



Hungary-Romania
Cross-Border Co-operation
Programme 2007-2013

Two countries, one goal, joint success!

European Union
European Regional Development Fund



SMARTMAT project

University of Debrecen & University of Oreda

MakroLab

University of Debrecen, Faculty of
Engineering Department of Civil
Engineering

Debrecen 15. 02. 2013

www.hungary-romania-cbc.eu
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500 kN ELECTROMECHANICAL TESTER GENERAL DESCRIPTION



CHARACTERISTICS:

- CAPACITY: 500 KN.
- MAX. DISTANCE BETWEEN TWO PLATEN (mm): 2.000
- RELATIVE ERROR OF READING + 1 OF APPLIED LOAD AND BETWEEN 2 AND 100% OF NOMINAL.
- FACE MEASURING POSITION: 0,1% CLASS 1.
- SPEED ACCURACY: + 1%
- CROSSHEAD DISPLACEMENT: AUTOMATIC PC CONTROLLED
- MAX. WORKING SPEED: 0 – 100 mm/min.
- HORIZONTAL SPAM: 610 mm.



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500 kN ELECTROMECHANICAL TESTER GENERAL DESCRIPTION



RELATED RESEARCH TOPICS:

- Steel and non metallic reinforcement: tensile strength, modulus of elasticity, stress - strain diagram
- Glass/steel/carbon fibre reinforced composite material: modulus of elasticity, stress - strain diagram
- Flexural and compressive strength of fibre reinforced mortar
- Different tests on soil specimens
- Different tests on rock specimens



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500 kN ELECTROMECHANICAL TESTER GENERAL DESCRIPTION



ROLE IN EDUCATION:

- Construction Materials I.-II.; RC Structures I.-III., Steel Structures I.-III., Composite Structures, Timber & Masonry Structures, Laboratory Practice
- Properties of Concrete, Mortar, Ceramic, Wood and other materials
- Behaviour of Column, Beam, Wall and Slab models



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30 TN HYDRAULIC FLEXURAL TESTING FRAME GENERAL DESCRIPTION

CHARACTERISTICS:

- CAPACITY: 30 TN
- HYDRAULIC CILINDER: DOUBLE EFFECT
- PISTON TRAVELLING DISTANCE: 350MM
- FACE MEASURING POSITION: 0,1% CLASS 1.
- SPEED ACCURACY: + 1%
- PISTON DISPLACEMENT: AUTOMATIC PC CONTROLLED
- HORIZONTAL SPAM: 6 MTS
- TESTING WIDTH: 70 CENTIMETERS





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30 TN HYDRAULIC FLEXURAL TESTING FRAME GENERAL DESCRIPTION



RELATED RESEARCH TOPICS:

- Testing of Beams, Slabs or other specimens in bending
- Plate Shear test
- Analysis of full-scale structural models in different loading



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30 TN HYDRAULIC FLEXURAL TESTING FRAME GENERAL DESCRIPTION



ROLE IN EDUCATION:

- Materials and Structural Testing Lab
- Reinforced Concrete, Prestressed Concrete, Composite structural element



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RAPIDAIR 457 SYSTEM



RapidAir 457 is an automated image analysis system performing analysis of the air void distribution of hardened concrete according to the ASTM C 457: „Standard method for Microscopical Determination of Parameters of the Air-Void System in Hardened Concrete”



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RAPIDAIR 457 SYSTEM



RESEARCH ACTIVITY:

- Surface analysis of
 - full self compacting or conventional concrete after/during frost resistance test
- Microstructural analysis of construction materials
- Analysis of bond surface in different cementitious materials
- Analysis of corrosion effect



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RAPIDAIR 457 SYSTEM



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- Properties of Concrete, Mortar, Ceramic, Wood and other materials
- Behaviour of Column, Beam, Wall and Slab models

laboratory work



factory visit



lectures



conference attendance



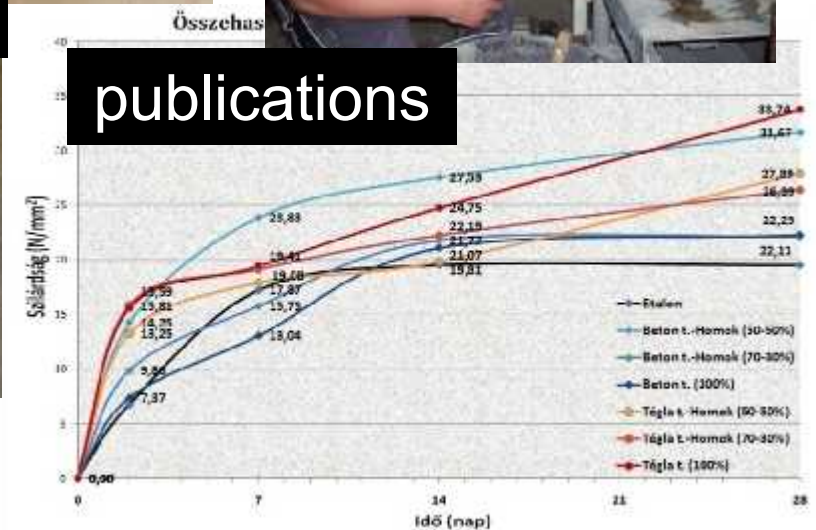
TDK work



OTDK



publications





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GO SMARTMAT