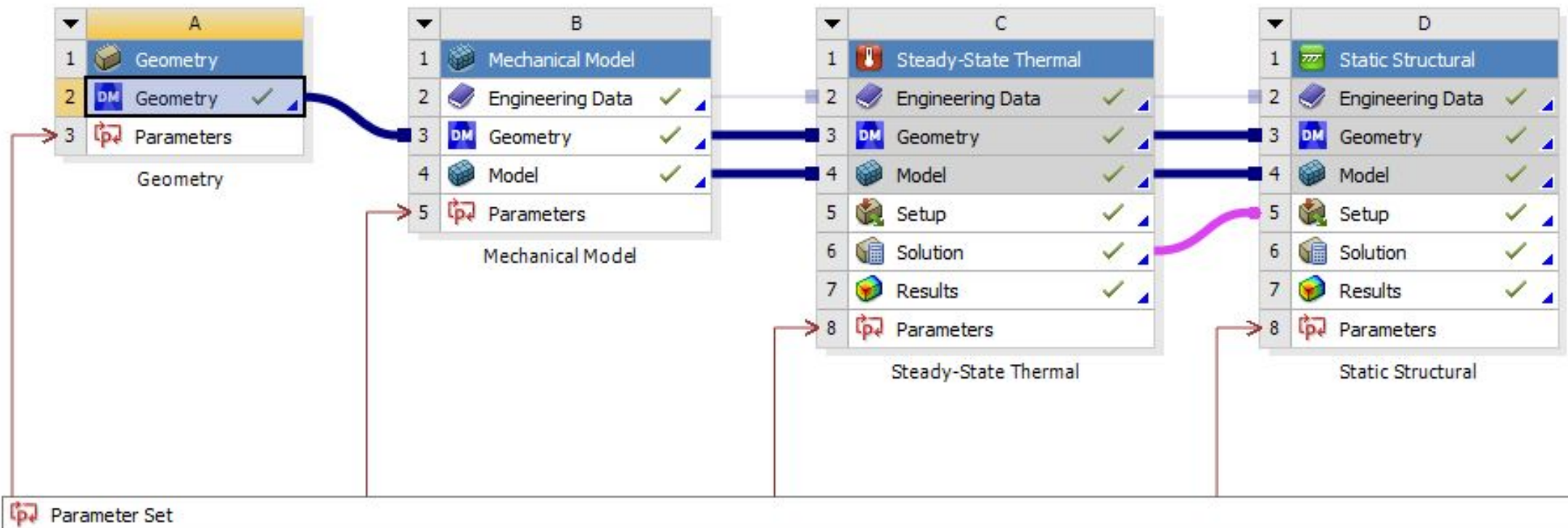


# Расчёт напряженно- деформированного состояния лопатки компрессора авиационного двигателя

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ТП-17-1, 3 курс  
ФТФ ДНУ

**Цель работы:** провести расчет лопатки компрессора с учётом инерционных и газовых сил и температурных воздействий

Project Schematic



# Геометрия

The screenshot displays the ANSYS 2019 R2 Academic software interface. The main window shows a 3D model of a mechanical part, which consists of a base with several parallel cylindrical features and a vertical, curved plate extending upwards. The model is rendered in a light gray color against a blue background.

The **Tree Outline** on the left side of the interface shows the following structure:

- A: Geometry
  - XYPlane
  - ZXPlane
  - YZPlane
  - Plane4
    - Sketch2
  - Plane5
    - Sketch3
  - Plane6
    - Sketch5
  - Skin1
    - Sketch2
    - Sketch3
    - Sketch5
  - Extrude1
    - Sketch7
  - 1 Part, 1 Body
    - Solid

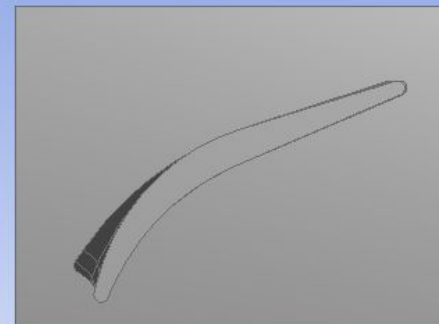
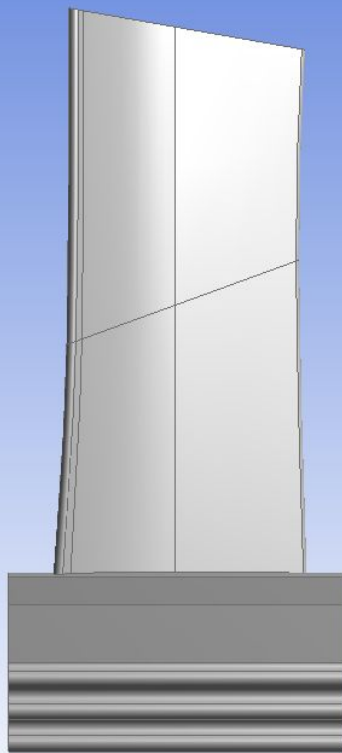
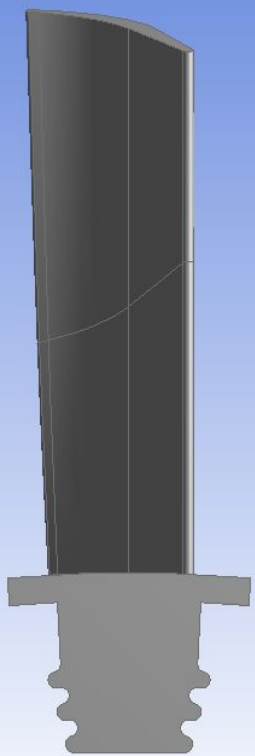
The **Details View** on the left side of the interface shows the following information:

