

Q4 | 2024

FUSION

MAGAZINE

EDTC

**SUPPLY
MADE
SIMPLE**

www.dtc-uk.com

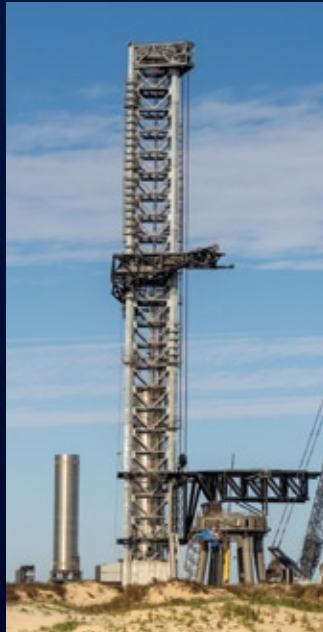
AERONIX CARBON NEUTRAL PEEL PLY

P 3



SPACE X ACHIEVES HISTORIC MILESTONE WITH SUCCESSFUL STARSHIP ROCKET CATCH

P 4



MASKING TAPE AND TOOLS: MAKE MASKING MORE EFFICIENT

P 5-6



UK'S POTENTIAL IN SPACE TECHNOLOGY

P 7-8



THE EUROPEAN AUTOMOTIVE INDUSTRY'S TRANSITION TO ELECTRIC VEHICLES

P 9-10



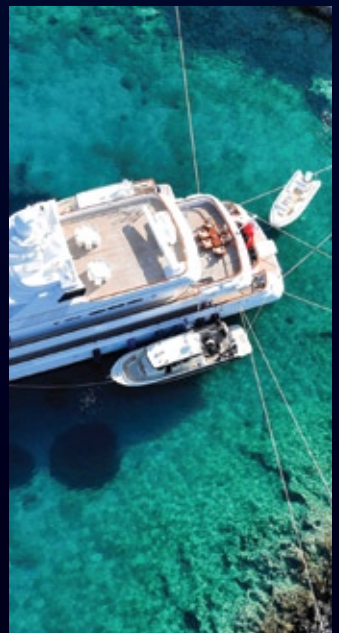
THE BEST DUST EXTRACTION METHODS FOR THE FINISHING INDUSTRIES

P 11



CASE STUDY: WP10 5-LAYER SPRAY BOOTH PROTECTION FILM

P 13-14



THE EVOLUTION OF MARINE COMPOSITES

P 15-16

IN THIS ISSUE

**MARINE COATINGS:
INDUSTRY GROWTH AND
INNOVATION**

P 17-18



**FUEL CONSUMPTION
AND CAPACITY FOR
YACHTS**

P 19-20



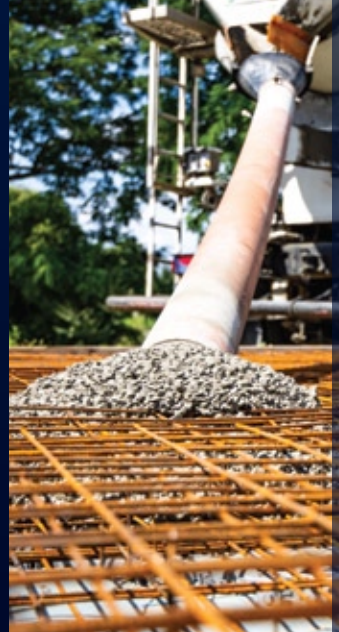
**THE BENEFITS OF
AI IN WAREHOUSE
OPERATIONS**

P 21



**REVOLUTIONISING
END-OF-LIFE
COMPOSITE
MANAGEMENT**

P 23



**BAXT CHEMSHIELD:
HEAVY DUTY CHEMICAL
RESISTANT GLOVES**

P 24



**CASE STUDY:
EXCELLING IN VENDOR
MANAGED INVENTORY
(VMI) WITH UNMATCHED
CUSTOMER SUPPORT**

P 25-26



**THE SMART
MOTORWAY DEBATE:
BALANCING SAFETY,
TECHNOLOGY, AND
CAPACITY**

P 27-28



**A LOOK INTO THESE
INDUSTRIES FOR
2025**

P 29-30

Fusion Magazine Editor: Harvey Taylor



aeronix
TECHNOLOGIES

Vacuum Bagging | Process Materials | Technical Partners



Carbon Neutral Peel Ply

Aeronix Technologies Peel Ply can perform many jobs, such as providing a bondable surface when used correctly, or as a method for removing excess resin, keeping the composite surface free from pollutants and many other functions.

A very useful material that can be used in a variety of composite manufacturing process such as vacuum bagging, resin infusion, wet layup and pre-preg applications.

- 85gsm
- Max working temp 180 Degrees
- Compatible with most common resins
- Available with nylon tracers

Bringing you **THE
WORLD'S
FIRST**

fully certified
carbon neutral
range of composite
manufacturing
products

t: 023 8025 9949
e: sales@aeronix-technologies.com
www.aeronix-technologies.com

SPACE X ACHIEVES HISTORIC MILESTONE WITH SUCCESSFUL STARSHIP ROCKET CATCH

Space X has made another giant leap in spaceflight with the successful landing and retrieval of its Starship rocket during its fifth test flight on October 13, 2024. In a daring move, Space X's massive Super Heavy booster, part of the Starship system, was caught mid-descent by the launch tower's innovative "chopstick" arms, marking a significant milestone in reusable rocket technology.

At nearly 400 feet tall, the Starship system is designed to revolutionise space travel, combining the Super Heavy booster with the Starship spacecraft. This fully reusable rocket aims to drastically cut down the time and cost associated with launching missions, making space travel more frequent and efficient. Space X's goal is to make long-duration space missions to Mars a reality, with founder Elon Musk boldly asserting that a "big step toward making life multiplanetary was made today."

The October 13 launch was not only a success for Space X but also for space exploration efforts worldwide. The rocket booster, after detaching from the spacecraft mid-flight, descended back to Earth and was expertly guided toward the launch tower. It hovered just above the tower before being gently grasped by the metal chopstick arms, securing a soft landing.

This achievement represents a significant step for future missions, particularly those aimed at the moon. NASA is heavily invested in Space X's Starship program, contributing about \$4 billion to its development. NASA intends to use Starship to land astronauts on the moon's surface as part of the Artemis program, specifically targeting the South Pole region.

The precision landing capabilities demonstrated by Space X are critical for such missions, where landing in challenging, defined areas will be essential.

