

I. IDENTIFICATION DATA

Title of thesis:	Injection of test specimen for tensile test
Author:	Santhosh Reddy Bemmireddy
Thesis type:	Diploma
Faculty/department:	Faculty of Mechanical Engineering
Department:	Department of Process Engineering
Opponent:	Ing. Stanislav Solnař
Opponent affiliation:	Department of Process Engineering

II. EVALUATION OF THE PARTICULAR CRITERIA

Assignment	average
I consider the task of modeling plastic injection into a given geometry as difficult to average. To solve this task, it has been chosen software for which I am not really an expert.	
I consider the assignment as average difficult.	

Fulfilling the assignment	fulfilled with minor qualifications
Fulfilled. The student modeled the flow of polypropylene to the specified geometry (tensile test specimen). But I have a reservation on the theoretical part. In my opinion, the theoretical part should not include the composition of an injection molding machine for 20 pages, but a preview of literature that deals with a similar or even the same problem. Unfortunately, I did not find any such information and had to search the literature myself.	
Student has completed the diploma thesis assignment, but there are shortcomings in theoretical part mainly.	

Selected solution procedure	Suitable
The student used the Autodesk MoldFlow program, which is suitable for these tasks (at least according to their corporate advertising). The program is obviously very student-friendly because setup is simple. Unfortunately, I'm not an expert in evaluating the settings of such a program.	
The student modeled the test specimen according to the assignment and compared the numerically calculated values with the values set on our extruder.	
The solution of this work is appropriate.	

Professional level	E - sufficient
Professional level of this work is passable. The author did not take a lot of work with finding literature that deals with the same or similar issues and so is the question on which he supported his claims.	
The computed values from the numerical solver were compared with the setting of the extruder, which I find sufficient for basic calculation validation. However, the volume of work seems to me very small and overall, the work is perhaps more appropriate as a grade work than a diploma thesis.	
Professional level of this thesis is satisfactory.	

Formal and language level, scope of work	E - sufficient
The formal aspect of the work is at a very poor level and it is clear that the author did not pay much attention to it. The English used is difficult to read and distracts the author from the topic. I literally found hundreds of errors in the text, such as missing spaces, misused uppercase and lowercase letters, etc.	
Using more than one font and generally one template as very inappropriate. For further work I would recommend rather serif font.	
Unfortunately, almost half of the links to the pictures refer wrong, the student probably forgot about automatic renumbering links.	
The citation style using parentheses [1] is fine, but it must be used throughout the text and not changed.	
The list of pictures that appear at work is nice, but it's much more important to add Nomenclature.	
Formal and language level of this thesis is sufficient.	

Source Selection, Correct Quotation

C - good

The author has used several literary sources, mainly from the Internet, but they are listed correctly. The citation style is uniform, except for a few mistakes.

At work I would expect at least some scientific articles, but this is unfortunately associated with the absolute absence of any literature search.

Citation numbers 6, 9 and 12 are still the same citation and are written only once.

There are several citing errors in the text, but this is not a serious matter.

More comments and ratings

I'm very sorry, but if a student complains that he can't attach a video to his work, why not put it on a CD, why YouTube? Why isn't the computational program included on CD, or are you afraid of your results?

III. TOTAL EVALUATION AND PROPOSAL FOR CLASSIFICATION

The submitted work is complicated, but still within the confusion. The results of the numerical solution are evaluated very superficially and their difference, almost 50%, does not seem to me as "almost the same". Unfortunately, the student did not devote much time to the work and it is very obvious on the text, especially in the formal arrangement. I rate the absence of any literary research as great mistake and, in general, the volume of work that I have doubts as to whether it is sufficient.

I evaluate the submitted final thesis with the grade **E - sufficient**

I have a total of 3 questions:

1, Can you tell us what adjustments can be made to the selected MoldFlow program to improve the results? I mean, what are the possibilities of a program to produce a numerical result just like the data on an extruder.

2, Was the flow laminar or turbulent? If there was turbulence, how were the turbulences modeled?

3, In Figure 28 (Average Temperature), the average temperature appears to be asymmetric and even in one corner subcooling occurs. It's alright? Can you comment this result?

Date: 20. 8. 2019

Signature: