

Drying and Curing Solutions

for roll-to-roll processes, web-forming processes, and conveyor handling of parts



Complete Solutions from a Single-Source Supplier

Overview

As a global supplier of drying and curing systems, Dürr Megtec provides reliable, energy-efficient systems for new equipment, as well as upgrades for existing equipment.

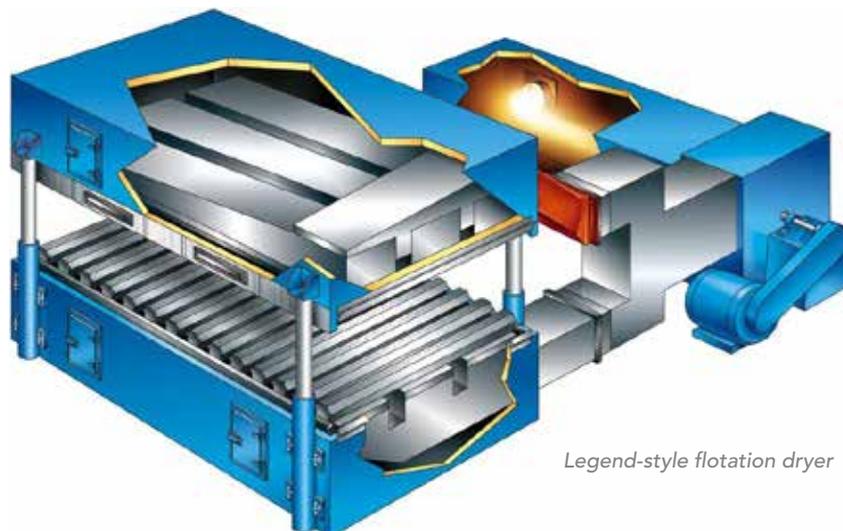
Experience

Dürr Megtec has 45+ years of experience with more than 100 patents and thousands of dryer installations worldwide.

Dürr Megtec is a recognized leader in providing drying and curing technologies for roll-to-roll processes, web forming processes, and conveyor handling of individual parts. In the web offset and digital printing market, Dürr Megtec has pioneered the development of patented flotation dryers, and integrated dryers with oxidation systems. The result is optimum printing performance, minimized energy and waste costs, and low emissions output to help meet stringent environmental requirements.

Dürr Megtec has extensive experience in drying process technologies and integrating emissions controls using a single heat source to provide total management of your air streams and to minimize energy consumption. Not only does Dürr Megtec offer industry-leading machinery solutions, but also world-class process development and support. Our global capabilities include manufacturing, service, and documentation, as well as expertise in local safety requirements.

The Dürr Megtec aftermarket team of professionals has a complete understanding of what it takes to keep your equipment and systems running at optimal performance. Our team of experts provides process optimization services that help you reduce operating costs. They can recommend replacements or upgrades that help extend equipment life. And, with more than 150 service professionals located worldwide, we are available to provide immediate customer service, as well as keep you stocked with parts for your inventory or in an emergency.



Legend-style flotation dryer

Broad Capabilities

Dürr Megtec has extensive drying and curing experience for roll-to-roll processes, web forming processes, and conveyor handling of parts, covering a wide range of applications and a unique array of dryer styles:

- Flotation
- Roll Support
- Festoon
- Catenary
- Belt/conveyor supported
- Through-air
- Inert
- Clean room
- Horizontal, vertical, and arched

Dürr Megtec dryers incorporate easy threading and maintenance access. Separate web drying and air handling modules open the basic design to virtually unlimited configurations with regard to web width, zone configurations, and machine layout. We can supply a standard dryer configuration or provide a customized solution for more difficult process conditions. Designs can include different heat sources, zone lengths, substrate widths, and nozzle configurations.

Energy-Saving Designs

High-efficiency heat sources and advanced air flow management conserve energy to minimize operating costs. Whether the application operates with gas, thermal oil, steam, or electricity, Dürr Megtec has a heating system designed to meet exact operational requirements.

Easy Maintenance

Dürr Megtec dryers and ovens are designed and engineered to provide easy access for the customer. The planar retraction system separates the top and bottom components to provide ample access from both sides of the dryer for thread-up, cleaning, and internal maintenance. Accessible fans, motors, and heat sources allow for easy adjustment, service, and maintenance. The complete system package is engineered to optimize production and uptime rates.

