



8º Congresso Internacional de Química do Cimento

**8th International Congress
on the Chemistry of Cement**

**8e Congrès International
de la Chimie des Ciments**

**Special Reports/Principal Reports
Rapports Spéciaux/Rapports Principaux
Volume I**

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22-27 de setembro de 1986
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Relationship of Processing Parameters to Clinker Properties; Influence of Minor Components.

Rapport entre les Paramètres du Processus et les Propriétés du Clinker; Influence des Éléments Mineurs

Chairwoman/Président: A.I. BOIKOVA (U.S.S.R.)

Principal Reporter/Rappoteur Principal: I. MAKI (Japan)

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Kinetic of Clinker Formation/Cinétique de la Formation du Clinker

Chairman/Président: O.P. MTCHEDLOV-PETROSSIAN, (U.S.S.R.)

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Chairman/Président: J.P. MERIC (France)

Principal Reporter/Rapporteur Principal: F.W. Locher (West Germany)

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Chairman/Président: G. FRONHSDORFF (U.S.A.) – Secretary/Secrétaire: P.J.M. MONTEIRO (Brasil)

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Physical Chemistry of Hydration Process; Influence of Minor Components and Admixtures. Physico-Chimie du Processus D'Hydratation; Influence des Éléments Mineurs et des Matières D'Additions

Chairman/Président: A.M. DMITRIEV (U.S.S.R.)

Principal Reporter/Rapporteur Principal: H.F.W. TAYLOR (Scotland, U.K.)

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244	E. Gartner, J.P. Skalny (U.S.A.)	Computation of solubility relationships for hydrating cement systems.
251	T.V. Kouznetsova, G.V. Akimov (U.S.S.R.)	Bicalcium silicate and calcium aluminates.
256	A.M. Dmitriev, A.K. Zapolsky, T.V. Kouznetsova, B.E. Yudovitch, I.D. Ponomarev (U.S.S.R.)	Alliage d'hydrolicité des ciments.

260	G.V. Akimov, T.V. Kouznetsova, A.B. Koudriavtsev, V. Paniouchkine (U.S.S.R.)	Défectuosités de structure et activité d'hydratation des minéraux entrant dans le clinker du ciment portland.
266	E.I. Fedin, T.V. Kouznetsova, A.V. Nekhorochev, M.A. Sorotshkin, A.L. Blumenfel'd, A.B. Koudriavtsev, G.V. Akimov (U.S.S.R.)	Étude de la cinétique de l'hydratation du ciment portland par la série de méthodes nucléaires.
271	A.I. Boikova, L.V. Grishchenko, A.I. Domansky (U.S.S.R.)	Hydration activity of chlorine-containing phases.
277	M.M. Sychev (U.S.S.R.)	Cement hydration control.
281	A. Polak (U.S.S.R.)	Certaines nouvelles conceptions sur le mécanisme d'hydratation des liants.
285	O.P. Mtchedlov-Petrossian, A.V. Oucherov-Marchark (U.S.S.R.)	Classification des processus de durcissement des liants.
290	A. Kochmai, O.P. Mtchedlov-Petrossian (U.S.S.R.)	Phénomènes électrochimiques intervenant aux premiers stades d'hydratation et de formation de la structure des pâtes de ciment.
295	E.D. Choukin, E.P. Andreeva, S.I. Kontorovitsh, E.A. Almelina (U.S.S.R.)	Rôle des processus de la polycondensation au cours du durcissement d'hydratation des liants siliceux.
300	H. Pöllmann (West Germany)	Solid solution of complex calcium aluminate hydrates containing Cl^- , OH^- and CO_3^{2-} - anions.
307	R. Wenda, H.-J. Kuzel (West Germany)	B^{3+} in calcium aluminate hydrates.
314	V. Mlakar (Yugoslavia)	The role of kinetic parameters on the properties of hydrating cement paste.

