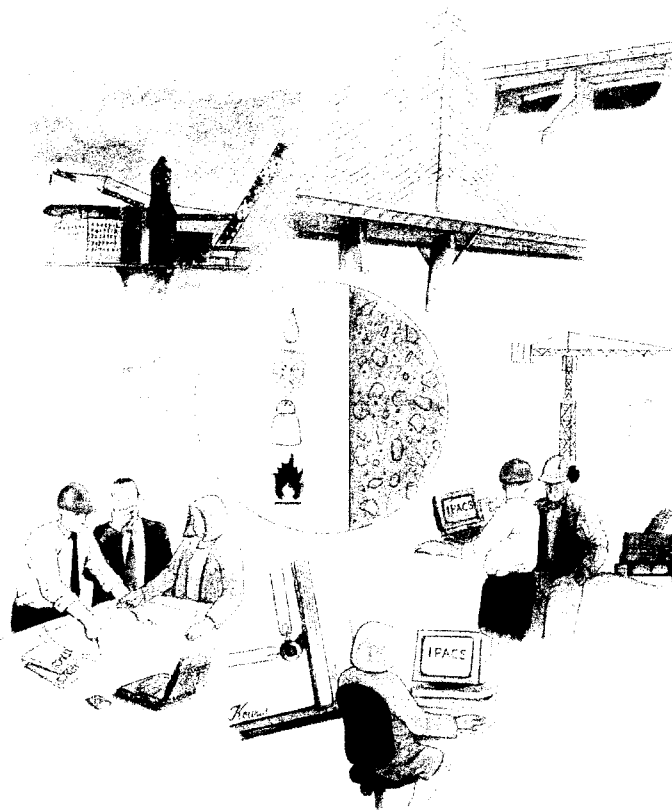


# *Modelling of Degree of Hydration on Basis of Adiabatic Heat Release*



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# CONTENTS

|           |   |           |
|-----------|---|-----------|
| <b>1</b>  | <b>INTRODUCTION AND AIM OF REPORT .....</b>   | <b>1</b>  |
| <b>2</b>  | <b>EXPERIMENTAL WORK .....</b>  | <b>1</b>  |
| 2.1       | COMPOSITIONS OF INVESTIGATED CONCRETES.....   | 1         |
| 2.2       | TEST SET-UP AND PROCEDURES OF TEST .....  | 2         |
| <b>3</b>  | <b>MODEL OF MAXIMUM HEAT RELEASE .....</b>  | <b>2</b>  |
| 3.1       | DETERMINATION OF REACTING PHASES.....   | 2         |
| 3.2       | SPECIFIC HEAT CAPACITY .....  | 3         |
| 3.3       | DETERMINATION OF MAXIMUM HEAT RELEASE.....  | 3         |
| <b>4</b>  | <b>EFFECTIVE AGE OF CONCRETE .....</b>  | <b>4</b>  |
| <b>5</b>  | <b>ENGINEERING MODELS OF DEGREE OF HYDRATION .....</b>                              | <b>5</b>  |
| 5.1       | DEFINITION .....  | 5         |
| 5.2       | MODELS OF DEGREE OF HYDRATION .....   | 6         |
| 5.2.1     | <i>Modified Jonasson Approach</i> .....   | 6         |
| 5.2.2     | <i>Danish Model</i> .....   | 6         |
| 5.2.3     | <i>Shrinkage Core Model (SCM)</i> .....   | 7         |
| 5.3       | MAGNITUDE OF PARAMETERS OF DIFFERENT MODELS .....                                   | 8         |
| 5.3.1     | <i>General Aspects</i> .....  | 8         |
| 5.3.2     | <i>Influence of that Release on Model Parameters</i> .....                          | 8         |
| 5.3.3     | <i>Influence of Temperature of Fresh Concrete on Model Parameters</i> .....         | 8         |
| 5.3.4     | <i>Influence of Cement Content on Model Parameters</i> .....                        | 9         |
| 5.3.5     | <i>Influence of Cement Type on Heat Release and Model Parameters</i> .....          | 11        |
| 5.3.6     | <i>Influence of Water-Cement-Ratio on Model Parameters</i> .....                    | 11        |
| 5.3.7     | <i>Influence of Fly Ash</i> .....   | 12        |
| 5.3.8     | <i>Concrete Mix of Round Robin Test</i> .....                                       | 13        |
| <b>6</b>  | <b>UNCERTAINTIES AND STATISTICAL PROPERTIES OF DEGREE OF HYDRATION</b><br><b>14</b> |           |
| 6.1       | VARIABILITY OF OPC AND GBFS-PC .....  | 15        |
| 6.2       | CLINKER PHASES .....  | 16        |
| 6.3       | DEGREE OF HYDRATION .....   | 17        |
| 6.3.1     | <i>Maximum Heat Release and Maximum Adiabatic Temperature Rise</i> .....            | 18        |
| 6.4       | MEASURED AND CALCULATED DEGREE OF HYDRATION .....                                   | 19        |
| 6.5       | MODEL UNCERTAINTIES.....  | 20        |
| 6.6       | UNCERTAINTIES OF ESTIMATED PARAMETERS OF THE USED MODELS.....                       | 20        |
| 6.6.1     | <i>Comparison of Models</i> .....   | 21        |
| <b>7</b>  | <b>SUMMARY AND RECOMMENDATIONS .....</b>  | <b>21</b> |
| <b>8</b>  | <b>LITERATURE.....</b>  | <b>23</b> |
| <b>9</b>  | <b>APPENDIX A: CONCRETE COMPOSITION .....</b>                                       | <b>26</b> |
| <b>10</b> | <b>APPENDIX B: CHEMICAL COMPOSITION OF CEMENT.....</b>                              | <b>34</b> |
| <b>11</b> | <b>APPENDIX C: PARAMETER OF HEAT RELEASE.....</b>                                   | <b>39</b> |

