DEPARTMENT OF MATERIAL ENGINEERING

Head of the Department:
Assoc. Prof. Ildikó Rouseková, PhD.

Tel.: + 421 2 59274 681
Fax: + 421 2 52494 357
E-mail: ildiko.rousekova@stuba.sk

I. STAFF

Professors		
Bajza, Adolf, PhD.	+ 421 2 59274 687	adolf.bajza@stuba.sk
Associate Professors		
Rouseková Ildikó, PhD.	+ 421 2 59274 681	ildiko.rousekova@stuba.sk
Šályová Dagmar, PhD.	+ 421 2 59274 683	dagmar.salyova@stuba.sk
Šveda Milukáš, PhD.	+ 421 2 59274 684	mikulas.sveda@stuba.sk
Unčík Stanislav, PhD.	+ 421 2 59274 686	stanislav.uncik@stuba.sk
Senior Lecturers		
Pavlík Vladimír, PhD.	+ 421 2 59274 691	vladimir.pavlik@stuba.sk
Dubík Marián	+ 421 2 59274 224	marian.dubik@stuba.sk
Ledererová Miriam	+ 421 2 59274 521	miriam.ledererova@stuba.sk
Struhárová Alena	+ 421 2 59274 685	alena.struharova@stuba.sk
Research Fellows		
Ugorčáková Jana	+ 421 2 59274 223	jana.ugorcakova@stuba.sk
Doctoral Students		
Pagáč Stanislav	+421 2 59274 227	
Technical Staff		
Hroudný František	+ 421 2 57294 450	(Vazovova ul.)
Hutníková Gabriela (secretary)	+ 421 2 59274 681	gabriela.hutnikova@stuba.sk
Talostanová Judita	+ 421 2 59274522	

II. EQUIPMENT

II.1 Teaching and Research Laboratories

1. Concrete technology laboratory
2. Lightweight concrete laboratory
3. Ceramics laboratory
4. Binders laboratory
5. Building chemistry laboratory
6. Laboratory for scanning electron microscopy and mercury intrusion porosimetry
7. Laboratory for X-ray diffraction analysis
8. Laboratory for differential thermal analysis

II.2 Special Measuring Instruments and Computers

- Derivatograph-C, MOM Budapest, Hungary
- Derivatograph G 425, MOM Budapest, Hungary
- Diffractometer Mikrometa 2, Chirana, Prague, Czech Republic
- Scanning electron microscope BS-301, Tesla Brno, Czech Republic
- Spectrophotometer Specol, Carl Zeiss Jena, Germany
- Equipment for determination of thermal conductivity PMV - 01, Elsyst, Prague, Czech Republic
- Apparatus for determination of thermophysical parameters - Isomet, Model 104, Applied Precision, Bratislava, SR
- Schmidt concrete test hammers, Proseq SA, Zürich, Switzerland
- Dyna pull-off tester, Proseq SA, Zürich, Switzerland
- Resonance apparatus RP-5, Mankovický, Bratislava, SR
- Porosimeter, Model 70H, Carlo Erba, Milan, Italy
- Test apparatus for determination of air content B 2020, BC-Export Unlingen, Germany
- Pentium computers
- Testing machines with loads of 200, 400, 1000 and 3000 kN
- Device for waterproofing concrete
- Apparatus for measuring length changes

III. TEACHING

III.1 Graduate Study

Subject	Semester	Hours Per Week		Lecturer
		Lectures	Seminars	
Chemistry for Civil Engineers	1	2	1	V. Pavlík
Building Materials I.	2	2	1	I. Rouseková S. Unčík
Building Materials II.	3	2	1	I. Rouseková S. Unčík
Building Materials	1	2	2	D. Šályová
Chemistry of Building Materials	7	3	4	V. Pavlík
Ceramics	7	3	3	M. Šveda
Binders	8	3	3	A. Bajza
Precast Concrete Technology	8	3	4	L. Marko, S. Unčík
Concrete Technology	9	3	4	A. Bajza
Designing Plants for Production of Building Materials	9	0	4	J. Šimovič
Technology of Built-Up Constructions	9	2	3	M. Čabrák
Testing	10	2	2	V. Priechodský
Technological Project	10	0	8	J. Šimovič
Lightweight Concrete	10	2	3	D. Šályová
Insulating Materials	10	2	2	M. Šveda

IV. RESEARCH TARGETS

Current research in the Department is focused, above all, on the utilisation of industrial waste products in cement composites, the effects of admixtures on concrete properties, as well as the modification of properties of brick-shatter using organic substances and light materials from industrial wastes.

