

DARTFORD COMPOSITES



# Rail Industry Products & Services

Delivering Affordable Quality & Innovation for the Future

# Who Are We?

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Dartford Composites Ltd is a specialist manufacturer of high quality GRP and GRP(ph) fire retardant components.

Established over 30 years, during this time we have built an understanding of the rail industry and a reputation of working with our customers to respond in a timely and cost effective manner. We are approved suppliers to several Train Manufacturers and Train Operating companies including: Bombardier, Siemens Mobility, TFL (Transport for London), Virgin Trains, Govia Thames Link and South Eastern Trains to name but a few!

We believe that key to working successfully in the rail industry is understanding our customers needs.

We work closely with our customers from the design conception stage through the full product development cycle to production of the finished product to enable them to leverage our expertise and experience in both GRP and the rail industry sector.

We are ISO9001(2015) accredited and are also approved applicators of specialist paint products for Dupont, Mankiewicz and most globally recognised paint suppliers.

# Manufacturing Processes

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We produce products using a range of core specialist base materials all of which are fire rated and rail industry approved these include:

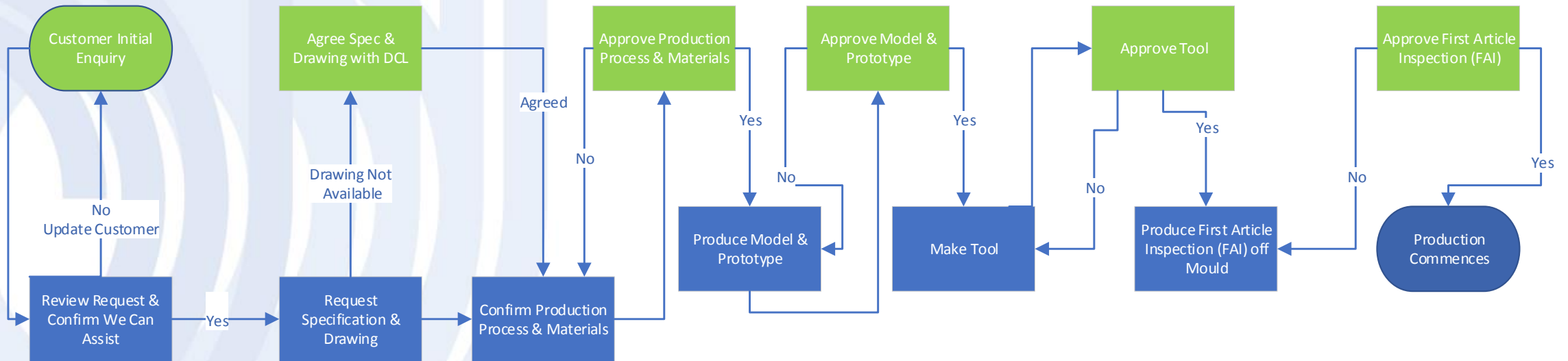
- Class 1/0 Fire Rated GRP Systems.
- Phenolic GRP Systems
- Twintex – Polypropylene/Glass Fibre Moulding
- Fire Rated Gel Coats & Paint Systems to compliment the fire rating of the composite product.
- Full colour matching service

We use a number of specialist manufacturing processes which are ergonomically aligned to ensure delivery of a high quality product to individual customer requirements.

- fiRST Silicon Moulding System
- Resin Injection Moulding
- Vacuum infusion
- Vacuum assisted ovens
- Traditional GRP Laminating Systems

# New Product Development Process

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This process is the intellectual property of Dartford Composites Ltd



# Core Product Range

Whilst all new products are manufactured to the individual customers requirements and specifications we do have over the years built up a core product range focusing on our specific areas of expertise and experience including:

- Toilet Sinks & Mouldings
- Honeycomb Composite Panels.
- Polycarbonate extrusions
- Seating (Full Seats & Seat Shells)
- Litter Bins & Frames
- Washer Bottles
- All Interior & Exterior GRP/GRph Panels
- Exterior Valances
- Rock Shield Covers
- Pit Boards
- Rubber and Aluminium Extrusions
- Grab Rails
- Graphite Shims
- Fire Extinguisher Covers
- Fleet Modifications

# Sinks

Dartford Composites Ltd were approached to be involved in the Project 21 refreshment of the East Coast Mainline fleet. Working with the customer we created a new design sink unit that ensured a light, modern and spacious feel to the toilet area. The final design was installed in the entire fleets standard and UAT toilets.

