AkzoNobel Powder Coatings

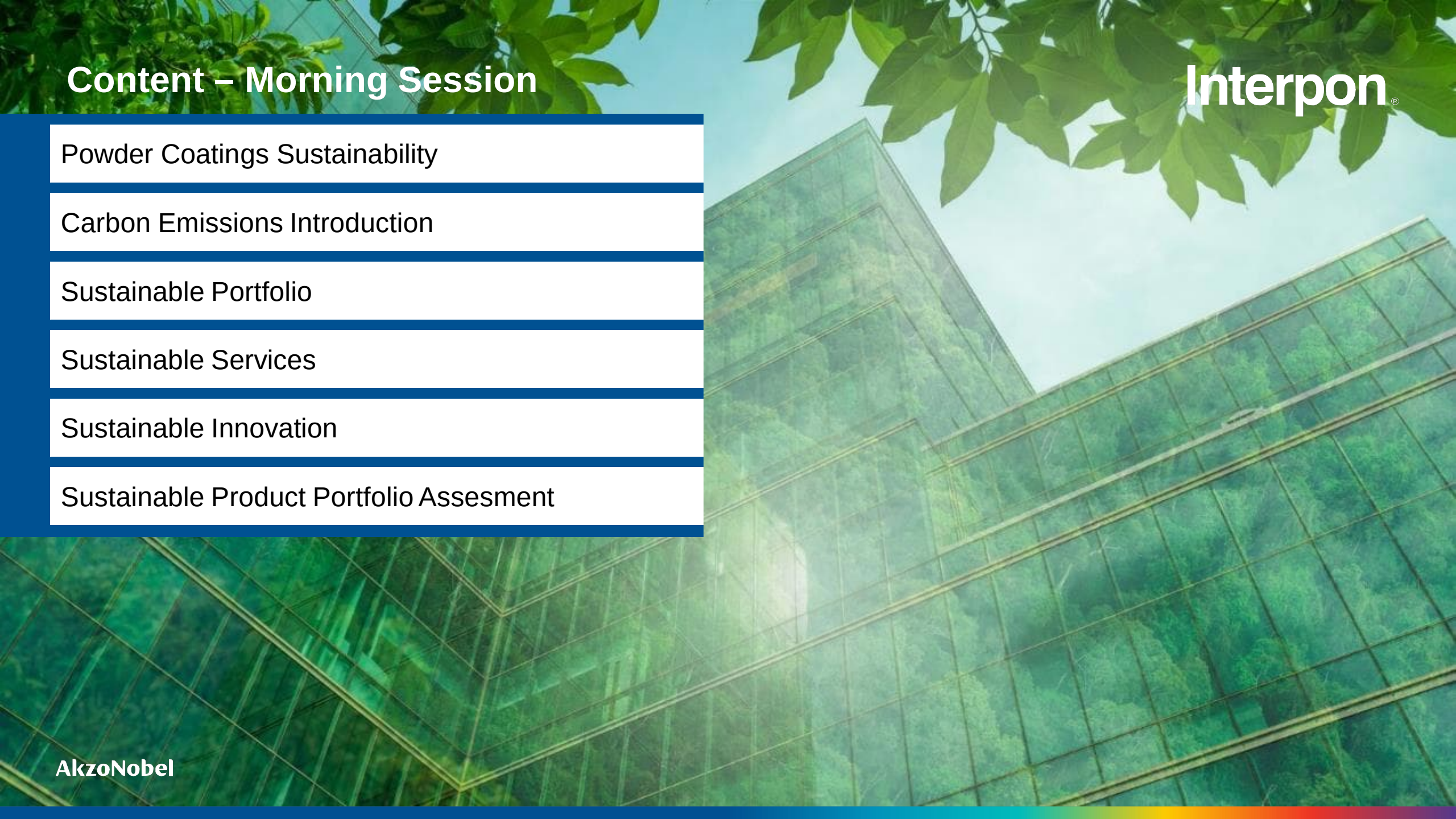
May 2025

AkzoNobel

Content – Morning Session

Interpon®

- Powder Coatings Sustainability
- Carbon Emissions Introduction
- Sustainable Portfolio
- Sustainable Services
- Sustainable Innovation
- Sustainable Product Portfolio Assesment



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Content – Afternoon Session

Interpon®

- Energy / Carbon Footprint Consulting
- Interpon Low-E
- Coating AI
  AkzoNobel's exclusive Technical Service tool
- Interpon XTR
- Q&A

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What does Interpon stand for?

Our brand promise to the market

Interpon®

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Our ambition: True sustainability

Interpon®

Our commitment to sustainability is the engine driving our innovation in powder coatings. We harness our expertise in powder coatings to create solutions that don't just look good, but also do good for the environment. Our strategy revolves around reducing energy and material consumption, cutting down on carbon emissions, and minimizing waste. Furthermore, we are steadily increasing our use of renewable energy sources and sustainable materials.

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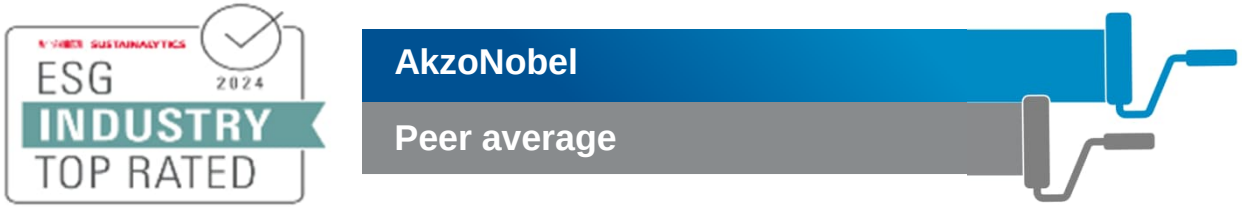
A recognized sustainability leader

Top 1% of all companies assessed by **EcoVadis** and **platinum medal** awarded

Multi-year ESG **leading** position in **MSCI**

Only **low risk** assessed company in paints and coatings industry by **Sustainalytics**



Our approach to True Sustainability

Interpon®

Sustainable Portfolio

How we provide solutions that bring economical value and carbon footprint reduction to customer's production/operations

Eco+ Products

Sustainable Services

How our technical expertise and tools can help our customers gain efficiency in their coating line, reduce their carbon footprint, and even help them get green credentials

Eco+ Services

Energy and carbon footprint consulting (Eco+ Cure)

Coating line optimization (Flightpath Pro)

Environmental Product Declaration (EPD)

Technical solutions for enhanced efficiency

Sustainable Innovation

How we bring the latest technology to the market to address customer's challenges and needs, as well as help to reduce their carbon footprint (and our own operations) in an innovative way

Latest innovation

Natural Metals

Interpon D Low-E

Sustainable Partnership

How we team up with organizations across the value chain that share the same ambition with us to lower carbon footprint

Latest partnership

coatingAI

Radii Planet

DFV

Arkema

Allnex

Zoomlion

What is carbon footprint?

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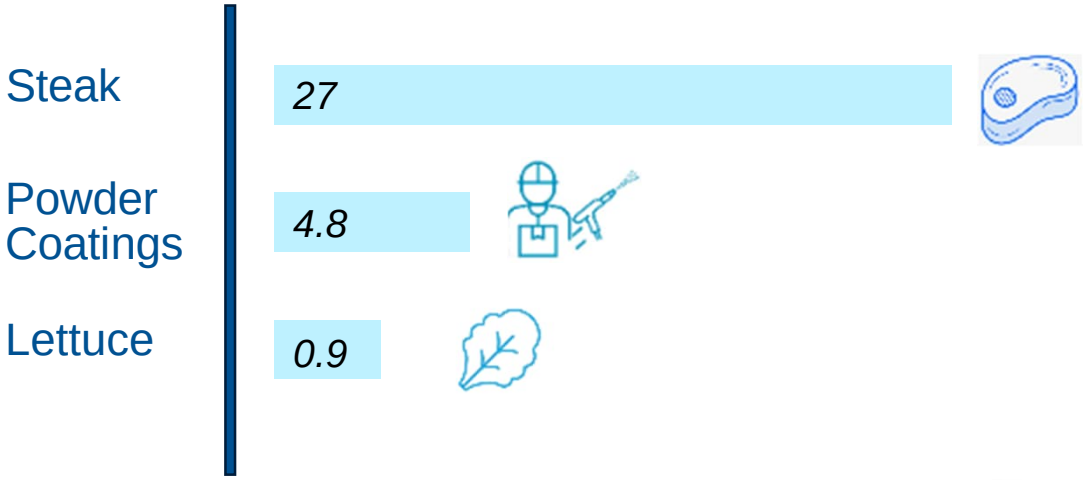
- Carbon footprint is the measure of how much **carbon dioxide** is released to the atmosphere related to specific products or operations
- The most common source of carbon footprint is the use of **fossil fuels** for heating, generation of electricity or transportation
- Increasing levels of **carbon dioxide (CO_2)** cause global warming, making carbon footprint reduction an important topic
- Common drivers for carbon footprint reduction are using green alternatives for electricity generation and moving away from **oil and fossil sourced materials**

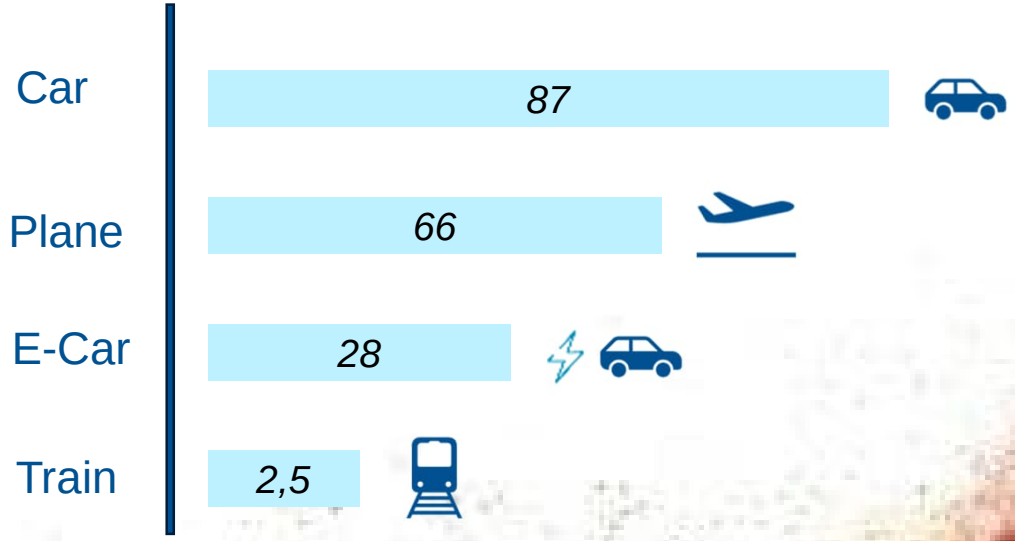
Putting carbon footprint into perspective

Interpon

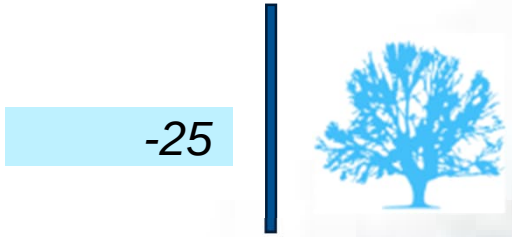
Kg CO_2 per kilogram



Kg CO_2 - Paris to London



Kilogram CO_2 usage per year



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Background information about SBTi

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Source: https://sciencebasedtargets.org/

What are ‘science-based targets’?

Science-based targets provide a clearly-defined pathway for companies to reduce greenhouse gas (GHG) emissions, helping prevent the worst impacts of climate change and future-proof business growth.

Targets are considered ‘science-based’ if they are in line with what the latest climate science deems necessary to meet the goals of the Paris Agreement – limiting global warming to 1.5°C above pre-industrial levels.

SBTi – Who they are

The SBTi is a partnership between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF). The SBTi call to action is one of the We Mean Business Coalition commitments.

The Science Based Targets initiative (SBTi):

- Defines and promotes best practice in emissions reductions and net-zero targets in line with climate science.
- Provides technical assistance and expert resources to companies who set science-based targets in line with the latest climate science.
- Brings together a team of experts to provide companies with independent assessment and validation of targets.
- The SBTi was the lead partner of the Business Ambition for 1.5°C campaign - an urgent call to action from a global coalition of UN agencies, business and industry leaders, which mobilized companies to set net-zero science-based targets in line with a 1.5°C future.

Powder coatings carbon emissions across the value chain

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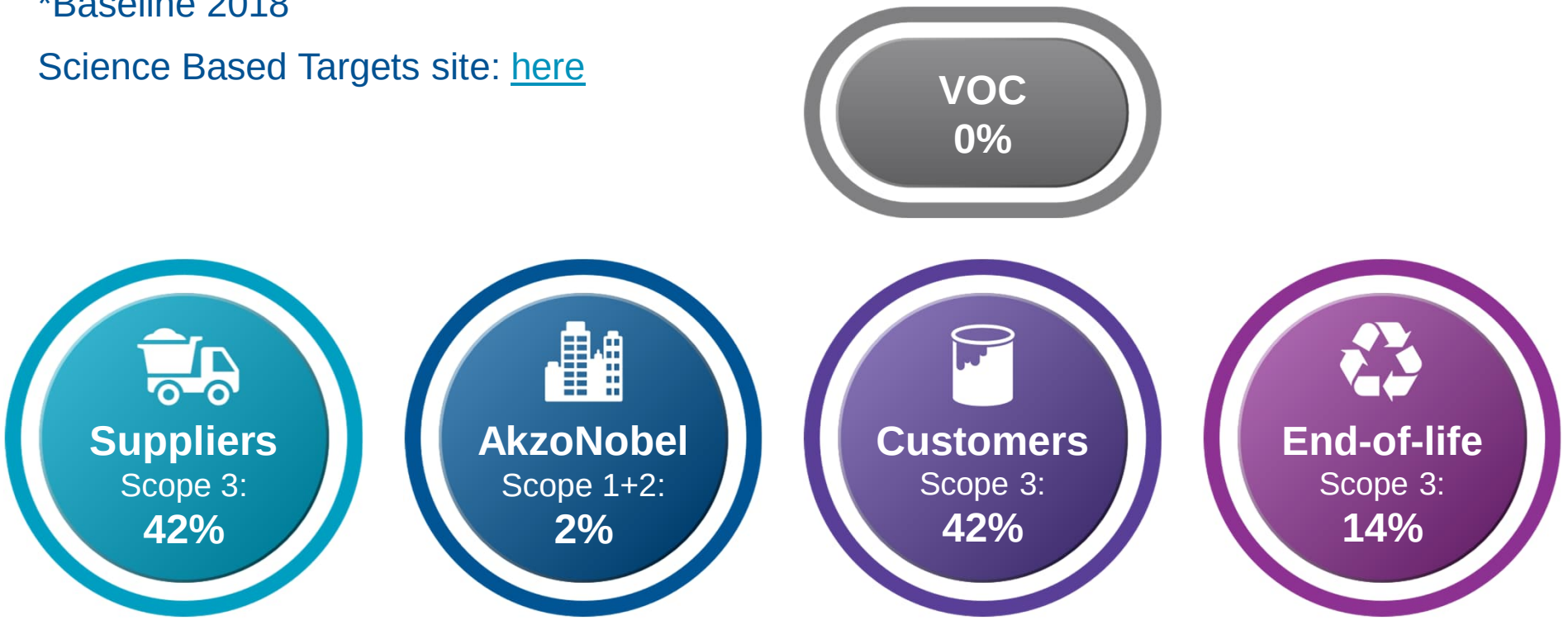
*Baseline 2018

Science Based Targets site: here



Our value chain
% contribution to carbon footprint

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

50%
less carbon emissions for the full value chain*

First
paints and coatings company to set science-based carbon reduction targets

How we help to reduce carbon footprint

Interpon®

No VOCs: powder has no VOCs (Volatile Organic Compounds)

Sustainable raw material: further reduction of carbon footprint

Our ambition:
50% less carbon emissions for the full value chain

- 100% renewable electricity in EU and North America
- Reducing energy through specific projects at our sites
- Future-proof lighting solution at our sites
- AkzoNobel and partners team up to hack carbon reduction challenges
- Reduce waste in our manufacturing process

- **No Waste**: powder can be reclaimed up to 100% at overspray
- **Low cure**: reduction in energy consumption or increased output
- **Thin film technology**: reduced consumption per m2
- **Product selection**: epoxy/epoxy-polyester vs polyester
- **Consultancy**: industry expert helping customers on CF journey

Improve circularity powder: improving waste management throughout whole value chain

Our market “firsts”

Interpon

Superdurable architectural range

coatingAI Flightpath Pro

Redox One Coat

Hyperdurable architectural range

Energy calculator

OptiMesure

EPD for architectural products

Thin film technology

Low Solar Absorption

We continue to lead the market

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Eco+ Products

Our sustainable portfolio

Interpon

We don’t just talk about sustainability to make us feel better about ourselves. Nor do we see it only through the comparatively narrow lens of functionality and performance. Whether it’s products that enable you to cure faster or at a lower temperature, or achieve in a single coat what was only previously possible with two, we deliver a portfolio of products and solutions that go beyond ‘business as usual’ to deliver real economic efficiencies and value while measurably reducing your carbon footprint.