Space X's drive for reusable rocket technology could revolutionise space travel, bringing it closer to an "airline-like" model where rockets are rapidly reused, refuelled, and launched again. This efficiency, combined with Starship's unprecedented power, positions Space X as a leader in the new era of space exploration. While challenges remain, particularly in the complexities of long-distance missions like refuelling in orbit for a trip to the moon or Mars, the successful landing on October 13 shows that Space X is steadily pushing the boundaries of what is possible in space.

With NASA's Artemis mission on the horizon, the collaboration between Space X and NASA is vital for future space exploration. As Space X continues to refine and test its technology, each flight brings us closer to the next big leap in space travel.

This historic landing marks a promising future, with Space X already planning additional test flights and pushing the boundaries of space exploration for the years to come to meet the demands of the customer's requirements, using clear communication, responsiveness, and problem-solving. Being just a supplier isn't what we're about, we want to push for improvements in the supply chain process which in turn can have a positive knock-on effect on projects and teams.



MASKING TAPE AND TOOLS: MAKE MASKING MORE EFFICIENT

In the highly technical arena of industrial painting, there's a lot more to masking-up than just picking up a roll of masking tape and getting going.

Although a seemingly simple part of the process, anyone involved in masking up an expensive car, aeroplane or boat knows that a shortcut when masking up generally leads to very costly failures down the line.

SELECTING THE RIGHT MASKING TAPE FOR INDUSTRIAL APPLICATIONS



Choosing the correct masking tape if the first step in creating a perfect finish. It's worth considering a few more specialist tapes tailored to the job you're doing, rather than just choosing the cheapest product.

High-Temperature Masking Tape

For applications where the product will be baked is a more obvious application, but It's also worth considering high-temperature tape for situations where the object you're masking will be outdoors or exposed to sunlight before unmasking.

High-Adhesion Masking Tape

High-adhesion masking tape is ideal for slight irregular surfaces including timber, rubber or shotblasted surfaces.

It's also a good option for applications where there will be high-pressure spraying (including airless spraying) where the tape can easily be blown off during spraying.

Low-Adhesion Masking Tape

Low-adhesion masking tape is a good choice when the surface you are protecting is very delicate and must not face the risk to delamination when removing the tape.

Long-Life Masking Tape

Products like 3M's 14-day tape are designed to be used on when you don't plan to remove the tape for several days. The adhesive remains sticky but is still removable after a longer period without leaving a residue behind.

Blending Tape

Blending Tape is a flexible foam combined with a masking tape is designed for the masking of swage lines (like door apertures) and panel edges to blend old and new paintwork without forming a hard line.

Aluminium Tape

Aluminium masking tape is perfect for masking areas which need to have an extremely high protection against chemicals or any bleed. Typical applications for this include aircraft which will be exposed to paint stripper and other solvents.

Gaffer Tape

Gaffer Tape (also called Duct Tape, Duck Tape or Gaffa Tape) is not actually a masking tape but is often used for this where maximum adhesion is required on difficult or rough surfaces. It's worth noting though that it doesn't create a clean line and paint bleed is highly likely.

Fine Line Tape

Fine line tape is used for creating lines on cars, aircraft, boats or almost any other application. This tape is typically available in very narrow widths and has a flexible, highly accurate and clean edge. It can be stretched in curved shapes making it perfect for forming lines and curves on the item being painted.

OTHER MASKING PRODUCTS



Masking up more than just regular, small shapes? Here are a few other masking products you should have in your arsenal:

Masking films

Masking films are normally used alongside masking tapes and are used for protecting large areas that would take too long to mask using online tape. They vary in size and thickness, making them ideal for almost any industrial application. They are great for areas that need to be protected against any bleed through.

Masking Paper

Masking paper is a good environmentally friendly choice, and is well suited to flat panels that won't be left outdoors.

Bleed though is a factor to consider though, particularly if it's going to get a lot of wet overspray on it during painting.

Masking Film With Tape

Some masking films are available with tape applied to one edge. These are extremely quick and convenient to use and are good for long, straight sections.

Masking Blanks

Masking blanks are custom-made shapes which are ideally suited to masking up repetitive shapes, for example aeroplane windows. These can be made of a variety of materials and are extremely effective in saving time during masking and preparation.

MASKING TOOLS

You've got the tape, you've got the films, now what about the tools and other things to go with it? Here are some of the more useful tools we've seen:

Magnetic Strips

Magnetic masking strips are flexible, reusable magnets which hold masking film and paper in place on cars when being sprayed.

Masking Paper Dispenser Trolleys

Masking paper dispenser trolleys are great for not only dispensing masking paper, but they also apply a strip of masking tape along one or two edges of the paper when being unrolled, ensuring a much faster and cleaner masking job.



Scalpels

Available in a range of sizes and types, scalpels are invaluable for cutting very intricate shapes and very precise cuts when masking up small components.

Safety Cutters

Quite simply, these are a safe and very efficient way to cut long stretches of masking film or paper. No risk of cuts or damaging the surface being masked!

IN SUMMARY: SELECTING THE RIGHT MASKING TAPE FOR INDUSTRIAL APPLICATIONS

Applications

Selecting the right masking materials is a critical part of the preparation for painting, and there's a huge difference between selecting something that will "just about do the job" and something that's got a specific use in mind.

Spend a bit more time and money on the right tool for the job and you'll save an enormous amount of time and money further along in the process.



UK'S POTENTIAL IN SPACE TECHNOLOGY





The UK has a rich legacy of aerospace innovation, marked by achievements like the Black Arrow and iconic aircraft such as Concorde and the Harrier Jump Jet. These milestones, while historical, serve as reminders of the UK's potential in engineering and space exploration. However, to remain competitive in the global space race, the country must look forward and invest in the next generation of aerospace advancements.

The Opportunity for Growth
Worth over £16.4 billion annually, the UK's space sector is a vital contributor to the economy and presents a unique opportunity to revive the nation's engineering prowess. Despite impressive advancements from startups and established players, the pace of innovation is not keeping up with global trends. To move forward, there needs to be a greater focus on enabling technological breakthroughs, particularly in the design and development of rocket engines.

The UK space industry employs nearly 50,000 people, and with the right investment in talent and infrastructure, this figure could rise significantly. By fostering a larger, more skilled workforce, the UK could become a global leader in space technology, benefiting the wider

economy and ensuring the nation has sovereign launch capabilities.

Nurturing Future Talent
To fuel this growth, the UK must address a critical skills gap, particularly in space engineering. While there is no shortage of enthusiasm among graduates, few are equipped with the hands-on experience needed for manufacturing and testing in the space sector. Strengthening the apprenticeship system and expanding STEM funding could help bridge this gap, offering a pipeline of talented individuals ready to contribute to the nation's aerospace and space industries.

Furthermore, attracting talent is not solely about offering competitive salaries. Many candidates, particularly those early in their careers, are drawn to companies with a clear vision and set of values that resonate with their own aspirations. Companies working towards sustainable space exploration and making space technology an enabler for the broader high-tech economy will have the upper hand in securing the best talent.

Collaboration: The Key to Innovation
Rocket engine development is one of the most challenging areas of aerospace innovation. The UK already has the talent and expertise to create world-class propulsion systems, but

the current approach is fragmented. Establishing a national centre for engine development or fostering greater collaboration between universities and private companies could accelerate progress.

Centralised design bureaus or national testing labs could play a pivotal role in ensuring the UK remains competitive. Such bodies would not only provide a platform for talent to flourish but also promote the sharing of ideas, successes, and even failures—key ingredients in any innovative ecosystem.

Many UK-based companies are already leading the charge in propulsion technology. Protolaunch, for example, is developing groundbreaking chemical propulsion solutions, while Monumo is combining machine learning with traditional engineering expertise to push the boundaries of electric motor design. By encouraging more collaborations like these, the UK can become a hub for aerospace innovation.

Testing and Learning: Moving Forward

The recent vertical rocket launch attempt by Rocket Factory Augsburg (RFA) from SaxaVord demonstrated that, while innovation is rarely a straight path, each failure offers

valuable lessons. To truly accelerate the development of the space sector, the UK must focus on addressing the bottlenecks that hold back talent and private companies from reaching their full potential.

Perhaps the answer isn't a national engine design bureau, but instead a more nuanced approach to how the UK nurtures and funds innovation. Revisiting university programs, rethinking apprenticeships, and bolstering STEM initiatives could be the catalysts needed to push the UK back to the forefront of aerospace engineering.

Looking Ahead

The UK has all the elements required to succeed in space technology: talent, innovation, and a long history of engineering excellence. What is needed now is a unified effort to harness these strengths, enabling the UK to once again become a leader in the global space race. Through collaboration, investment, and education, the next wave of aerospace innovation could be just around the corner.



THE EUROPEAN AUTOMOTIVE INDUSTRY'S TRANSITION TO ELECTRIC VEHICLES: CHALLENGES AND COMPETITION



Europe's automotive industry is at a critical juncture, facing multiple challenges as it grapples with the transition to low-carbon technologies, supply chain disruptions, rising competition from Asia, and shifting consumer demand. A dip in electric vehicle (EV) sales is raising concerns about the sector's ability to meet the European Union's stringent climate targets.

During a recent European Parliament debate, Members of the European Parliament (MEPs) discussed the growing crisis in the industry, which has seen factory closures across the continent due to weak sales. Central to the discussion was the

EU's target of achieving 100% zero-emission vehicles by 2035, a cornerstone of its strategy to reduce carbon emissions and combat climate change.

By 2025, the legal limit for cars' CO₂ emissions is set to decrease by nearly 20%, bringing it down to under 94 grams per kilometre. However, automakers are voicing concerns that the recent downturn in electric vehicle sales makes it nearly impossible to meet these targets.

Despite this, the European Commission remains resolute in its stance. Valdis Dombrovskis, Executive Vice-President of the Commission, argued that

the industry has been given ample time to prepare for the transition. "One out of five cars sold in 2024 is set to be electric," Dombrovskis stated. "Europe cannot afford to fall behind in the race for electric vehicles. The targets provide certainty for manufacturers and investors."

However, not everyone agrees with the current focus on electric vehicles. Jens Gieseke of the European People's Party (EPP) criticised the EU's narrow focus on EVs, describing it as a "dead end" and calling for a broader mix of technologies to drive the industry forward.

While Europe debates the future of its automotive sector, Chinese

manufacturers are rapidly gaining ground. Chinese-made electric vehicles are significantly cheaper than their European counterparts, giving them a strong foothold in the European market. Despite the imposition of EU tariffs on Chinese EV imports, European carmakers are struggling to compete on price.

Mohammed Chahim, an MEP from the Netherlands, emphasised the need for Europe to reclaim its competitive edge. "China is outpacing us in every way," Chahim noted. "We need flagship projects, such as investments in the European battery industry, to ensure

quality jobs and reduce dependencies on external powers."

In summary, Europe's automotive industry is at a decisive moment, requiring strategic investments and innovation to navigate the path towards sustainable mobility. While electric vehicles are a key component of that transition, it's clear that a broader technological approach and stronger European manufacturing capacity are necessary to keep the industry competitive on the global stage.

THE BEST DUST EXTRACTION METHODS FOR THE FINISHING INDUSTRIES

Ensuring the best dust extraction is something that needs to be taken seriously by the marine, composite, and bodyshop finishing industries. We compiled this guide to help you better understand the different types of dust and the best dust extraction methods available.

Dust extraction is something that needs to be taken seriously by the marine, composite, and bodyshop finishing industries. With inadequate dust extraction systems in place, finishing professionals can be exposed to large amounts of potentially dangerous particulate daily. (Before we get into the details of this best dust extraction methods article, we would like to point out that this is only a general overview. Everyone has unique extraction requirements, and we highly recommend that you contact us if you are even slightly unsure about your own.)

Here we are going to look at some of the most common and dangerous airborne particles, and some suitable extraction methods to remove them from the air efficiently and safely.

Carbon Fibre Particulate

Carbon fibre particulate is commonly produced in various finishing industries. Even slight stretching releases fibrous particles and cutting or sanding increases this risk. These particles can easily become airborne and inhaled, leading to respiratory irritation or serious health issues.

Glass Reinforced Plastic (GRP) Particulate

Like carbon fibre, GRP can release particulate through handling, stretching, or sanding. The health risks depend on fibre size, with larger fibres causing skin irritation and respiratory problems. GRP is considered a possible carcinogen, so exposure should be minimised.

Dust Extraction Methods

1. Ducted Systems

These systems act like industrial vacuum cleaners with localised extraction points that filter dust through a common exit. Ideal for localised dust formation.

2. Dust Control Booths

Semi-sealed units designed for mobility, containing several high-powered extraction points for large-scale operations like boat building and aerospace.