Range of Experience

Substrate Types	Paper, films, foils, laminates, fabrics, membranes, other flexible web materials
Substrate Width	50 mm to 10 m
Substrate Thickness	4.6 micron film to 3.4 mm steel
Line Speed	Up to 30 m/sec
Dryer Length	< 1 m to > 200 m



Roll support dryer



Dryer for clean room environment

Belt, Through-Air, and Drum Designs

Dürr Megtec applies experience in advanced thermal technology to belt dryers and ovens where the material to be dried or cured requires continuous support as it moves through the oven.

Examples include non-woven fiber mats, extensible membranes, friable webs, sheeted materials, low-strength tissue and toweling, and many other materials that cannot sustain tension stresses in roll support or flotation ovens. Convection and optional infrared (IR) heating zones efficiently dry and thermally cure in processing conditions engineered to deliver uniform product quality while achieving maximum throughput.

Impingement Through-Air Drying

Dürr Megtec offers several oven designs incorporating through-air only or hybrid technology utilizing impingement and through-air for heating, drying, and thermal curing.

Some materials exhibit sufficient air permeability to benefit from highly effective through-air oven designs. While supported on an air-permeable belt, heated and dried air is passed through the product, thus affecting internal heat and mass transfer within the thickness of the material.

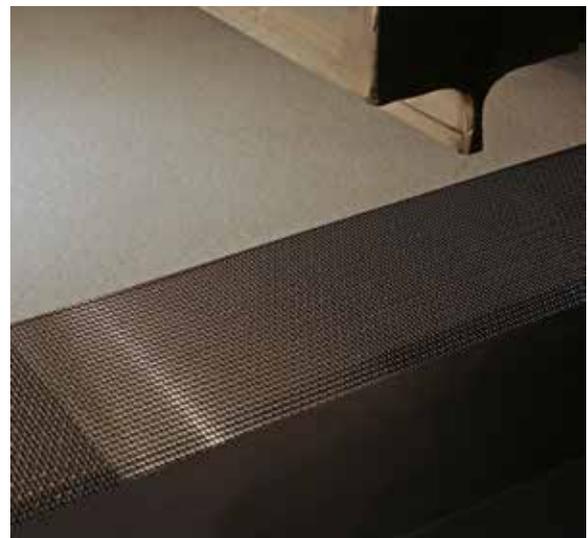
Uniform air delivery and passage through the material is controlled using patented Dürr Megtec thermal air management systems.

Drum Dryer

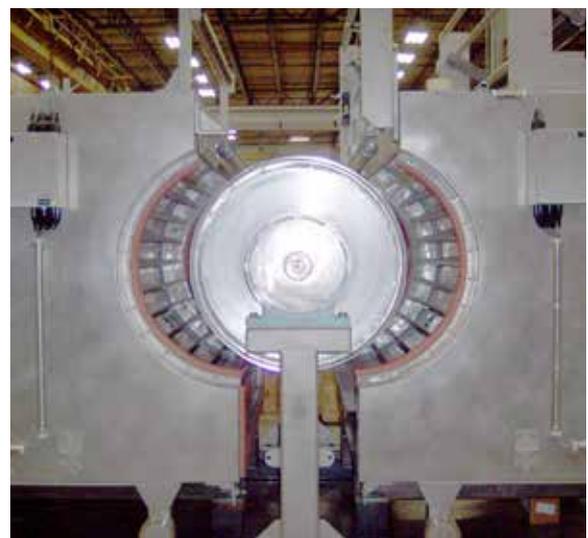
Dürr Megtec offers drum dryers to meet process needs. One example is a vacuum drum surrounded by impingement nozzles, which not only dries the substrate, but also eliminates curl. Our patented design is tailored to the application.



Belt dryer



Impingement through-air dryer internals



Vacuum drum dryer

Precision Nozzle Designs

Dürr Megtec understands the importance of applying the optimum nozzle design and configuration to meet process requirements. It is the control of drying rates that do not disturb the coating, coupled with the knowledge and experience of web handling that puts Dürr Megtec at the leading edge.

Air Turns

Non-contact air turns allow the turning of flexible webs without damaging the coating or the web material. Our design consists of a pressurized radial air chamber with engineered perforations matched to the desired web path, with turn angles up to 300 degrees. An optional automatic control system compensates for web tension changes. The patented design is engineered to reduce pressure requirements and air spillage, resulting in energy savings and lower noise levels. The air can be heated to provide additional drying or curing.

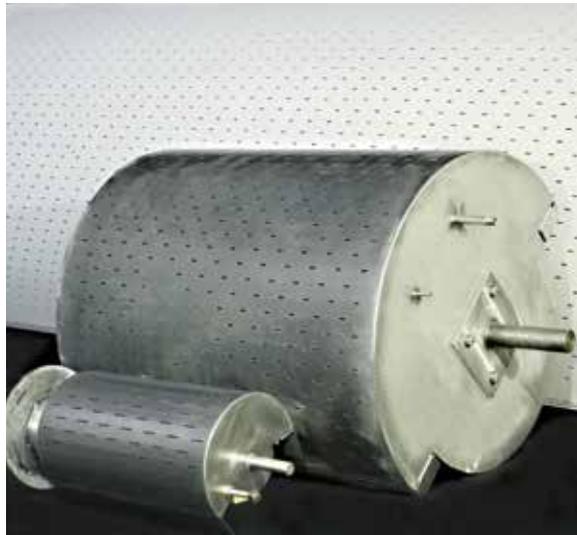
Drying and Curing Using Infrared or Combination IR/Convection Dryers

Dürr Megtec offers a wide range of infrared (IR) configurations to meet the demands of a variety of products and applications. These include systems designed for complete drying, preheating, pre-drying, fusing, curing, and profiling. By combining the correct wavelength of infrared light and optimizing the control system, precise process conditions can be achieved to deliver maximum product quality in the most efficient manner.

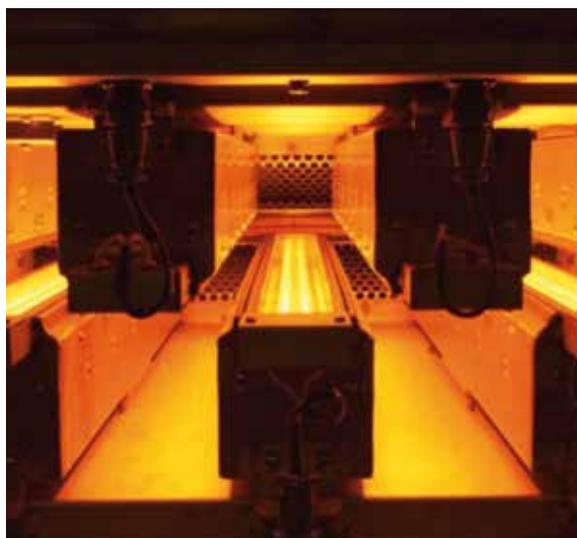
Our patented shutter system is available for applications where quick on-off functionality of the infrared light is critical. In addition to stand-alone infrared modules, we can combine infrared with flotation and/or impingement drying systems to enhance the performance of the overall drying or curing process.