Reduced energy

Reduced energy consumption in the curing process

Increased productivity

Single layer, less process steps, faster curing, and less repairs

Less waste

Reduced waste in the manufacturing and application process; less leftover powder waste

Reduce, reuse, renew

Reduced consumption of powders in the coating process; right-first-time performance

Longer lasting performance

Standard, super- and hyperdurable powders to protect assets up to decades

Reduced carbon footprint

Reduced carbon footprint of the raw materials used to create the powder coatings (e.g. hybrid vs polyester)

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Interpon ACE 2010 Low-E

Comparison with standard Polyester

Interpon

Interpon ACE 2010 Low-E is a super durable topcoat that has been specially engineered to either cure at a lower temperature or cure faster, with superior UV and weather resistance, and protection against corrosion.

Key sustainability features

- Lower energy consumption with curing at 160°C, saving up to 20%
- Up to 25% faster curing with higher temperature
- High UV durability
- Carbon footprint reduction up to 20%

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**Product may not be available in all regions*

Interpon A4710 & A4711

Comparison with standard powder primer

Interpon®

Key sustainability features

- Less cooling needed during production
- More storage stability as it requires no cooled transport or storage

Interpon A4710 & A4711 are high performance primers that provide further improved edge coverage, excellent machinability, and are less sensitive for storage at higher temperatures.

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*Product may not be available in all regions

Interpon A5500

Comparison with liquid coating

Interpon

Key sustainability features

- Being powder coating means no solvents and therefore no Volatile Organic Compounds (VOCs)

- The product can be reclaimed and reused, creating minimal waste

Interpon A5500 is a smooth primer for use on truck cabs, front grills, and bumpers, providing the ideal base for finishing with either powder coating or liquid topcoats.

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*Product may not be available in all regions

Interpon D1036 Low-E

Comparison with standard Polyester

Interpon

Interpon D1036 range of powder coatings, a low energy (Low-E),is a high performance coating that achieves an industry first in being able to cure at temperatures as low as 150°C while still being Qualicoat class one certified.

Key sustainability features

- Up to 20% reduction of energy and carbon footprint

- Increased productivity 25%

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*Product may not be available in all regions

Interpon D2525 Low-E

Comparison with standard durable architectural Polyester

Interpon

Interpon D2525 Low-E is a superdurable powder coating that achieves an industry first in being able to cure at temperatures as low as 150°C while still being Qualicoat Class 2 certified.

Key sustainability features

- Up to 20% reduction of energy and carbon footprint
- Increased productivity 25%
- Higher durability (warranty up to 25 years when applied by an Interpon D Approved Applicator

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*Product may not be available in all regions

Interpon D2000 series

Comparison with standard durable architectural Polyester

Interpon

Interpon D2000 series is our superdurable range created to withstand demanding climates, designed to protect and beautify architectural exterior aluminum applications with up to 25 years warranty and backed by an Environmental Product Declaration (EPD).

The series include:

- Interpon D2525 Futura
- Interpon D2525 Structura
- Interpon D2525 Natural Metals
- Interpon D2015 Précis Ultra Matt
- Interpon D2525 Stone Effect
- Interpon D2525 Anodic
- Interpon D2525 Wood Effect (STF)

Key sustainability features

- UV durability
- 30% less cleaning frequency
- Improved lifetime of the coating

- Up to 40% of carbon footprint reduction on coating lifetime

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*Product may not be available in all regions

Interpon D2525 LSA

Comparison with super durable Polyester

Interpon

Interpon D2525 LSA contains a reflective pigment that deflects the infrared light, and thus the sun's heat, from any substrate that it coats. As a result, the surface of the substrate, and any interior spaces that it protects, are cooler than if painted with a standard coating.

Key sustainability features

- Reflects heat with a Total Solar Reflectance (TSR) value of up to 65%, meaning less requirement to use of air conditioning units and therefore more energy saved.

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*Product may not be available in all regions

Interpon D X-Pro

Comparison with standard Polyester

Interpon

Interpon D X-Pro with improved mar resistance property ensures the surfaces of window frames, doors and similar architectural products are guarded against the wear and tear of everyday life with the ultimate protection from scratches and blemishes.

Key sustainability features

- Improved mar resistance
- Improved scratch resistance

- Reduced reject rates during transportation and installation
- Reduced repair works (less touchup) after installation

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*Product may not be available in all regions

Interpon Cr

Comparison with chrome plating

Interpon

Interpon Cr is a powder coating that brings the style and brilliance of chrome plating but is free of Volatile Organic Compounds (VOCs), easy to use, and has a performance that ensures it delivers even in some of the more challenging applications.

Key sustainability features

- No outsourcing of complex chrome plating process
- Less reject rate vs chrome plating
- Improved anti corrosion performance

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*Product may not be available in all regions

Interpon 610 Low-E

Comparison with standard Polyester

Interpon

Interpon 610 Low-E is a range of ‘low bake’ powder coatings specially engineered for curing at lower temperatures, consuming less energy and accelerating production, directly supporting a company’s drive towards a net zero carbon future.

Key sustainability features

- Up to 20% reduction of energy and carbon footprint
- Increased productivity 25%

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*Product may not be available in all regions

Interpon 700 Low-E

Comparison with standard Polyester

Interpon

Interpon 700 Low-E is specially engineered for either curing at lower temperatures, consuming less energy, or faster to boost productivity. It offers exceptional protection for a wide range of interior products, from domestic appliances to office furniture and electric cabinet.

Key sustainability features

- Up to 20% reduction of energy and carbon footprint

- Increased productivity 25%

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Interpon Extra (XTR, AF, AC)

Comparison with standard powder coating

Interpon

Interpon Extra is the latest development in a proven line of powder coatings that have all of the advantages of a thinner film, but with none of the drawbacks or compromises. Harnessing Interpon's patented Particle Management Technology (PMT), manufacturers can get the quality they need, but use less powder and achieve a lower cost per square meter for every surface they coat.

Key sustainability features

- Lower consumption per m2 with particle size technology
- For XTR, up to 40% reduction in carbon footprint and consumption
- For AF and AC, less reject rates or re-work
- Reduced maintenance cost

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*Product may not be available in all regions

Interpon Redox

Comparison with topcoat only

Interpon

Interpon Redox is your total corrosivity solution, enabling products to withstand whatever the world can throw at them, and remain fully operational long into the future. By offering a full series of multi-layer powder systems, including primers, intermediates, and topcoats in a variety of colors, textures and finishes, Interpon Redox provides you with a one-stop-shop for corrosion protection.

Key sustainability features

- Corrosion protection means extending lifetime of product (ISO 12944 standard)
- Less maintenance (repainting)

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*Product may not be available in all regions

Interpon Redox One Coat

Comparison with two layer system (primer + topcoat)

Interpon

Interpon Redox One Coat enables you to deliver corrosion protection up to C4M in a single coat. Unlike traditional coatings, which require a primer for adhesion and corrosion protection, followed by a topcoat for UV protection and gloss, Interpon Redox One Coat delivers good levels of corrosion protection and UV durability from one application.

Key sustainability features

- Apply and cure at one layer, saving 50% of labor and energy and time
- Reduce one curing process step with primer and topcoat in one
- Less product consumption
- Extended lifetime
- 50% reduction of carbon footprint for the value chain

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*Product may not be available in all regions

Interpon Redox One Coat

Characteristics and advantages

- Robust product to use regardless of pretreatment method saving costs since no additional investments in pre-treatment are required
- UV Durability making it suitable for outdoor use
- One coat application method saving process time and costs
- Corrosion protection up to C4M providing extended lifetime of the object due to corrosion protection
- VOC-free, solvent-free and zinc-free

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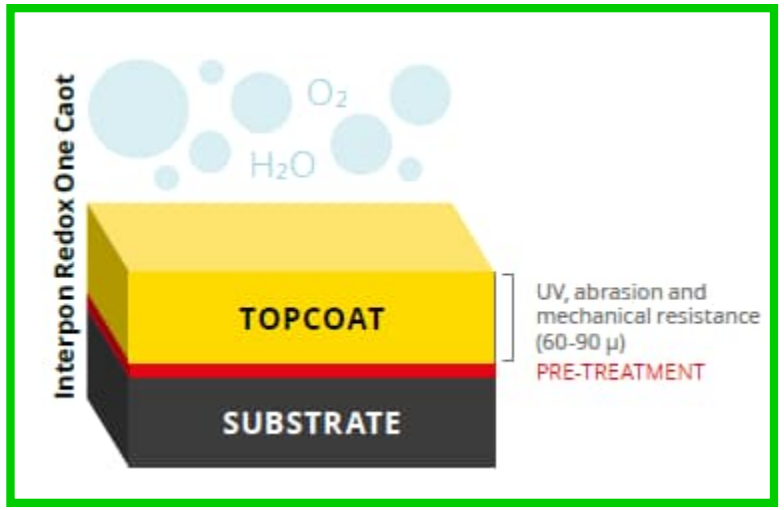
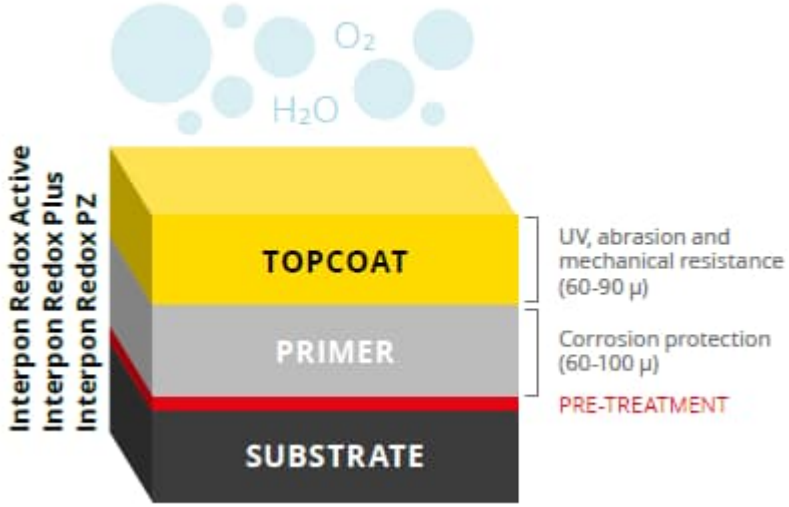
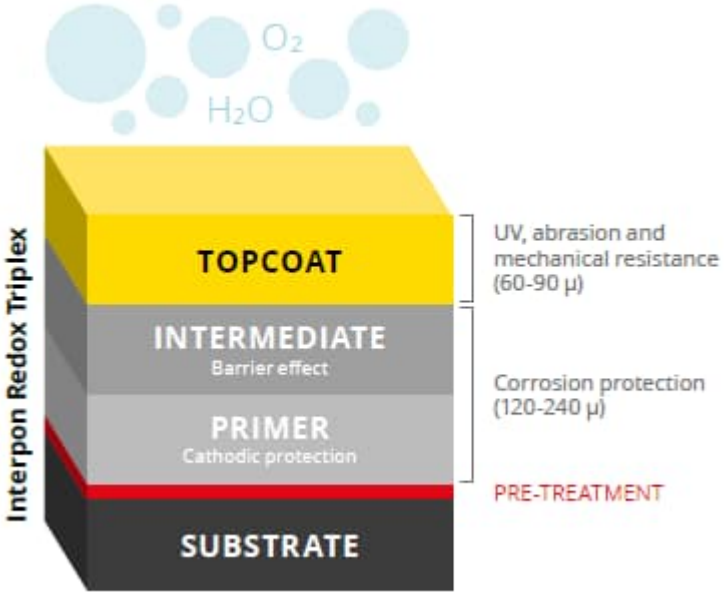
Multi-layered protection

Our powder systems are layered to offer the highest level of protection







The right powder solution for every project

Identify which Interpon Redox system meets your protection requirements

Chemical pre-treatment	C1	C2	C3	C4	C5
Interpon Redox One Coat			H	M	L
Interpon Redox Active			H	M	L
Interpon Redox Plus				H	M
Interpon Redox PZ	Not recommended				
Interpon Redox Triplex	Not recommended				

Mechanical pre-treatment					
Interpon Redox One Coat			H	M	L
Interpon Redox Active			H	M	L
Interpon Redox Plus				H	M
Interpon Redox PZ				H	M
Interpon Redox Triplex					H

Durability ranges based on the ISO 12944:2018 standard

Low (L)	Up to 7 years
Medium (M)	7 to 15 years
High (H)	15 to 25 years
Very High (VH)	More than 25 years

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The right powder solution for every project

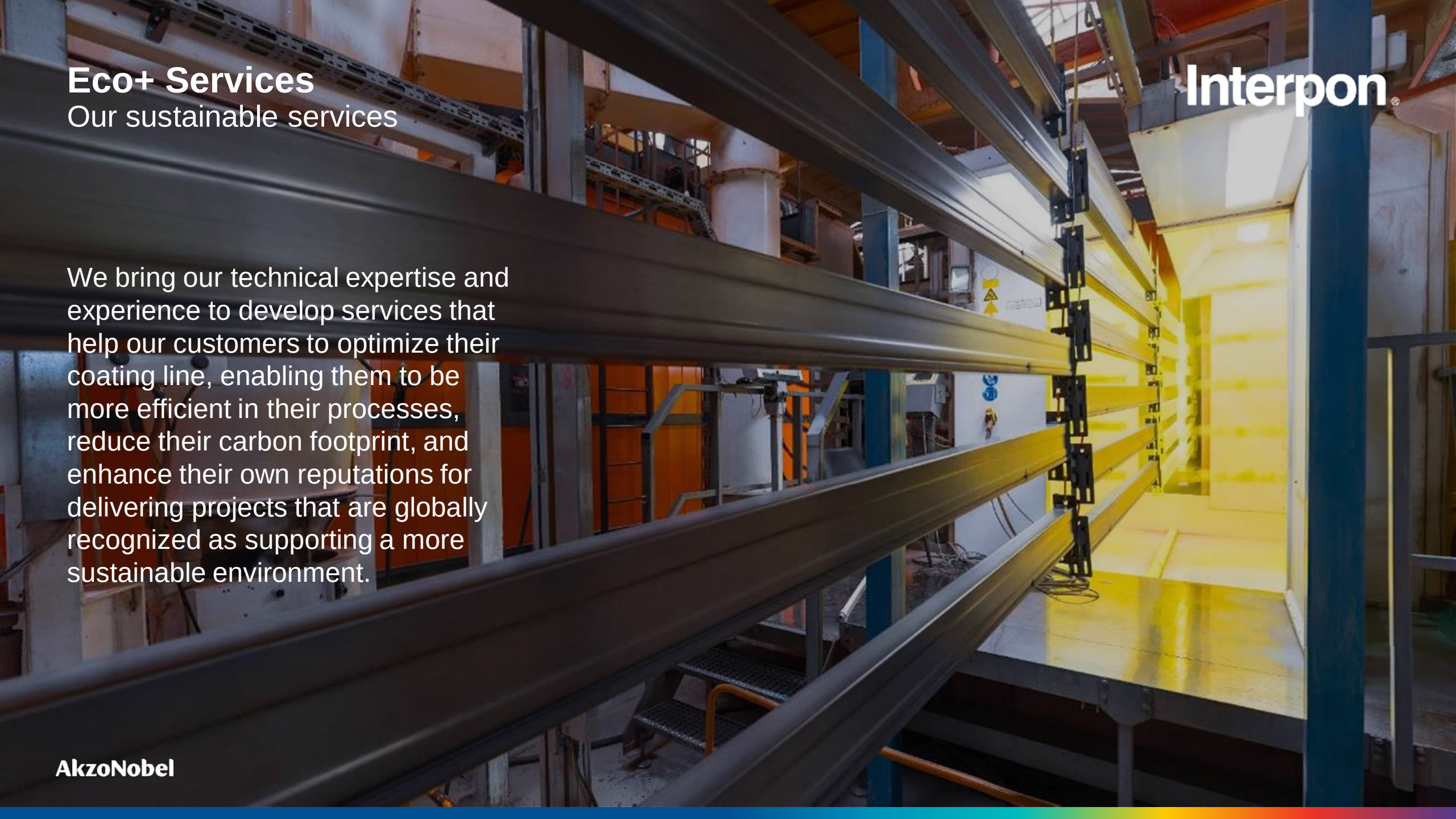
All our primers are tested to ensure minimum required performance

Category	Low ≤ years	Medium 7 – 15 years	High 15 – 25 years	Very High 25+ years
C2 **Low**	-	-	-	480 h
C3 **Medium**	120 h	240 h	480 h	720 h
C4 **High**	240 h	480 h	720 h	1440 h 1680 h (10 cycles)
C5 **Very high**	480 h	720 h	1440 h 1680 h (10 cycles)	2688 h (16 cycles)

Neutral Salt Spray (ISO 9227)

Cyclic Corrosion (ISO 20340)

Pre treatment during test conditions: iron phosphate



Eco+ Services

Our sustainable services

Interpon®

We bring our technical expertise and experience to develop services that help our customers to optimize their coating line, enabling them to be more efficient in their processes, reduce their carbon footprint, and enhance their own reputations for delivering projects that are globally recognized as supporting a more sustainable environment.

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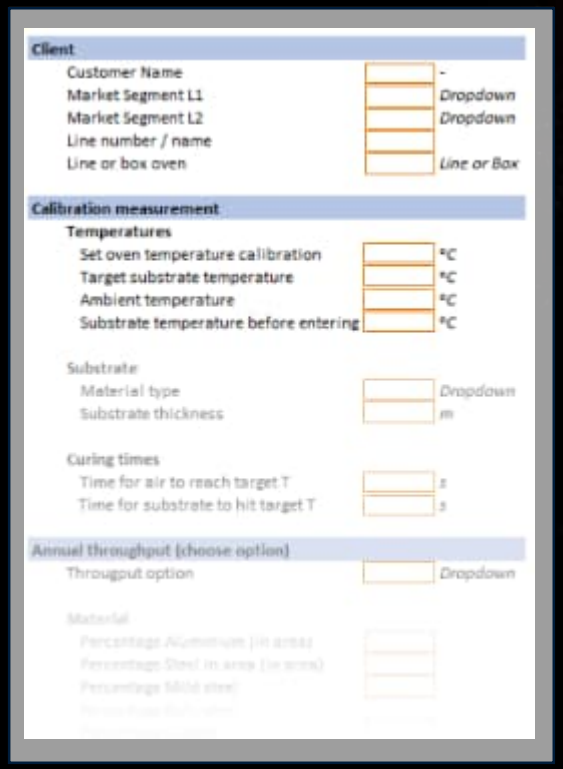
Energy and carbon footprint consulting service

Get visibility on your savings opportunity with Eco+ Cure energy calculator

Interpon®

Audit

Calculation



Result

- Technical assistance in auditing application and curing process
- Processing info in unique powder coatings industry energy and carbon footprint calculator (Eco+ Cure)
- Maximum return on energy savings and carbon footprint reductions based on different feasible customer curing scenarios

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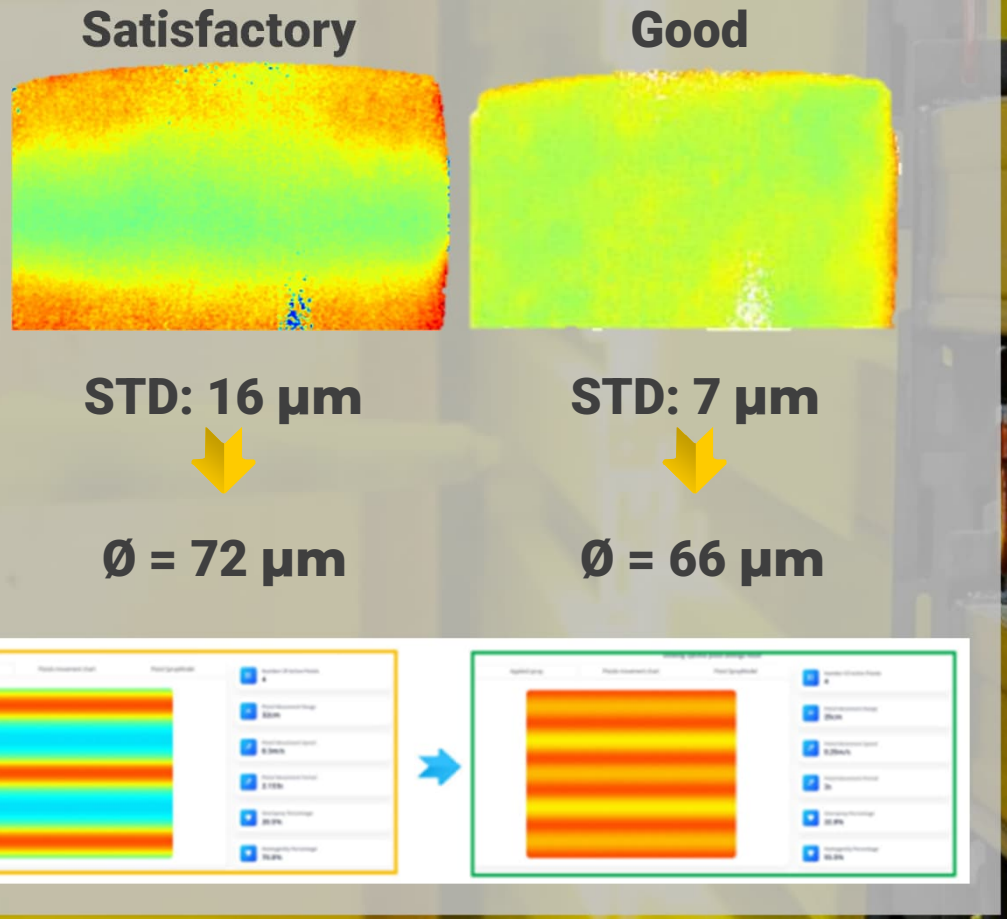
Flightpath Pro

AI-based software to improve coating homogeneity

Interpon



Operational Efficiency

FlightPath Pro optimizes equipment settings to reduce defects and overspray, **saving powder up to 9%**

Quality Improvements

The AI-powered recommendations result in more **uniform, consistent coating** and **avoid rework**

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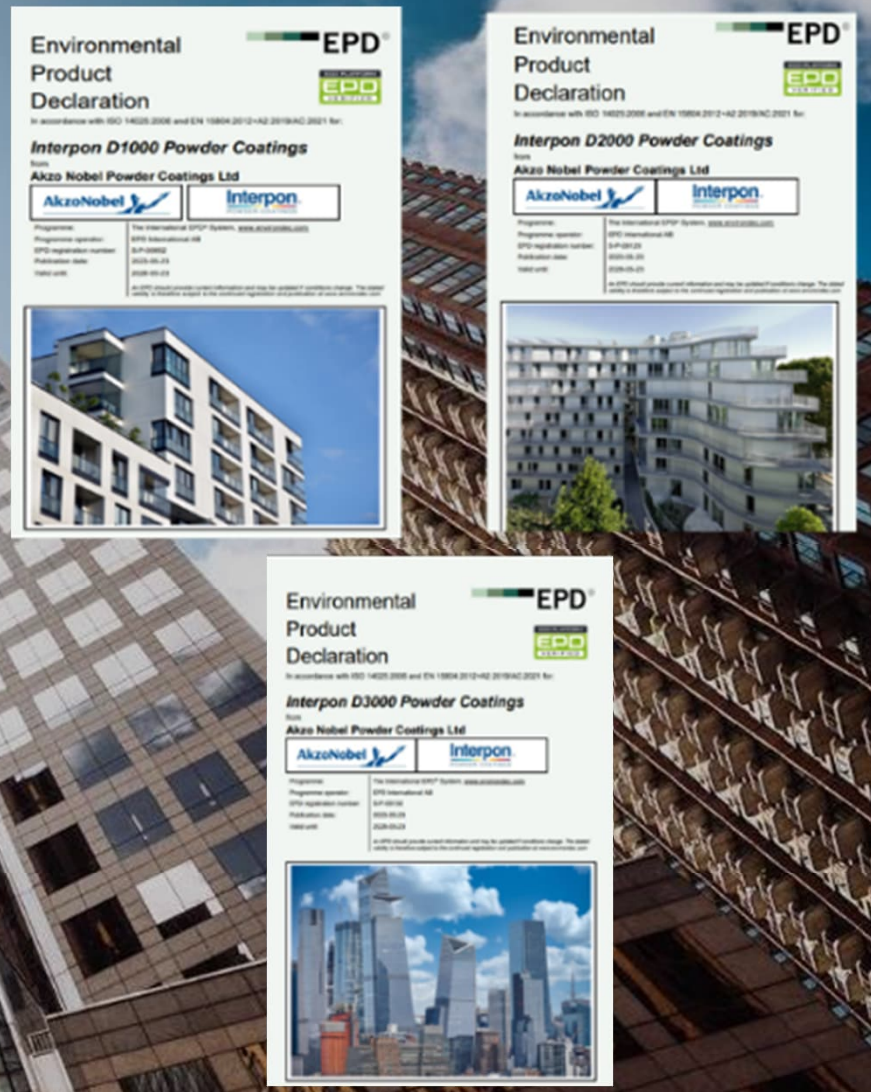
Environmental Product Declaration (EPD)

Interpon

- We show our transparency on carbon emissions with our Environmental Product Declaration – an EPD. Our EPD is independently created and recognized.
- This EPD is valid for all our Interpon D products and shows the environmental impact of our powder coatings throughout the lifecycle; scope 1, 2 and 3 – so it looks from raw materials used until the application and curing.
- An EPD can contribute to achieving points for green building certifications like LEED and BREAAM for our customers.
- We are continuously improving to try and reduce the impact of our operations.



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OptiMesure system (Eco+ Coat)

Thickness control of your coating application

Interpon®

The OptiMesure system is a coating thickness measurement system to aid control of paint consumption and quality.

The system can be used to collect all film thickness measurement data to build a comprehensive database. This database can then be used to support optimization of your coating process to manage paint usage and to minimize reject or reworking of coated items.

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*Service may not be available in all regions

Interpon D Natural Metals

Interpon

With Interpon D Natural Metals range, the appearance of metal finishes can now be imagined in a powder coating with the advantages of being **cost-effective**, **easier to handle**, and with a **longer design life** than the real thing.

The Natural Metals collection comes with a **patented stabilized particulate technology** developed by AkzoNobel Powder Coating scientists. The technology results in a more concentrated deeper metallic finish than conventional metallic powder coatings.

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Patented Technology in Natural Metals

Interpon®

- The patented technology in the Natural Metals range is implemented in:
  - Warm Brass
  - Sunset Copper
  - Red Copper
- Technology improves useability of highly enhanced metallic powder coatings
  - Allows customer to use more like a standard powder coating

Key Technology Benefits

Interpon®

The patented technology improves:

- Application performance
  Allows mica and basecoat to be homogeneously applied across a range of spray conditions
- Utilization of mica pigment
  Achieve brighter shades than usually possible
- Stability of powder/mica mixture
  Reduced mica picture framing, better colour stability across spray conditions, robustness to recycling
- Cleaning of spray equipment
  Mica sticks to the powder mixture instead of earthed surfaces

Dedicated Natural Metals page in Architectural web-space

Building a sustainable future

Building a sustainable future The Interpon D Natural Metals range is not just helping us to imagine the future; it is also protecting it.

Backed by an Environmental Product Declaration (EPD), the raw materials, manufacture and transportation associated with creating Interpon D have been assessed by an independent third-party for transparent sustainability credentials.

EPD®

THE INTERNATIONAL EPD® SYSTEM

Speak to your local representative or contact interpon.info@akzonobel.com to order samples and learn more about what Interpon D Natural Metals collection can do for you.

AkzoNobel Interpon

Download on the App Store

Interpon Design App
Created especially for architects and specifiers

Interpon AkzoNobel

Download on the App Store

Interpon App
Our Interpon App opens the door to all you need to know about Interpon powder coatings

Sustainable Product Portfolio Assesment

Interpon®

Sustainable solutions

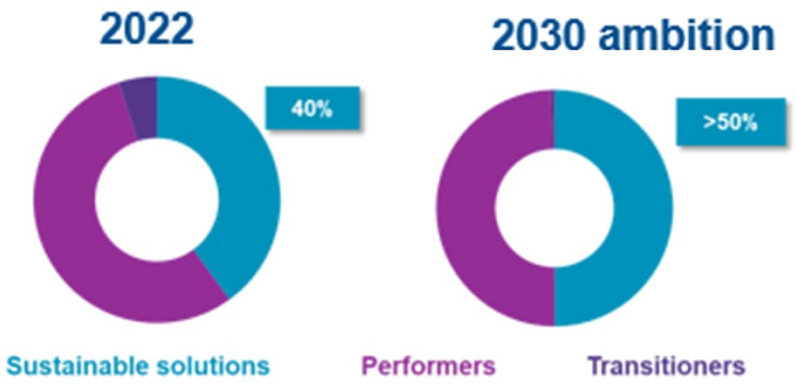
Products that provide sustainability advantages to our customers

Performers

Products that have no immediate negative or positive sustainability impact

Transitioners

Products that have known sustainability risks



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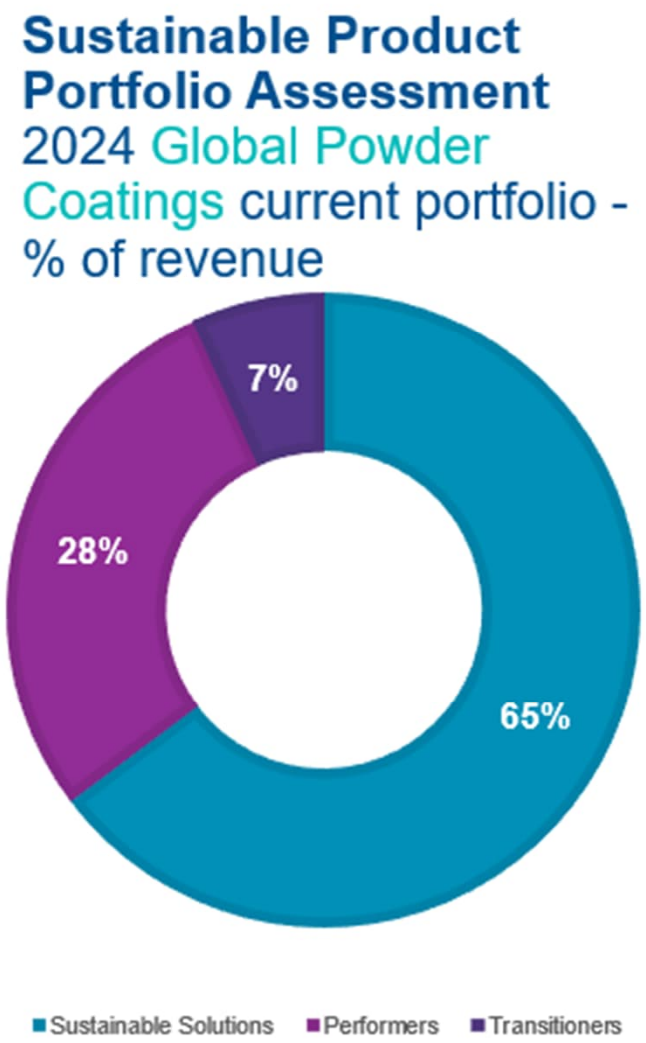

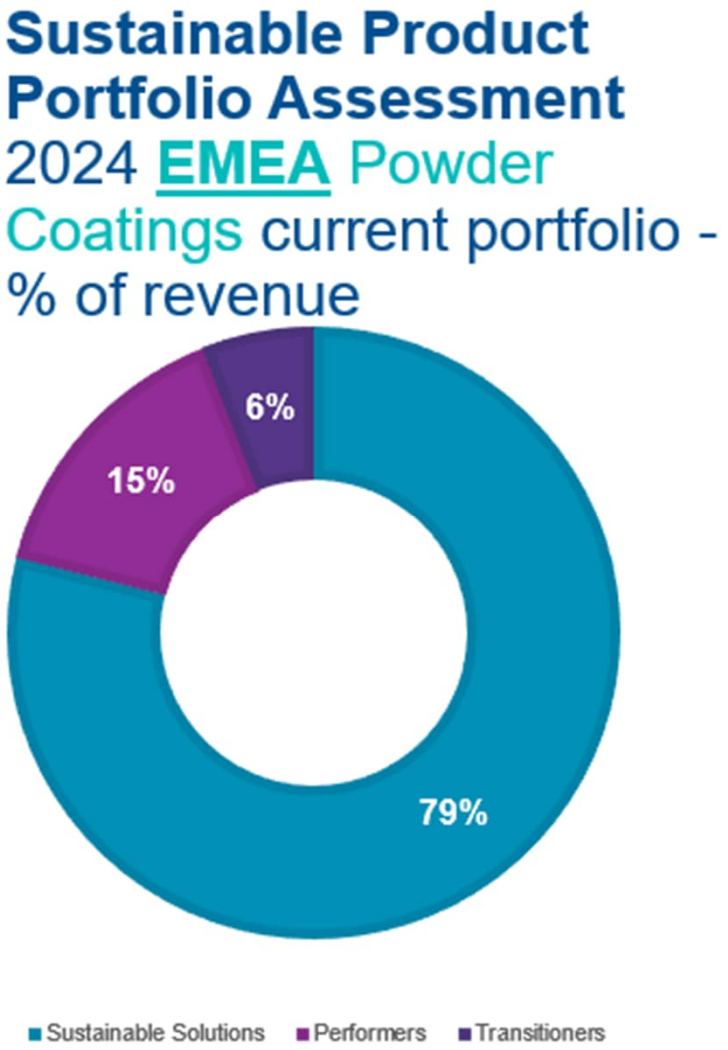

Content – Afternoon Session

Interpon®

- Energy / Carbon Footprint Consulting
- Interpon Low-E
- Coating AI
  AkzoNobel's exclusive Technical Service tool
- Interpon XTR
- Q&A

