

CASE STUDY | CLARKS SHOES AND RPS SERVICE AND SUPPORT

Clarks Shoes, shaping future footwear development and innovation with 3D printing and RPS.

British footwear brand and pioneer **Clarks Shoes** choose RPS to service and support in-house 3D printing stereolithography technology.

Clarks is an iconic British footwear brand and pioneer in shoemaking innovation, known globally. Designing and producing footwear for nearly 200 years, Clarks has invested in the latest ideas and technology over the decades. Today, Clarks continues to be at the forefront of technology, investing in additive manufacturing to prototype concepts for shoe development. Clarks has chosen British 3D printer manufacturer RPS, to service and support their in-house stereolithography technologies, helping Clarks shape future footwear development and innovation.

Clarks was founded in 1825 by entrepreneurial brothers Cyrus and James Clark who started the footwear business using off cuts of sheepskin rugs to make slippers. Innovators, the brothers were passionate about new technologies and finding ways to adopt this in shoe production. This set the tone for years to come with Clarks investing in the latest ideas and technology

such as manufacturing their own Crispin sewing machine in 1862, adopting team system factories in the 1880's, using steam power for production in the 1880's and 1890's and investing in IBM computer systems in the 1950's to record and control stocks across the business, a first in the UK. Clarks also looked at ways in which they could streamline and cut costs of producing and manufacturing their footwear.

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Clarks





NEO800 - Designed and Manufactured by RPS Engineers in the UK

With traditional footwear development, Clarks would design and specify a “last” to use which is a mould the shoe is made on. From here, a sketch of the design is drawn and prototype shoe made, with patterns and pieces of the shoe cut and stitched by hand.

The sole would have been hand modelled in wax first then when approved, a sample mould created. Materials such as rubber, PU, TPU or TR is poured or moulded to produce a finished sole and then stuck to the bottom of the shoe. This traditional method of shoe manufacturing required many hours of labour and cost, which led them to explore the idea of 3D printing technology.

In 1998, Clarks invested in 3D printing technology and CAD design to create shoe sole prototypes for footwear development. Printed using stereolithography (SL) technology, the prototype became a silicon mould pattern to replace the traditional wax model. The silicon



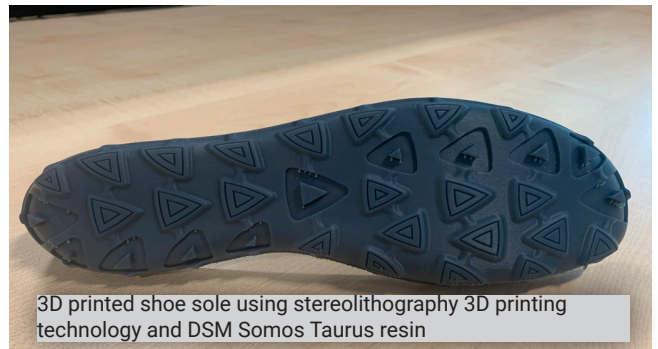
RPS services and supports a range of industrial 3D printing systems, including laser refurbishment.

mould was then used in the vacuum casting process to cast polyurethane (PU) prototype soles. 10-15 outsoles could be cast from the same mould allowing multiple prototype shoe samples to be produced quickly and

easily. Clarks could also 3D print soles overnight or during the day while other members of the development team work on other projects, saving time and costs.

RPS are the first point of call for supporting Clarks in-house 3D stereolithography technologies.

A British 3D printer manufacturer, RPS was founded servicing 3D printers and supporting customers globally. The experience and expertise gained in the field helped the RPS engineers understand 3D printing technologies and customer needs, leading them to design and manufacture the RPS NEO800 stereolithography system. The friendly and approachable RPS team provides the knowledge, experience and expertise required to service, support and maintain Clarks in-house 3D printer. RPS are also swift to respond to any



3D printed shoe sole using stereolithography 3D printing technology and DSM Somos Taurus resin

issues, reducing any downtime during critical periods of shoe development giving Clarks the reassurance and confidence that they need.

Clarks has seen the benefits of utilising 3D printing technology in footwear development compared to traditional methods. Benefits include the ability to create complex designs, plus time and cost savings. Now, Clarks are looking into more ways to innovate using 3D printing, investing in materials and processes with the aim of taking 3D printing into production.

Clarks are true leaders of innovation and technology and continue to invest in future developments and ideas like the Clark brothers did nearly 200 years ago. Clarks will also continue to collaborate with partners such as RPS, who share the same vision – utilising 3D printing to shape design, development and manufacturing of the future.