3. On Tool Extraction

This system connects directly to handheld tools for mobile dust extraction, typically used with high-pressure pipe systems or portable units.

4. Downdraft Benches

Workbenches with built-in extraction beneath the mesh surface. Effective for both large and small objects, these are commonly used in manufacturing and finishing work.

Filtration Systems

Once collected, dust must be filtered before being released. Filtration efficiency depends on the particulate hazard level:

- Low Hazard Class: 99% efficient, suitable for non-hazardous particulates like common dust.
- Medium Hazard Class: 99.9% efficient, ideal for wood, filler, and cement particulates.
- High Hazard Class: 99.995% efficient, for carcinogenic and highly dangerous particulates like asbestos and glass wool.

These methods are essential for ensuring safety in finishing industries. Reach out if you're unsure about your dust extraction needs.

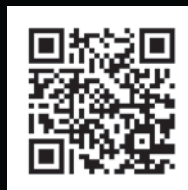


3M™ Aura™ Particulate Respirator 9300+ Series

Now containing recycled materials*

3M™ Aura™ Particulate Respirators 9300+ Series are designed with a variety of innovative technologies and features to help provide comfortable, reliable respiratory protection. Enabling you to;

- Breathe with ease
- Keep your vision clear
- Maintain face and head comfort



Scan the
QR code to
find out
more

Product



Aura™ 9312+, 9322+ and
9332+ contain at least

25%

recycled content*

Packaging



At least

30%

recycled content in
individual product wrap*



76%

recycled content in
shipper case*



100%

recycled content in
primary carton*

Manufacturing



Manufactured in the
United Kingdom



Over 20 years of
ISO 14001
a set of standards to reduce
environmental footprint



100%

of electricity used in our
manufacturing site is
renewable (RE100)

* Claims apply to products produced since 01/04/2024 and are correct at time of publication. Product: 3M™ Aura™ Particulate Respirators 9312+, 9322+ and 9332+ contain at least 25 % pre-consumer recycled content. Percentage recycled content varies by model. Figure stated is the lowest percentage of recycled content for the three protection levels. Percentage recycled content calculated in accordance with EN ISO 14021:2016+A1:202. Packaging: At least 30% recycled content in individual product wrap – Aura™ 9310+, 9312+, 9320+, 9322+, 9330+, 9332+, 1872V+ and 1873V+ only. 100% recycled content in primary carton, 76% recycled content in shipper case.

CASE STUDY:

WP10 5-LAYER

SPRAY BOOTH

PROTECTION FILM

Client: A Leading Professional Accident Repair Centre

Industry: Automotive Refinishing

Product: BAXT WP10 5-Layer Spray Booth Protection Film

THE CHALLENGE

A professional accident repair centre with over 25 years of experience in the automotive refinishing industry had worked with various types of spray booth wall coverings. Over time, they encountered multiple issues with durability, adhesive strength, and the ease of installation. The previous coverings would often peel or degrade, leading to frequent reapplications and increased downtime, which affected their overall workflow. To keep up with the demands of their busy workshop, they needed a durable, easy-to-install wall covering that could stand up to heavy use without compromising quality or efficiency.

THE SOLUTION

BAXT WP10 5-Layer Spray Booth Protection Film. After choosing this product the repair centre saw immediate improvements in their operations:

- **Durability:** WP10 exceeded expectations, showing no signs of adhesive failure or peeling, even after months of continuous use.
- **Ease of Installation:** The thickness and flexibility of the material made installation a smooth process. With the help of BAXT's detailed YouTube installation guide, the centre was able to complete the setup efficiently, without needing to contact customer support.

THE RESULTS

The switch to BAXT WP10 significantly improved the centre's spray booth operations, offering key benefits such as:

- **Minimised Maintenance Needs:** The long-lasting adhesion and durability reduced the frequency of maintenance, saving valuable time and resources.
- **Enhanced Workflow:** With WP10 in place, the repair centre was able to maintain a cleaner, more efficient workspace, improving overall productivity.
- **Highly Satisfied Team:** The repair centre praised the quality and performance of WP10, noting that it outperformed other market-leading products they had used previously.

SUMMARY

BAXT WP10 5-Layer Spray Booth Protection Film is the ideal solution for automotive refinishing centres seeking a durable, easy-to-install, and highly reliable spray booth covering. It simplifies maintenance, accelerates workflow, and enhances overall operational efficiency.





"The durability of WP10 is impressive; even after months of heavy use, it shows no signs of adhesive failure or peeling. BAXT's YouTube installation video was incredibly helpful and made the process straightforward."

"I highly recommend BAXT WP10 to anyone in the refinishing industry. It has exceeded our expectations in both quality and performance!"

"We have used various types of spray booth wall coverings over the years, but I can confidently say that BAXT WP10 is a game changer."

Manager

THE EVOLUTION OF MARINE COMPOSITES

Marine composite materials have revolutionised the way boats and yachts are built and maintained. The principle behind their development stems from the age-old idea that “necessity is the mother of innovation.” Over the last century, marine composites have been developed both by design and chance, offering engineers and designers materials that improve performance, longevity, and aesthetics. Let’s look at the qualities that make these materials ideal for marine use and explore some of the most widely used composites today.

Marine composite materials have revolutionised the way boats and yachts are built and maintained. The principle behind their development stems from the age-old idea that “necessity is the mother of innovation.” Over the last century, marine composites have been developed both by design and chance, offering engineers and designers materials that improve performance, longevity, and aesthetics. Let’s look at the qualities that make these materials ideal for marine use and explore some of the most widely used composites today.

Seven Essential Qualities of Marine Composites

Marine environments demand a lot from any material used in boat building or repairs. To meet these demands, composite materials used in marine applications must possess a combination of the following qualities:



1. Corrosion Resistance: Marine composites are resistant to rust and corrosion, ensuring longevity in harsh saltwater environments.



2. Durability: With the ability to withstand wear and tear over long periods, marine composites offer extended service life.



3. Lightweight: These materials are significantly lighter than traditional metals, which improves fuel efficiency and enhances boat performance.



4. Strength: Despite their lightweight nature, marine composites provide excellent strength and structural integrity.



5. Thermal Insulation: Superior thermal insulation properties help maintain internal temperature stability in marine vessels.



6. UV Resistance: Marine composites are resistant to ultraviolet degradation, maintaining their strength and appearance even with prolonged sun exposure.



7. Versatility: Their adaptability allows them to be easily moulded into complex shapes, enabling more innovative designs and custom solutions.