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Energy / CF Consulting

Interpon
POWDER COATINGS

AkzoNobel

Energy and carbon footprint consulting service

Get visibility on your savings opportunity in energy and carbon footprint

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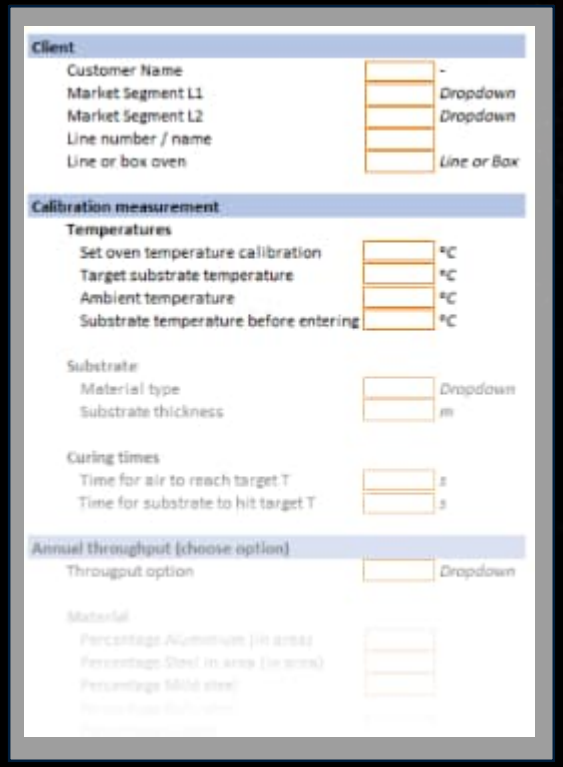

Result

- Technical assistance in auditing application and curing process
- Processing info in unique powder coatings industry energy and carbon footprint calculator
- Maximum return on energy savings and carbon footprint reductions based on different feasible customer curing scenarios

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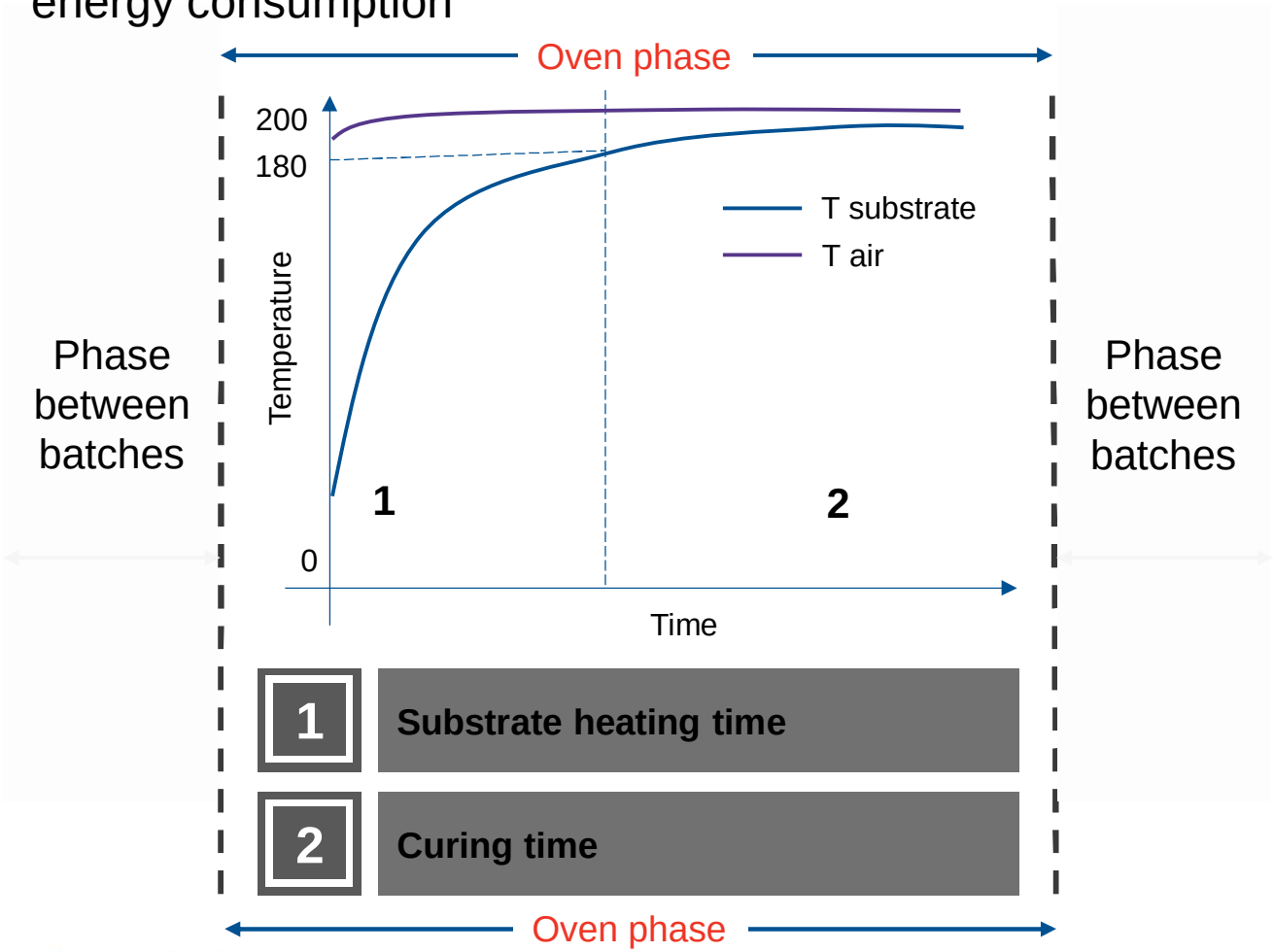
The model explanation

The model calculates the time spent in each phase, combined with the power output this results in the total energy consumption



1 **Substrate heating time**

Newton's heating law determines this phase, it depends on material type, mass, surface area, etc. Some parameters have a very small impact or are very hard to measure, the effects of these parameters are captured in a **calibration constant for which an oven measurement** is needed.

2 **Curing time**

Completely prescribed by the powder specifications, but the choice can be made between different **temperature and time combinations**.

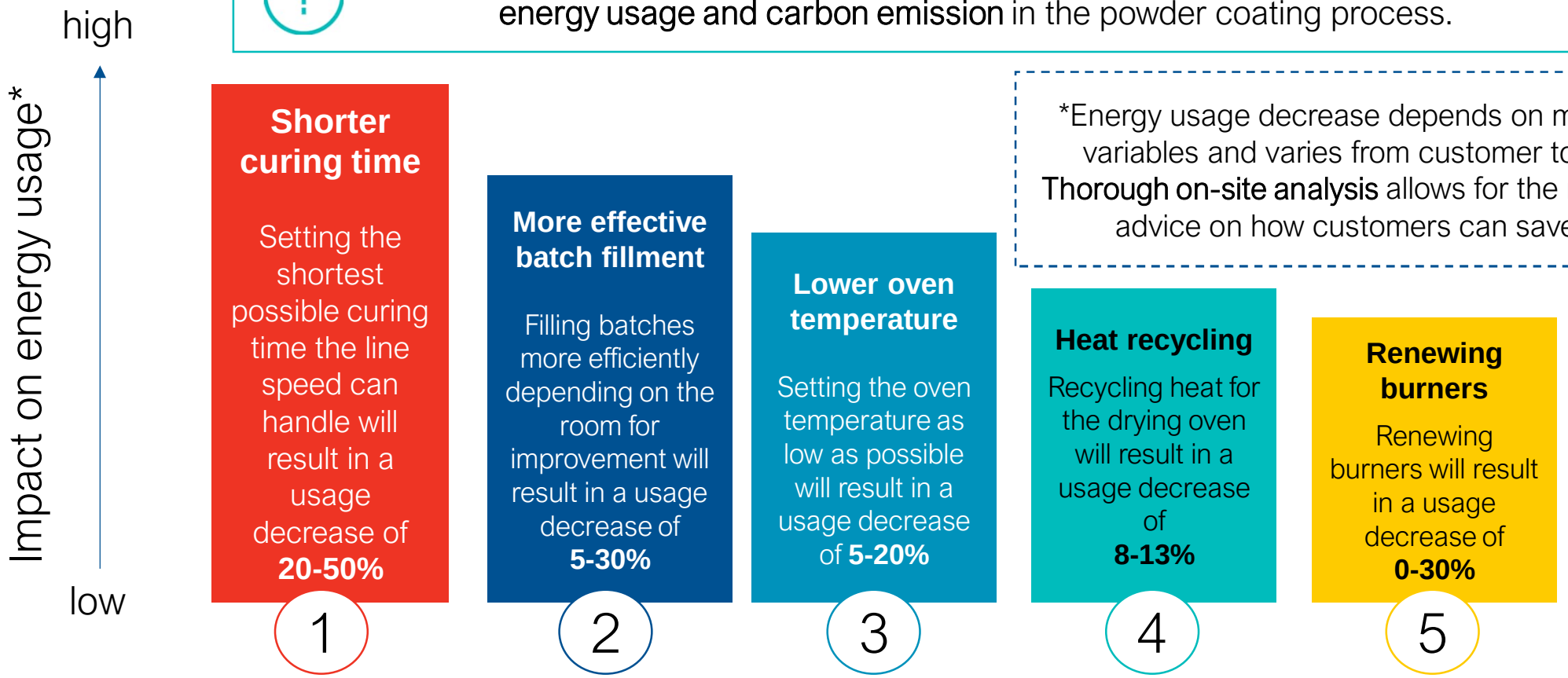
! As the **database of clients** grows, the calibration constant can be estimated **increasingly accurately** from this database and **a calibration measurement becomes optional**.

Reduce Curing time

Interpon®

Reducing the curing time results in the biggest energy reduction in the powder coating process

Customer data indicates that the **curing process account for 30-50% of the total energy usage and carbon emission** in the powder coating process.



*Energy usage decrease depends on many different variables and varies from customer to customer. **Thorough on-site analysis** allows for the most accurate advice on how customers can save energy.

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Data from market interviews and scientific papers

Output Example

Interpon®

Current operation day

Interpon D1036

Gas usage per year	61.079	*m3/year*
Electricity usage per year	0	*kWh/year*
Carbon footprint per year	132.228	*kg/year*
Carbon footprint per kg powder	1,047	*kgCO2eq/kgPowder*
Energy cost per year	30.540	€

Interpon D1036 Low-E

Gas usage per year	47.553	*m3/year*
Electricity usage per year	0	*kWh/year*
Carbon footprint per year	102.946	*kg/year*
Carbon footprint per kg powder	0,815	*kgCO2eq/kgPowder*
Energy cost per year	23.776	€

Optimal operation day

Interpon D1036

Minimum (optimal) operation time	15,90	*h/day*
Gas usage per year	40.469	*m3/year*
Electricity usage per year	0	*kWh/year*
Carbon footprint per year	87.609	*kg/year*
Carbon footprint per kg powder	0,694	*kgCO2eq/kgPowder*
Energy cost per year	20.234	€

Interpon D1036 Low-E

Minimum (optimal) operation time	13,06	h/day
Gas usage per year	25.869	*m3/year*
Electricity usage per year	0	*kWh/year*
Carbon footprint per year	56.004	*kg/year*
Carbon footprint per kg powder	0,443	*kgCO2eq/kgPowder*
Energy cost per year	12.935	€

Customer Benefits

Interpon®

- Model allows to work out together different scenarios to define most optimal case, for example:
  - Improve speed
  - Reduce temperature
  - Optimize batch sizes
- Improved cost insights from different perspective to support differentiated cost markups:
  - Steel vs aluminum
  - Larger vs smaller batches
- Commercial benefit for specifications
  - EPD + model provides full scope 1,2 and 3* carbon footprint of powder coating

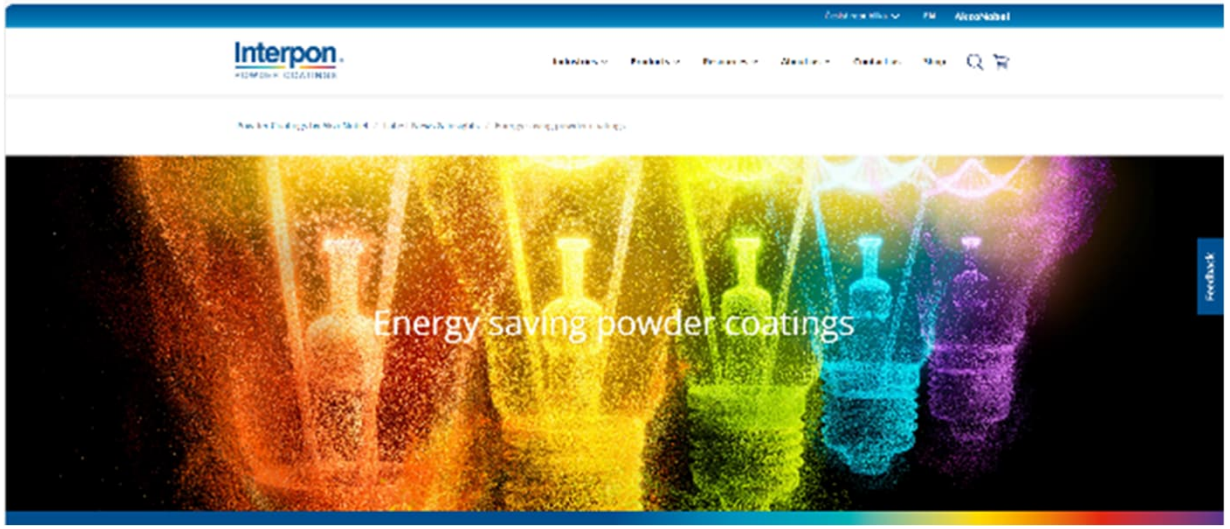
Input required

Info collection guided via completed audit form

- Oven calibration measurements
- Annual throughput info + substrates in use
- Operational info - # working days, oven data
- Line info: # batches, switch time between batches
- Annual gas estimate if available for calibration

Energy / CF Calculator
Now online!

Interpon



[Energy saving powder coatings | Interpon]

Eco+ Cure Energy Calculator

Current curing temperature		°C
Mass substrate throughput		kg/h
Working days		per year
Working hours		per day
Most used substrate material		

Show me my energy savings

Current annual carbon footprint:
0 in kg/year equivalent

Reduced annual carbon footprint:
0 in kg/year equivalent

Carbon footprint improvement (%):
0

Disclaimers: The Energy savings calculator is a generic model and therefore is to be used as guidance only. Specific oven design features, such as insulation factors, are not included. The calculation model uses the following assumptions: Energy savings based on a 20°C reduction. Ovens are gas fired. Electricity is only used for fans etc. Heat-up rate is the same, regardless of temperature set point. AkzoNobel cannot accept liability for any loss or damage arising from the use of the Energy Savings Calculator information and results. Using the given information and calculation results as substantiation for investment or otherwise is at own responsibility. No particular rights can be granted from using these data.

Eco+ Cure Energy Calculator

Current curing temperature	200	°C
Mass substrate throughput	1,000	kg/h
Working days	300	per year
Working hours	16	per day
Most used substrate material	Mild steel	

Show me my energy savings

Current annual carbon footprint:
98,348.31 in kg/year equivalent

Reduced annual carbon footprint:
87,995.86 in kg/year equivalent

Carbon footprint improvement (%):
10.53

Disclaimers: The Energy savings calculator is a generic model and therefore is to be used as guidance only. Specific oven design features, such as insulation factors, are not included. The calculation model uses the following assumptions: Energy savings based on a 20°C reduction. Ovens are gas fired. Electricity is only used for fans etc. Heat-up rate is the same, regardless of temperature set point. AkzoNobel cannot accept liability for any loss or damage arising from the use of the Energy Savings Calculator information and results. Using the given information and calculation results as substantiation for investment or otherwise is at own responsibility. No particular rights can be granted from using these data.

