3D-Print your own face shield

Learn how to fabricate and produce a general-purpose face shield for yourselves as well as others in the community to stay safer during the pandemic. The face shield is designed to offer a layer of protection against fluid splashes. This guide should be used by professionals or individuals with adequate knowledge of 3D-printing.

> ➢ You will minimally require a 3D printer for the frame of the face shield
> ➢ Protect your hands and eyes with appropriate gear at all times
> ➢ The steps and design can be modified where necessary to suit your needs

1 Download our design files for FaceProtect+ 3D frame and visor template

.STL File (download and print)
.STP File (if you wish to modify and customise the frame)
Visor Template (A3 size, ideal)
Visor Template (A4 size)

2 Don protective gear such as mask and gloves

3 Using recommended 3D printer settings in the table below, print the frame

One-piece design with no assembly required
Recommended print orientation is the default in the 3D model
Minor post-processing to remove additional support material (depending on printer)

4 Print the visor template with a normal printer, either in A3 or A4 size

5 Overlay and secure the visor template onto a clear plastic sheet

6 Trim edges and punch a few holes to test

7 Test the fit of the visor

Clip on the visor through the frame's mounting points
Adjust the size of holes, where necessary

8 Complete punching the rest of the holes and assemble the face shield

9 Try it on and adjust the fit of visor holes if required

Recommended tools, materials and settings

Part	Tool	Material	Specifications / Settings
Frame	<u>3D printer</u> Bed dimensions of minimum 150 mm by 150 mm (eg. Original Prusa Mk3s, Ultimaker UM3, Creality CR-10)	Polylactic Acid (PLA) Polyethylene Terephthalate (PETG) Acrylonitrile Butadiene Styrene (ABS)	Nozzle Diameter: 0.4mm Rafts: No Supports: Yes Layer Height: 0.15 to 0.25 mm Infill: 20% Perimeters: not less than 3
Visor	<u>Trimming and hole-punching tools</u> (eg. Scissors, penknife, screwdriver, needle, ballpoint pen)	Transparent & water-resistant plastic sheet. It should be optically clear and not crack or crease when bent to form a U-shape. There should not be scratches or holes.	0.2-0.3mm thickness A3-sized ideally A4-sized otherwise

*Alternative tools and materials can be used as long as safety is not compromised.

To Note

After each use, wash face shield with soap and water.
Do not expose to high heat.
The equipment does not provide particulate filtration.

In collaboration with Siege Advanced Manufacturing.