## Notations, Abbreviations, Units

|                           |   |                      |
|---------------------------|---|----------------------|
| $Q_{pot}$                 | maximum heat release of concrete  | [kJ/m <sup>3</sup> ] |
| $Q_{Cpot}$                | maximum heat release of cement  | [kJ/kg]              |
| $c_c$                     | heat capacity of concrete   | [kJ/(kg·K)]          |
| $c_{Ce}$                  | heat capacity of cement   | [kJ/(kg·K)]          |
| $\rho_c$                  | density of concrete   | [kg/m <sup>3</sup> ] |
| $c_1, t_k$                | parameters of modified JONASSON model                                   | [-], [h]             |
| a, b                      | parameters of Danish model  | [h], [-]             |
| d, $t_{d0}$               | parameters of Shrinkage Core Model                                      | [1/h], [h]           |
| C, R, FA, SF, W           | amount of cement, aggregate, fly ash, silica fume and water in concrete | [kg/m <sup>3</sup> ] |
| $\alpha$                  | degree of hydration   | [-]                  |
| meas $\alpha$             | measured degree of hydration  | [-]                  |
| cal $\alpha$              | calculated value and model of degree of hydration, resp.                | [-]                  |
| $C_3A, C_2S, C_3S, C_4AF$ | clinker phases  | -                    |
| meas $\Delta T_{ad}$      | measured adiabatic temperature rise                                     | [K]                  |
| max $\Delta T_{ad}$       | maximum adiabatic temperature rise                                      | [K]                  |
| $t_e$                     | effective age   | [h]                  |

