

Minding the Gap Between Risk & Safety

In the preview to our Rail Safety Report 2019, we discuss why unlocking the power of composites holds the key to accelerating improvement to the Platform Train Interface.

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Tom Bowman
Commercial Director, Dura Composites

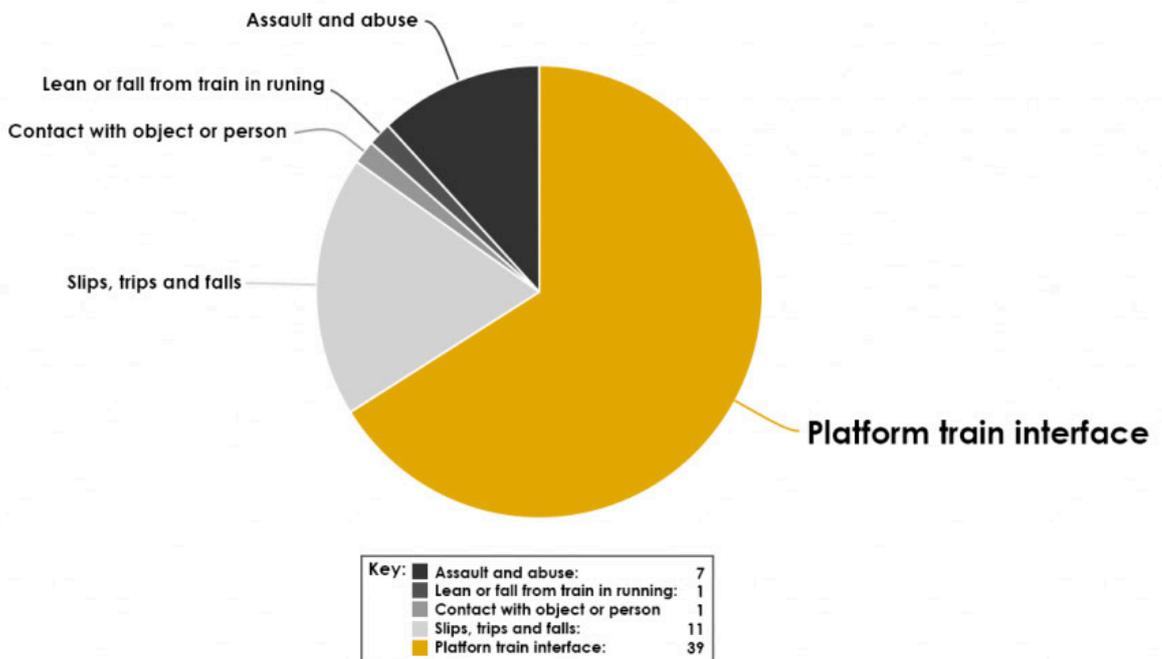
Britain's railways are the safest in the EU, but with ten station fatalities in 2018/19, there is still much to be done to reduce risk.

Dura Composites are launching a report into safety on the UK rail system, providing a spotlight on efforts by the government, rail operators and manufacturers to increase safety, obtaining insights from industry bodies like Composites UK and British Transport Police.

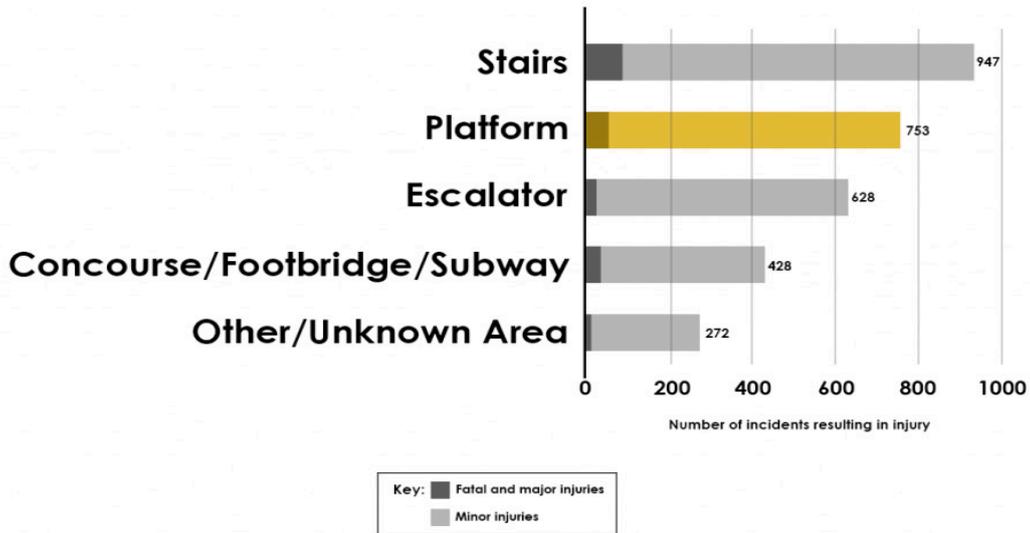
In this preview to our Rail Safety Report, Tom Bowman, Commercial Director at Dura Composites, discusses why unlocking the power of composites holds the key to fast-tracking improvements to the Platform Train Interface.

