

N. De Belie, H.J. Verselder, B. De Blaere, D. Van Nieuwenburg and R. Verschoore: Influence of the Cement Type on the Resistance of Concrete to Feed Acids	1717
I. Janotka, J. Madejová, L. Števula and D.M. Frt'álová: Behaviour of Ca(OH) ₂ in the Presence of the Set Styrene-Acrylate Dispersion	1727
A. Demirbaş: Optimizing the Physical and Technological Properties of Cement Additives in Concrete Mixtures	1737
LETTER TO THE EDITOR	1745
ERRATA	1747
NEWS ITEMS	1749

1996

Volume 26, Number 12

December

COMMUNICATED PAPERS

Xingshan Zhou, Xian Lin, Mingjiang Huo and Yang Zhang: The Hydration of Saline Oil-Well Cement	1753
R.K. Dhir, M.R. Jones and M.J. McCarthy: Binder Content Influences on Chloride Ingress in Concrete	1761
R.K. Dhir, M.A.K. El-Mohr and T.D. Dyer: Chloride Binding in GGBS Concrete	1767
J.J. Beaudoin, Ping Gu and W. Lin: Flexural Behavior of Cement Systems Reinforced with High Aspect Ratio Aragonite Micro-Fibres	1775

REFEREED PAPERS

W. Morris, E.I. Moreno and A.A. Sagüés: Practical Evaluation of Resistivity of Concrete in Test Cylinders Using a Wenner Array Probe	1779
Caijun Shi: Strength, Pore Structure and Permeability of Alkali-Activated Slag Mortars	1789
I. Maki, M. Ichikawa, H. Yoshida and T. Yoshida: Anisotropic Light Absorption of the Ferrite Solid Solutions (Ca ₂ (Fe _{1-x} Al _x)O ₅)	1801
Mitsunori Kawamura and Katsunobu Takeuchi: Alkali-Silica Reaction and Pore Solution Composition in Mortars in Sea Water	1809
F.M. Miller and F.J. Tang: The Distribution of Sulfur in Present-Day Clinkers of Variable Sulfur Content	1821
A. Delagrave, J. Marchand and E. Samson: Prediction of Diffusion Coefficients in Cement-Based Materials on the Basis of Migration Experiments	1831
Bernadett Kolláth and A. Zoltán Juhász: Mechanochemical Capillary Reactions in Partly Dehydrated Gypsum and Aluminium Hydroxide Interground Powder Mixtures	1843
NEWS ITEMS	1859

INDEX TO VOLUME 26	1863
Key Word Index	1872
Author Index	1875

Key Word Index

Abrams' Law, 933	Acetic Acid, 475	Age, 465
Absorption, 1423, 1761	Acid Attack, 1717	Aggregate Size, 63
Accelerated Evaluation, 203	Activation, 1351	Aggregates, 993
Accelerators, 1179	Admixtures, 1083	Alhambra, 825
Acetate, 1593	Ag/AgCl Sensors, 1157	Alignment, 1245

- Alkali Carbonate, 1661
- Alkali-activated Slag, 21, 439
1789
- Alkali-aggregate Reaction, 21,
153
- Alkali-carbonate Reaction,
1579
- Alkali-silica Gel, 309
- Alkali-silica Reaction, 623,
1809
- Aluminate, 1203, 1661
- Analysis, 1695, 1821
- Ancient Mortar, 841
- Anhydrite, 1505
- Anisotropy, 1801
- Aragonite Fibers, 1775
- ASR Aggregates, 663
- Autoclaving, 1109, 1399

- Bases, 1689
- Beams, 363
- Belite Cements, 1213
- β - Ca_2SiO_4 , 1179
- Biaxial Stress, 1409
- Binder Content, 1761
- Bond Degradation, 267
- Bond-slip, 657
- Bond Strength, 189, 1007,
1499
- Borogypsum, 1737
- Brazilian Test, 125
- Brownmillerite, 77
- Burnability, 457, 1361, 1473

