

Rails of Sheffield opt for Carbon® Digital Light Synthesis™ technology to create first mass-produced 3D printed wagons



Model railway retailer, Rails of Sheffield, sought to fulfil a demand for niche products in their hobby market that would not normally justify a full production run using injection moulding processes

Rails of Sheffield are the second largest retailer of railway modelling items in the UK. They also manufacture specialist, museum-quality, niche products for collectors under their own label. Their ethos is simple: these products must be researched, designed and produced solely in the UK.

The Challenge

Rails of Sheffield were determined to create a viable, niche product that not only satisfied its market in terms of price, but also in terms of longevity and durability. Key to the success of the product would be the ability to include a level of detail that would be impossible to reproduce through injection moulding; and the ability to minimise the number of parts included in its assembly.

The Solution

Rails of Sheffield knew from the start that 3D printing (additive manufacturing) would possibly provide the solution to their needs. However, the common desktop technology used by the hobby market to print wagons and coaches could neither deliver on the detailing

required, nor on the economies of scale necessary to achieve in order to produce models in sufficient quantity. Furthermore, the resins available were unlikely to be robust enough for producing ready-to-run products.

Having explored a range of 3D printing and additive manufacturing options, Rails were delighted to discover that Carbon® Digital Light Synthesis™ technology was available in the UK. Moreover, it was available 'just up the road' from the Rails headquarters.

Rails met with Paragon Rapid Technologies in November 2018 to explore the opportunities for production Carbon's technology has to offer.

Designing wagons for Carbon®

The first step in the process was to really test what was achievable with the technology. Carbon's technology is designed to print multiple parts in one build, and the greater the efficiency in use of build space, the more cost effective the build will be when it comes to producing large numbers of product.

