Technische Universität Wien
Fakultät für Bauingenieurwesen
Institut für Hochbau und Technologie
Forschungsbereich für Baustofflehre, Werkstofftechnologie und Brandsicherheit

Karlsplatz 13/206-1, A-1040 Wien
www.bl.tuwien.ac.at
Sekretariat

T +43 1 58801-20601
F +43 1 58801-20699
michaela.herndl@tuwien.ac.at

ASSESSMENT OF THE MASTER'S THESIS

Author of the thesis:	**Ing. Michaela Fiedlerová**
Thesis title:	**Behavior of Concrete at High Temperatures**
Dissertation supervisor:	**Ass.Prof. Dipl.-Ing. Dr.techn. Heinrich Bruckner**

The master thesis deals with the behavior of composite materials (high performance concrete) exposed to high temperature with focus on explosive spalling. The piece of work has 110 pages of text. Of these 110 pages, 46 pages deal with a theoretical part which refers to current and relevant sources of information. The theoretical part provides a complete list of the factors having a dominant influence on explosive spalling including the spalling mechanisms themselves, permeability of concrete linked with porous network, methods to eliminate spalling by addition of polypropylene fibers, etc. The theoretical part is elaborated in detail, well arranged and in a logical sequence and therefore provides a comprehensive overview.

The first part of experimental work focuses on explosive spalling of concrete with various dosages of polypropylene fibres with different melt flow indexes. A graphical evaluation in the form of photogrammetric images provides a clear impression of surface defects after fire exposure and therefore is classified as appropriate.

The second part of experimental work was conducted in cooperation with Vienna University of Technology where the permeability of concrete was measured. The student worked very actively on her own. It should be pointed out that the student was very responsible in conducting experiments by means of the device for measuring permeability of concrete. This measurement requires full attention of the operator, especially because of the high temperatures which are applied in testing

as well as the need for precision readout and post-processing of intermediate results. The results are well assessed and organized in diagrams. The laboratory methods used as well as the processing and the evaluation of the results correspond to the education and specialization of the student. The results are valuable, well represented graphically and well described. The interpretation of the results obtained from high temperature microscopy and the discussion was done very well.

The level of the thesis (and language processing) meets the requirements for a master thesis and it is therefore recommended that Ms. Fiedlerova should take the final examination.

ECTS grade: **A / 1**

Technische Uni...
Forschungsbereich für ...
Werkstoffwissenschaften ...
A-1040 Wien, ...

Vienna

Signature

Grading scheme/grade distribution guidance

ECTS grades	A	B	C	D	E	F
Grades in numbers	1	1,5	2	2,5	3	4