SUB-THEME/SOUS-THÈME 2.2

Microstructure of Hardened Cement Paste and its Effects on its Behaviour Microstructure de la Pâte de Ciment Hydraté et ses Effets dans son Comportement

Chairman/Président: P.K. MEHTA (U.S.A)

Principal Reporter/Rapporteur Principal: S. DIAMOND (U.S.A.)

Pages	Authors (Countries)/Auteurs (Pays)	Titles of Papers/Titres des travaux
323	Y. Tezuka, J.G. Djanikian (Brasil) H. Uchikawa, S. Uchida (Japan)	Hydration characteristics and properties of mixtures of cement and high content of calcium sulfate.
330	D.R. Vollet, A.F. Craievich (Brasil)	Structure and kinetics of formation of the gel phase in hydrated tricalcium silicate.
337	J.J. Beaudoin, R.F. Feldman (Canada), J. Baron, M. Conjeaud (France)	Dependence of degree of silica polymerization and intrinsic mechanical properties of C-S-H on C/S ratio.
343	Lu Ping, Huang Yiun-yuan (China)	A study of the intrinsic properties of hardened cement pastes (HCP).
349	V. Lach (Czechoslovakia)	The formation of $\text{C}_2\text{SH(A)}$ and C_3SH at the hydration of portland cement.
356	F. Skvára (Czechoslovakia)	Microstructure of hardened pastes of gypsum-free portland and slag cements.
363	J. Jambor (Czechoslovakia)	Pore structure and strengths of hardened cement pastes.
369	T. Knudsen (Denmark)	The dispersion model for hydration of portland cement.
375	E. Henderson, J.E. Bailey (England, U.K.)	Structure and morphological aspects of calcium silicate hydrates.

382	N.B. Eden, J.E. Bailey (England, U.K.)	Crack tip processes and fracture mechanism in hardened hydraulic cements.
389	K.L. Scrivener (England, U.K.)	A study of the microstructure of two old cement pastes.
394	A. Negro, L. Montanaro, A. Bachiorrini (Italy)	Sur l'hydratation de la phase ferrite en présence de chaux et gypse.
401	K. Isozaki, K. Nakagawa (Japan)	Behaviour of ettringite in high strength hardened cement paste.
407	W. Kurdowski, K. Miskiewicz (Poland)	$\text{Ca}_3\text{SiO}_4\text{Cl}_2$ hydration under hydrothermal conditions.
412	O.Z. Cebeci (Saudi Arabia)	Hydration and porosity of cement paste cured in warm and dry environment.
417	A.D. Buck (U.S.A.)	Relationships between ettringite and chloroaluminate, strength, and expansion in paste mixtures.
425	L. Chpynova, V. Ilioukhine, M. Sanitski, S. Melnik (U.S.S.R.)	Phénomènes cristallochimiques intervenant dans l'hydratation des minéraux du ciment.

SUB-THEME/SOUS-THÈME 2.3

Bond: Paste-Aggregate, Paste-Reinforcement and Paste-Fibres.

Adhérence: Pâte-Granulat, Pâte-Armature et Pâte-Fibres.

Chairman/Président: J.P. SKALNY (U.S.A.)

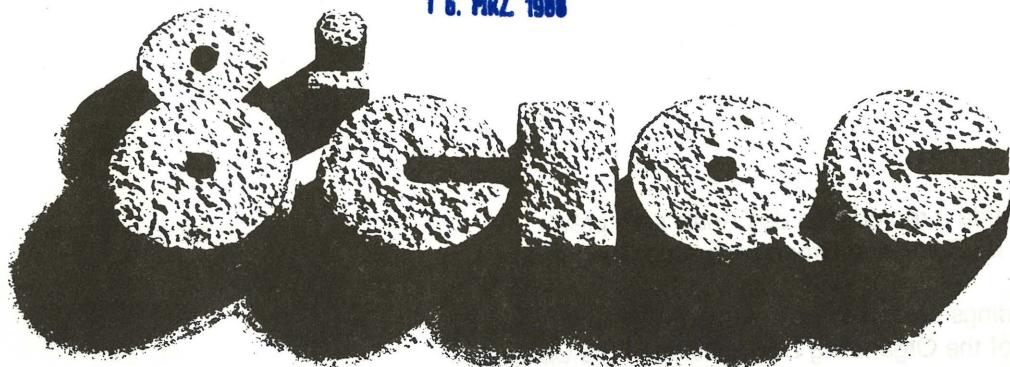
Principal Reporter/Rapporteur Principal: F. MASSAZZA (Italy)