- C_3A , 717
- $\text{C}_4\text{A}_3\text{S}$, 1315
- Ca Sulfoaluminate, 743
- Calcium Nitrate, 1131
- Calcium Sulfoaluminate, 1673
- Calorimetry, 203
- $\text{Ca}(\text{OH})_2$, 1257, 1727
- Carbon Dioxide, 551
- Carbon Fiber, 1007, 1485
- Carbon Filament, 1467
- Carbonation, 405, 729, 1095,
1199
- Ca-Si Gels, 623
- Ca_3SiO_5 Pastes, 1369
- Cb, 377
- Cement, 1295
- Cement Composites, 1467
- Cement Paste, 1545
- Cement Raw Meal, 377
- Cement Setting, 491
- Cement-fly Ash Binders, 895

- Cementitious Systems, 539
- Cement-lime Mortars, 861
- Cement-quartz Pastes, 1399
- Cements, 1315
- Center Notch, 125
- Characterization, 841
- Chemically Bonded Ceramics,
933
- Chloride, 513, 1593, 1695
- Chloride Binding, 1767
- Chloride Concentrations, 319
- Chloride Content, 1443
- Chloride Diffusion Coefficient,
1239
- Chloride Diffusivity, 551, 697
- Chloride Extraction, 267
- Chloride Ingress, 1761
- Chloride Ions, 749, 907
- Chloride Media, 215
- Chloride Monitoring, 1157
- Chloride Removal, 851
- Chloride Transport, 869
- Chlorides, 781, 1525
- Chromium-III, 1369
- Class C Fly, 1131
- Clinker, 377, 1473
- Clinker Formation, 1435
- Clinker Phases, 1821
- Clinker Synthesis, 1307
- Clinkers, 1315
- Coagulation, 491
- Cold Bonding, 181
- Composite, 521, 611
- Composites, 1489
- Composition, 1629
- Compounds, 1613
- Compression, 1513
- Compressive Strength, 963
- Concrete, 113, 253, 611
- Concrete Brittleness, 63
- Concrete Curing, 677
- Concrete Performance, 355
- Concrete Quality, 761
- Correlations, 1629
- Corrosion, 345, 475, 513,
761
- Corrosion Inhibitor, 405
- Corrosion Potential, 501
- Corrosion Protection, 1525
- Corrosion Rate, 1151
- Corrosion Rates, 1593
- Cr, 377
- Crack Arrest, 1245
- Crack Frequency, 345
- Cracking, 869, 919, 1199

- Cracks, 573
- Creep, 1409
- Crusher Dust, 1121
- Crystallinity, 1451
- C-S-H, 1257
- C-S-H Composition, 295
- CuO , 1473
- Curing, 1341
- Curing Conditions, 355
- Cycles, 683

- Decalcification, 1029
- Degree of Reaction, 139
- Deicing Salts, 1163
- Delayed Formation, 1649
- Deterioration, 999
- Diffusion, 781, 907
- Diffusion Coefficients, 1831
- Diffusivity, 1301
- Digital Image Publication, 3
- Direct Tension Test, 949
- Dispersion, 985
- Dolomite, 1579
- Dry Cements, 237
- Dry Concrete Products, 427
- Drying, 1423
- DSC, 1473
- Durability, 557, 601, 1189
- Dye Impregnation, 573

- Early Hydration, 439
- Edta Extraction, 139
- Efficiency Factor, 465
- Elastic Modules, 611
- Elastic Moduli, 83
- Electrical Conductivity, 529,
1801
- Electrical Double Layer, 907
- Electrical Impedance, 253
- Electrical Restivity, 15
- Electrochemical Chloride
Extraction, 165, 771, 1095
- Electrochemical Process, 851
- Electrochemical Tests, 545
- Electron Probe, 1695
- Enhancement, 49
- EPR Spectra, 237
- Ethanolamines, 701
- Ettringite, 309, 1277, 1493,
1649
- Ettringite Formation, 417
- Expansion, 1083, 1493
- Expansive Cement, 805
- Expansivity, 993
- Experiment, 1325

Experimental Methods, 1443
Extraction, 791

Fatigue, 1513
Fatigue Damage, 15
Ferrite, 1689
Fiber Reinforcement, 1045
Fibers, 9, 1245
Fibre Reinforcement, 363
Field Concrete, 1341
Filler, 943
Fly Ash, 49, 153, 225, 1189,
1295, 1717, 1761
Fly Ash Concrete, 465
Fluxes, 457, 1361
Fracture, 181
Fracture Toughness, 521
Free Lime, 243
Freeze/thaw, 55
Fresh Concrete, 1121
Fresh State, 283
Friede's Salt, 717, 729
Frost Durability, 919, 1163

