

EUROPEAN CONSTRUCTION IN SERVICE OF SOCIETY

ECO-SERVE NETWORK

CLUSTER 2

Production and Application of Blended Cements

Network / Research activities

Timetable

Deliverables / Milestones April/May 2004

26.03.2004

Table 1: Network: Overview of deliverables

Deliverable No.	Delivery date	Output from Task/ sub task No. Nature of Deliverable and brief description
D3	31. May 2004	Benchmarking and proposal for further RTD activities Periodic cluster report

Table 2: Research: Overview of deliverables

Deliverable No.	Delivery month ¹⁾	Output from Task/ sub task No.	Nature of Deliverable and brief description	
D3	10/2003-03/2004 (08/2004-12/2004)	R1.1-R1.5	Data/Re/ Mat	Process data from the production of blended cements and blended cements (data and materials of 4 partners)
D4	07/2004 (06/2005)	R2.1	Data/Re	Properties of components and blended cements (data of 4 partners)
D5	09/2004 (09/2005)	R2.2	Data/Re	Interaction between the main constituents (data of 4 partners)
D6	09/2004 (09/2005)	R2.3	Data/Re	Microstructure (data of 4 partners)

Re.: Data

Mat.: Materials

1) Referring to the start of the research activities 10/2003

Table 3: Research: Overview of Milestones

Milestone No.	Month ¹⁾	Brief description of milestone objectives	Decision criteria for assessment
M4	03/2004	Evaluation of D3-D6	Strength development and water-demand of the cements → if necessary modification of cement composition / production / properties

1) Referring to the start of the research activities 10/2003

Table 4: Network: Reference list on blended cements (examples)

No.	Author(s)	Titel etc
1	Lindner, Stefan ; Ludwig, Horst-Michael ; Möller, Hendrik ; Wächtler, Hans-Jürgen	Production and properties of CEM II/B-M Portland composite cements. In: Process Technology of Cement Manufacturing / VDZ Congress 2002 / Verein Deutscher Zementwerke, VDZ (Hrsg.). - Düsseldorf : Verl. Bau Technik, 2003. - ISBN 3-7640-450-0; pp. 37-41 (2003)
2	Ludwig, H.-M.	Influence of process technology on the manufacture of market-oriented cements. In: Process Technology of Cement Manufacturing / VDZ Congress 2002 / Verein Deutscher Zementwerke, VDZ (Hrsg.). - Düsseldorf : Verl. Bau Technik, 2003. - ISBN 3-7640-450-0; pp. 2-24 (2003)
3	Irassar, E.F. ; Bonavetti, V.L. ; Gonzalez, M.	Microstructural study of sulfate attack on ordinary and limestone Portland cement at ambient temperature. In: Cement and Concrete Research 33 – No. 1, pp. 31-41 (2003)
4	Menéndez, G. ; Bonavetti, V. ; Irassar, E.F.	Strength development of ternary blended cement with limestone filler and blast-furnace slag. In: Cement & Concrete Composites 25 – No. 1, pp. 61-67 (2003)
5	Sprung, Siegbert ; Siebel, Eberhard	Influence of limestone in Portland limestone cements on the durability of concrete. In: Beton 41 – No. 3-4, pp. 113-117, 185-188 (1991) – in German
6	Tsivilis, S. ; Chaniotakis, E. ; Badogiannis, E. ; Pahoulas, G. ; Ilias, A.	A study on the parameters affecting the properties of Portland limestone cements. In: Cement & Concrete Composites 21 – No. 2, pp. 107-116 (1999)
7	Tsivilis, S. ; Chaniotakis, E. ; Batis, G. ; Meletiou, C. ; Kasselouri, V. ; Kakali, G. ; Sakellariou, A. ; Pavlakis, G. ; Psimadas, C.	The effect of clinker and limestone quality on the gas permeability, water absorption and pore structure of limestone cement concrete. In: Cement & Concrete Composites 21 – No. 2, pp. 139-146 (1999)
8	Tsivilis, S. ; Tsantilas, J. ; Kakali, G. ; Chaniotakis, E. ; Sakellariou, A.	The permeability of Portland limestone cement concrete. In: Cement and Concrete Research 33 – No. 9, pp. 1465-1471 (2003)

CLUSTER 2			MANPOWER BARCHART																								
Task/Sub-task descriptions			2003			2004												2005									
			Month																								
			10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
Task	R1	Cement production																									
Sub-task	1.1	Blast furnace slag																									
Sub-task	1.2	Natural pozzolana																									
Sub-task	1.3	Fly ashes																									
Sub-task	1.4	Silica fume																									
Sub-task	1.5	Limestone																									
Task	R2	Basic research																									
Sub-task	2.1	Physical and chemical properties of components and cements																									
Sub-task	2.2	Interaction between the main constituents																									
Sub-task	2.3	Microstructure																									
Task	R3	Concrete properties / Durability aspects																									
Sub-task	3.1	Basic concrete properties																									
Sub-task	3.2	Carbonation																									
Sub-task	3.3	Penetration of chlorides																									
Sub-task	3.4	Freeze-thaw durability																									
Sub-task	3.5	Chemical resistance																									
Deliverables			D2				D3				D4	D5			D3*						D4*				D5*		
												D6													D6*		
																									D7		
																									D8		
																									D9		
																									D10		
																									D11		
																									D12		
																									D13		
Milestones			M2B																								
			M3																								
							M4																				
																									M6		
																										M7	

Figure 1: Cluster 2 time table for research activities - revised and adjusted for start in 10/2003