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Interpon®
POWDER COATINGS
Industrial

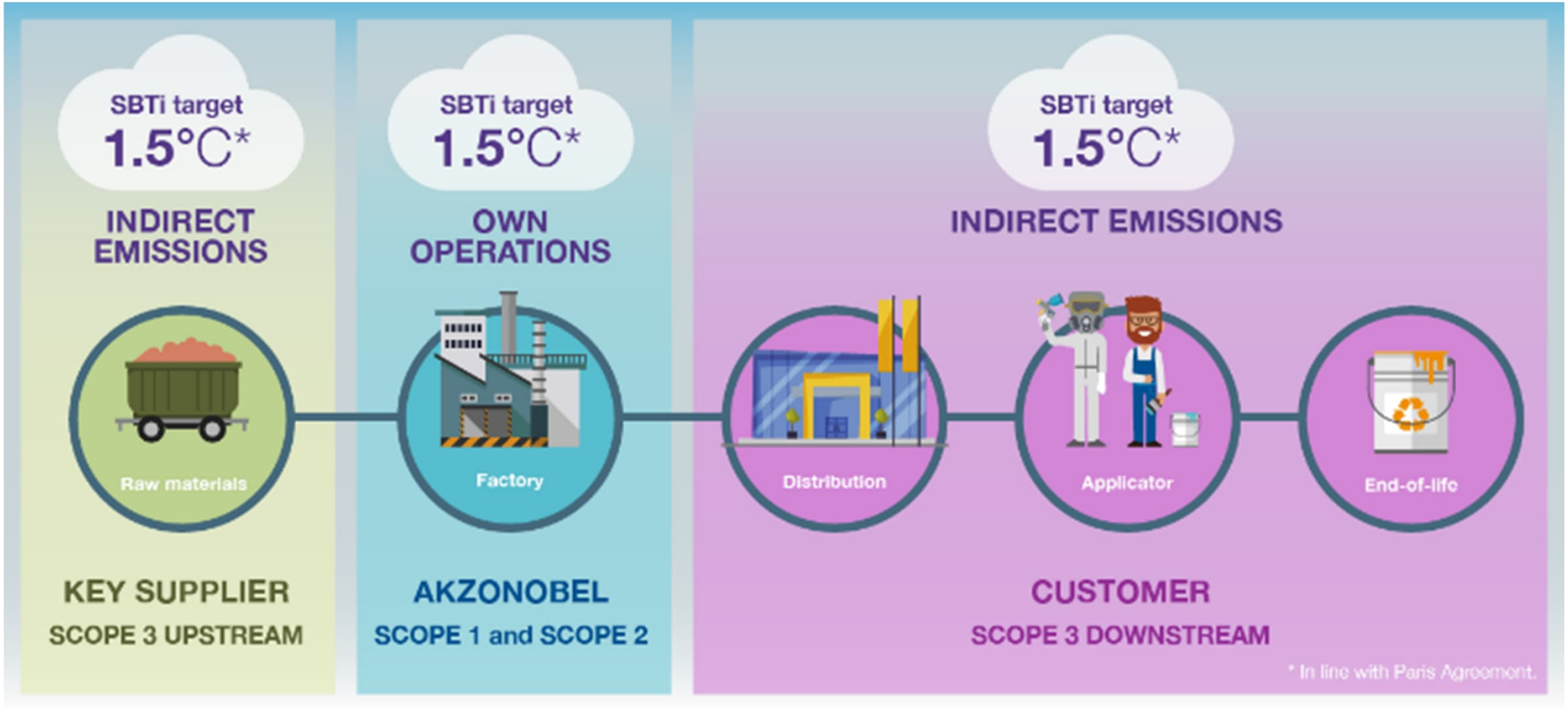
Interpon Low-E

For sustainably-minded businesses
seeking greater energy efficiencies

AkzoNobel

Proud of our pioneering carbon reduction target to help tackle climate change

Interpon®



OUR TARGET*:

Absolute carbon reduction of 50% by 2030 across our entire value chain

SCIENCE BASED TARGETS

*Baseline 2018

Science Based Targets site: here

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Interpon®

Interpon Low-E

- Energy saving up to 25%
- 25% improved curing speed
- Avoidance blooming and pinholes
- Easy to apply and excellent coverage
- Good weather resistance

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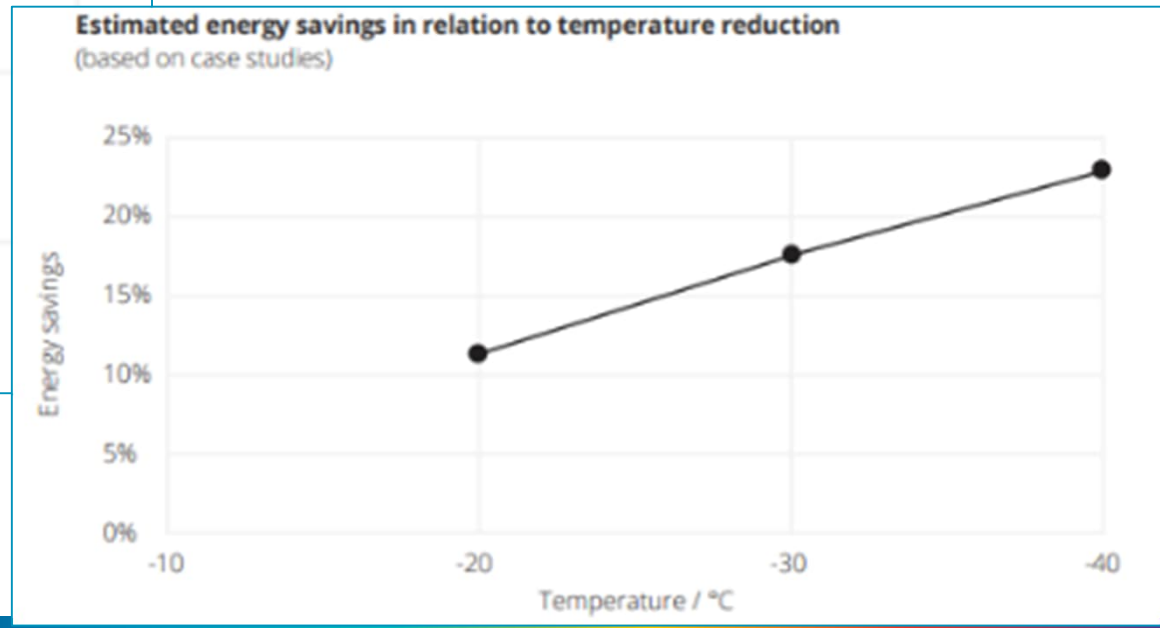
Reducing energy up to 25% or increasing output up to 25%

Interpon®

- Low-E is the AkzoNobel range name for all polyester based products that can be cured more efficiently than our conventional Interpon ranges.
- Designed to reduce the curing temperature or the curing time without losing the quality and properties of the coating.
- Low-E, often known as Low Bake, is for products with a curing schedule between 150-170°C*.
- Using our Low-E ranges can reduce your energy consumption and/or increase productivity of your application process



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Interpon Low-E product range

Interpon 700 Low-E

Interpon 610 Low-E

Interpon D 1036 Low-E

Interpon D 2525 Low-E

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Interpon Low-E is suitable for many application areas

Interpon®

Steel Construction
hot dip galvanized, zinc plated, electro galvanized or metallized steel

City Furniture

ACE

Garden Furniture

Electrical Distribution Cabinets

General Industrial

Childrens Playgrounds

Shelving & Racking

Bicycle Parts

Cabinets

Fences

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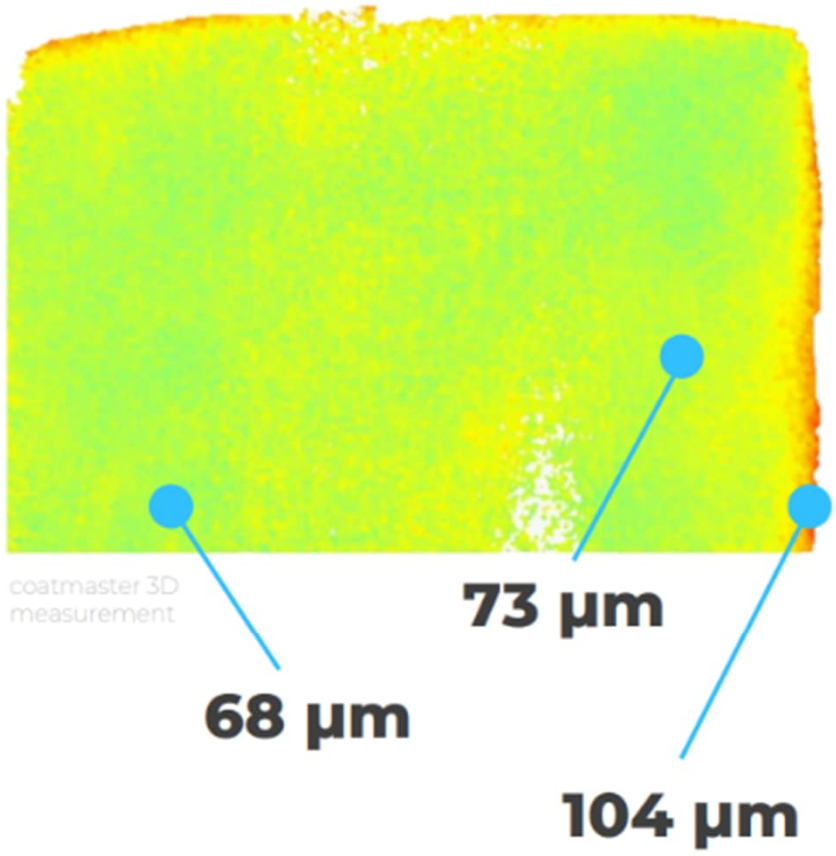
Interpon®
What is coatingAI
“Flightpath Pro”
AkzoNobel

Coating Uniformity

Interpon®



What is the coating uniformity?

How the coating uniformity is defined

Standard deviation

Measure of how wide our thickness distribution is spread.

Average thickness

With reduced spread, we can reduce the average.

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Customer line example
Non homogenous coating

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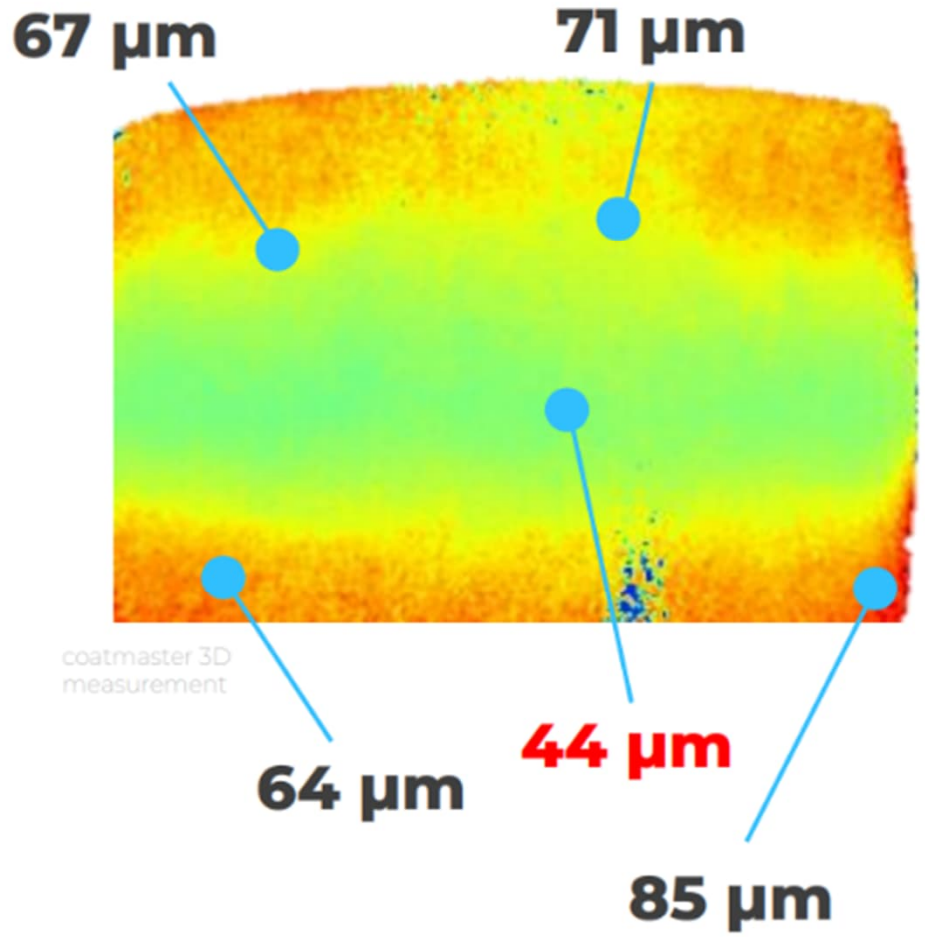


Qualicoat example

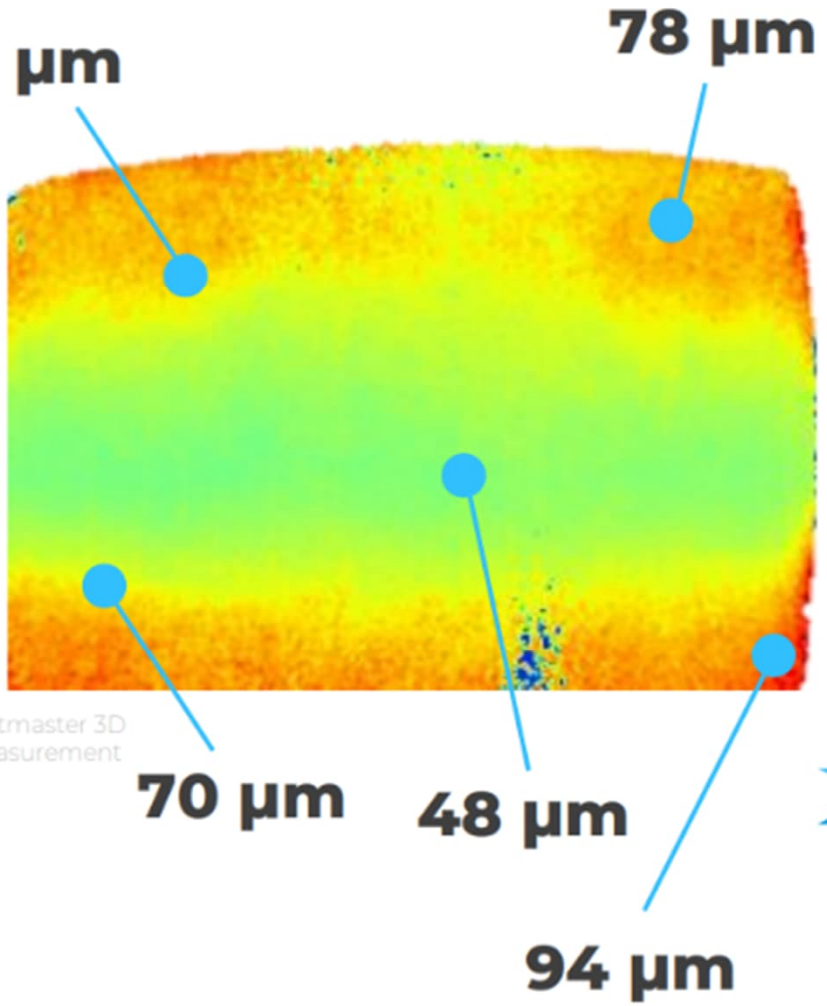
From bad to satisfactory

Average min thickness: 60 µm
Absolute min thickness: 48 µm

Average: 66 µm
Standard deviation: 15 µm

Customer line example
From Bad to Satisfactory

Interpon®



Qualicoat example

From bad to satisfactory

Increase powder amount 10%

Min 44 µm -> 48 µm

Average: 72 µm

Standard deviation: 16 µm

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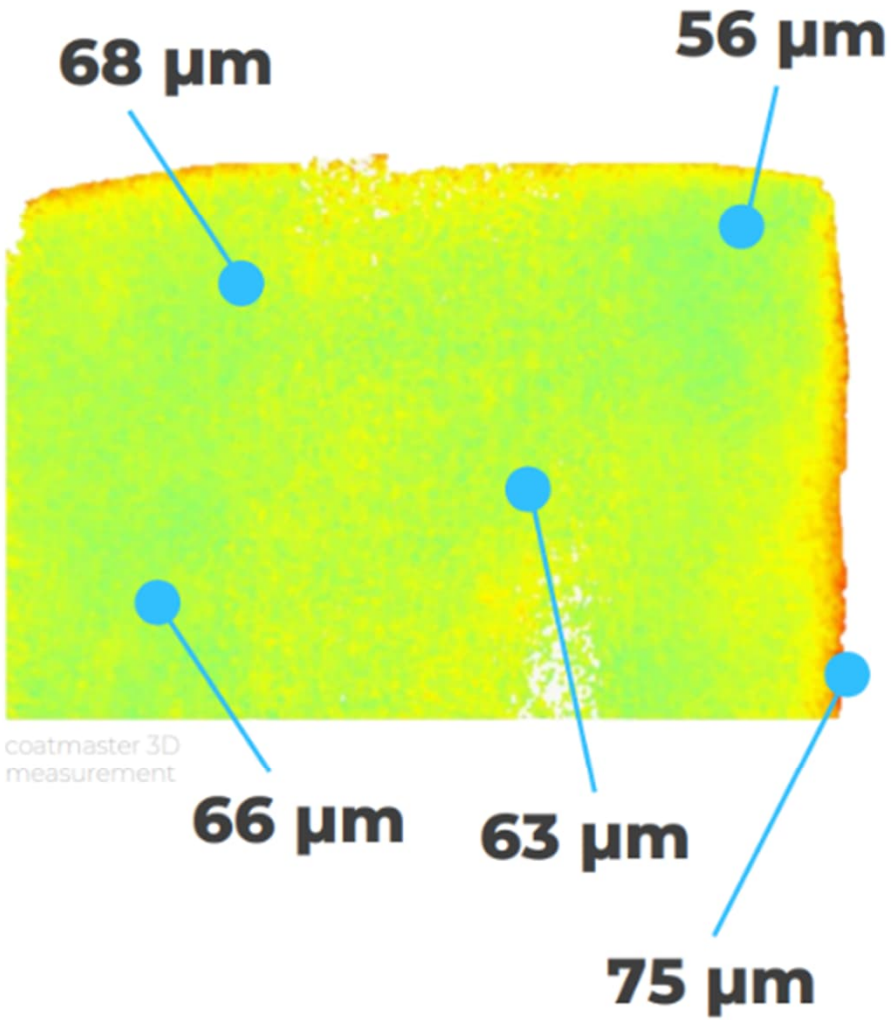
Customer line example
Good Coating