V. RESEARCH PROJECTS

1. Revitalisation of Passivating Conditions of Steel Reinforcement in Concrete by Penetrating Corrosion Inhibitor (A. Bajza)
2. Effect of Pore Structure of Brick Shatter on Its Frost Resistance (M. Šveda)

VI. COOPERATION

VI.1 Cooperation in Slovakia

1. HYDROSTOP Ltd., Poprad
2. ZIPP Bratislava Ltd., Bratislava
3. HOLCIM BETON Ltd., Bratislava
4. Applied Precision Ltd., Bratislava
5. Sika Slovakia Ltd., Bratislava
6. Slovak Institute of Standardisation, Bratislava
7. Slovak Office of Standards, Metrology and Testing, Bratislava
8. BETÓN-RACIO, Ltd., Trnava
9. TERRANOVA - INDUSTRIA Ltd., Bratislava
10. HOLCIM, Joint Stock Company, Bratislava
11. Chestreal, Joint Stock Company, Bratislava
12. Premac Ltd., Bratislava
13. SE, Joint Stock Company, Nuclear Power Plant, Jaslovské Bohunice
14. SE, Joint Stock Company, Nuclear Power Plant, Mochovce
15. Termstav, Joint Stock Company, Bratislava
16. MC-Bauchemie Ltd., Nitra
17. Civil Engineering Technical and Testing Institute, Bratislava
18. Baumit Ltd, Bratislava
19. ORGWARE, Joint Stock Company, Bratislava
20. Cooling Towers Ltd., Jaslovské Bohunice
21. SKW-MBT Slovakia Ltd., Žilina
22. Porfix, Joint Stock Company, Zemianske Kostoľany
23. Hebel Pórobetón, Ltd., Šaštín
24. Calmit, Ltd. Bratislava

VI.2 International Cooperation

1. Klokner Institute, TU Prague, Czech Republic
2. Department of Building Materials, FCE TU Opole, Poland
3. Research Institute of Civil Engineering, Zlín, Czech Republic
4. CarboTech Bohemia Ltd., Ostrava, Czech Republic

5. Institute for Prefabrication and Precast Concrete Buildings, Weimar, Germany
6. Research Institute of Building Materials, Joint Stock Company, Brno, Czech Republic
7. Brno University of Technology, Brno, Czech Republic
8. Czech Technical University, Prague, Czech Republic
9. VŠB - Technical University of Ostrava, Czech Republic
10. Dansk Beton Teknik A/B, Hellerup, Denmark
11. NNC AB, Solna, Sweden
12. Institute of Fundamental Technological Research – Polish Academy of Sciences, Warsaw, Poland

VI.2.1 Visitors to the Department

1. Prof. R. Drochytka, PhD., Faculty of Civil Engineering, Brno Technical University, Brno, Czech Republic, 3 days
2. Prof. J. Cigánek, PhD., Faculty of Civil Engineering, Ostrava, Czech Republic, 4 days
3. Assoc. Prof. T. Klečka, PhD., Klokner Institute, Czech Technical University, Prague, Czech Republic, 3 days
4. Assoc. Prof. L. Svoboda, PhD., Faculty of Civil Engineering, Czech Technical University, Prague, Czech Republic, 3 days
5. Prof. J. Adámek, PhD., Faculty of Civil Engineering, Brno Technical University, Brno, Czech Republic, 3 days
6. Assoc. Prof P. Rovnaníková, PhD., Faculty of Civil Engineering, Brno Technical University, Brno, Czech Republic, 3 days

VI.2.2 Visits of Staff Members and Postgraduate Students to Foreign Institutions

1. Adolf Bajza, Faculty of Civil Engineering TU, Brno, Czech Republic, 1 day
2. Adolf Bajza, Klokner Institute, Czech Technical University, Prague, Czech Republic, 3 days
3. Adolf Bajza, Faculty of Civil Engineering, VŠB - Technical University of Ostrava, Czech Republic – 2 days
4. Miriam Ledererová, Research Institute of Building Materials, Joint Stock Company, Brno, Czech Republic – 2 days

VII. THESES

VII.1 Graduate Theses

No.	Student's Name	Title
1.	Stanislav Pagáč	Compatibility of cement and admixtures

VIII. OTHER ACTIVITIES

VIII.2 Commercial Activities

1. Evaluation of Strength of Concrete – Ventilation Stack SO 460 SE EBO JE (Nuclear Power Plant) V2 (A. Bajza, I. Rouseková, J. Ugorčáková)
2. Preparation and Testing of Samples with and without Alkali Resistant Glass Fiber and Materials (A. Bajza, I. Rouseková, M. Dubík)
3. Evaluation of Service Life of Fiber-Reinforced Concrete Containers (A. Bajza, I. Rouseková, S. Unčík, V. Pavlík)
4. Evaluation of Concrete Floor – Lozorno Autopark (S. Unčík)
5. Compressive Strength and Flexural Strength Tests (S. Unčík)
6. Compressive Strength and Flexural Strength Tests II (S. Unčík)
7. Compressive Strength and Flexural Strength Tests III (S. Unčík)

IX. PUBLICATIONS

IX.1 Journals

[1] ŠVEDA, M.: Effect of Water Absorption on Frost Resistance of Clay Roofing Tiles. British Ceramic Transaction, Vol. 102, 2003, No. 1, pp. 43 – 44

[2] ŠVEDA, M.: The Reduction Core in Clay Roofing Tiles. Střechy, fasády, izolace, Vol. 13, 2003, No. 1, pp. 36 – 37 (in Slovak)

[3] ŠVEDA, M.: The Use of a Low-Melting Agent for Improvement of the Frost Resistance of Clay Roofing Tiles. Silika, Vol. 13, 2003, Nos. 1-2, pp. 32 – 34 (in Slovak)

[4] ŠVEDA, M.: Frost Resistance of Clay Roofing Tiles with a Reduction Core. Silika, Vol. 13, 2003, Nos. 5-6, pp. 152-155 (in Slovak)

[5] ŠVEDA, M.: Bricks for Vertical Constructions. Silika, Vol. 13, 2003, Nos. 7-8, pp. 202-205 (in Slovak)

[6] PAVLÍK, V. – BAJZA, A. – DUBÍK, M.: Chemical Attack of Flue Gases on the Concrete Shell of a Power Plant Stack. Slovak Journal of Civil Engineering, Vol. X, 2002, No. 3, pp. 1-10

[7] ŠVEDA, M.: Evaluation of Clay Roofing Tiles during Roof Reconstruction. Stavebnícka ročenka 2004, Bratislava: JAGA, 2003, pp. 110-113 (in Slovak)

IX.2 Buletins

[1] UNČÍK, S.: Technology of Concrete Production. In: Betón 2003. Bulletin. Trnava: BetónRacio, 2003, Chapter 3, pp. 7 – 71 (in Slovak)

IX.3 Conferences

[1] BAJZA, A. – ROUSEKOVÁ, I.: Durability of High-Performance Concrete. In: Proceedings of 2d International FC & HPC 2003 Symposium. Prague, Sekurkon 2003, pp. 96-104

[2] LEDERER OVÁ, M. – ROUSEKOVÁ, I.: Use of the Crushed Aggregate of Waste Rock in Concrete. In: Conference Proceedings, Recycling 2003 – Possibilities and Future of Recycling Debris as a Source of Raw Materials. Brno: ARSM 2003, pp. 61-66 (in Slovak)

[3] ROUSEKOVÁ,I. – BAJZA, A. – UNČÍK, S. – PAVLÍK, V. – DUBÍK, M.: Reconstruction of the Deteriorated Concrete Shell of a Power Plant at Stack ENO B Nováky. In: Proceedings of 4th Seminar on Repair of Concrete Constructions.. Bratislava, ZSBK and KMTI SvF STU, 2003, pp. 75-82 (in Slovak)

[4] ROUSEKOVÁ, I. – BAJZA, A.: Effect of Duvilax VME Admixture on Properties of Cement Mortars. In: Proceedings of 9th CONSTRUMAT 2003 International Conference. Bratislava, KMTI Svf STU, 2003, pp. 228-234 (in Slovak)

[5] ČABRÁK, M. – ROUSEKOVÁ, I. – GILÁNYI, L.: Specifications of CE Mark Masonry Units. In: Building Materials and Testing 2003. Stupava, ORGWARE, 2003, pp. 158-160 (in Slovak)

[6] BAJZA, A. – ROUSEKOVÁ, I.: Adhesion and Watertightness of Secondary Protection. In: Proceedings of 4th Seminar on Repair of Concrete Constructions.. Bratislava, ZSBK and KMTI SvF STU, 2003, pp. 16-21 (in Slovak)

[7] PAVLÍK, V. – BAJZA, A. – DUBÍK, M.: Effect of Flue Gases on the Concrete Shell of a Power Plant Stack. In: 3d International Scientific Conference Quality and Reliability in the Building Industry. Košice, Svf TU, 2003, pp. 443-449 (in Slovak)

[8] PAVLÍK, V. – UNČÍK, S. – DUBÍK, M.: Formation of Calcium Incrusts from Tiling Mortar Composites. In: Proceedings of 9th CONSTRUMAT 2003 International Conference. Bratislava, KMTI Svf STU, 2003, pp. 222-227 (in Slovak)

[9] ŠVEDA, M.: Quality of Clay Roofing Tiles with a Reduction Core. In: 3d International Scientific Conference on Quality and Reliability in the Building Industry. Košice, SvF TU, 2003, pp. 528-532 (in Slovak)

[10] ŠVEDA, M.: Brick Products for Vertical Constructions. In: Proceedings of 9th CONSTRUMAT 2003 International Conference. Bratislava, KMTI Svf STU, 2003, pp. 240-244 (in Slovak)

[11] LEDERER OVÁ, M.: Recycling Waste Concrete in the Building Industry. In: Proceedings of 9th CONSTRUMAT 2003 International Conference. Bratislava, KMTI Svf STU, 2003, pp. 217-221 (in Slovak)

[12] STRUHÁROVÁ, A.: Cellular Concrete - A Progressive Building Material. In: Proceedings of 9th CONSTRUMAT 2003 International Conference. Bratislava, KMTI Svf STU, 2003, pp. 235-239 (in Slovak)

[13] UGORČÁKOVÁ, J. – BAJZA, A.: Effect of a Corrosion Inhibitor on the State of Steel Reinforcement. In: Proceedings of 9th CONSTRUMAT 2003 International Conference. Bratislava, KMTI Svf STU, 2003, pp. 245-249 (in Slovak)