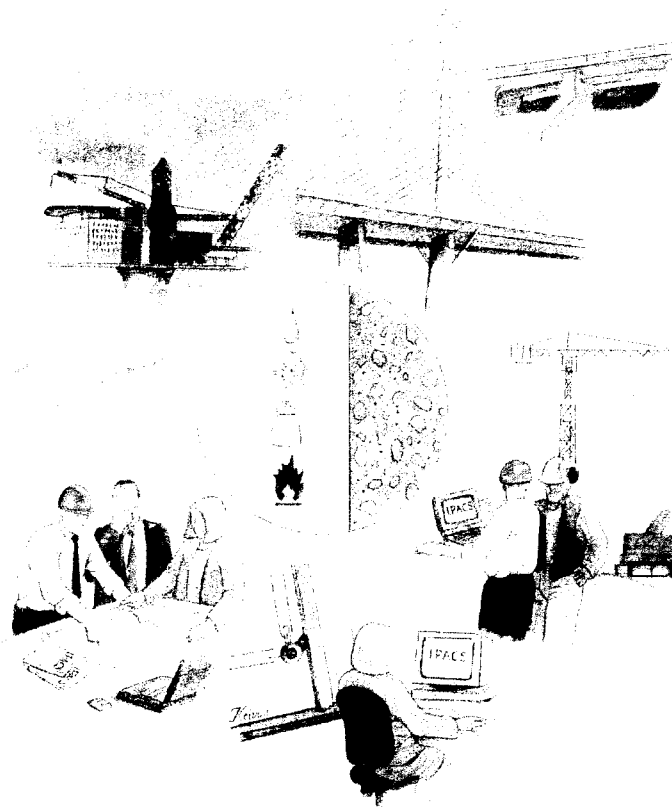


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# *Non-Destructive Assessment of Mechanical Properties of Concrete at Very Early Age by US Techniques – Method, Results and Modelling*



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# CONTENTS

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>INTRODUCTION</b> .....  | <b>1</b>  |
| <b>2</b> | <b>MODELING OF MECHANICAL PROPERTIES OF CONCRETE AT VERY EARLY AGES</b> .....                                      | <b>2</b>  |
| 2.1      | PROBLEM AND SCOPE OF INTEREST .....  | 2         |
| 2.2      | THE USE OF NDT TECHNIQUE.....  | 4         |
| <b>3</b> | <b>MATERIAL PROPERTIES OF YOUNG CONCRETE</b> .....   | <b>4</b>  |
| <b>4</b> | <b>DETERMINATION OF INITIAL DEGREE OF HYDRATION WITH THE COMPRESSIONAL WAVE METHOD (CWM)</b> .....                 | <b>6</b>  |
| 4.1      | INTRODUCTION .....   | 6         |
| 4.2      | COMPRESSIONAL WAVE METHOD .....  | 6         |
| 4.2.1    | <i>Application of the sound penetration technique and testing</i> .....  | 7         |
| 4.3      | TEST RESULTS OF CWM.....   | 10        |
| 4.3.1    | <i>Velocities of compressional waves</i> .....   | 10        |
| 4.4      | DEVELOPMENT OF DYN E ACC. TO CWM.....  | 11        |
| 4.4.1    | <i>Influence of cement type</i> .....  | 12        |
| 4.4.2    | <i>Influence of water - cement ratio</i> .....   | 13        |
| 4.5      | DETERMINATION OF INITIAL DEGREE OF HYDRATION .....   | 14        |
| <b>5</b> | <b>DETERMINATION OF INITIAL DEGREE OF HYDRATION WITH COMBINED SHEAR AND COMPRESSIONAL WAVE METHOD (SCWM)</b> ..... | <b>15</b> |
| 5.1      | INTRODUCTION .....   | 15        |
| 5.2      | TEST SET-UP.....   | 16        |
| 5.3      | ADIABATIC CALORIMETER.....   | 16        |
| 5.4      | ULTRASONIC MEASUREMENT .....   | 16        |
| 5.5      | TESTING OF AXIAL TENSILE STRENGTH AND STATIC MODULUS OF ELASTICITY .....   | 18        |
| 5.6      | CONCRETE COMPOSITIONS .....  | 18        |
| 5.7      | MODELS AND TEST RESULTS .....  | 19        |
| 5.7.1    | <i>Test results</i> .....  | 19        |
| 5.7.2    | <i>HPC</i> .....   | 19        |
| 5.7.3    | <i>Material properties at early ages of HPC</i> .....  | 20        |
| 5.7.4    | <i>Application of NDT on HPC</i> .....   | 22        |
| 5.7.5    | <i>Improvement of iBMB – model</i> .....   | 23        |

|       |  |    |
|-------|--|----|
| 5.7.6 | <i>Improvement of Scandinavian model</i> .....         | 24 |
| 5.8   | PARAMETER STUDIES REGARDING END OF DORMANT PHASE ..... | 24 |
| 6     | <b>CONCLUSIONS</b> .....                               | 25 |
| 7     | <b>REFERENCES</b> .....                                | 26 |