Interpon®



Qualicoat example

Good coating

Average: 66 µm

Standard deviation: 7 µm

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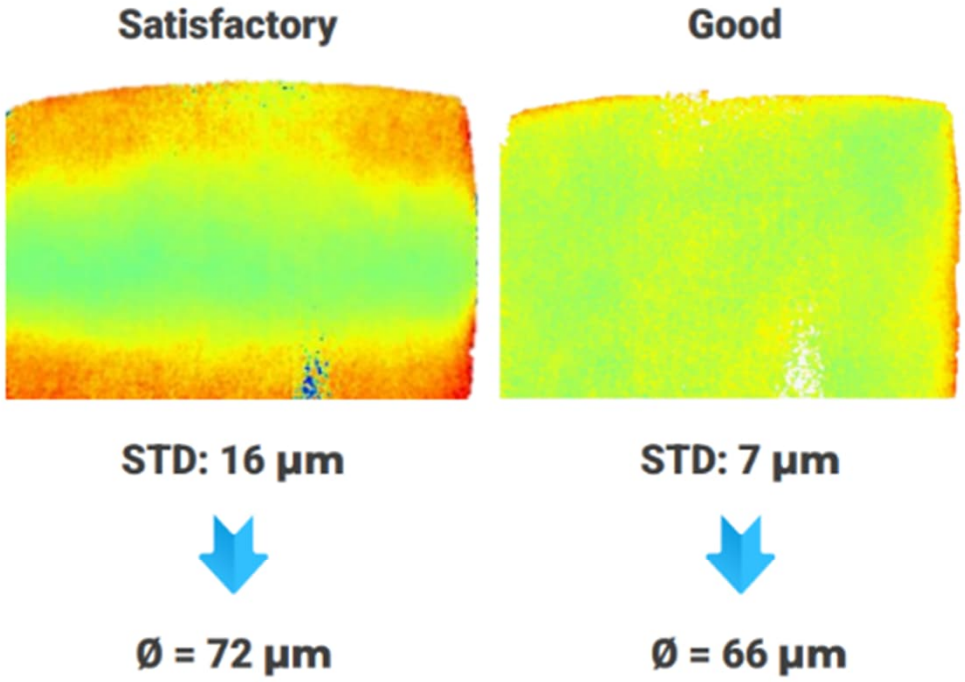
Why is it important to increase homogeneity?

Interpon®



Why is it important?

The consequences of low homogeneity

- **Powder saved: 9%**
- **Increased Quality**
- **Avoided Rework**

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The movement path

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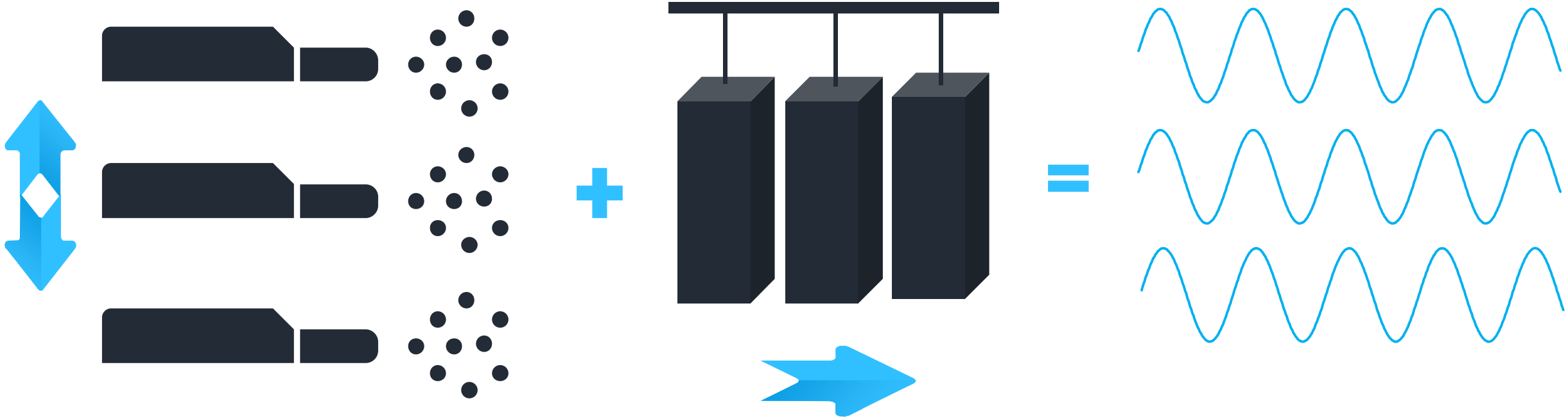
What the guns draw on the substrate



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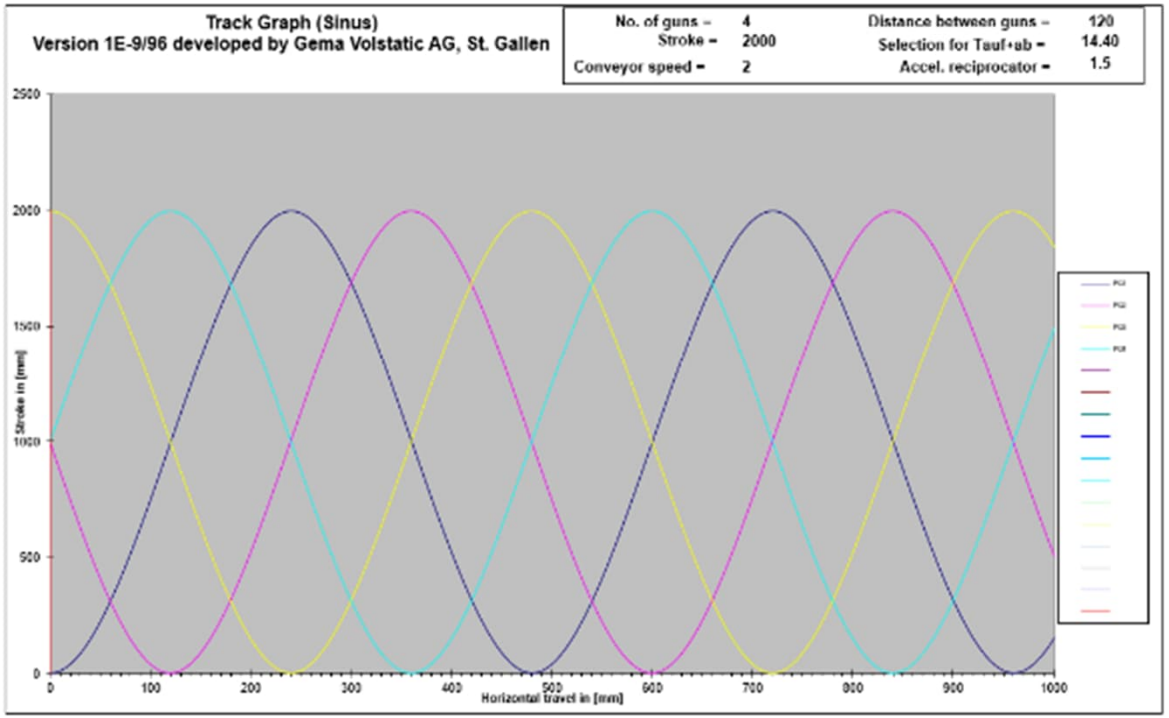
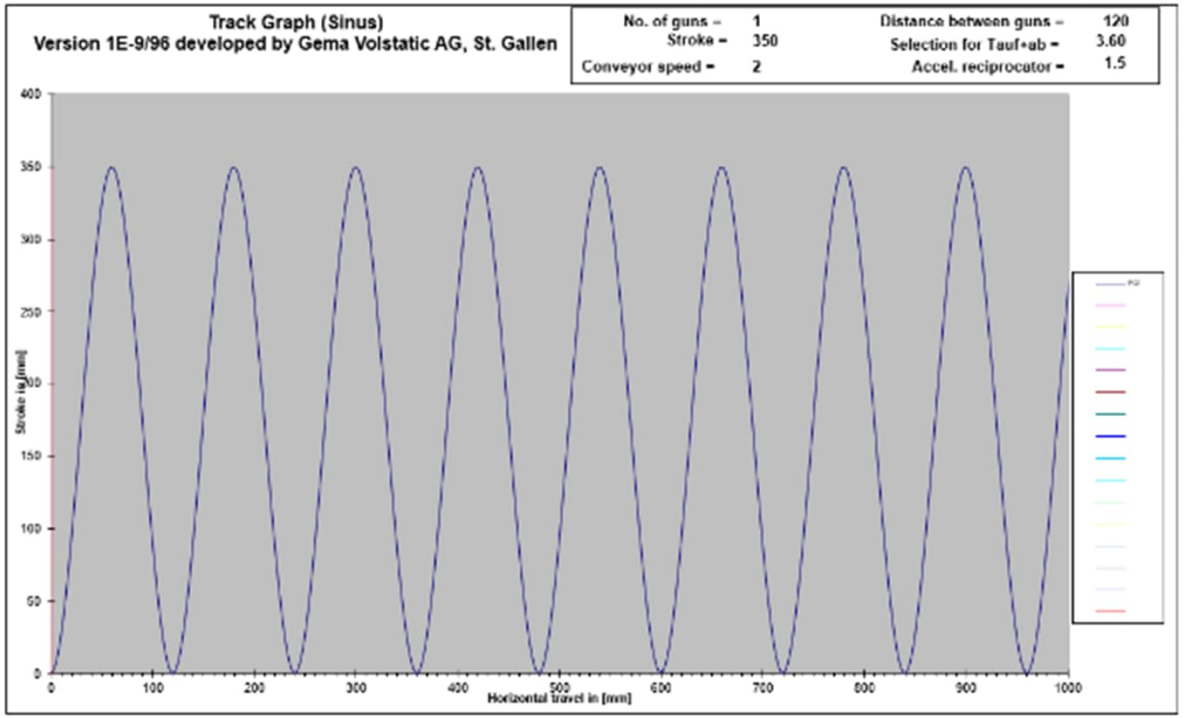
Traditional method of calculating movement

Interpon®





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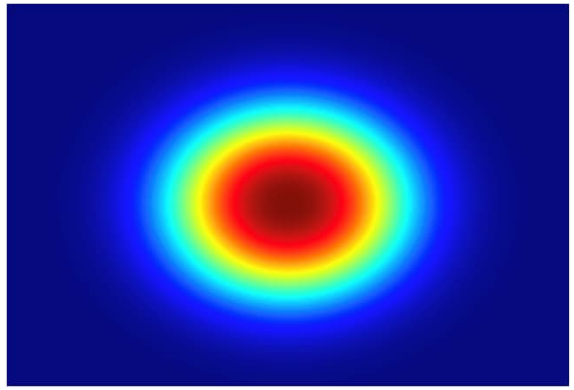
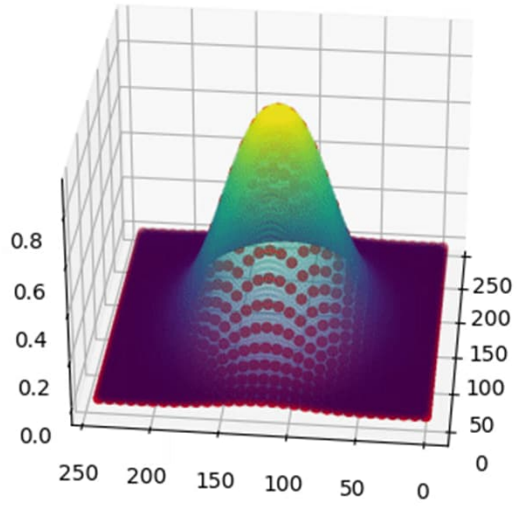
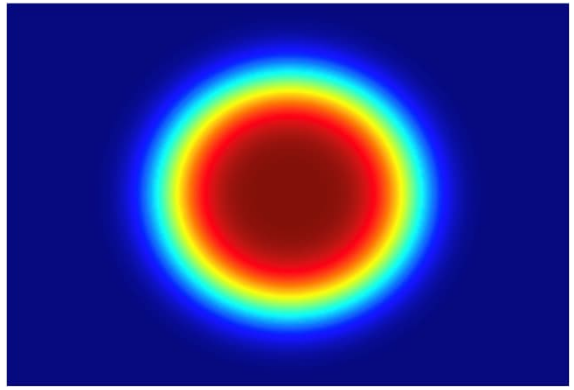
Spray pattern

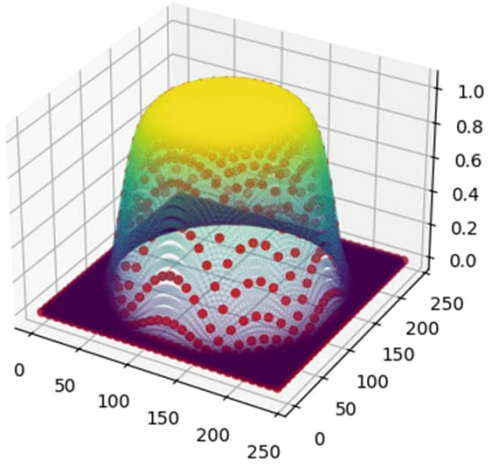
The spray pattern changes depending on distance, airflow and powder.