Galvanizing, 215, 1525
Garnet Granulities, 397
Gas Permeability, 781
Gel Formation, 1843
Glass, 1683
Grinding, 225
Gypsum, 1505, 1843
Gypsum Binders, 449

Hardened Concrete, 1121
Healing, 869
Heat Curing, 295, 1649
Heating, 1661
High Alumina Cement, 417,
799
High Content SO_3 , 1307
High-calcium Fly Ash, 243
High-performance Concrete,
283
High-performance Pastes, 749
High Strength, 567, 919
High Strength Concrete, 55,
1513
High-strength Mortars, 883
Hollow Shells, 593
Hot Climate, 1341
Hydration, 593, 701, 1131,
1179, 1689, 1753, 1843
Hydrotalcite, 1707
Hydrothermal Reaction, 1335

Identification, 791
Ilmenite Dust, 707
Impact Loading, 363
Impedance, 529
Interface, 253
Interfacial Zone, 35, 963
Ion Selective Electrodes, 319
Ionic Concentration, 491
Iron Oxidation State, 237
Iron Particles, 1435

Kinetics, 1435

Langmuir Isotherm, 697
Large Scale, 949
Latex Particles, 985
Leachability, 895, 1381
Leaching, 1257, 1707
Lead, 895, 1381
Light Absorption, 1801
Lightweight Aggregate, 1423
Lightweight Concrete, 181
Lime Kiln, 1269
Lime-fly Ash Pastes, 1351
Lime-sand Concrete, 1109
Limestone, 1057, 1613
Limestone Filler, 883
Liquid Composition, 1717
Loss Moduli, 69

Magnesium Brine, 557
Marine, 513
Mathematical Model, 761
Mathematical Treatment, 1831
Mechanical Activation, 1843
Mechanical Properties, 49, 449,
535, 701
Mechanism, 717
Metakaolin, 657, 1537, 1545
Methylcellulose, 535
Mg, 77
Mg Oxychloride, 1199
Mg Oxychloride Cement, 1203
MgO, 1057
Mg-phosphate, 387
MgSO₄, 1013
Microcracking, 1493
Microfiber Reinforcement,
601
Microfibers, 1163
Micromechanics, 83, 1567
Microscopy, 573
Microstructure, 101, 295, 427,
593, 1479

Microstructures, 663
Microwave Processing, 41
Mineral Admixture, 1073
Mineral Admixtures, 113
Mineral Powder, 101
Mixed Mode Fracture, 125
Model, 1567
Modeling, 1257
Models, 345, 457
Moist Conditions, 567
Mori-Tanaka Theory, 83
Mortar, 1245
Mortars, 601, 1045

$\text{Na}_2\text{PO}_3\text{F}$, 405
 Na_2SO_4 , 27, 195, 1013
Nitric Acid, 475

Oil Well Cement, 707, 1753
Organic Fibers, 791
Oxidation, 1499

Palmnut, 1045
Particle Morphology, 225
Particle Size, 1399
Pastes, 69
Pb, 377
Performance, 1673
Permeabilities, 1325
Permeability, 1779
Permeation, 1767
Petrography, 825
pH, 749
Phosphate, 1661
Phosphogypsum, 1083, 1737
Physical and Mechanical
Properties, 669
Physical Properties, 101,
1065
Polarization Resistance, 691
Polymer Admixture, 189
Pore Size Distribution, 1545
Pore Solution, 27, 1809
Pore Structure, 1619, 1789
Porosity, 35, 215, 449, 539
Porous Stones, 861
Portland Cement, 397
Portland Cement Clinker, 41
Potential Gradient, 1039
Potential Measurements, 683
Pozzolan, 943, 1277
Pozzolanic Activity, 203, 1065,
1073
Pozzolanic Reaction, 93

- Precipitator Dust, 1269
 Pre-rusted Steel, 501
 Profiles, 1695
 Propanol, 1301
 Properties, 1315, 1619, 1629
 Pull-out, 267
- Quantum Chemistry, 955
- Radio Wave Heater, 677
 Railroad Ties, 309
 Railway Ties, 999
 Raw Materials, 397
 Reaction, 697
 Reactive Belites, 1227
 Reactive Powder Concrete, 93
 Reactivity, 1213
 Reinforcement, 215, 1151, 1485
 Replacement Level, 1537
 Residual Sludge, 521
 Resistivity, 539, 985, 1301, 1779
 Restraint, 9
 Retardation, 799
 Rheology, 283, 707
 Rheology Slurries, 387
 Rice-husk Ash, 963
 Rietveld Refinement, 77
- Salt Content, 1753
 Sand, 1361
 Scaling, 1639
 Scaling Resistance, 1555
 Sea Water, 1809
 Secondary Formation, 195
 Self Healing, 55
 SEM Backscatter, 3
 Sensitivity, 1629
 Sewage Sludge Ash, 1389
 Shielding, 1467
 Shredding, 1489
 Shrinkage Cracking, 9
- Si, 77
 Silica Concrete, 1683
 Silica Fume, 63, 355, 1479, 1639
 Silicate Phases, 1057
 Sintering, 181
 Sizing, 1389
 Slag, 1381, 1707, 1717, 1767
 Slag Blends, 139, 1029
 Slag Paste, 1013
 Sodium Silicate, 799
 Sodium Sulphate, 1683
 Solution, 1727
 Solutions, 1369
 Sorptivity, 1189
 Stability, 729
 Stainless Steel, 1151
 Standards, 1451
 Steam Curing, 153, 1505
 Steel, 253, 1499, 1593
 Steel Corrosion, 683, 691
 Steel Fiber, 1639
 Steel Fibers, 657
 Steel Reinforcement, 545
 Steel Slags, 1737
 Storage Moduli, 69
 Strength, 585, 1045, 1065, 1083, 1381, 1389, 1505, 1537, 1567, 1775, 1789
 Structure, 955
 Structure Refinement, 743
 Structural Shape, 165
 Styrene-acrylate, 1727
 Sulfate, 551
 Sulfate Attack, 1029
 Sulfate Degradation, 1295
 Sulfate Resistance, 113
 Sulfides, 993
 Sulfur, 1821
 Sulphates, 1689
 Sulphoaluminates, 805
 Superplasticizers, 585
 Surface, 1727
- Surface Area, 1613
 Surface Finish, 545
 Surface Layer, 1707
 Surface Microstructure, 1555
 Surface Treatment, 1007
- Tan Delta, 69
 Technological Options, 1227
 Temperature, 669, 1409
 Tensile Properties, 1485
 Tests, 1831
 Theory, 1325
 Thermal Analysis, 1269
 Thermal Treatment, 1479
 $3\text{CaO} \cdot 3\text{Al}_2\text{O}_3 \cdot \text{SrSO}_4$, 955
 Threshold, 513
 Tobermorite, 1335
 Toughness, 1775
 Transition Zone, 529, 611
 Two-step Mixing, 585
- U Phase, 27, 195
- Vibration, 387
 Volume Change, 567
- Wall Material, 825
 Waste Plastics, 1489
 Water Reduction, 943
 W/C Ratio, 475
 Wenner Array Probe, 1779
 White Cement, 457, 1361
 Wood's Metal, 35
 Workability, 225
 W/S Ratio, 1673
- X-Ray Diffraction, 1451
 XRD, 77
 XRD Analysis, 1277
- Zinc, 1381
 Zn, 377
 Z-Phase, 1335

Author Index

- Abadjiev, P., 1065
 Abd El-Aleem, S., 1179
 Abo-El-Enein, S.A., 669, 1479
 Adenot, F., 1707
 Aguado, A., 993
 Agulló, L., 993
 Aiqin, Wang, 943
- Aİtcin, P.-C., 883
 Aköz, F., 1287
 Al-Haddad, M., 1341
 Alonso, C., 405
 Al-Zaid, R., 1341
 Ammouche, A., 573
 Andrade, C., 405
- Arafah, A., 1341
 Argiz, C., 405
 Arsenault, B., 1151
 Arya, C., 345, 851
 Atkins, C.P., 319
 Atzeni, C., 1381
 Azzabi, M., 601, 1163