The design also called for improvements to the servicing time which was achieved by using a modular design which improved access when required.

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Prototype Model



Standard Sink

UAT Sink

# Toilet Shrouds

Working with Eurotunnel, Dartford Composites created a combined toilet shroud for the Breda vehicles and a revised shroud for the Costa vehicles. Working to the highest fire and smoke emissions we achieved the customers requirements in a cost effective and prompt manner.

Part of the brief was to have minimal visible fixings and this was achieved utilising the vehicles existing brackets.

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Costa Toilet Shroud



Breda Toilet Shroud

# Seat Shells

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Dartford Composites worked with the customer to create a replacement seat shell that maintained the required fire rating, was more cost effective and had a longer expected life. Using the fiRST silicone mould vacuum system enabled the seats to have the required uniformity whilst improving the cost effectiveness of production.

A substantial saving that the customer benefited from. We invested in the fiRST machinery to introduce this innovative new moulding system to the rail industry and are currently using it on further railway applications.





# Rock Shield Covers (Twintex)

Working with Bombardier Transportation we successfully transferred production of the RockShield covers to our Erith facility. These products have a unique flexibility that ensures a longer life in an extremely demanding environment.

Using a special polypropylene and glass fibre woven cloth these items are moulded at a high temperature whilst under vacuum. After trimming they undergo a pyrosil flame treatment prior to having an intumescent paint treatment.



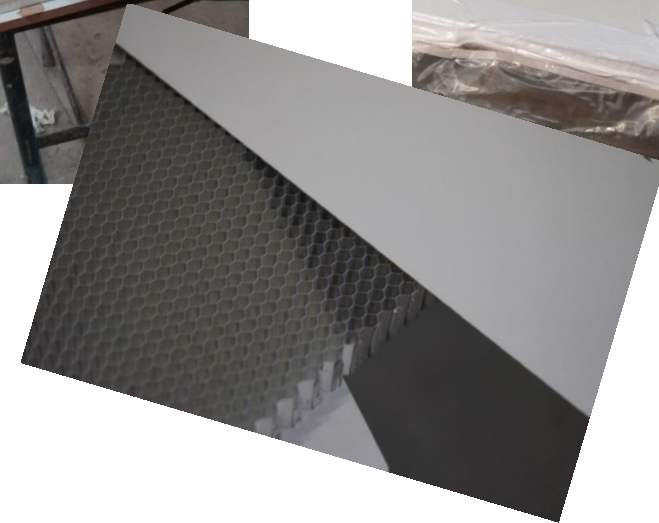
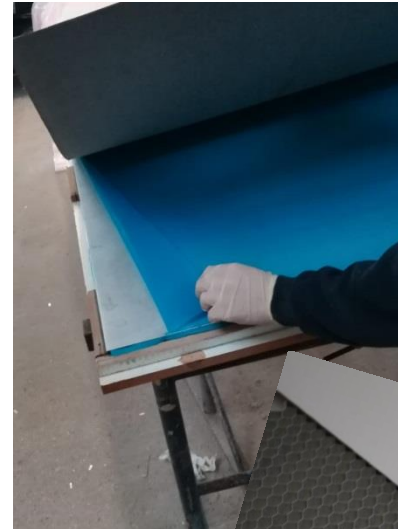
# Aluminium Honeycomb Composite Panels

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In 2018 Dartford Composites invested in a new larger capacity vacuum fitted oven capable of holding an entire train cab, with a temperature range of up to 400°C. By utilising this equipment we are now able to produce honeycomb panels up to 2400x1200mm, in a range of thicknesses. This enables small quantities of panels to the exact customer requirements.

By utilizing our spray paint capabilities we are able to colour match even the smallest batch run. Panels can be provided in sheet sizes or complete bespoke panels including fitting inserts





# Vehicle Arm Rests

## Eurotunnel Breda vehicle arm rests

Whilst carrying out a recent project for Euro Tunnel we were asked to examine the possibility of creating fire rated protective covers to protect rubber seat arms from damage.

These trains are over 20 years old and the process of using a protective cover over the tired rubber arms improves cleaning and customer perception in a cost effective manner.



# Refurbishment & Damage Repair Services

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## Refurbishment Services

Dartford Composites has built an enviable reputation for offering affordable efficient train refurbishment services.