Details	
Bodies	1
Volume	...
Surface Area	...
Faces	39
Edges	100
Vertices	64

The **Graphics** window on the right side of the interface shows the 3D model. A coordinate system is visible in the bottom right corner, with the X-axis pointing right (red), the Y-axis pointing up (green), and the Z-axis pointing left (blue). A scale bar at the bottom of the graphics window indicates dimensions in millimeters, with markers at 0,00, 25,00, 50,00, 75,00, and 100,00 (mm).

The **ANSYS 2019 R2 ACADEMIC** logo is visible in the top right corner of the graphics window.

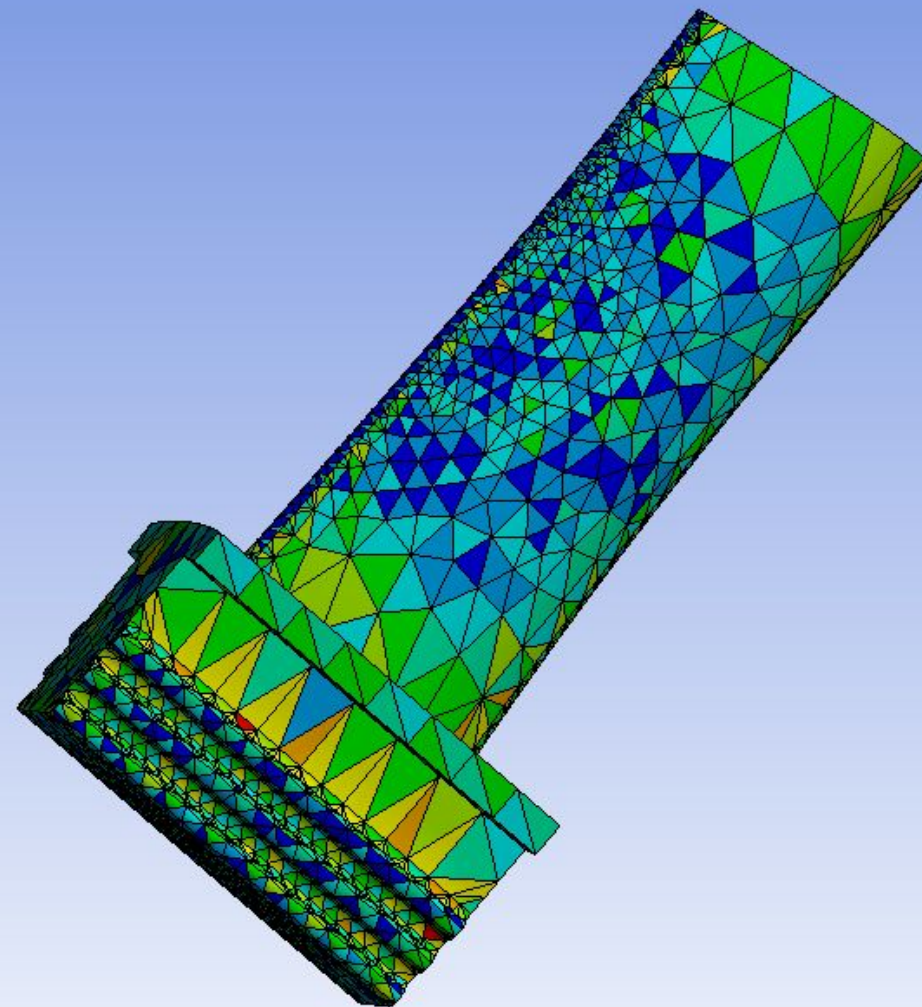
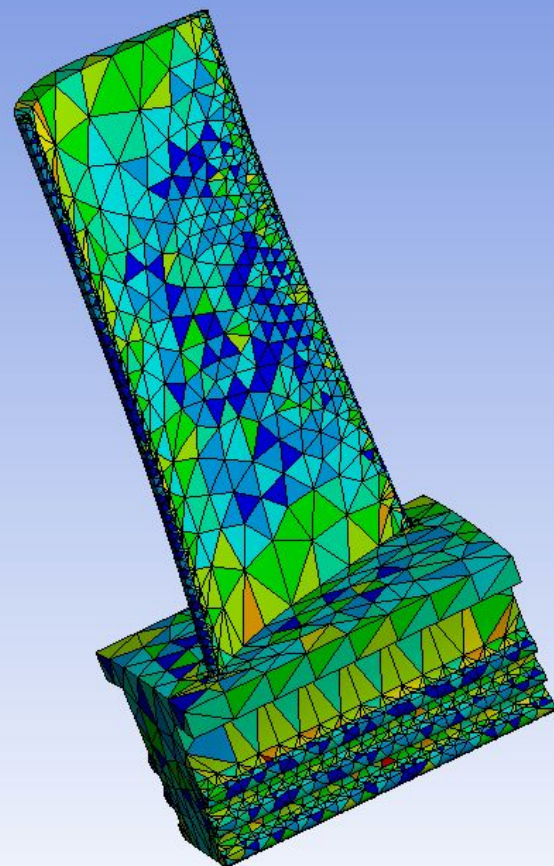
The status bar at the bottom of the interface shows "Ready", "No Selection", "Millimeter Degree", and "0 0".

