



*Case
Study*

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**Class 185 DMU
Seat Refurbishment**

SIEMENS

DIAMOND
RAIL SERVICES

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Our Client

Siemens Mobility is a separately-managed subsidiary of Siemens, arising from a corporate restructuring effective 1 August 2018. With a global reach, managed from their headquarters in Munich, Siemens Mobility has four core business units:

**Mobility Management
Rolling Stock**

**Railway Electrification
Customer Services**

Employing 34,000 people with an annual revenue of 8.8 Billion Euros, Siemens Mobility is one of the leading rolling stock and infrastructure providers to the worldwide railway industry.

In the UK, Siemens supply and maintain approximately 30% of mainline rolling stock at several of their own depot facilities including Bletchley, Glasgow, Manchester, Northampton, Southampton and York and are investing up to £200 million in developing a new train building and supply chain facility at Goole in East Yorkshire.



**New UK Train
Building Facility**



**34,000
Employees**



**Supply and Maintain
30% of UK Rolling Stock**

SIEMENS

Project Purpose

Introduced into service in 2006, the 52 class 185 Siemens Desiro DMU trains operated by Transpennine Express were approaching their mid-life.

Siemens, in association with Eversholt (the trains owners) and First Group (the new operator of the Transpennine Express franchise) embarked on a full refurbishment of the fleet.

Primarily this was to provide a vastly improved customer experience for passengers early in the franchise, whilst Transpennine Express procured and introduced their fleet of new trains. In addition, this served as a full mid-life refurbishment for the two thirds of the fleet, which were planned to go off lease, and would be looking for prospective new operators.



*Pre-refurbishment
class 185 interiors*

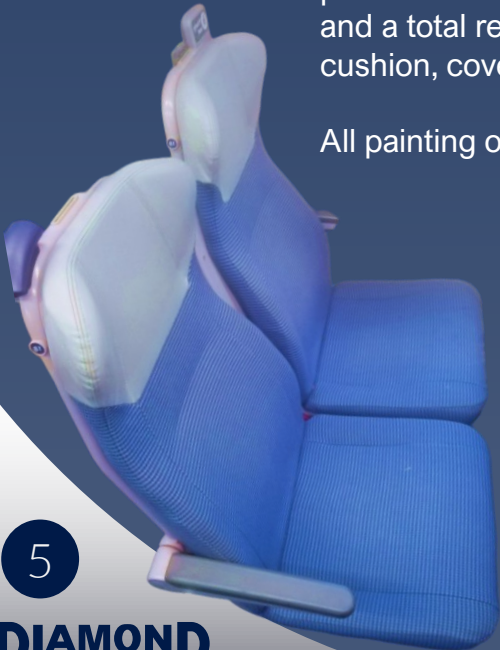


Scope of Work

Contracted to supply all standard and first-class seating for the Class 185 Transpennine fleet. DRS conducted full fire testing to **GMRT/2130 iss4**, which further calls upon tests, **BS 476: Part 6**, **BS 476: Part 7**, **BS 6853: 1999 Annex B Clause B.2** and **BS 6853: 1999 Annex D Clause D.8.5**.

Our scope also included refinishing grab handles, meal trays, shells, painting, manufacture of new and refurbishment of old. The full seats and all associated parts fell within our scope for this project. Design of laminates, colour finishes and a total redesign of the first class seat with extended head rest, back and seat cushion, covered in the new material, e-leather, was specified.

All painting of the first class was undertaken.



The Trains

The scope of work covered the full fleet of Class 185 DMU trains operated by Transpennine Express

52 x 3 Car



52
Trains



156
Vehicles



9,464
Seats

5

Materials

The client specified a flat cloth seat with an e-leather head rest in standard class and a full e-leather seat in first class. This required compliance to **GMRT/2130 iss4**, which further calls upon tests;

BS 476: Part 6,
BS 476: Part 7,
BS 6853: 1999 Annex B Clause B.2 and,
BS 6853: 1999 Annex D Clause D.8.5.

Foam, interliners and top covers were designed, trialled and produced using our specialist partners and suppliers to achieve this project. Jigs were created for the internal frames and foam moulding tools created to produce the foam in both standard and first class.

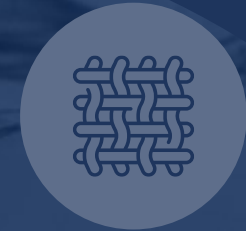
The metal seat pan and back shell of the standard class was powder coated and the GRP shell of the first class seats were painted using approved paint methods. Paint fire testing was conducted to demonstrate compliance to all the relevant standards. A re-designed extended first class grab handle had to be tested for load by means of a push test. This was approved by Siemens and produced by DRS to then be installed on the re-designed seat. Paint fire testing was conducted to demonstrate compliance to all the relevant standards.

DRS selected Camira Fabrics to supply all standard class covers for this project which were produced and delivered on a weekly basis as required with zero defects. This consisted of 167 base and back covers a week for 51 weeks.

camira

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Materials Used
Flat Cloth
E-Leather



Material Volume

<i>E-Leather</i>	<i>Moquette</i>
80 Rolls	380 Rolls
(6,177 Sq Meters)	(9,493 Sq Meters)



Material Output

<i>1st Class</i>	<i>Std Class</i>
Approx. 30	Approx. 25
Seats Per Roll	

Project Delivery

The design, materials and composition was taken from the schedule of finishes document and transferred into reality for a full seat mock-up. Once agreed, samples were sent for testing and through various iterations the interliners to support the designer's vision were chosen. This process was fully managed and controlled by DRS.