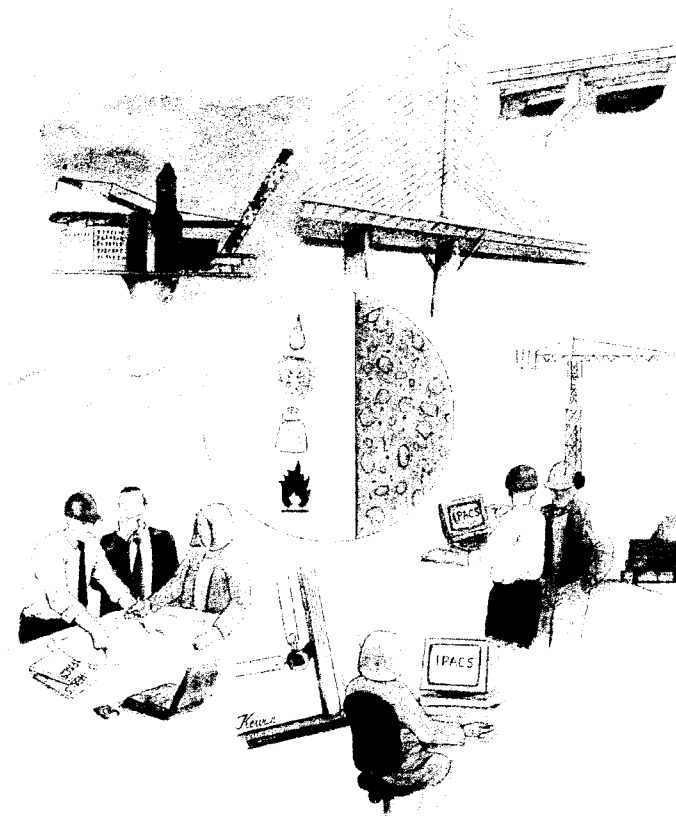


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# *Fracture Mechanics Behaviour of Concrete at Early Age*



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# Contents

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>Introduction</b>  | <b>1</b>  |
| <b>2</b> | <b>Fracture mechanics</b>  | <b>2</b>  |
| 2.1      | General . . . . .  | 2         |
| 2.2      | Microcrack development and crack growth . . . . .                      | 3         |
| 2.3      | Identification of the Fracture Process Zone (FPZ) . . . . .            | 4         |
| <b>3</b> | <b>Experimental set-up</b>   | <b>9</b>  |
| 3.1      | Specimens and control . . . . .  | 11        |
| 3.2      | Optics . . . . .   | 11        |
| <b>4</b> | <b>Experimental results</b>  | <b>15</b> |
| 4.1      | Fracture energy . . . . .  | 16        |
| 4.1.1    | General . . . . .  | 16        |
| 4.1.2    | Influence of age of specimens on $G_F$ . . . . .                       | 16        |
| 4.1.3    | Influence of specimens size on $G_F$ . . . . .                         | 18        |
| 4.2      | Fracture process zone . . . . .  | 18        |
| 4.2.1    | General . . . . .  | 18        |
| 4.2.2    | Exemplary results achieved on double-edge notched tensile specimens    | 18        |
| 4.2.3    | Selected results of single-edge notched three-point bending beams      | 20        |
| 4.2.4    | Influence of the degree of hydration on the FPZ . . . . .              | 20        |
| 4.2.5    | Influence of the aggregate size on the FPZ . . . . .                   | 26        |
| 4.2.6    | Influence of the compressive strength of concrete on the FPZ . . . . . | 26        |
| 4.2.7    | Influence of specimen size on the FPZ . . . . .                        | 26        |
| 4.2.8    | Influence of the loading rate on the FPZ . . . . .                     | 30        |
| <b>5</b> | <b>Mechanical modeling and numerical results</b>                       | <b>32</b> |
| 5.1      | General . . . . .  | 32        |
| 5.2      | Modeling the fracture energy $G_F$ . . . . .                           | 33        |
| 5.3      | Model of the FPZ-extension $l_{pr}$ . . . . .                          | 38        |
| 5.4      | Multi-layer model . . . . .  | 41        |
| <b>6</b> | <b>Conclusions</b>   | <b>43</b> |
| <b>7</b> | <b>References</b>  | <b>48</b> |