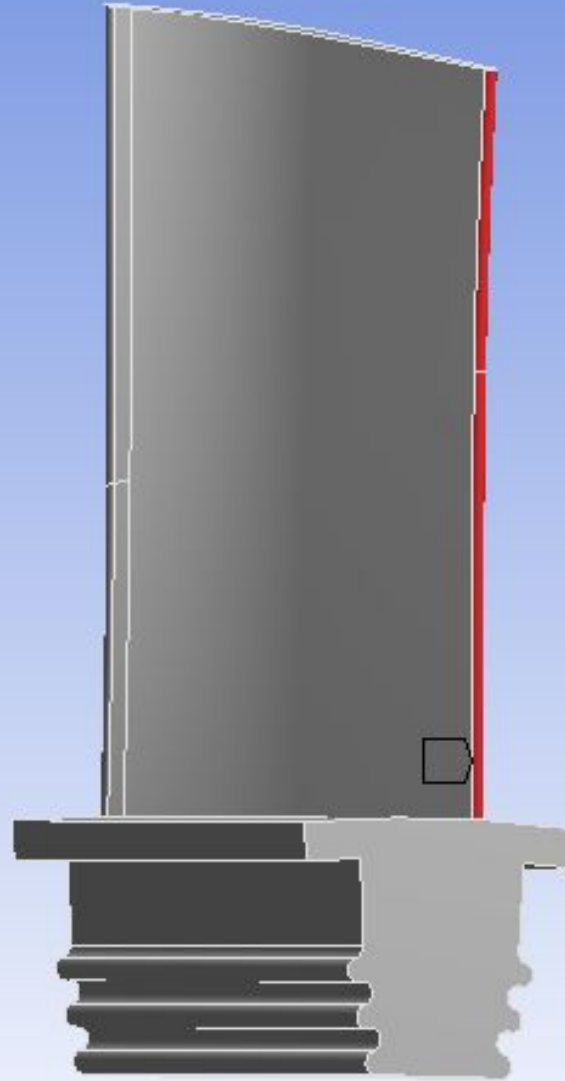


# Расчётная сетка

## Mesh

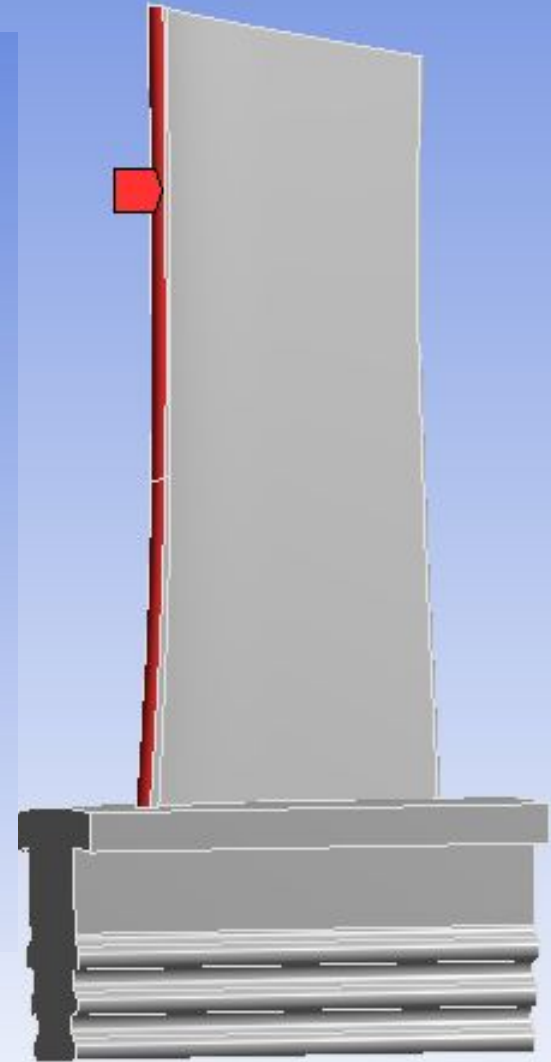
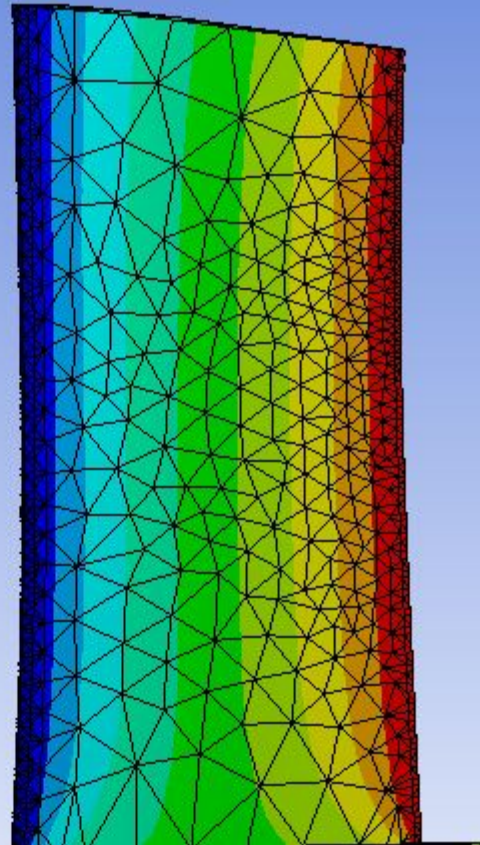
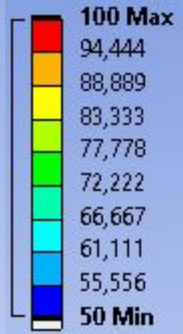
Element Quality  
17.05.2020 20:04





**C: Steady-State Thermal**

Temperature  