Distance
Airflow
Powder





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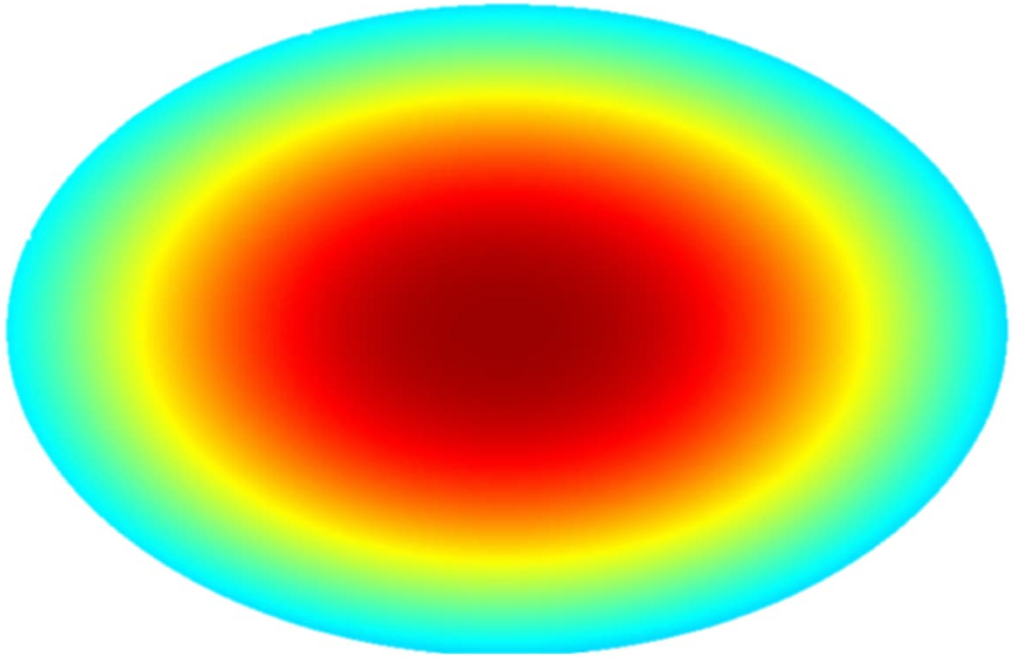
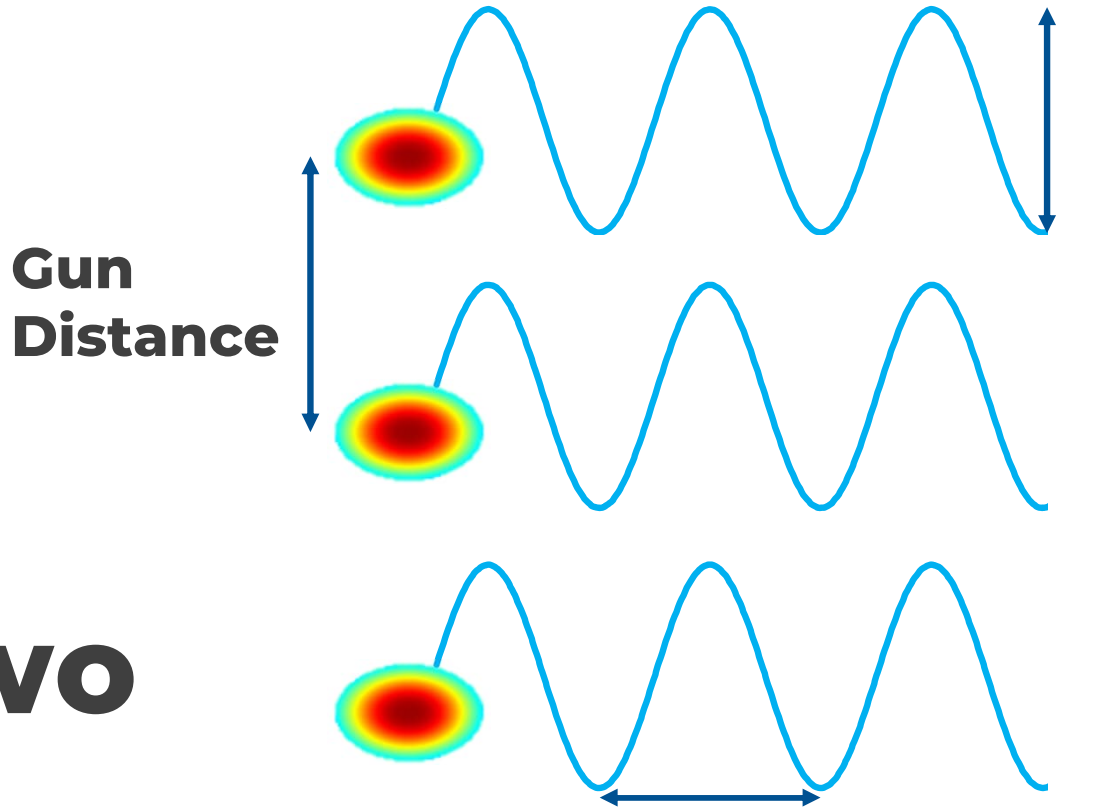
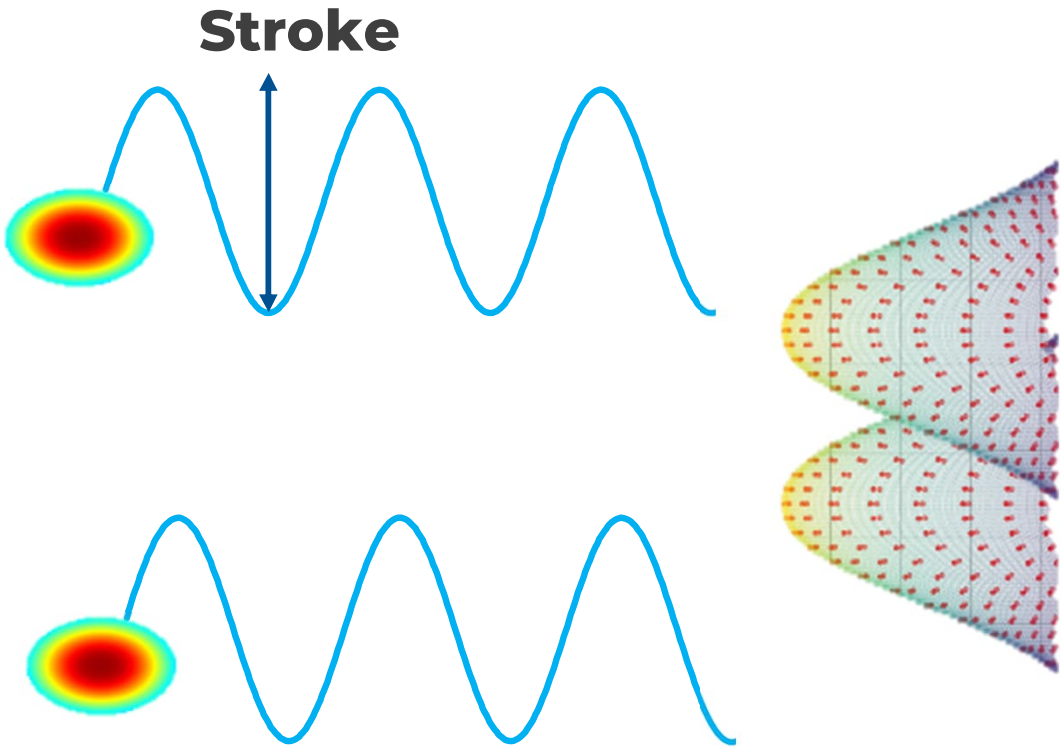


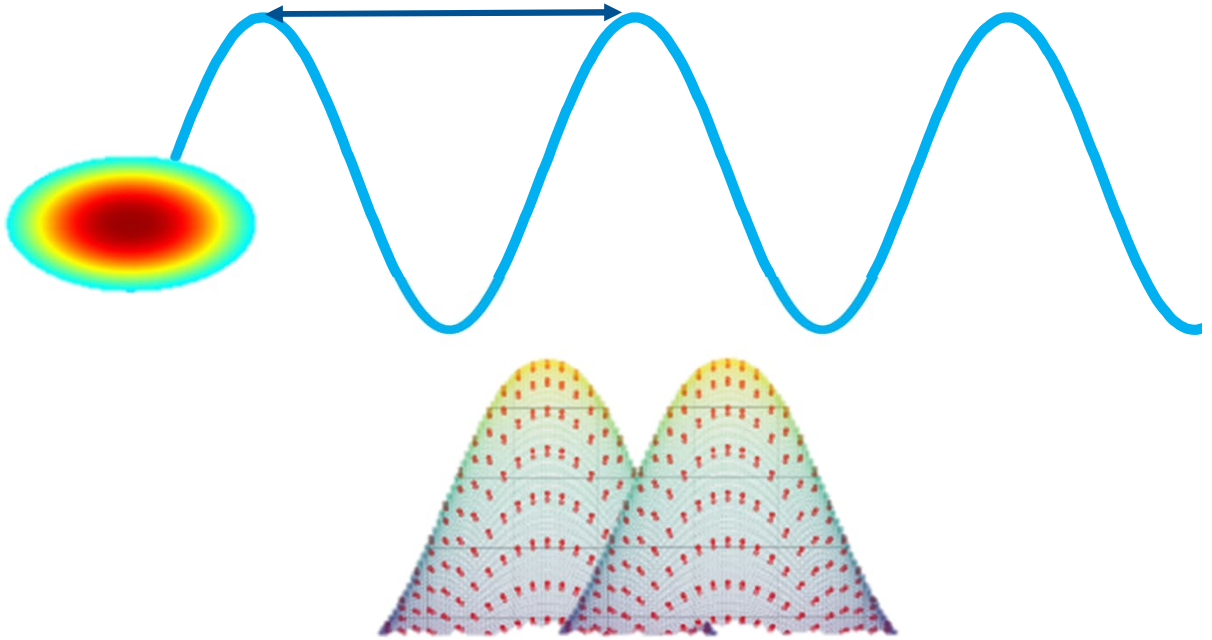


Combining the two

How the coating can be influenced

The coating distribution is a function of the distance between guns, the stroke height, stroke speed, line speed and the spray pattern itself.





Combining the two

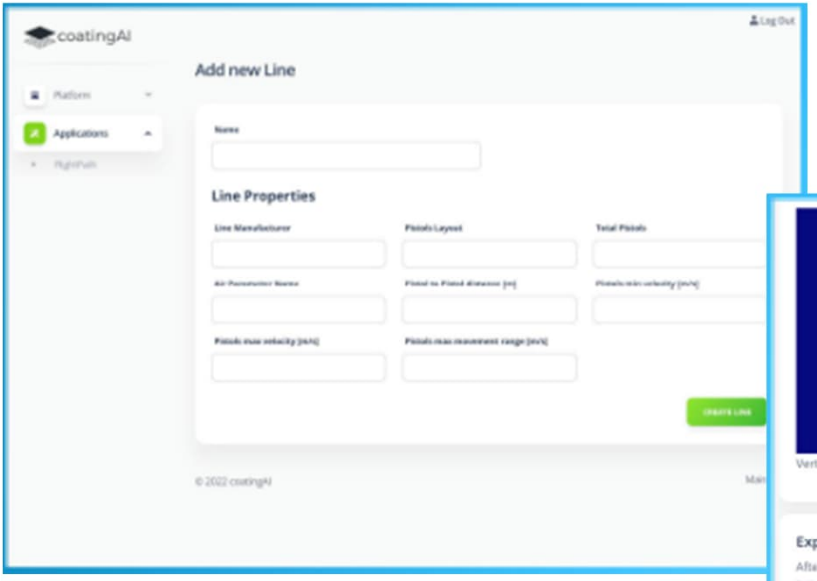
How the coating can be influenced

How it works

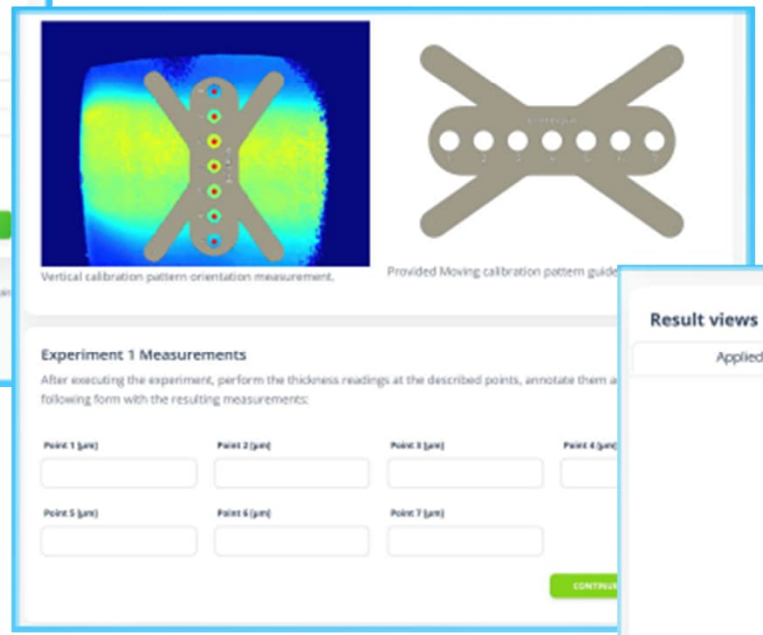
In 3 steps to the perfect uniformity

Interpon®

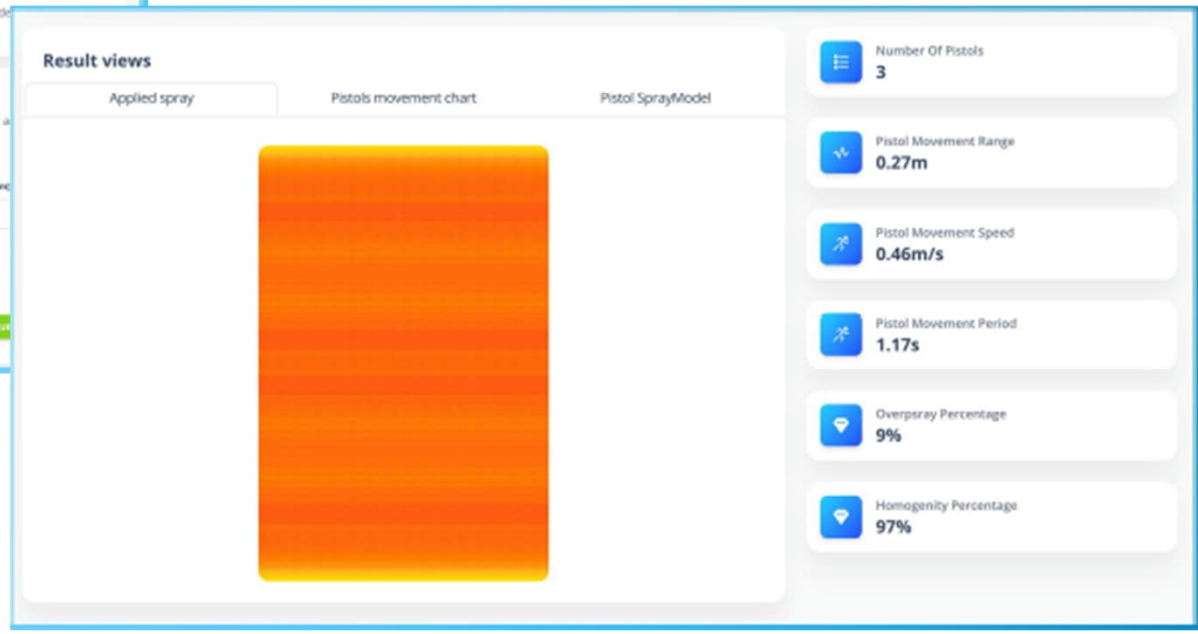
1. Define the line



2. Calibrate



3. Optimize



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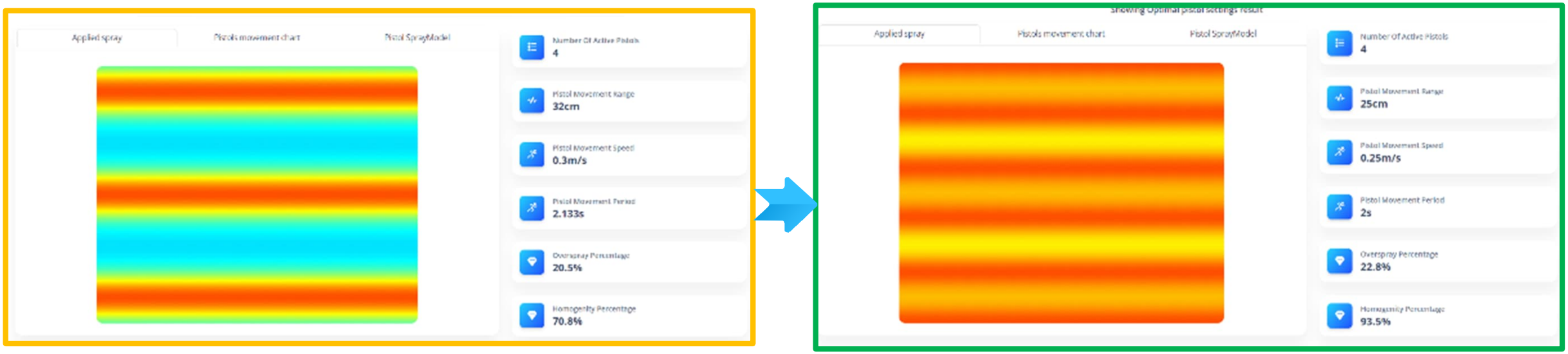
Visual representation of powder laydown

Interpon®



Improvement of Homogeneity by 32%

AkzoNobel


Interpon®
Benefits for our Customers
AkzoNobel

Benefits for customers

Operational Efficiency

FlightPath optimizes equipment settings like gun motion to reduce defects and overspray, **saving on powder costs**

Quality Improvements

The AI-powered recommendations result in more **uniform, consistent coatings** with fewer flaws

Easy to Adopt

FlightPath sits on top of existing equipment, not requiring complex integration. **Quick and simple**.

Continuous Optimization

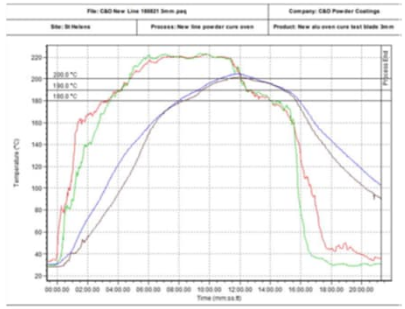
As conditions change, FlightPath continually adapts its recommended parameters through cloud-based data analysis

coatingAI Flightpath Pro
AkzoNobel's exclusive Technical Service tool

Interpon®

1. Customer audit

In addition to standard customer process steps such as oven recording or coating thickness, Flightpath can be used with ***general optimization*** option to give an overview of current reciprocator setup



2. Product line trials & benchmarking

For new product trials, often we are limited for the number of attempts we have on a customer line to demonstrate the required performance of our powder. Flightpath can be used either with ***general optimization*** or ideally with a ***calibrated powder optimization*** to have improved insights into ideal reciprocator parameters to achieve even powder laydown.