Fiberglass: The Accidental Revolution

One of the most widely recognised marine composite materials is fibreglass. Its discovery was unintentional researchers, experimenting with glass fibres to replace mineral wool insulation, stumbled upon its superior properties. Fibreglass quickly became a staple in the marine industry, and today, it is used in over 90% of yachts. Its success lies in its balance of affordability, strength, and durability.

Two main types of fiberglass are commonly used in marine applications: E-Glass and R-Glass (S-Glass). E-Glass is the standard for composites due to its affordability, strength, and resistance to environmental factors. However, R-Glass, or Strength Glass, surpasses E-Glass in both strength and toughness, though it comes at a much higher cost.

Carbon Fibre: Performance at a Premium

While fibreglass paved the way for marine composites, carbon fibre took things to a new level. Known for its exceptional strength-to-weight ratio, carbon fibre is about six times more rigid than E-Glass and far lighter than steel or aluminium. These properties make it a favourite in high-performance sailing vessels, luxury yachts, and powerboats. Despite its many advantages, carbon fibre's high cost presents a challenge. However, the demand for its unmatched strength and lightweight qualities continues to grow. Carbon fibre also presents handling risks due to the fibrous nature of the material, which can cause harmful dust particles to become airborne. These challenges necessitate additional safety measures during manufacturing, which can further drive-up costs.



Aramid: Strength with a Caveat

Aramid, a synthetic polymer, became popular around the same time as carbon fibre. The most well-known member of the Aramid family is Kevlar®, but others like Nomex® are also utilised in marine applications. Aramid offers remarkable strength and durability without adding weight. However, it has one significant drawback—it can absorb water, which is far from ideal for marine use. For this reason, Aramid is typically used in conjunction with other composite materials that protect it from moisture.

Sandwiching: Combining Strength and Affordability

Given the expense of advanced composites like carbon fibre and Aramid, engineers have developed a technique known as sandwiching. This process involves placing a core of less expensive material, such as foam or balsa wood, between two layers of composite. The result is a material that is thicker and more rigid without the excessive cost. Sandwiching also helps distribute stress across a larger area, reducing the risk of damage from impact.

The Future of Marine Composites

The marine industry continues to evolve, with ongoing research into new composite materials that could offer even greater strength-to-weight ratios. Advances in technologies like carbon nanotubes are pushing the boundaries of what's possible, promising to enhance durability, reduce costs, and improve safety.





MARINE COATINGS: INDUSTRY GROWTH AND INNOVATION

As the marine industry continues to evolve, the global marine coatings market is on track to surpass \$24.7 billion by 2034. The demand for coatings that provide extended service life and reduce maintenance is rising, particularly among fleet operators. A significant factor driving this growth is the need for advanced coatings that deliver protection while meeting sustainability standards - a key focus for modern marine operations.

THE IMPORTANCE OF HIGH-PERFORMANCE COATINGS

Marine coatings play a critical role in protecting vessels from corrosion, fouling, and environmental wear. The growing global trade volume and the need for increased efficiency and reduced fuel consumption have pushed manufacturers to develop coatings that enhance vessel performance. Coatings with antifouling properties, which prevent marine organisms from attaching to hulls, are particularly in demand as shipping routes expand and environmental regulations tighten.

This trend mirrors the broader industry shift towards sustainability. Eco-friendly coatings are becoming increasingly popular among boat owners, operators, and shipbuilders who prioritise minimising their environmental impact while ensuring long-lasting protection for their vessels.

TAILORED COATINGS FOR MODERN MATERIALS

As new materials like composites and aluminium alloys are increasingly used in ship construction, specialised coatings are required to ensure proper adhesion and durability. These advanced materials present unique challenges, driving innovation in the marine coatings market to meet the demands of modern shipbuilding.

The need for tailored solutions extends beyond ships to other sectors, including the aerospace, composites, and automotive industries, where coatings must meet stringent performance criteria. Across these industries, businesses benefit from expert guidance in selecting the right coatings to maximise both protection and performance.

KEY MARKET TRENDS DRIVING GROWTH

Several key trends are shaping the marine coatings market:

- **Environmental Responsibility:** Eco-friendly and low-VOC (volatile organic compound) coatings are gaining traction as the industry adopts more sustainable practices. The development of bio-based coatings aligns with both regulatory requirements and consumer demand for greener solutions.
- **Durability and Efficiency:** Coatings that extend service life and reduce downtime for maintenance are critical. The focus on reducing vessel drag, improving fuel efficiency, and enhancing overall vessel performance has led to the development of advanced coatings that can withstand the harshest marine environments.
- **Technological Advancements:** The evolution of coating technologies has resulted in formulations that provide better protection against corrosion, fouling, and abrasion. This has a significant impact on reducing operational costs and extending the lifespan of vessels.

REGIONAL MARKET INSIGHTS

The marine coatings market's growth is also reflected in regional dynamics:

- **North America:** With leading manufacturers like PPG Industries and Sherwin-Williams, North America plays a crucial role in driving the marine coatings market. The region's strong focus on sustainability and stringent environmental regulations is pushing innovation in eco-friendly coatings.
- **Europe:** Europe's mature market is characterised by high regulatory standards and significant investment in renewable energy sectors such as offshore wind. Companies like AkzoNobel and Hempel A/S lead the way in providing advanced coating solutions for the shipbuilding and maritime maintenance sectors.
- **Asia Pacific:** Rapid industrialisation and expanding shipbuilding activities make Asia Pacific a key player in the market. Companies like Nippon Paint and Kansai Paint leverage local market knowledge to meet the growing demand for high-performance coatings in this region.

The marine coatings market is set for continued growth as the demand for environmentally responsible, durable, and efficient coatings rises. Businesses across the marine, aerospace, composites, and automotive industries must stay ahead of these trends to maintain competitiveness and operational efficiency.

Through industry expertise, innovative solutions, and a commitment to sustainability, companies can enhance their operations and reduce their environmental footprint. By selecting the right coatings for each application, operators can protect their assets while supporting broader environmental and performance goals.



FUEL CONSUMPTION AND CAPACITY FOR YACHTS



Fuel consumption and capacity are critical factors for yacht owners, influencing both operational costs and the environmental impact of their voyages. Yachts vary significantly in size and purpose, from smaller pleasure yachts to larger superyachts, and each has different fuel consumption rates. Understanding these factors can help yacht owners better plan their trips, manage costs, and adopt eco-friendly practices.

HOW MUCH FUEL DOES A YACHT HOLD?