Type: Temperature  
Unit: °C  
Time: 1  
17.05.2020 20:08



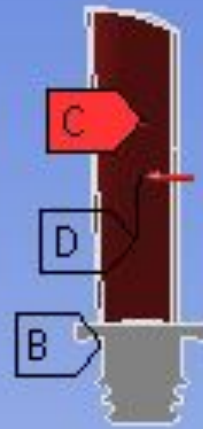
## D: Static Structural

Static Structural

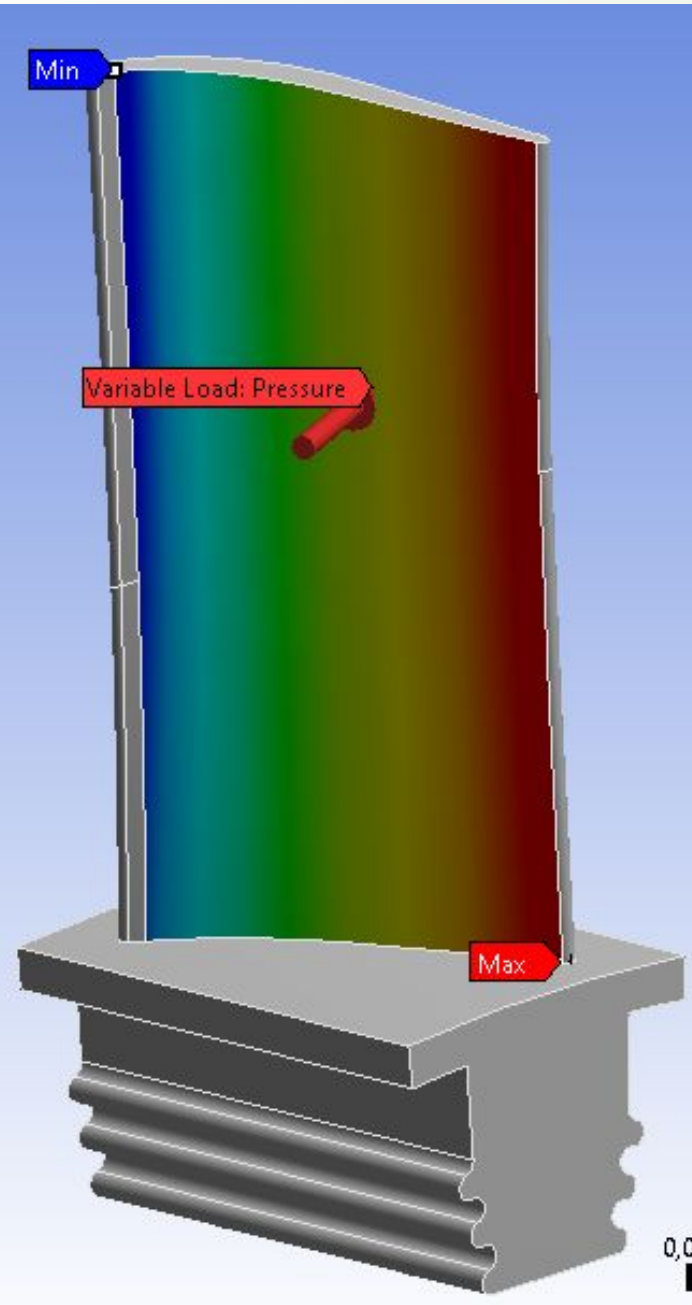
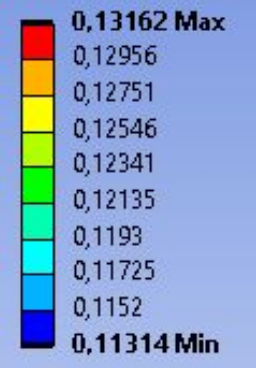
Time: 1, s

