.

Right from the start of our company history we set ourselves the goal of reducing the specific energy consumption for each new line generation. It is a promise that we have kept for composite lines of the new RF5 generation.
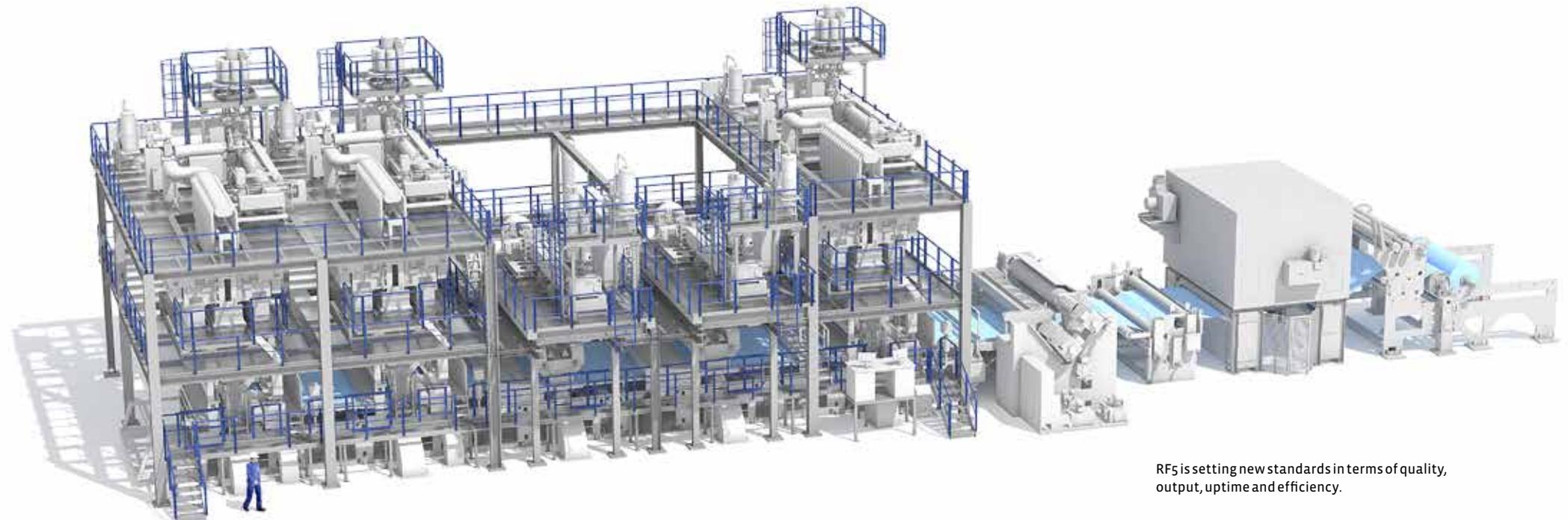
RF5 is setting new standards in terms of quality, output, uptime and efficiency.

The Intelligent Machine
A Start Has Been Made

In the future, it won't be just line operators and process engineers who know our machines inside and out. The system will become an expert on itself. It will know its status, it will be able to predict the effects of parameter changes, it will communicate with other systems, learn and act autonomously to fulfill the production targets. Reicofil is developing hands-on solutions that pave the way for intelligent production.

Human Machine Interface
Easy and intuitive as never before

The human machine interface is the most important access to your line. Here you control your process, adjust your quality and monitor your productivity. Now, with our completely revised operation concept this is easier and more intuitive than ever before. We have developed a web-based, context-related user interface which simplifies system control and reduces complexity. Create your own individual dashboards showing the information most relevant for you, make use of remote control if helpful and benefit from a visualization that guides and supports you.

Digital Assistant
Bye bye searching

With our digital assistant we virtually send to you an operator providing all the information that could be relevant for your staff – such as line documentation, product descriptions, technical drawings, step by step instructions for maintenance or even training videos. The best: All the information is stored centrally, accessible by a mobile device from anywhere. No more searching: Operators working directly at the line benefit from direct access to specific information by scanning QR codes attached to line components. And if additionally needed: Use expert support via video conference or troubleshooting via webcam.

Digital Business Platform Brochure

Our solutions for intelligent production are based on the Digital Business Platform of Reifenhäuser Group. Please refer to the brochure of the same name for more information.

Digital Business Platform With Industry 4.0 toward Intelligent Production.

How can I help you?

RAISE YOUR EFFICIENCY

Attention, you are not running your line under optimal conditions. If you continue, drops will occure. Change the cabine pressure to 3500 Pa.