Fuel capacity in yachts is largely determined by the vessel's size and intended purpose. Smaller yachts, often used for shorter trips or weekend cruises, typically have fuel tank capacities ranging from 200 to 1,000 gallons. These yachts are designed for efficiency and shorter range, ensuring a more streamlined

experience for recreational sailors. Larger yachts, including superyachts and mega yachts, are built for extended journeys and can hold significantly more fuel. These vessels often have fuel capacities ranging from 10,000 to 50,000 gallons or more, enabling them to traverse vast distances. Superyachts equipped for transoceanic voyages need to carry enough fuel to cover thousands of nautical miles without requiring refuelling.

For yacht owners, understanding the fuel tank capacity of their vessel is crucial. A well-planned journey takes into account the yacht's range and the availability of refuelling stations along the route. With the right knowledge, owners can optimise their routes and avoid unnecessary risks, ensuring a smooth and enjoyable experience on the water.

FACTORS AFFECTING YACHT FUEL CONSUMPTION

Fuel consumption in yachts depends on several variables, including the yacht's size, weight, engine type, and cruising speed. Smaller yachts are typically more fuel-efficient, consuming anywhere from 20 to 50 gallons of fuel per hour at cruising speed. Larger yachts, such as superyachts, can consume much more—anywhere from 100 to 500 gallons per hour, depending on their size and the power requirements of their engines.

One of the key factors influencing fuel consumption is speed. The faster a yacht cruises, the more fuel it burns. This is because higher speeds increase water resistance, requiring more engine power to maintain speed. By cruising at an optimal, fuel-efficient speed, yacht owners can significantly reduce fuel consumption

and lower operational costs. This not only benefits the owner but also minimises the yacht's environmental footprint.

Efficient navigation is another critical aspect. By planning routes carefully, yacht owners can avoid unnecessary detours and unfavourable weather conditions that increase fuel usage. Regular maintenance also plays a significant role—well-maintained engines and hulls are more fuel-efficient, ensuring optimal performance and lower fuel consumption over time.



FUEL EFFICIENCY AND BEST PRACTICES

To get the most out of a yacht's fuel, adopting best practices for fuel efficiency is essential. Here are several strategies that yacht owners can implement:

1. Optimise Cruising Speed:

Avoiding high-speed cruising and sticking to an optimal range can dramatically cut fuel consumption. Many yachts have a "sweet spot" where fuel efficiency is maximised without sacrificing too much speed.

2. Regular Maintenance: Routine engine maintenance, including oil changes and proper tuning, ensures that the engine operates efficiently. A well-maintained engine uses less fuel and is less prone to breakdowns during a voyage.

3. Hull Cleaning: Keeping the hull clean of barnacles, algae, and other marine growth reduces drag, improving fuel efficiency. Even minor hull fouling can significantly increase fuel consumption.

4. Load Management: Reducing excess weight on board can lower fuel consumption. Keeping the yacht's load to essential items only helps ensure that fuel efficiency is optimised.

5. Use of Modern Technologies: Investing in modern yacht designs with fuel-efficient hulls and engines can make a significant difference. Many newer yachts are designed with aerodynamics and efficiency in mind, reducing drag and optimising fuel usage.

THE ENVIRONMENTAL AND FINANCIAL BENEFITS OF FUEL EFFICIENCY

Fuel efficiency in yachts not only helps reduce operating costs but also lowers the vessel's environmental impact. Burning less fuel means fewer carbon emissions, contributing to a more sustainable boating experience. As yacht owners become more environmentally conscious, fuel efficiency has become a key focus in yacht design and operation. By following best practices and staying informed about their yacht's fuel usage, owners can enjoy longer, more cost-effective voyages while doing their part to protect the environment. Furthermore, as fuel prices fluctuate, efficient fuel management helps stabilise operating costs, allowing yacht owners to budget more effectively.

FUTURE OF FUEL EFFICIENCY?

In an era where both cost-consciousness and environmental responsibility are priorities, understanding yacht fuel consumption and capacity is vital. Whether navigating a smaller pleasure yacht or a luxurious superyacht, owners who implement fuel-efficient practices can enjoy smoother, more sustainable voyages. By optimising cruising speed, maintaining their vessel, and keeping an eye on fuel efficiency, yacht owners can reduce both costs and their environmental footprint.



THE BENEFITS OF AI IN WAREHOUSE OPERATIONS

Artificial Intelligence (AI) is rapidly evolving, with new advancements emerging at an unprecedented pace. From automation to data analysis, AI is changing industries and as technology advances, it's crucial for businesses to stay updated on the latest AI innovations to remain competitive. Keeping a close eye on new developments in AI not only helps organisations streamline their operations but also unlocks opportunities for growth, efficiency, and enhanced decision-making. The integration of Artificial Intelligence (AI) in warehouse management is transforming intralogistics by streamlining operations and enhancing efficiency. Here are seven key benefits of AI in warehouse operations:

- 1. Intelligent Demand Forecasting and Inventory Optimisation:** AI algorithms enable businesses to generate precise demand forecasts by analysing historical data, market trends, and other factors. This ensures that warehouses can optimise inventory, refine supply chain processes, and make informed decisions regarding procurement and transportation.
- 2. Predictive Maintenance and Equipment Optimisation:** AI monitors real-time data from sensors, predicting equipment breakdowns and maintenance needs. This predictive approach minimises downtime, reduces maintenance costs, and ensures that critical machinery operates at peak performance.
- 3. Enhanced Order Fulfilment and Logistics:** AI-powered algorithms optimise order picking by considering variables like product attributes and real-time priorities. This improves order accuracy, increases throughput, and reduces labour costs, creating a more efficient warehouse workflow.
- 4. Robotics and Automation:** AI-driven robotics, such as Autonomous Mobile Robots (AMRs) and robotic piece picking solutions, are revolutionising warehouse tasks. These intelligent systems enhance productivity, improve safety, and reduce human error by performing tasks like picking, sorting, and packing.
- 5. Real-Time Visibility and Asset Tracking:** AI-powered tracking technologies such as Radio Frequency Identification (RFID) and IoT devices provide real-time insights into asset locations and inventory levels. This heightened visibility improves decision-making, resolves bottlenecks, and increases operational efficiency.
- 6. Continuous Improvement and Process Optimisation:** AI-driven systems track key performance indicators (KPIs) and analyse operational data to identify areas for improvement. This ongoing optimisation helps warehouses streamline workflows and drive continuous improvement.
- 7. Enhanced Safety:** AI improves worker safety by analysing data, monitoring safety parameters, and automating maintenance tasks. By reducing the need for manual labour, AI also decreases the risk of accidents, enhancing overall safety in the warehouse.