17.05.2020 20:10

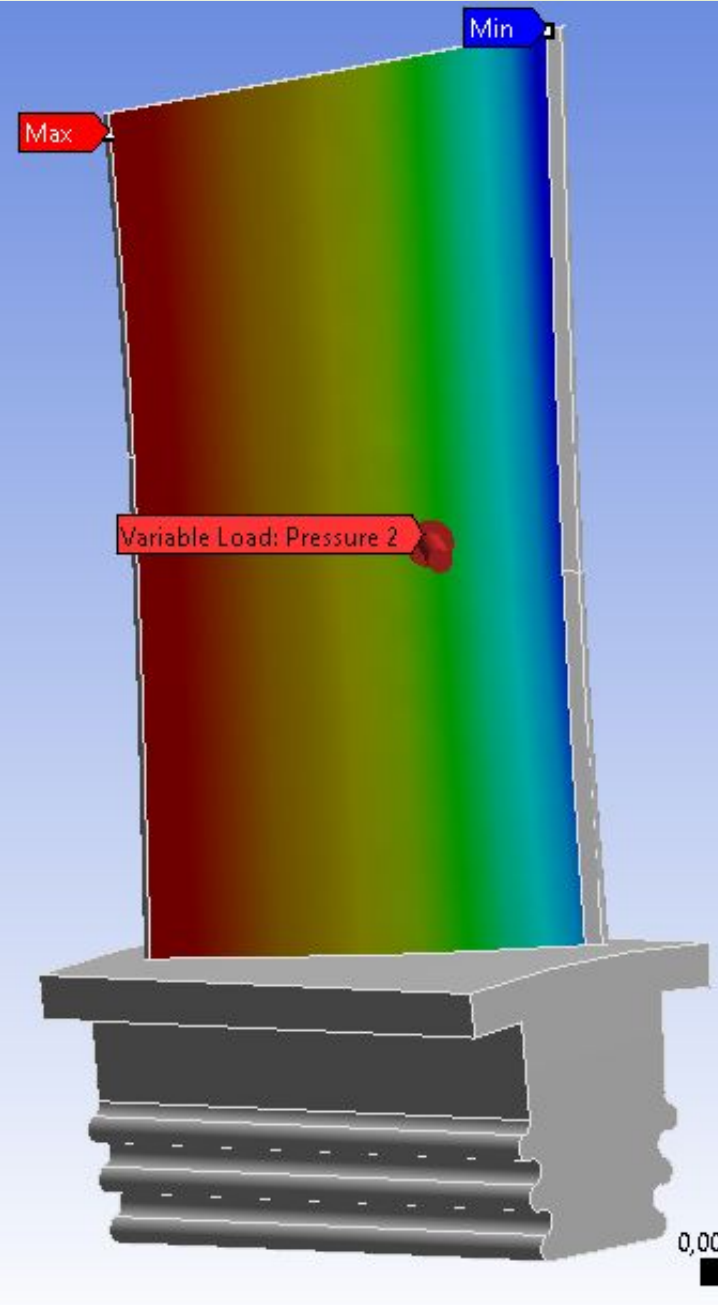
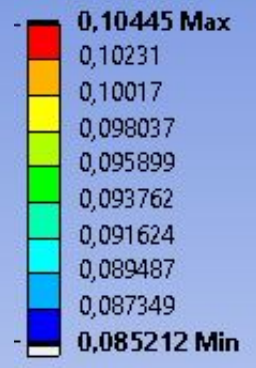
- A** Rotational Velocity:
- B** Fixed Support
- C** Variable Load: Pressure
- D** Variable Load: Pressure 2



