Assignment 5

Opened: Monday, 22 May 2023, 8:00 AM
Due: Friday, 2 June 2023, 11:59 PM

Done: Make a submission

Abaqus.pptx	15 May 2023, 4:06 PM
Assignment5.pdf	15 May 2023, 4:06 PM
ASTM E399.pdf	15 May 2023, 4:06 PM
Tensile_test.xlsx	15 May 2023, 4:06 PM
Toughness_test.xlsx	15 May 2023, 4:06 PM

Submission status

Submission status	Submitted for grading
Grading status	Released
Time remaining	Assignment was submitted 4 days 23 hours early
Last modified	Monday, 29 May 2023, 12:05 AM
File submissions	Assignment 5_Nguyen Xuan Binh_887799.pdf 29 May 2023, 12:05 AM exercise.ipynb 29 May 2023, 12:05 AM model.cae 29 May 2023, 12:05 AM

Edit submission | Remove submission

You can still make changes to your submission.

Feedback

Grade

Each section should include the following elements to get full marks.

Modelling approach (2pts)

Geometry; Boundary Conditions (symmetry plane and applied load); Mesh (type of elements, plane stress/strain, element size); and material properties (linear elastic, value of Young's modulus).

Results (3pts)

Show how the stress intensity factor varies with the number of contours. Explain which contour should be selected to predict Pmax. Present your calculation for Pmax.

Discussion (3pts)

Compare Pmax to formula in ASTM E399.

Discuss the difference between analytical and FE results: in FE we have a notch not a sharp crack. Reducing the mesh size could also increase the accuracy of FE results.

Possible improvements to the model: the stress-strain curve of the polymer has some degree of plasticity which is not included in the material model. We could use a 3d model and reduce the mesh size.

Presentation (2pts)

Good English; concise report; tables/figures are well presented (axes are labelled, readable and include units).

Modelling approach	Important elements missing ***0 points***		Minor elements missing ***1 points***	All elements included ***2 points***
Results	Inadequate ***0 points***	Important elements missing ***1 points***	Minor elements missing ***2 points***	All elements included ***3 points***
Discussion	Inadequate ***0 points***	Important elements missing ***1 points***	Minor elements missing ***2 points***	All elements included ***3 points***
Presentation	Needs improvements ***0 points***		Good ***1 points***	Excellent ***2 points***

10.00 / 10.00

Graded on	Thursday, 8 June 2023, 3:40 PM
Graded by	Luc St-Pierre
Annotate PDF	Binh Nguyen_5285915_0.pdf 8 June 2023, 11:52 AM View annotated PDF...

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