

**REVIEWER'S FORM
for thesis evaluation**



1. Identification of the student

Student:	Luisa Natalia Peña Leal
Thesis:	Flexural Tests of Consolidation Effects on stone
1 st Institution:	UPC Barcelona/UNIPD Padova
2 nd Institution:	Czech Technical University in Prague
Academic year:	2016/2017

2. Identification of the reviewer

Name:	Karol Bayer
Institution:	University Pardubice, Faculty of restoration
Position:	Dean

3. Fulfillment of thesis goals

excellent <input type="checkbox"/>	above aver. <input checked="" type="checkbox"/>	average <input type="checkbox"/>	below aver. <input type="checkbox"/>	weak <input type="checkbox"/>
Comments:				
Objectives are clearly defined in chapter 1.2. The diploma thesis cover and fulfills to a high extent the thesis goals, but as commented in the quality description bellow It would be possible to make more use of the results obtained and so meet the objectives better.				

4. Academic/scientific/technical quality

excellent <input type="checkbox"/>	above aver. <input type="checkbox"/>	average <input checked="" type="checkbox"/>	below aver. <input type="checkbox"/>	weak <input type="checkbox"/>
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Comments:

The diploma thesis is methodologically well-structured; the selected scientific and technical procedure corresponds to the content and objectives of the work. The author has gained many results through her measurements. Unfortunately, these results are not fully utilized, which partially decrease the quality of the work. Some statements are not fully correct or properly explained.

The most important examples are as follows:

In the chapter 2.1.1 *Inorganic consolidants*, page 6, it is argued that "The barium hydroxide is similar to the calcium hydroxide, but it is insoluble in water." In fact the solubility of barium hydroxide is 3.9 g / 1L and in comparison the solubility of calcium hydroxide being much less 1.7 g / L at 20 °C.

A more detailed description of silanes (Silicic acid ester) would be very helpful with regard to the goals of the thesis (2.1.3 *Silane - based materials*).

In the chapter 2.3. *The ultrasonic test* it is claimed "The velocity is easy calculated as space over time". In fact the velocity of ultrasonic wave propagation is calculated as travel distance in time.

The following questions are open to the gained results and their interpretation:

1. In chapter 4.1. Results and discussion on page 23: "*The minimum improvement of the bending behavior with the use of the product B is because of the less precipitation of silica gel deposited in the pores*". Is it the only possible reason? The difference in precipitation of silica gel in products A and B differs just marginally according to the technical information (see chapter 3.2.2. Consolidants).
2. In chapter 4.1. Results and discussion on page 29: "*The excellent flexural behavior of the Product C is remarkable, and due to the high values gives in the four first levels is possible appreciate the sudden change between the level four and five...*" Isn't it possible that the high differences in strength and E-modulus between the consolidated and non-consolidated zone can lead to unfavorable tensions in the future?
3. Chapter 4.3. *Relation between the flexural strength and the ultrasonic test to determine penetration depth of the products*. Is there any possible explanation for the different depth gradients of the results of flexural strength and ultrasonic speed?

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5. Formal arrangement of the thesis and level of language

excellent above aver. average x below aver. weak

Comments:

The master thesis is structured in a standard way and the content is well and clearly to understood. Unfortunately, there are quite a lot of write failures and grammatical errors in the text.

6. Further comments

7. Grade: C good

Use the following scale

A (excellent)	B (very good)	C (good)	D (satisfactory)	E (sufficient)	F (fail)
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July 14, 2017

The Reviewer,

Karol Bayer