[According to the Rail Safety and Standards Board \(RSSB\)](#), incidents at the Platform Train Interface (PTI) account for almost half of the total passenger fatality risks on the mainline railway network, and about one-fifth of the overall passenger Fatality and Weighted Injury (FWI) risk. To manage this risk, the PTI must be acknowledged as a fundamental part of the railway system and should form an integral part of all current and future design, build and remedial works – rather than be seen as a standalone issue.

Fatalities involving passengers and the public on trains and stations (2007-2017):



Location of passenger and public slips, trips and falls in stations (2018/2019):



The Gap is Growing

As reported by Graeme Paton, Transport Correspondent for The Times, the gap between the UK's trains and platforms is getting bigger, with the introduction of thousands of new carriages resulting in a growing gap for passengers trying to board and disembark.

There were ten fatalities at stations in 2018/19, which is higher than the recent average. Seven of these involved the platform edge, as at Wimbledon on 25 July 2018, when a passenger fell and was struck by a departing train.

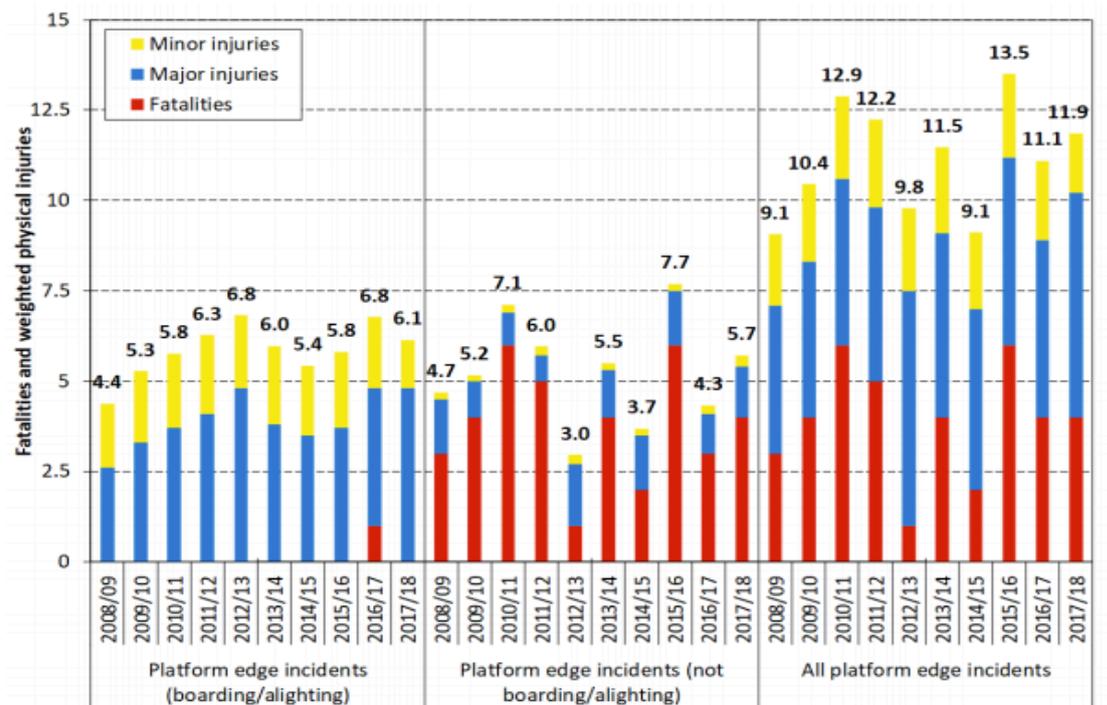


Figure 5.2 Harm at the platform-train interface (excluding workforce)

At Ponders End, three days later, a similar event occurred as a passenger was leaning over the platform edge. This demonstrates a clear need to rethink the safety element of UK station platforms.

Risk to Passengers & the Public

With over 4.7 million rail journeys made in the UK every day, the stations where people start and end their journeys are a key focus for improvements to safety and accessibility. Mark Atkinson, chief executive at disability charity Scope has noted that 40% of disabled people experience problems using trains and on 8th July 2019 the government announced that it was opening a £20m fund for accessibility improvements which are designed to reduce hazards for disabled passengers.

But risk at the PTI is not limited to passengers. Members of the public, visiting stations for reasons other than travel such as shopping, socialising, or meeting passengers are also affected by PTI-related risk. Recent research has shown that modern day distractions and general carelessness means that the public are unwittingly putting themselves at risk on train platforms – and the RSSB's new Respect the Edge campaign aims to raise awareness of the potential dangers.

Key Areas of PTI Risk Include:

- Legacy platforms that do not conform to the current standard
- Varied rolling stock, stepping distances and heights
- Lack of suitable disability access
- Crowding on platforms within stations
- An ageing population
- Distractions – the increase in use and dependency on technology
- Improper footwear
- The effects of adverse weather

But, with more than 7,000 new carriages set to be introduced by 2021 to replace ageing rolling stock and accommodate growing passenger numbers – educating passengers on the risks is only half the story. The onus is on the rail industry itself to design-out the risk wherever possible.

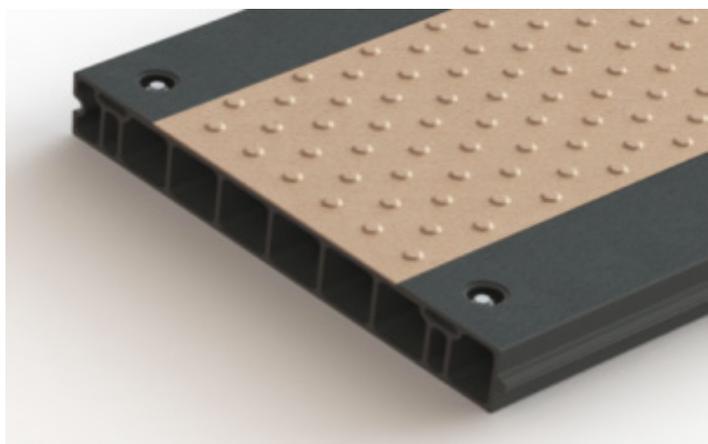
Designing out the Risk

Dura Composites' Commercial Director, Tom Bowman, believes the answer lies in accelerating the adoption of advanced Glass Reinforced Polymer (GRP) composites which can be easily deployed as anti-slip and height-adjustable platform surfaces to accommodate the new rolling stock and improve overall safety.

As reported in The Times, station design guidance states that platforms should ideally be 73cm to 74.5cm from the tracks and 89cm to 91.5cm high and that the total gap between the train doors and platform should not exceed 20cm. But in reality, hundreds of Victorian platform installations are out of gauge with these requirements, leaving Network Rail with a real challenge.



After more than a century of heavy use, they now require replacement or refurbishment as they reach the end of their service life, with allowance for the passage of freight trains, track maintenance and inspection adding to the complexities. Traditionally, remedial works to ageing out of gauge platforms using materials such as concrete can require long possessions and Road Rail Vehicles are required for the transportation of associated materials. Even when concrete is used, there has still been no easy solution to fixing the problem of stepping distances between the train and the platform when subsidence means they have become out of gauge. Until now.



With 23 years' experience in designing and manufacturing cutting edge composites, Dura Composites' strategy for improving the passenger train interface has been to create market-leading composite solutions for the rail industry which are designed to reduce incidents and accidents through clever features such as anti-slip surfaces and height adjustable capabilities, which can be installed efficiently and cost effectively across the network.

Dura Platform allows contractors to replace or overlay onto damaged or subsided platforms a low maintenance, modular, lightweight, height adjustable structure that enhances safety with anti-slip surface options, in-built water management, integral lines, integral lighting, snow melting capability and that has similar or lower overall project costs than concrete. The panels have three patented features which make them unique in the marketplace and have been deployed in a wide range of station environments.

Dura Platform in Action at Marsden Station

Network Rail, working in partnership with Northern and TransPennine Express, [recently completed a vital project at Marsden railway station](#) to fix what was termed by passengers as a “danger platform” with an astonishing 18in (45cm) step from the train to platform that had caused passengers problems for years.

Improvements costing £350,000 included the deployment of Dura Platform and were carried out by railway specialists Hammond ECS Ltd working for rail operator Northern. Raising the platform with Dura Composites' simple overlay solution has resulted in the removal of the need for single door operation, the process where only one set of doors on the train open, making boarding and alighting the train much easier.

Chris Nutton, Major Projects Director for TransPennine Express, commented:

“ We are pleased that work to raise the height of the platform is now complete. We have responded to customer feedback and this will make it easier for customers to comfortably get on and off our trains.



The following images show the reduction of PTI at Marsden Railway Station platform after the installation of Dura Platform. The 'before' image shows a significant gap between the train step and the old concrete platform while the 'after' shot demonstrates how Dura Platform can reduce the Platform Train Interface gap to make boarding easier and reduce risk.



Photograph taken by Anne Ramsden at Marsden Railway Station

Photograph taken by Hammond ECS Ltd

Why are Composites the Answer?

One of the most notable benefits of composites, such as GRP, is their lightweight structure. When it comes to the rail network, and in particular, station platforms, the alternative these GRP platforms are usually replacing is concrete. Composite platforms are easier and faster to install, which also means shorter possession times.

Saving Time:

Composite platforms, such as Dura Platform, can be installed rapidly by skilled contractors, it requires fewer possessions compared to a conventional re-build approach and allows for work to be carried out at difficult locations where a more traditional approach would be prohibitive. The non-sparking and non-conductive properties of composites make them easy to install and also lead to shorter possession times.

Saving Money:

The overall outlay cost is less than a traditional re-build approach, and adjustments can be made quickly and easily to suit the requirements of future rolling stock.

Dramatically Improved Lifecycle:

Composites have a longer lifespan. Dura Platform has a design life in excess of 60 years, making it a truly future-proof solution. There are many clever features of the product that allow it to be tailored to the site conditions. The hidden fixing system minimises trip hazards, and the platform is also crank-able to create an instant 1:40 fall to manage drainage. A solid surface on the 600mm plank removes the need for longitudinal cover plates to cover the fixings and provides a uniform, aesthetically pleasing finish.

Low Maintenance & Anti-slip:

Not only is the composite surface incredibly low maintenance, but additions such as the yellow tactile integrated with the platform edge have practically eliminated the ongoing cost of platform edge painting.

Dura Platform (40 and 100) achieves above a 55PVT value in both wet and dry conditions, making it an ideal way to help mitigate the increased number of slip, trip and fall injuries which have occurred at UK stations over the past year.

Minding the Gap Between Risk and Safety is a preview into Dura Composites' upcoming rail safety report, which focuses on exploring the progress made on the UK rail network, and more importantly, what still needs to be done.

Alongside PTI safety, the report also includes:

- *Fire safety standards for infrastructure*
- *Electrification and its challenges*
- *Technology and innovation*
- *Passenger and worker safety and statistics*
- *CP6 and the lifecycle costs of composites*
- *Public attitudes towards rail safety*
- *Anti-suicide and wellbeing measures*

A number of industry bodies and companies including RIA, Rail Alliance, RSSB, Network Rail and TFL, are working with Dura Composites and other industry experts to unlock the safe application of GRP on their assets.

The group is dedicated to championing the growth and correct application of GRP composites in the rail sector and promoting its suitability for a range of rail applications.

Register your interest for the report here:

<https://www.duracomposites.com/rail/minding-the-gap-between-risk-and-safety/>

To book a free technical consultation for your next rail project, call us on +44 1255 440291, or visit the website at: www.duracomposites.com/rail