While implementing AI requires careful planning and investment, the benefits are clear. AI enhances customer experiences, improves operational efficiency, and gives businesses a competitive edge in the fast-paced world of intralogistics. It's continuing to grow and new inventive ways to use AI are being explored every day to enhance operations, making it critical to stay informed on new trends.



Cubitron™ 3
Performance Abrasives



A new era of abrasive performance is here.

3M™ Cubitron™ 3 Cut-Off Wheels

3M™ Cubitron™ 3 Cut-Off Wheels with their fast cutting and long-lasting performance improve productivity and efficiency in various body shop cutting processes.

These Cut-Off Wheels are built with the 3M™ Cubitron™ 3 Precision Shaped Grains – designed with sharp, angular structures that continuously fracture to form fresh, sharp points that allow the discs to slice faster, and last longer. They will cut through most materials, including high strength steels, stainless and mild steel.

40%

more life
than our previous
generation of Cubitron™ II
Cut-Off Wheels



Scan the
QR code to
find out
more

Remove up to

40%

more material
than Cubitron™ II Cut-Off
Wheels

REVOLUTIONISING END-OF-LIFE COMPOSITE MANAGEMENT:

CEMENT CO-PROCESSING AS A SUSTAINABLE SOLUTION



The challenge of managing end-of-life (EoL) composite materials, commonly used in industries like automotive, construction, and wind energy, has long posed a significant environmental concern. However, a groundbreaking Life Cycle Assessment (LCA) report, prepared by SGS INTRON, offers a promising solution—co-processing these composites in cement facilities. This process not only significantly reduces CO2 emissions but also offers a more sustainable approach to waste management.

A Climate-Friendly Approach to Composite Waste

Glass fibre reinforced thermoset composites, used in everything from wind turbines to recreational boats, have traditionally been incinerated or sent to landfills, processes that release harmful emissions and waste valuable resources. The new LCA report reveals that each ton of composite waste treated in a cement facility can save up to one ton of CO2 when compared to traditional waste incineration methods. This marks a substantial environmental win.

The emissions savings are achieved in two ways:

- 1. Avoiding Incineration Emissions:** By diverting composite waste from incineration, the process eliminates around 500 kg of CO2 emissions per ton of EoL composites.
- 2. Reducing Cement Production Emissions:** Co-processing composites in cement production further cuts CO2 emissions by approximately 330 kg per ton, bringing the combined savings to a remarkable 830 kg of CO2 per ton.

Additional Environmental Benefits

Beyond CO2 reductions, co-processing composites in cement facilities offers two additional benefits that make the cement industry itself more sustainable:

- **Reduced Raw Material Use:** The process recovers the valuable glass fibre fraction of the composites, reducing the need for virgin raw materials in cement production.
- **Efficient Energy Recovery:** The resin fraction of the composites is effectively converted into energy, reducing the cement industry's dependence on fossil fuels.

The Call for Policy Recognition

Nine prominent industry associations, including EuCIA, CEMBUREAU, and WindEurope, have now called for cement co-processing to be formally recognised as a recycling process for the mineral fraction of EoL composites. Such recognition could accelerate the adoption of this sustainable solution, driving the creation of a robust waste collection system for composite materials.

A well-structured collection system would also lay the groundwork for future circular economy solutions in waste management.

Paving the Way for Circularity

As industries worldwide strive to adopt more sustainable practices, co-processing composite waste in cement production offers a pathway to significant environmental savings. With the right policy framework, this innovative method can help reduce industrial emissions and foster a more circular economy in composite manufacturing.

This breakthrough highlights a critical step forward in managing composite waste sustainably, showing that collaboration between industries can lead to innovative solutions that benefit both the environment and the economy.





CHEMSHIELD™

HEAVY DUTY CHEMICAL RESISTANT GLOVES

BAXT CHEMSHIELD are high-quality, durable nitrile glove that are resistant to a range of chemicals and conforms to the hand during use for a comfortable fit. The beaded cuff provides extra strength and helps prevent liquid roll back, while the textured palms and fingers improve grip, particularly when working in wet or oily conditions. The glove is manufactured with an ultra-heavyweight construction, which makes it very tough, durable, and long-lasting. The glove is also ambidextrous, which means you don't have to split a pair to replace a damaged glove.





At DTC we are driven to provide inventive solutions to customers' supply chain problems. In today's environment, the significance of ensuring inventory management is working correctly for a business, and having an eager, responsive, and ample customer support team to cater to any queries is fundamentally imperative. DTC excels at just that. We ensure smooth operations are maintained leading to high customer satisfaction.

Importance of VMI

Vendor-managed inventory (VMI) is a strategy in supply chain management whereby the supplier manages the inventory levels for the customer. This process has numerous benefits, including reduced stockouts, improved inventory accuracy, cost savings, improved supplier-customer relationships, competitive advantage and more. VMI helps maintain optimal stock levels and streamlines supply chain processes, ensuring that customers always have what they need, when they need it.

Our VMI Expertise

At DTC our approach to VMI is rooted in advanced systems and real-time data sharing. We understand that stock availability is a crucial facet of projects and by understanding and sharing data we can accurately prevent stockouts. DTC has a specialised workforce who are responsible for managing customer inventories and helping manage the customer relationship. This workforce works directly with the in-house team who are proactively using modern technology and industry

experience to effectively monitor stock levels, predict demand, and automatically replenish inventory. This active strategy is efficient to the extent that DTC can confidently integrate with any business's supply chain seamlessly and promptly.

DTC Difference

What sets us apart from other companies, is our commitment to personalised support. We work closely with our customers, guiding them through every step of the VMI process. DTC works tirelessly

to meet the demands of the customer's requirements, using clear communication, responsiveness, and problem-solving. Being just a supplier isn't what we're about, we want to push for improvements in the supply chain process which in turn can have a positive knock-on effect on projects and teams.

EXCELLING IN VENDOR MANAGED INVENTORY (VMI) WITH UNMATCHED CUSTOMER SUPPORT





If you're struggling with supply chain problems, feel free to contact DTC to see if we can be the solution

Tel: 023 8025 1100

Email: sales@dtc-uk.com

THE SMART MOTORWAY DEBATE: BALANCING SAFETY, TECHNOLOGY, AND CAPACITY

Smart motorways have become one of the most debated infrastructure developments in the UK. They were designed to address congestion by repurposing the hard shoulder as an active traffic lane, which provided extra capacity on some of the busiest road networks. However, their safety has often been questioned, and recent coverage by BBC's Panorama has sparked further concerns.

While media scrutiny is vital, it's equally important to delve deeper into the actual data and the responses from National Highways, the authority responsible for these roads. So, are smart motorways as dangerous as they are perceived, or is the public outcry missing key points?

Safety: A Data-Driven Approach

National Highways stresses that safety remains its top priority, and statistics suggest that smart motorways are among the safest roads in the UK. According to the latest reports, fatal and serious injury rates on these roads are lower than on traditional motorways. Yet, public perception remains wary, particularly when it comes to the absence of a continuous hard shoulder.

The BBC's Panorama program quoted figures suggesting that breaking down on a smart motorway without a hard shoulder triples the risk of serious injury or death. However, National Highways argues that this statistic lacks important context. They point out that collisions with stationary vehicles are relatively rare (3.9% of all incidents) and are not unique to smart motorways. In fact, similar accidents occur on other types of roads, particularly on A-roads, which tend to have higher collision rates.



The Misunderstood Hard Shoulder

One of the central concerns surrounding smart motorways is the removal of the hard shoulder. Many drivers see it as a necessary safety feature, but data suggests that the hard shoulder is not always as safe as assumed. Surprisingly, around one in 20 motorway fatalities occur on hard shoulders, leading National Highways to focus instead on emergency refuge areas. These designated stopping zones are safer and better equipped, featuring clear signage and direct communication links to traffic control centres. Importantly, there have been no fatalities in these emergency areas since their introduction.

Addressing Technology Concerns

Another point raised in the BBC program was the reliability of the technology used to monitor smart motorways, especially the performance of the Stopped Vehicle Detection (SVD) system. According to National Highways, this technology,

designed to detect stationary vehicles in live lanes, has undergone significant improvements. Since September 2022, it has detected over 2,000 stopped vehicles per month, with a detection accuracy rate above 98%, exceeding performance targets. Concerns were also raised about power outages affecting the technology. National Highways responded by stating that such outages tend to be localised and affect only small sections of the network. When outages occur, contingency plans are immediately activated, including increased patrols and speed limit adjustments. Additionally, the authority is investing £105 million to improve the resilience of its systems.

Emergency Services and Public Compliance

Emergency services play a critical role in the safety of smart motorways, and their access to incidents has been a concern. National Highways

asserts that lane closures and traffic management are closely coordinated with emergency responders to ensure quick access to any incidents. The key is compliance with the Red X signal, which indicates a lane closure. Non-compliance puts both drivers and emergency responders at risk, but fortunately, most drivers adhere to these signals.

The Path Forward

National Highways is not blind to public concern. As part of a £900 million investment in smart motorway safety, they are constructing 150 additional emergency refuge areas, with 13 completed in 2022 and many more on the way. This expansion is expected to significantly reduce the distance between refuge areas, further improving safety for drivers who break down.

Despite the negative attention smart motorways have received, they are designed to address real challenges: congestion and the need

for expanded capacity. Without them, the UK's road network could face gridlock, pushing drivers onto less safe roads. However, National Highways acknowledges the need for continuous improvement in public awareness and confidence.

The debate surrounding smart motorways is far from over, but one thing is clear: balancing road capacity with driver safety remains a complex challenge. Whether smart motorways can ultimately win over public trust will depend on both the effectiveness of the technology and the ability to bridge the gap between perception and reality.



A LOOK INTO THESE



AEROSPACE INDUSTRY IN 2025: KEY PREDICTIONS

The aerospace industry is set for rapid growth with a projected global market value of \$430.9 billion by 2025, growing at a 7% CAGR. Key trends include:

- Additive Manufacturing: Expected to reach \$6.75 billion by 2026, driving innovation in lightweight materials.
- Aerospace Composites: Forecast to hit \$41 billion, supporting the demand for lightweight, durable materials.
- Polymer 3D Printing: Projected to grow to \$1.6 billion by the end of 2025, facilitating faster production cycles.
- Satellite Sales: Estimated at \$350 million.
- Supersonic Flight: Expected to begin by 2025.
- Other impactful trends include AI, blockchain, digitisation, and immersive technologies, driving efficiency and safety.

MARINE INDUSTRY IN 2025: TRENDS AND GROWTH AREAS

The marine yacht industry is expected to see growth across multiple sectors:

- Electric Yachts: Manufacturers like Feadship aim for emission-free yachts by 2025.
- Yachts Under 20 Meters: Significant growth due to versatility and recreational use.
- Yacht Charters: Growing tourism fuels the charter market, focusing on luxury cruises.
- Glass Integration: Lower costs for large glass panels are driving innovation in yacht designs.
- Autonomous Vessels: Expected to improve safety, reduce costs, and increase efficiency.

Growth is also supported by economic expansion and an increase in high-net-worth individuals.

INDUSTRIES FOR 2025



COMPOSITE INDUSTRY IN 2025: EXPANSION AND INNOVATIONS

The composite industry is expected to reach \$121.01 billion by 2025, driven by:

- **Lightweight & Corrosion-Resistant Materials:** Key for aerospace, automotive, and wind energy sectors.
- **Innovation:** Opening new application markets.
- **Sustainability:** Composites are critical in EVs, hydrogen storage, and wind energy.

- **Recycling:** The UK leads in composite recycling, enhancing material supply resilience.

Trends include high-performance resins, carbon fibre, biomaterials, nanocomposites, and additive manufacturing.

The automotive industry will see significant shifts by 2025, including:

- **Electrification:** EVs to account for 10% of new sales, with 30% on the road by the 2030s.



AUTOMOTIVE INDUSTRY IN 2025: ELECTRIFICATION AND BEYOND

- **Autonomous Driving:** Advancements, particularly in urban environments.
- **Connectivity:** Connected car market projected to reach \$191.83 billion by 2028.
- **Micromobility:** Growing as a solution for last-mile urban transport.

- **AI and IoT:** Enhancing vehicle interaction and performance.
- **Drive Trains:** A broader range of options including hybrids and electric vehicles.

These developments will reshape production, sustainability, and consumer experience.



DTC Ltd.

Castlehill Business Park,
Flexford Road, North Baddesley,
Southampton. SO52 9DF

Tel. 023 8025 1100

Email: sales@dtc-uk.com

www.dtc-uk.com