We work closely with you and where appropriate your other suppliers to support ensuring on-time project completion to high quality standards.

Our refurbishment services include:

- Interior & Exterior passenger carriage refurbishment.
- Dilapidation Project Support for GRP Products including seat shells and window frame repairs.
- Supply of on-site teams to repaint interiors and exteriors.
- Refurbishment of tables and other key interior parts.
- Reverse engineering to supply new replacement GRP components.

## Damage Repairs

Dartford Composites has developed a specialist damage repair process which we have completed on over 200 trains to deal with impact damage.

We offer a comprehensive GRP repair service this includes utilization of a specialist on-site team for repairs combined with manufacturing support where required from our factory based team.

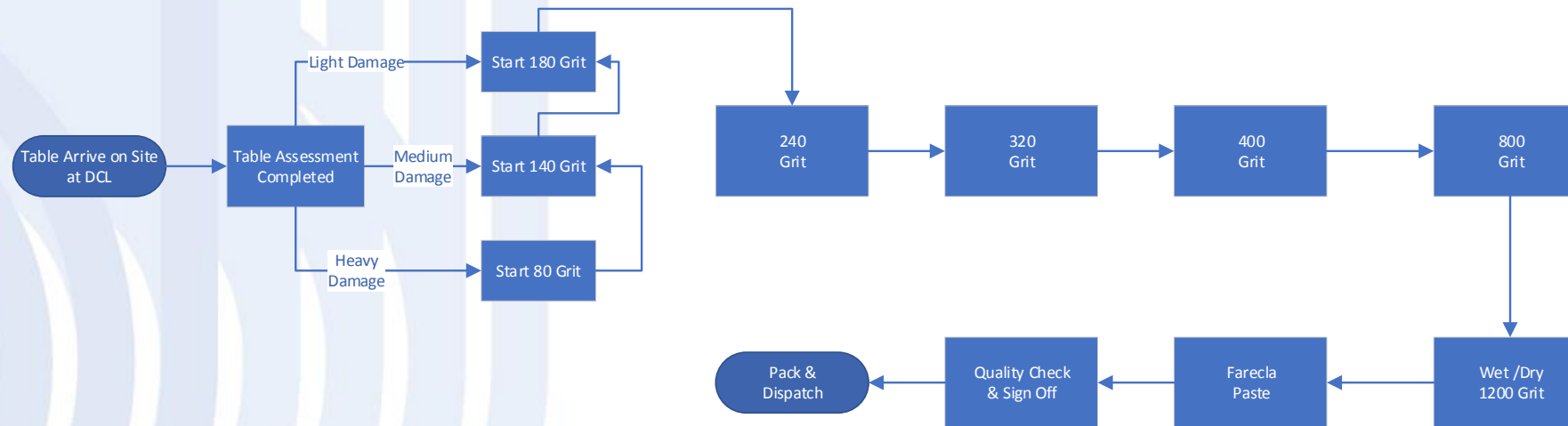
We understand that time is of the utmost importance and we will always respond in a timely manner. When finished, the repair will be invisible with at least the same structural strength as the pre-damaged area. We will assess the damage within 24 hours of a call out and have a team in place to commence repairs 24 hours thereafter. This response and the quality of the repairs will minimise the unit downtime and ensure the passenger service is protected.

# Refurbishment Process Example

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## Table Renovation Process



## Summary

At each step of the above process the renovation technician will assess progress on the renovation and if required will revert back to the previous step and repeat this before progressing to the next stage in the process.

A full quality check of the table is completed prior to factory sign off approval being given and the table progressing to pack and dispatch.

We use papers of different grit grades and relevant to the tool being used as part of the renovation process.