D: Static Structural  
Pressure  
Time: 1, s  
Unit: MPa  
17.05.2020 20:11



D: Static Structural  
Pressure 2  
Time: 1, s  
Unit: MPa  
17.05.2020 20:11





### D: Static Structural

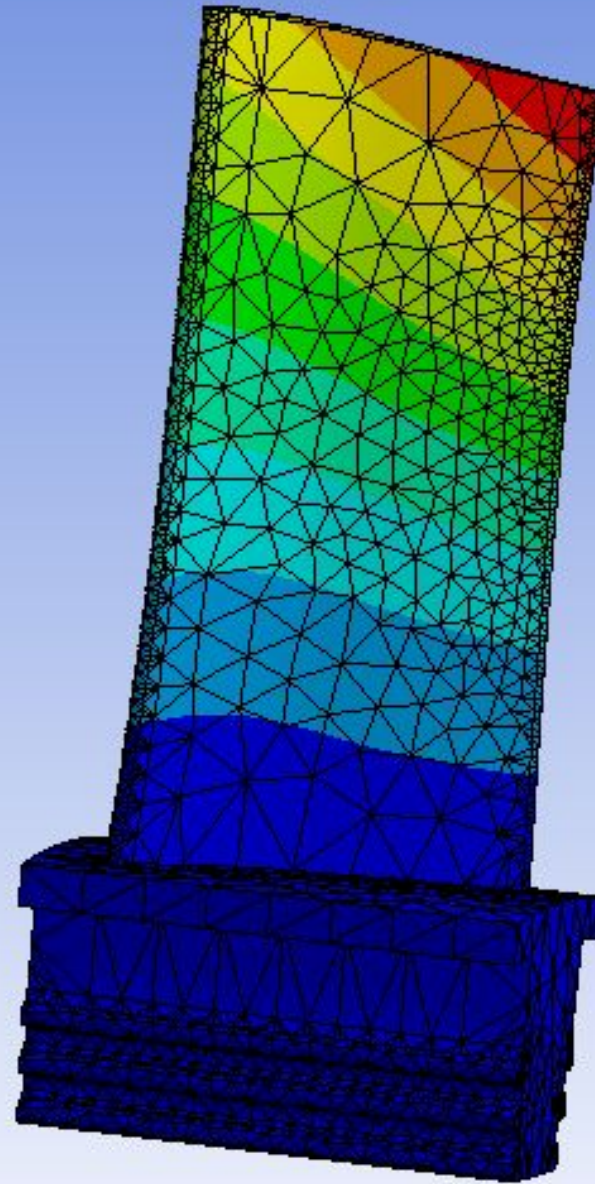
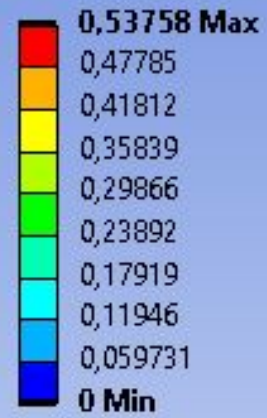
Total Deformation