RAISE YOUR PROCESS STABILITY

Anomaly Detection
Monitor your line components

Your line will be able to predict anomalies before they occur – much earlier as humans could ever do. Thanks to algorithms the machine can compare and analyse a huge amount of data, learn what is normal and thus identify the abnormal. You will benefit from a more stable process and maximum uptime as you can act instead of react. Be informed about upcoming leakages or contaminations.

Virtual Sensors
Monitor your process

Virtual sensors keep your machine running in case a hardware sensor fails. But virtual sensors can do more: By measuring and evaluating process parameters, virtual sensors provide valuable indications on the best possible line set-up for high quality production. In the future, your line may tell you that you are on the way to produce a drop and it may also tell you how to avoid this – or even adjust itself.

Reicofil Nonwoven Grading
Predicting what your customers think

The quality of products is judged by objective quality measures obtained in the laboratory. However, customers will often judge products subjectively based on how they look. Our nonwoven grading considers this subjective evaluation in addition to the objective measurement values, and predicts how your customers will perceive the nonwoven. Utilize the new possibilities to produce nonwovens individually tailored to your customers – e.g. based on their geographical location.

You are producing nonwovens of Reicofil quality grade 7.

RAISE YOUR PRODUCT QUALITY

Attention, some of your machine components do not act, as they should. Damage on press roll beam B will occure within two weeks. Please check the bearing.

RAISE YOUR UPTIME

Predictive Maintenance
Avoid unplanned downtime

Your intelligent line will be able to inform you about upcoming wear and the failure of parts. You will be able to replace components before they will affect your productivity or product quality. With some more development effort it will also be possible to make exact predictions on the remaining life expectancy. Thus, you will know if you can replace the predicted parts during a planned maintenance stop or if you have to act earlier.

RF5
Facts and Figures

Excellent is not good enough for us. We continually work to increase our technical lead. The result is a line generation that sets new standards. The facts speak for themselves.

RF4 versus RF5

	RF 4s	RF 5
Specific Throughput SB (kg/h/m)	120 - 200	150 - 270
Specific Throughput MB for Composite Lines (kg/h/m)	15 - 50	15 - 70
Titer Range znPP (den)	1,5 - 1,8	1,2 - 1,8
Titer Range mPP (den)	1,0 - 1,5	0,9 - 1,1
Production Speed on the Belt (m/min)	910	1200
Specific Throughput @ 1.8 den (kg/h/m)	200	270
Specific Throughput @ 1.5 den (kg/h/m)	175	230
Specific Throughput @ 1.3 den (kg/h/m)	150	170
Specific Throughput @ 1,2 den (kg/h/m)	140	160
Specific Throughput @ 1.1 den (kg/h/m)	130	160
Specific Throughput @ 1.0 den (kg/h/m)	120	150
Specific Throughput @ 0.9 den (kg/h/m)	N/A	140
Basement Yes / No	Yes	for up to 3200mm: No

Upgrade: Improve your RF4 line with RF5 components

For more information about the Reicofil product portfolio, please refer to our Reicofil Technology brochure.

Technical Data

	RF5	RF5 Plus
Line Design		
Configurations	S, SS, SSS, SSSS, SMS, SMMS, SMMMS, SMMMMS, SSMS, SSMMS, SSMMMS, SSMMMMS, SSMMSS, SSMMMSS, SSMMMMSS	S, SS, SSS, SSSS, SMS, SMMS, SMMMS, SMMMMS, SSMS, SSMMS, SSMMMS, SSMMMMS, SSMMSS, SSMMMSS, SSMMMMSS
Line Width	1000 1600 2400 3200	4200 Plus (+200) 5200 Plus (+200)
Basement	no	yes
X Beam	yes	yes
Y Beam	yes	yes
Technology		
Spunbond	RF5	RF5
Meltblown	RF5 MB RF4 MB as option for multi-row	RF5 MB RF4 MB as option for multi-row
Bico	optional	optional
High Loft	optional	optional
Blue	extruder insulation, calender package, energy efficient motors	extruder insulation, calender package, energy efficient motors
Performance		
Max. Production Speed	1200 m/min	1200 m/min
Raw Materials		
PP, PE	yes	yes
PET	optional	optional
Installation		
Assembly	turnkey or supervisor	turnkey or supervisor
Digitalization		
Digital Assistant	yes	yes
RF5 Human Machine Interface	yes	yes
Virtual Sensors	yes	yes
Reicofil Nonwoven Grading	optional	optional
Condition Monitoring / Predictive Maintenance	optional future joint development	optional future joint development
Cloud Analytics	optional future joint development	optional future joint development

"**Next Level Nonwovens** Vision Becomes Reality"

future.reicofil.com