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438	P. Kittl, G. Diaz (Chile)	Compatibility of copper fibre with compacted cement and low thermal-shock fatigue thereof.
444	Chen Zhi-yuan, Zhang Xio-Zhong (China)	Investigations on the zinc/hydrated-cement-paste interfacial zone.
449	Chen Zhi-yuan, Zhang Xio-Zhong (China)	Distribution of $\text{Ca}(\text{OH})_2$ and of the CSH phase in the oolithic marble/hydrated cement paste.
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478	G. Frigione, B. Marchese, R. Sersale (Italy)	Microcrackings propagation in flexural loaded portland and high slag cement concretes.
485	P. Bartos (Scotland, U.K.)	Bond in cements reinforced with bundles of fibres.

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8º Congresso Internacional de Química do Cimento

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BLENDED AND SPECIAL CEMENTS/CIMENTS SPÉCIAUX ET CIMENTS AVEC ADDITIONS.

Chairman/Président: V.I. KUSCHIDI (U.S.S.R.) – Secretary/Secrétaire: Y. KIHARA (Brasil)

SUB-THEME/SOUS-THÈME 3.1

Characteristics and Activation of Blending Components.

Caractéristiques et Activation des Composants des Matières d'Addition.

Chairman/Président: R. BUCCHI (Italy) – Principal Reporter/Rapporteur Principal: M. REGOURD (France)

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22	P.C. Aitcin (Canada), A. Carles-Cibergues, M. Oudjat, A. Vaquier (France)	Influence des éléments autres que Si sur la réactivité des fumées de silice.
30	Lou Zonghan, Xu Xianyu, Yang Liqun, Sheng Qizhong (China)	Dissociation of aluminium from slag glasses and formation of ettringite.
36	Wang Yuji (China)	The effect of hydration products in steam treated steel slag (O.C.S.) on the hydration of steel slag-portland blended cement.
41	Huang Shiyuan, Cheng Jiping (China)	The evaluation of pozzolanic reactivity of fly ashes.
46	Han Qi Cheng (China), B. Osbaeck (Denmark) M. Murat, J. Ambroise, J. Péra (France)	Effects of fly ash grinding on the hydration and strength development of fly ash cements. Les différents procédés d'activation des minéraux argileux permettant d'élaborer des liants pouzzolaniques à résistances optimales.
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128	A.A. Gonorov (U.S.S.R.)	Certains aspects de la structure des laitiers granulés.
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137	K. Popovic, A. Djurekovic, V. Ukraincik (Yugoslavia)	Blended and special cements incorporating condensed silica fume.

SUB-THEME/SOUS-THÈME 3.2

Effect of Blending Components on Hydration and Structure Formation.

Effets des Composants des Matières d'Additions dans l'Hydratation et dans la Formation de la Structure.

Chairman/Président: J. CALLEJA (Spain)

Principal Reporter/Rapporteur Principal: H. UCHIKAWA (Japan)

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158	Shan-Ba Wang (China), R.L. Berger (U.S.A.)	Effect of $\text{Ca}(\text{OH})_2$ and $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ on the strength of flyash cement pastes.
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224	C. Atzeni, A. Marcialis, L. Massidda, U. Sanna (Italy)	Effect of fine mineral admixtures on the properties of hardened cement pastes.

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279	A. Djurekovic (Yugoslavia)	Hydration of alite and C_3A and changes of some structural characteristics of cement pastes by addition of silica fume.