Typical product examples:

- Metallics and Special Effects (Brilliance, Natural Metallics, Stone Effect)
- Interpon Extra (XTR, AF)

coatingAI Flightpath Pro
AkzoNobel's exclusive Technical Service tool

Interpon®

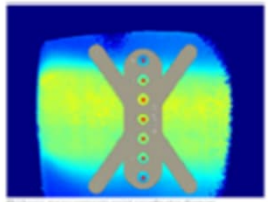
3. Customer process optimization

Customer optimization is a 3 steps process:

1. Performing a ***general optimization*** at a customer may indicate that potential homogeneity improvements can be achieved.
2. A ***calibrated powder optimization*** on the main product(s) is performed to further investigate the potential for application improvements.
3. **Optimized setting implementation** and validation test on customer line

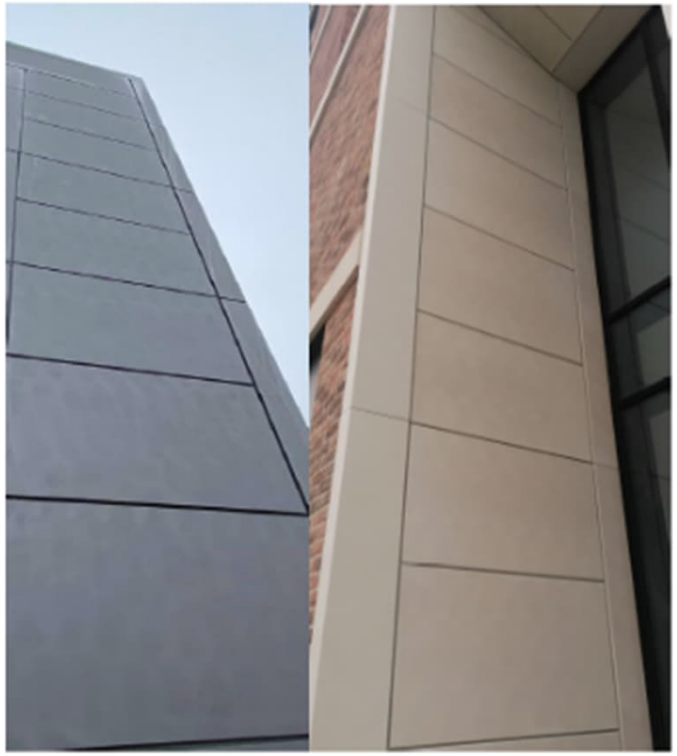
coatingAI AkzoNobel

	Current Settings	Optimal Settings	Difference comparison
Average Uniformity	87.32 %	98.73 %	+ 11.41 %
Average Overspray	8.84 %	8.01 %	-0.83 %



4. Quality investigation

Customer complaints regarding powder **homogeneity or striping** can be investigated quickly using a ***general optimization*** to evaluate potential contribution to quality failure due to incorrect reciprocator setup



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Interpon
POWDER COATINGS
Industrial

Interpon Extra

Interpon XTR - Particle Management Technology

Interpon AF - Advanced Fluidity

AkzoNobel

Product Information
Interpon AF / Interpon XTR

Interpon®

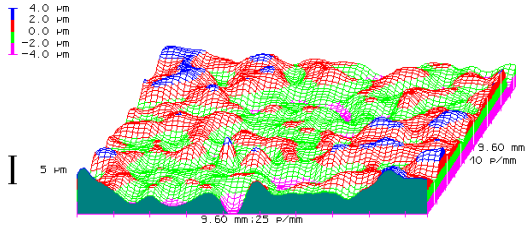
Customers need to reduce film thickness to reduce applied cost.

When powder coatings are cured, the particles melt and begin to flow out.

- If they melt and flow too quickly, drips will form on the bottom of the workpiece.
- If they melt too slowly, curing begins before good flow is achieved.

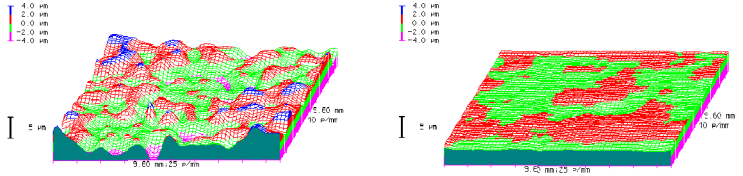
Powder flow is therefore a compromise and according to flow the final appearance still shows orange peel at the wavelength of the original particle size.

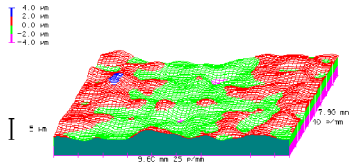
If a conventional powder coating is produced as thin film product, then the height of the peaks and troughs will also be dictated by the particle size of the product.



The only proven answer to this problem is to use fine particle size powders, which give shorter wavelength and lower amplitude, as shown in the laser profilometry diagrams.

Laser Profiles of the Surface of Various Particle Size Powders Sprayed at 30µm





Interpon Extra
In a nutshell

Interpon®

Interpon Extra is a customer focused program aimed at improving the performance of the powder coating process using two patented technologies.

- ✓ Interpon AF (Advanced Fluidity)
- ✓ Interpon AC (Advanced Cavity)
- ✓ Interpon XTR (Particle Management Technology)

It is a unique product technology backed up with technical service to powder applicators which can deliver one or more of a whole range of benefits including

- ✓ Cost Savings
- ✓ Productivity Improvements
- ✓ Quality Improvements

Program package is ;

- Customer needs audit
- Plant audit
- Product selection
- Benchmarking
- Trials
- After Sales Support

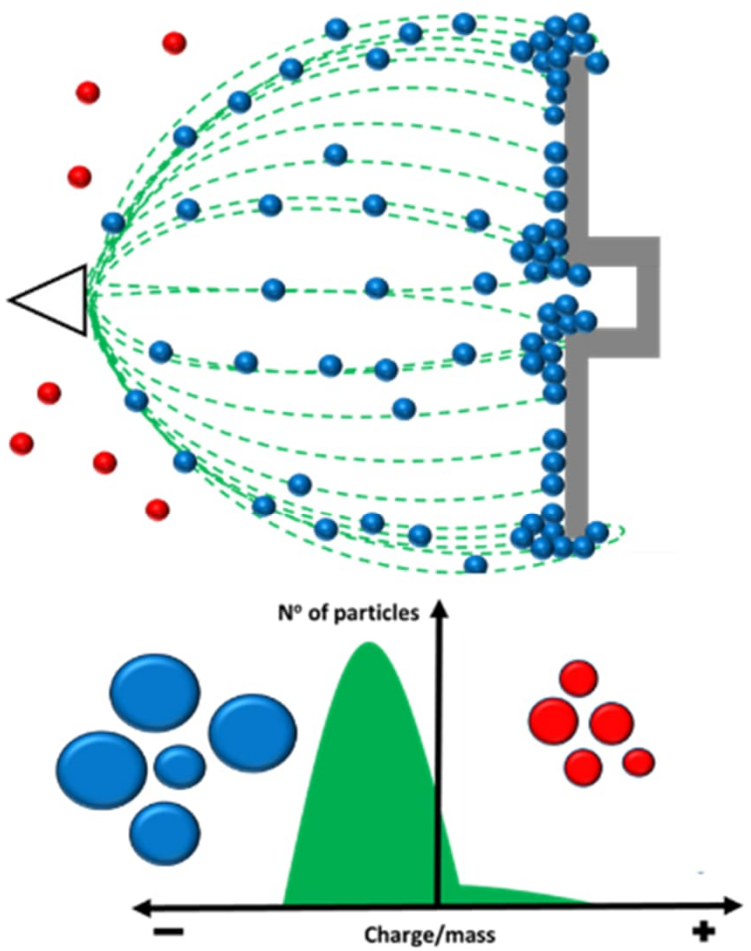
Product Information

Interpon XTR (Particle Management Technology)

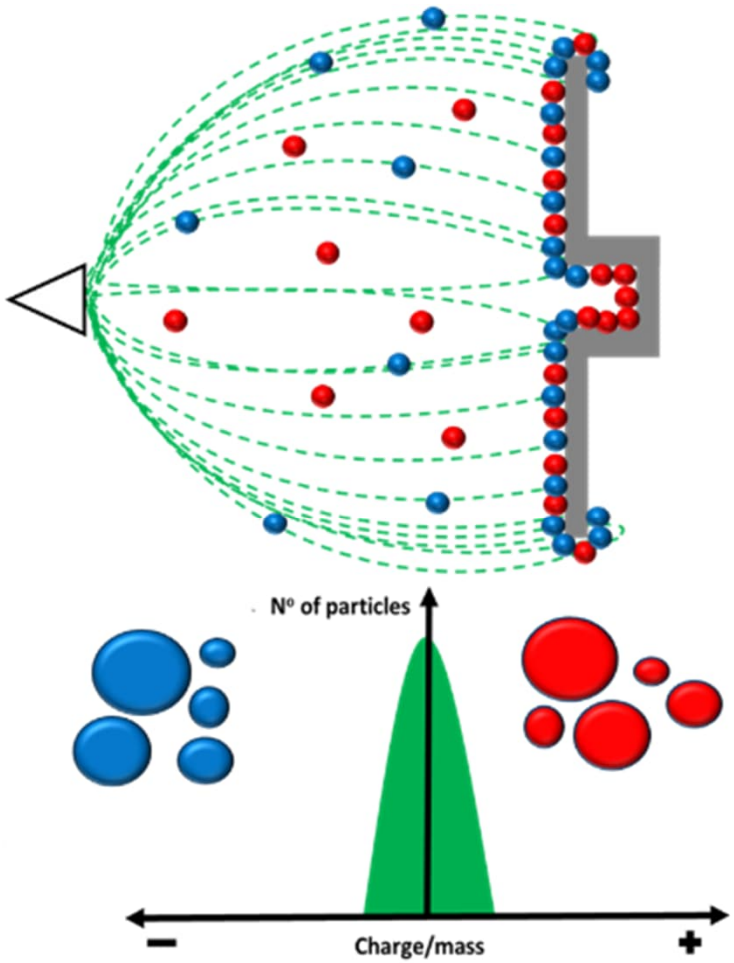
Interpon®

- Operates by correcting the charge distribution of a powder through a post additive approach
- Results in a balanced powder, with more equal numbers of large/fine particles between fractions.
- AF/AC and XTR properties achieved through the controlled discharge of agglomerates to remove high charge/mass species.

Conventional Technology



Particle Management



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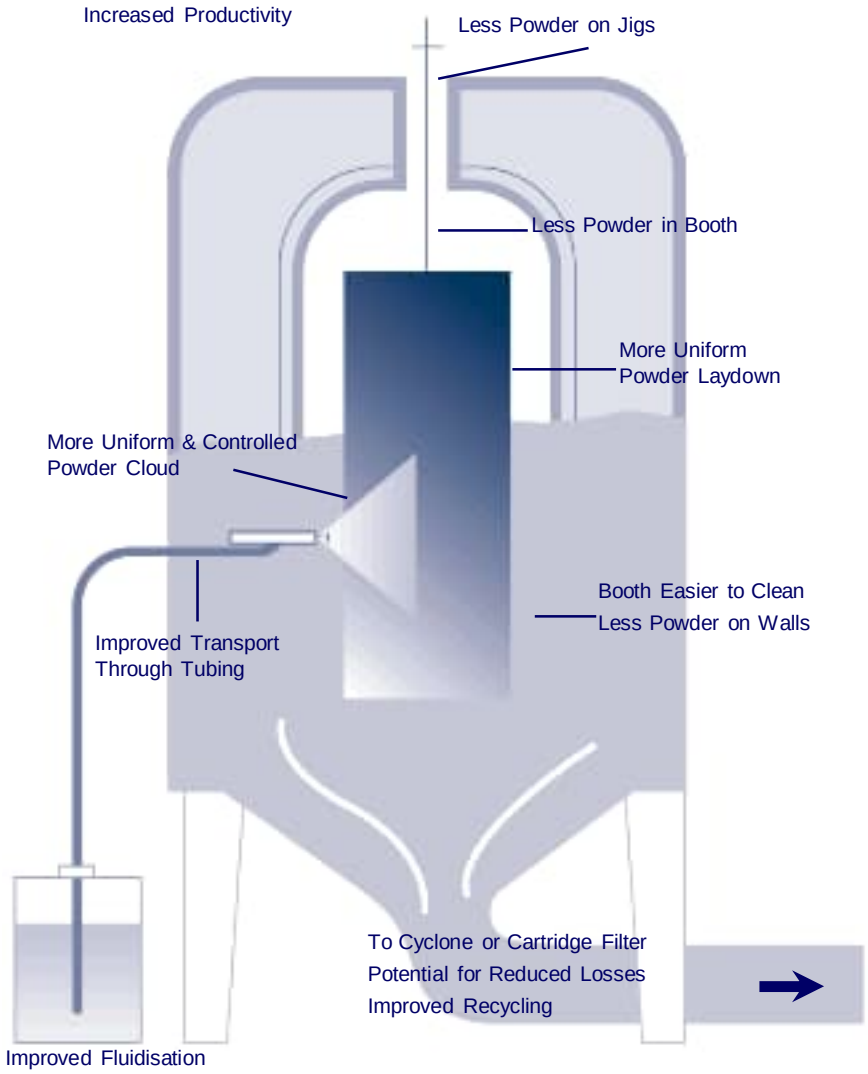
Interpon XTR (Particle Management Technology)

Productivity & Quality Benefits



- ✓ better & more consistent fluidization in the fluid bed
- ✓ improved transportation through tubing & ducting
- ✓ more even & controlled spray cloud from application gun
- ✓ more even laydown of particles onto workpiece
- ✓ less powder build-up on booth wall or in recovery systems

Interpon Extra
Benefits Summary

Interpon®

Productivity enhancements

- Increased line speed
- Lower gun output
- Reduced air and powder throughput
- Less paint build-up on jigs and hangers
- Better fines utilization
- Better transfer efficiency

Quality benefits

- Reduced fat edge
- Less thick areas
- Improved color consistency across a part

Application benefits

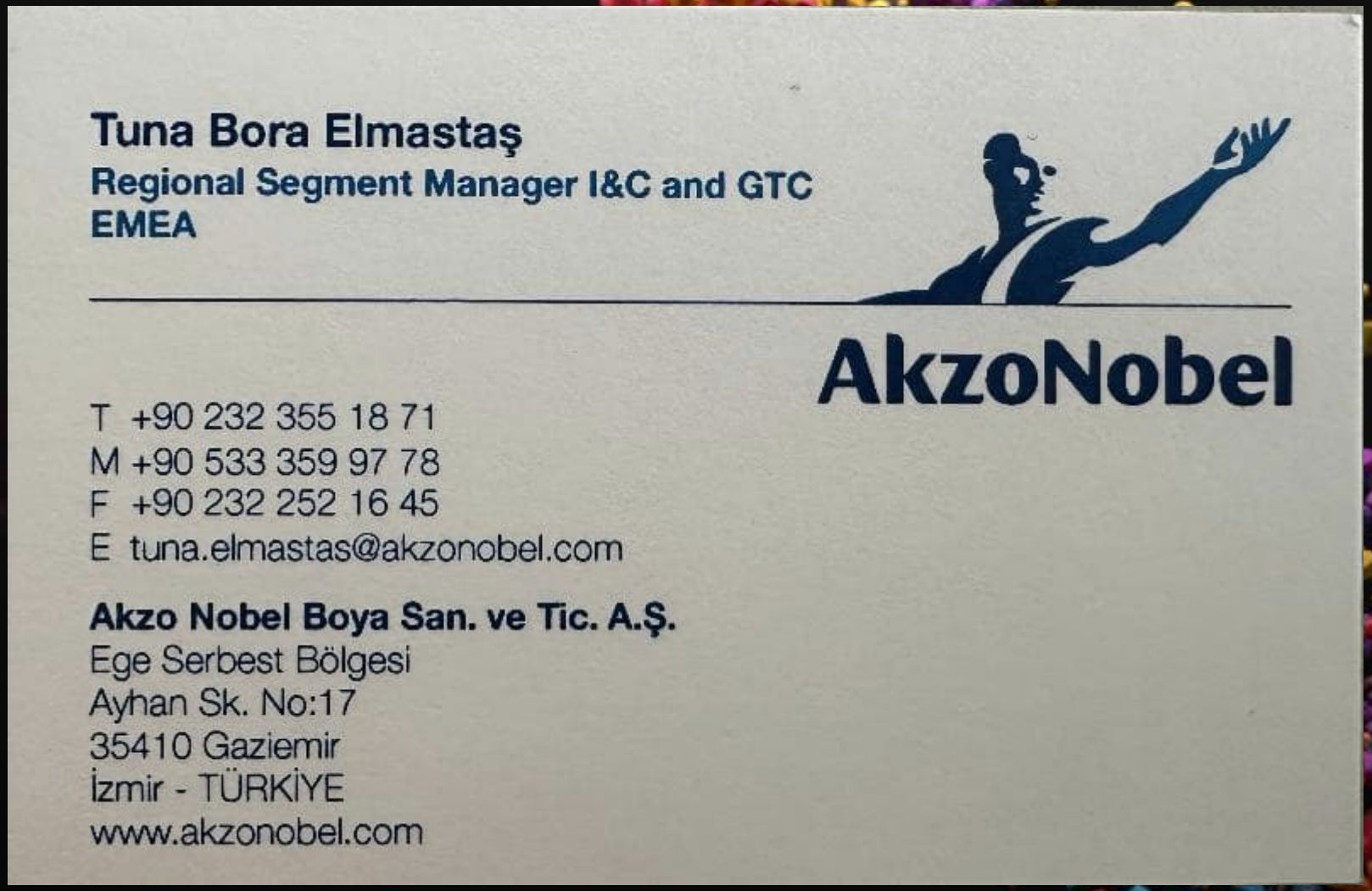
- Better and more consistent fluidization
- Improved transportation through tubing & ducting
- More even and controlled spray could from application gun
- More even laydown of particles onto work piece
- Less powder build-up on booth wall or in recovery systems

Recycling/Reclaim

- Improved first time deposition of fines
- Powder in the reclaim system is closer in particle size to the virgin powder
- Reduction in binding of cartridge filters
- Reduced waste by more efficient management of reclaim system

Contact information

Interpon®




Interpon
Q&A
AkzoNobel