Type: Total Deformation

Unit: mm

Time: 1

17.05.2020 20:13



### D: Static Structural

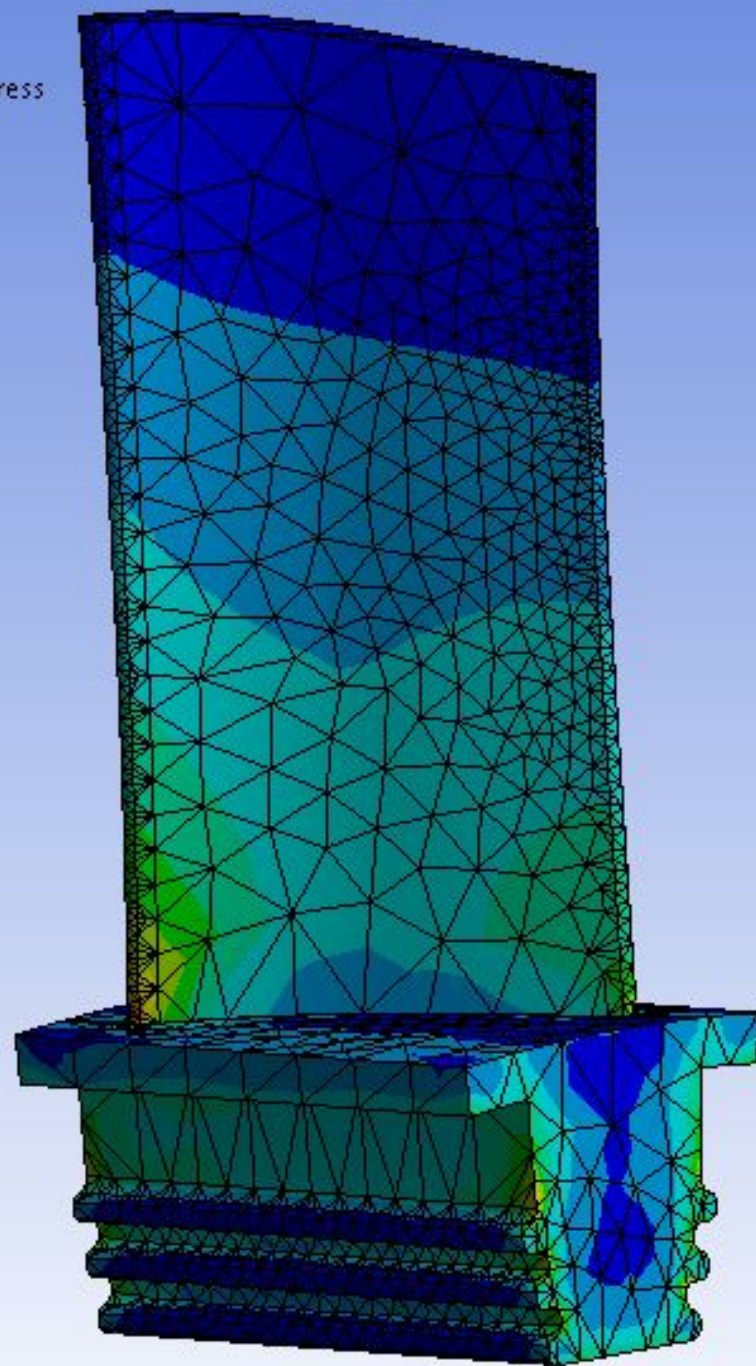
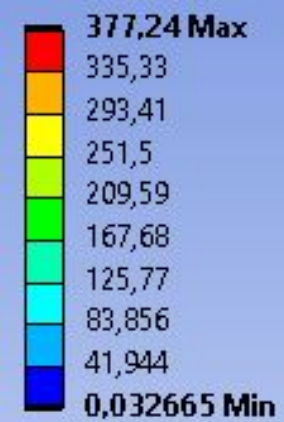
Equivalent Stress

Type: Equivalent (von-Mises) Stress

Unit: MPa

Time: 1

17.05.2020 20:14



### D: Static Structural

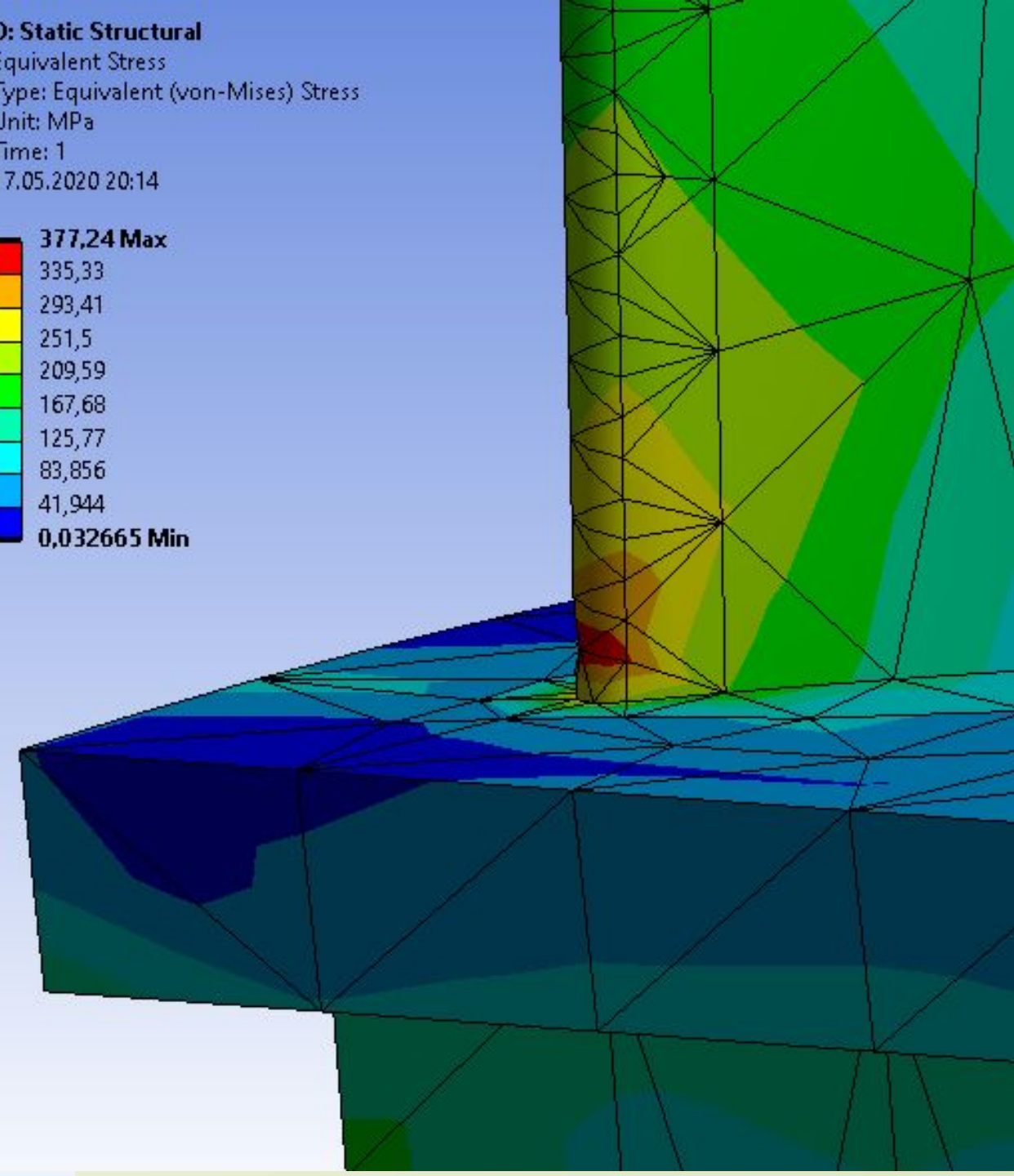
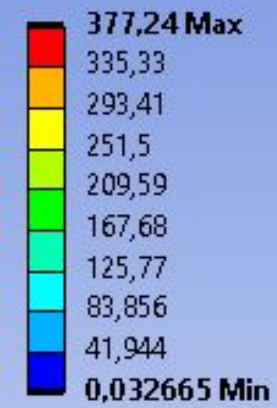
Equivalent Stress