SUB-THEME/SOUS-THÈME 3.3

Special Cements. Calcium Aluminate and Other No-Silicate Cements. Ciments Spéciaux. Ciments à Base d'Aluminates Calciques et Autres Ciments sans Silicates

Chairwoman/Président: T.V. KOUZNETSOVA (U.S.S.R.)

Principal Reporter/Rapporteur Principal: W. KURDOWSKI (Poland)

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306	Xue Jungan, Tong Xueli, Chen Wenhao, Xu Jizhi, Xi Yaxhong, Zhang Yiyu (China)	Study on high self-stress aluminate cement.
312	J. Hosek, K. Kolar, J. Novotny (Czechoslovakia)	Shrinkage problem of quick-setting cement.
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395	Y. Yamazaki, Y. Sakakibara (Japan)	Calcium sulfoaluminate made from phosphogypsum and its hydration properties.
401	J. Grzymek, A. Derdacka-Grzymek, Z. Konik, M. Pyzalski, A. Stock, J. Iwanciw (Poland)	The mechanism of expansive pressure development with the hydration of CaO .
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429	V.I. Korneev, V.V. Andreev, U.V. Nikiforov (U.S.S.R.)	Ciment fondu: comme éviter leur dégradation des résistances mécaniques.
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438	P. Gaidjourov (U.S.S.R.)	Ciments sur la base des hydrogénats et des hydrocarboaluminates de calcium.
443	A.P. Zoubekhin (U.S.S.R.)	Ciment d'alinite résistant aux sulfates.
		Particularités des phénomènes de formation de minéraux et d'hydratation des ciments décoratifs et en haute teneur de fer.
		Nouveaux aspects de la chimie physique du ciment portland blanc.

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INFLUENCE OF CEMENT IN THE DURABILITY OF CONCRETE/INFLUENCE DU CIMENT DANS LA DURABILITÉ DU BÉTON

Chairman/Président: G. WISCHERS (West Germany) – Secretary/Secrétaire: H.R.E. BUCHER (Brazil)

SUB-THEME/SOUS-THÈME 4.1

Pore Structure, Permeability and Diffusivity as Related to Durability.

Structure des Pores, Perméabilité et Diffusibilité en Liaison avec la Durabilité.

Chairman/Président: R.E. OBERHOLSTER (South Africa)

Principal Reporter/Rapporteur Principal: R.F. FELDMAN (Canada)

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22	G. Bozhinov, N. Barovsky (Bulgaria)	To the analysis of the pore structure of cement stone.
29	C.D. Lawrence (England, U.K.)	Measurements of permeability.
35	E. Revertegat, F. Bernaudat (France)	Rôle de la porosité dans la durabilité des liants hydrauliques.
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47	P. Gegout, H. Hornain, B. Thuret, M. Regoud (France)	Résistance au gel des ciments aux fillers calcaire.
53	H. Hornain, M. Regoud (France)	Microfissuration des bétons.
60	J.-M. Lameille, R. Chiappini, G. Goutière, J.-C. Petit, M. Regoud (France)	Relation entre la lixiviation d'éléments tracés (Cs, Sr et Co), et la microstructure au cours du vieillissement d'un mortier à base de CPA.
67	S. Krishnamoorthy, N.K. Jain (India)	Influence of blending flyash with portland cement on the pore structure changes of portland cement mortars cured in NaCl solutions.
73	A. Kumar, D.M. Roy (U.S.A.)	Pore structure and ionic diffusion in Admixtures blended portland cement systems.
80	G. Teodoru (West Germany)	Influence des conditions de durcissement sur la durabilité de la pâte de ciment et du béton.
85	G. Blunk, P. Gunkel, H.-G. Smolczyk (West Germany)	On the distribution of chloride between the hardening cement paste and its pore solution.

SUB-THEME/SOUS-THÈME 4.2

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Chairman/Président: G.G. LITVAN (Canada) – Principal Reporter/Rapporteur Principal: D.M. ROY (U.S.A.)