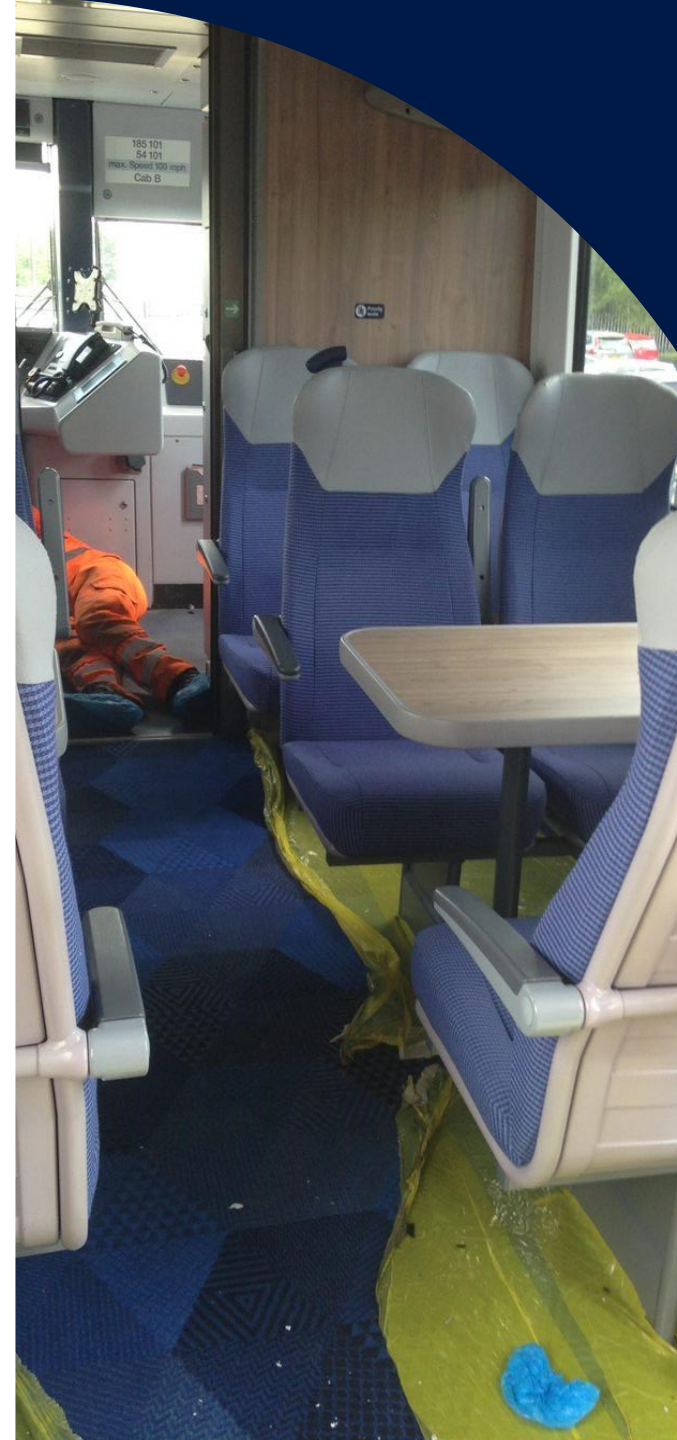
The results were collated and presented to the client for review and a third party NOBO was contracted to review and give validity to the reports. Following on from this we were contracted to complete a full strip and fit of 51 units over 51 weeks at the client's site in York. Seat construction teams were employed at our facility to build each seat and once the quality check process had been completed, they were then loaded into the appropriate packaging for each delivery/depot/install.

All delivery personnel were fully trained and inducted. A swift load and unload process following depot risk assessments and method statements was affected to allow the fitting team to maintain a light footprint on the clients site.

A dedicated install team fitted pedestals, frames, seat shells, tables and cushions into the unit, working to ensure all checks were conducted and the customer sign-off process was adhered to. Stillages were adapted to deliver goods to site to avoid any damage.

Our site teams (headed by the on-site team leaders) remained available until the unit was accepted into service allowing for any snagging to be completed immediately.

One unit a week was delivered to include full strip out from the train, full overhaul at DRS site and then full installation back at the client's depot to enable the end client to fulfil its very challenging franchise commitment.



Project Logistics

Resources were mobilised to York depot for this project. This involved our transport planner using our dedicated vans together with our chosen haulage partners on a weekly basis to collect and deliver the seats from site.

Our fleet of vehicles is tracked in real time and journey updates are sent to the client, so the on-site stakeholders are notified of arrivals and departures daily.

Tracking information shows time, speed, course, arrival time and incident reports. This information can be viewed by the client for a period of time specific to the delivery of their goods allowing the client to align on-site resources if required.



This contract required logistics management and transportation to one geographic location



Lead time from collection to return delivery at required site:

≡ 1 WEEK

Contract Details



Contract Value
at Award

£ 3.4 Million



Contract Value
on Completion

£ 3.6 Million



**Contract
Delivered**

30/03/17-27/07/18



**Client Contact
for this Contract**



Post-refurbishment class 185 interiors

Please contact us at Diamond for
details of references and/or
testimonials about this project.