Type: Equivalent (von-Mises) Stress

Unit: MPa

Time: 1

17.05.2020 20:14



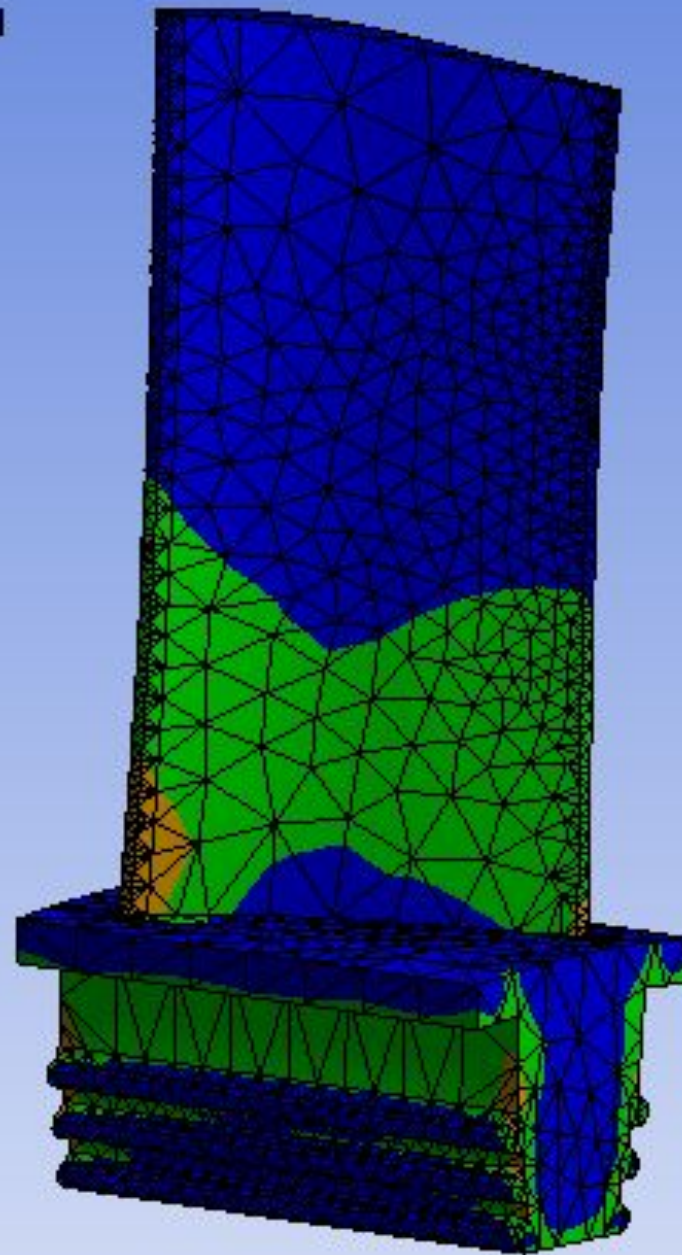
### D: Static Structural

Safety Factor

Type: Safety Factor

Time: 1

17.05.2020 20:16



**D: Static Structural**

Safety Factor

Type: Safety Factor

Time: 1

17.05.2020 20:19