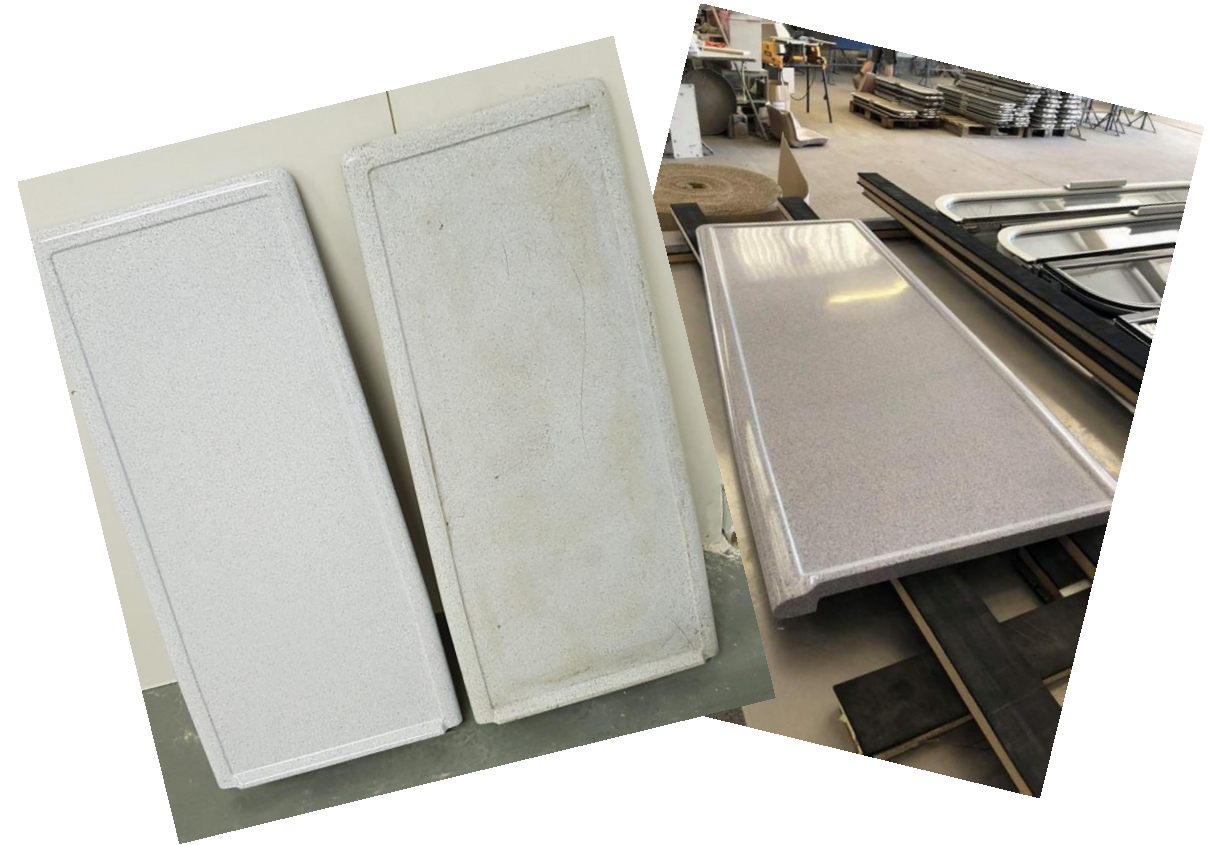
This process is the intellectual property of Dartford Composites Ltd.

# Carriage Tables Refurbishment

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This table was a hard moulded item that had years of use. We were asked to renovate the table. Through a process of polishing with different grades of abrasive papers the surface was brought back to life. The rear board was replaced with marine ply and coated with an intumescent paint for additional fire protection. Leaving the item ready to provide many more years service.



# C2C Project

Dartford Composites supported C2C's refurbishment project the work included both repair of existing seating and supply of new seating and on site interior paint refresh.

Whilst the on-site team carried out the required paint refresh a team in our Erith facility manufactured new seat shells and repaired and painted those being reused.

The demand was for in excess of 200 seat shells per week. Either replaced with new or refurbished.

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# Damage Repair

The pictures show a before, during and after shots of a repair carried out to a class 180 cab after a high speed bird strike.

No tooling was available so a temporary mould was taken from the opposite end to create an exact copy to perform the repair. Working to tight timescales this unit was completed and ready for service less than 72 hours after the initial phone call from the depot.

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# Corporate Social Responsibility

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At Dartford Composites Ltd, we have a full policy in respect of our corporate and social responsibility the key points within this that we feel it is important to share with our customers are:

- Our commitment to ensure all employees are treated with respect and courtesy and given the opportunity to develop and progress their skills and experience during their career.
- To ensure that all Health & Safety regulations on site are adhered to and that employees have a safe and healthy environment to work in.
- To, wherever possible, engage with and procure from local downstream suppliers in our supply chain.
- To commit to delivery of our environmental policy by reducing our carbon footprint through recycling and economical energy consumption.
- We actively invest in R&D, both in terms of being open to ideas and suggestions by employees and in investing in new technology and equipment.