

# Blackcad Engineering Reusable, One-Component Anti-COVID-19 Face Shield

A high-technology innovative response  
to the urgent need for  
protecting people in the times of the pandemic

## Challenge

In the times of the Coronavirus pandemic many institutions participate in the "COVID-19 Response Initiative". The aim of the industry is to cover the increased demand for the production of personal protection equipment such as masks and face shields.

The idea for Reusable One-Component Anti-COVID-19 Face Shield product derives from the need for a fast, one-step production of Face shields, now usually assembled from at least three components: shield, head cap and a strap.

This Face shield needs to fulfil the following requirements:

- It needs to be designed for manufacturability according to injection molding technology.
- It should have all the desired optics properties.



"ANSA is the ultimate solution  
for pre-processing "



## Approach

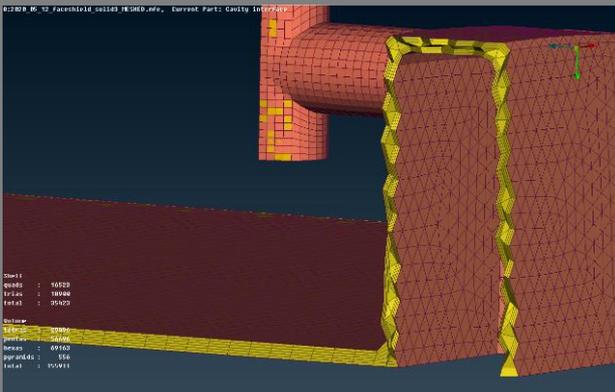
The best possible solution to check the manufacturability and the optics of the part, is to perform an injection molding simulation combined with the optic analysis in Moldex3D. The results will address all the questions about the possible molding problems and issues with the optical performance of the part as a result of the production process.

However, using the optic solver of Moldex3D requires a thoroughly prepared model discretized with hybrid solid mesh. The ANSA pre-processor offers the finest results for this purpose.

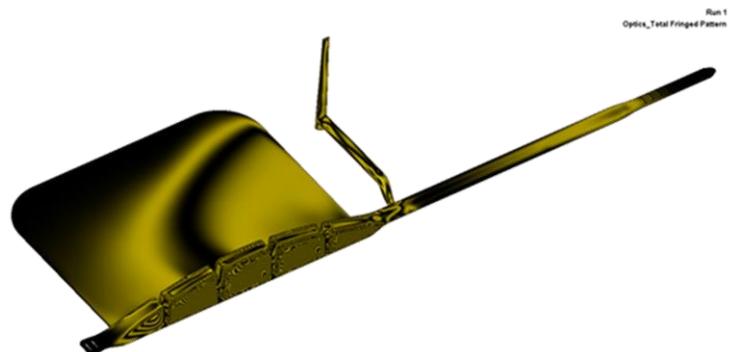
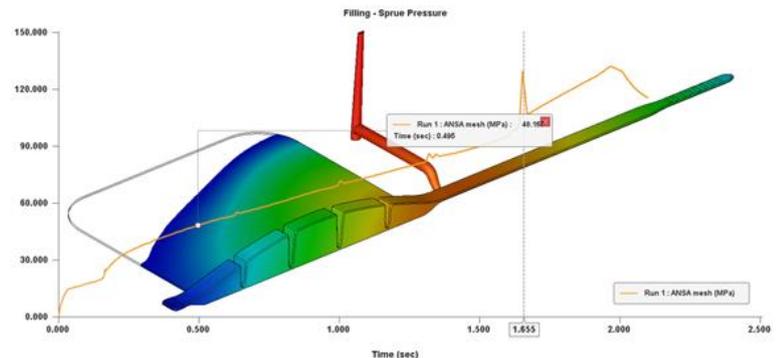
Within our company, ANSA is the go-to solution for preprocessing, and the software for impossible missions, such as this for hybrid solid meshing.

## Results – Benefits

- With the aid of ANSA this optics analysis is made possible.
- Capability to find potential issues, resulting from changing the material to enable the mass production.
- Creation of a product better equipped in helping to fight back the pandemic.



“I do not know any other pre-processing software, which can deal with hybrid meshing so good as ANSA does. I can't recommend it highly enough!”  
Przemysław Narowski  
CAE Engineer, Blackcad Engineering GmBH



For more about BETA CAE Systems, visit <https://www.beta-cae.com>

For more about Blackcad Engineering, visit <https://blackcad-engineering.com>