



Press Release

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Laser-cut face guards to shield Covid-19 key workers

Innovative face shields for key workers fighting Covid-19 can be made more quickly than other guards thanks to laser-cutting technology.

Technicians at the University of Edinburgh developed the shields – which take around 70 seconds to produce – to help meet unprecedented demand for protective gear during the pandemic.

The guards have a full-face visor and adjustable headband, and are made from sheet plastic using an automated laser-cutting machine.

The University's School of Engineering had already been using 3D printing to make headbands for face shields, with students and research, technical and academic staff producing them in the School's laboratories and their own homes.

The School has donated nearly 1200 shields made in this way – and has hundreds more ready to deliver – to local health and social care providers including hospitals, a hospice, a dental practice, and a housing association.

However, with 3D printer filament – plastic thread used to print 3D structures – becoming harder to source, and because it can take several minutes to print parts, the team developed a laser-cutting approach.

The new shields are much quicker to make and are also believed to be reusable, the team says, whereas 3D-printed ones are intended for single-use only.

Building on open-source designs available online, technicians developed an improved face shield and began work on production. More than 300 of their laser-cut shields have so far been donated, and further deliveries are expected in coming days.

The team is currently able to produce up to 1000 laser-cut shields per week and hopes to boost capacity by using other laser-cutters on campus.

Other departments are involved in producing face shields, and staff in the School of Engineering are collaborating with colleagues across the University on a range of Covid-19 related projects.

The initiatives are part of the University's response to the pandemic, which includes multi-million pound research projects and voluntary support provided to the NHS by final-year medical and nursing students.

More information on how the University is supporting global efforts to curb Covid-19 can be found here: <https://www.ed.ac.uk/covid-19-response>

Dr Iain Morrison, GP Partner at Newbattle Medical Practice, said: "The face shields received from the University are vital in protecting staff and in turn, securing vital services across Midlothian. For GPs, district nurses and care staff, the face shields offer security and confidence to conduct their duties. Many thanks for your exceptional generosity."



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Dr Katherine Dunn, who is coordinating Covid-19-related activities in the School of Engineering, said: "We are using all the technology and know-how at our disposal to support the fight against Covid-19. We have already used 3D printing to make nearly 2000 headbands for face shields, but the new laser-cut design can be made more quickly, and is expected to be more reusable. I am delighted that the team's hard work is now paying off and the face shields are starting to get to the front line."

Professor Conchúr Ó Brádaigh, Head of School of Engineering, said: "Staff and students in the School of Engineering have been working very hard, and the School's donations of face shields will make a real difference to key workers in health and social care. The School is also involved in a number of other Covid-19 related projects, and I am looking forward to seeing the results of those in due course."

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