Patented airbar nozzles

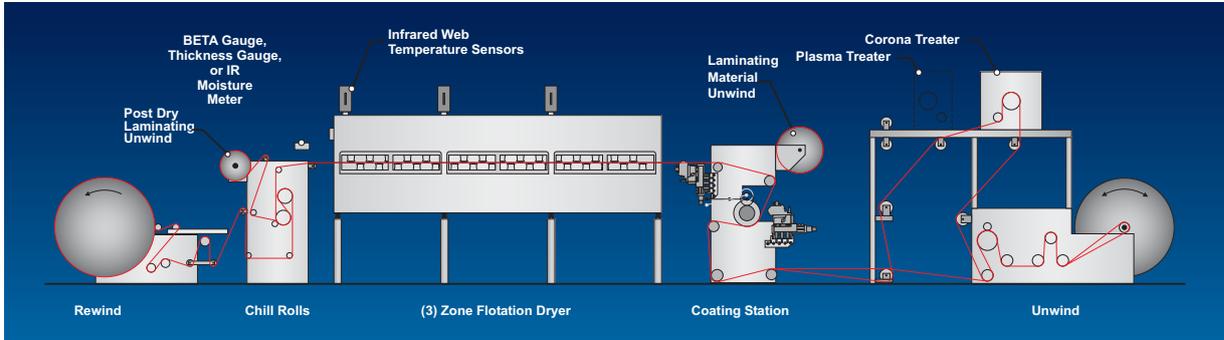


Air turns

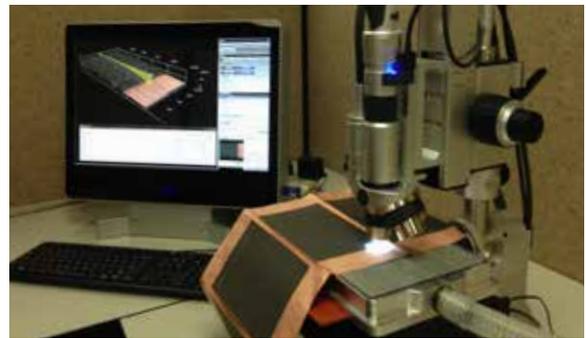


Infrared (IR) configurations

Process Development Services



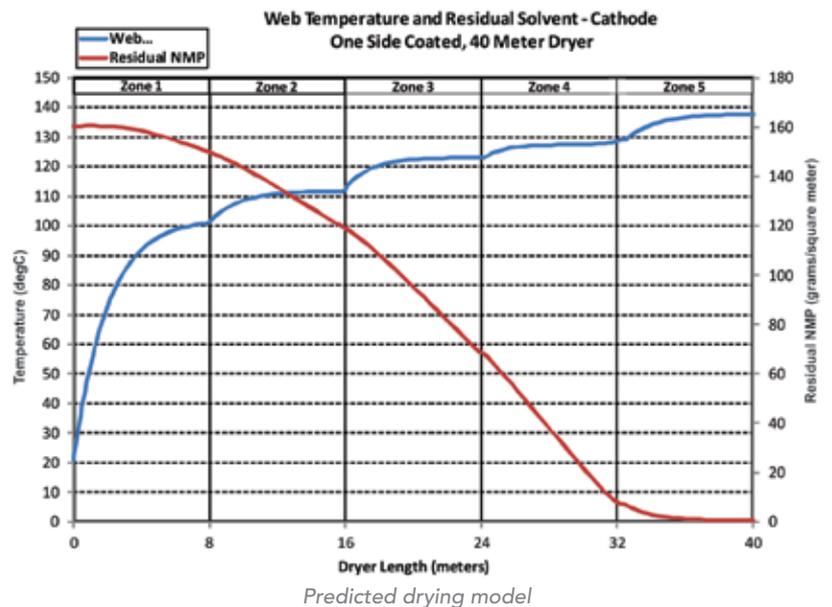
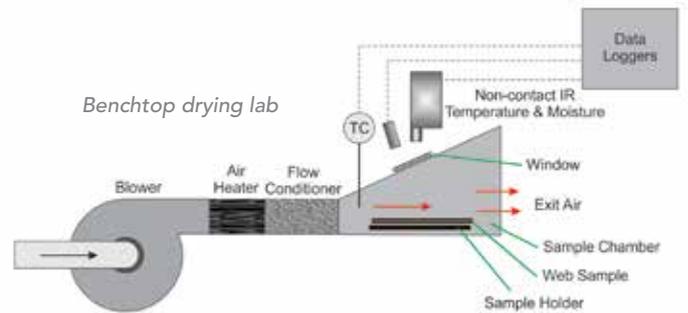
Dürr Megtec designs and manufactures drying and conditioning equipment for webs at any speed and any width. We offer innovative drying and curing technologies for roll-to-roll processing applications such as advanced battery materials, coating, composites, solar films, membranes, flexible packaging, coil coating, converting, printing, electronics, nonwovens, and other industries.



Hirox® digital 3D microscope

Our capabilities in drying and curing processes include:

- Expert engineering, new technology research and product development
- Scale-up from R&D/pilot projects to full-scale production
- Benchtop drying lab for early scale-up steps in formulation development, drying characterization, optimization, and troubleshooting
- Full-scale pilot line for system/process validation and follow-up tests
- Heat transfer stand for thermal analysis
- Drying process analysis modeling to predict test results for confirming full-scale production
- 3D microscope to measure and characterize dried film



Preventive Maintenance (PM) Services

Preventive maintenance services offer right-from-the-source expertise. Our factory-trained technicians are skilled in maintaining and upgrading your equipment.

The Dürr Megtec PM program offers reliable protection against equipment breakdown and keeps your equipment running at optimum capacity. Our PM service technicians look at ways you can save money by making annual adjustments and balances of dampers that help reduce your energy costs.



Installations and Relocations

Dürr Megtec engineers and contractors provide professional installation services for your new or existing equipment. Our capabilities range from contractor supervision to complete turnkey installation on projects of all sizes. We work with our clients from the start of the project through online commissioning to provide a trouble-free installation that is within your budget.



Technical/Parts Support

When you need immediate answers, you can rely on the Dürr Megtec Customer Care team. We offer advice on equipment enhancements to keep up with evolving process demands and advancing technologies, and help your operation respond to changing environmental and insurance regulations. We provide fast, accurate service that will help you troubleshoot your process.



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