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99	A. Bajza, I. Rousekova, O. Vrana (Czechoslovakia)	Corrosion of hardened cement pastes by NH_4NO_3 solutions.
104	H.Y. Ghorab, E.A. Kishar (Egypt)	The stability of the calcium sulfoaluminate hydrates in aqueous solutions.
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189	D. Heinz, U. Ludwig (West Germany)	Mechanism of subsequent ettringite formation in mortars and concretes after heat treatment.
195	D. Dimic, S. Droljc (Yugoslavia)	The influence of alite content on the sulphate resistance of portland cement.

SUB-THEME/SOUS-THÈME 4.3

Compatibility of Cement Paste with Aggregates and Reinforcements,

Including Electrochemical Corrosion.

Compatibilité de la Pâte de Ciment avec les Granulats et les Armatures, y compris la Corrosion Électrochimique.

Chairman/Président: R. CIGNA (Italy) – Principal Reporter/Rapporteur Principal: R. TURRIZIANI (Italy)

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214	M. Arpaia, R. Cigna, R. Turriziani (Italy)	Corrosion behaviour of TAD, diffused reinforcement concrete tubes.
220	G.P. Tognon, S. Cangiano, G. Coppetti (Italy)	Thermomechanical compatibility of aggregates in autoclaved very high strength concretes.
226	C. Tashiro, Y. Fukushima (Japan)	Effect of zinc oxide admixture on corrosion inhibition of iron in cement mortar containing sea water.
231	W. Kobayashi, N. Kataoka, Y. Tsutsumi (Japan)	On the behaviour of alkali in alkali-aggregate reaction.
237	K.-I. Nakano, S. Kobayashi, S. Nagaoka (Japan)	Influence of reactive aggregate and alkali compounds of expansion of alkali-silica reaction.
243	J. Wiśniewski, J. Karys, J. Czaja (Poland)	Protection chimico-potentiostatique de l'armature dans le béton.
249	G. Davies, R.E. Oberholster (South Africa)	Chemical and swell properties of the alkali-silica reaction product.
256	C. Andrade, C. Alonso, P. Santos, A. Macías (Spain)	Corrosion behaviour of steel during accelerated carbonation of solutions which simulate the pore concrete solution.
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8th International Congress
on the Chemistry of Cement

8e Congrès International
de la Chimie des Ciments

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154	J. Gebauer (Switzerland)	Effect of high MgO content in cement upon-turn properties of concrete.
158	V.K. Kozlova (U.S.S.R.)	Sur la formation des phases nouvelles dans le clinker lors de la cuisson des mélanges crus à base des produits secondaires.
164	I.G. Louginina, V.M. Konovalov, L.D. Chaklova, V.A. Beletskaia (U.S.S.R.)	Durcissement du ciment portland à teneur élevée en oxyde de magnésium et en autres compositions magnésiennes.

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321	E.B. Entin, L.S. Klyueva (U.S.S.R.)	Cement quality: key measures and evaluation techniques.
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337	G. Babachev, K. Kolev (Bulgaria)	The influence of the cement type on the values for light constructive – thermal insulating concrete.
340	T. Ming-shu, X. Zhong-zhi, H. Su-fen (China)	Alkali reactivity of glass aggregate.
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349	J.A. Forrester, S.A. Jefferis (England, U.K.)	Effects of high shear mixing on hydration behaviour of cement paste and rheological interpretations.
351	M.J. Coole, A.M. Harrisson (England, U.K.)	The effect of simulated large pour curing conditions on the temperature rise and strength growth of PFA containing concrete.
356	C. Vernet (France)	Réactions périodiques lors de l'attaque des ciments par des réactifs chimiques.
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400	N. Tsuyuki, N. Hirota, K. Miyakawa, J. Kasai (Japan)	The physical properties and the hydration mechanism of C_3A in the presence of $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ and $\text{Ca}(\text{OH})_2$.
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500	Z.M. Larionova, I.I. Kourbatova, N.S. Zhelvakova, L.P. Moiséeva (U.S.S.R.)	Influence des additions organiques sur la formation de la structure de la pierre de ciment.
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