

## MICHAEL DAVID ARTHUR THOMAS

### TECHNICAL PUBLICATIONS

#### *Refereed Journal Articles (Accepted, in press or published):*

1. Thomas, M.D.A., Fournier, B., Folliard, K.J., Shehata, M., Ideker, J. and Rogers, C.A. 2007. "Performance limits for evaluating supplementary cementing materials using the accelerated mortar bar test." ACI Materials Journal, Vol. 104 (2), pp. 115-122.
2. Tremblay, C., Berube, M-A., Fournier, B., Thomas, M.D.A., and Folliard, K.F. 2007. "Effectiveness of lithium-based products in concrete made with Canadian reactive aggregates." ACI Materials Journal, Vol. 104 (2), pp. 195-205.
3. Scott, A. and Thomas, M.D.A. 2007. "Evaluation of fly ash from the co-combustion of coal and petroleum coke for use in concrete." ACI Materials Journal, Vol. 104 (1), pp 62-69.
4. Shehata, M.H. and Thomas, M.D.A. 2006. "Alkali-release characteristics of blended cements." Cement and Concrete Research, Vol. 36, pp. 1166-1175.
5. Ekolu, S.O., Thomas, M.D.A., and Hooton, R.D. 2006. "Pessimism effect of externally applied chlorides on expansion due to delayed ettringite formation: Proposed mechanism." Cement and Concrete Research, Vol. 36, pp. 688-696.
6. Thomas, M.D.A., Fournier, B., Folliard, K., Ideker, J. and Shehata, M. 2006. "Test methods for evaluating preventive measures for controlling expansion due to alkali-silica reaction in concrete." Cement and Concrete Research, Vol. 36 (10), pp. 1842-1856.
7. Nokken, M., Boddy, A., Hooton, R.D., Thomas, M.D.A. 2005. "Time dependent diffusion in concrete – three laboratory studies." Cement and Concrete Research, Vol. 36, pp. 200-207.
8. Feng, X., Thomas, M.D.A., Bremner, T.W., Balcom, B.J. and Folliard, K.J. 2005. "Studies on lithium salts to mitigate ASR-induced expansion in new concrete: a critical review." Cement and Concrete Research, Vol. 35, pp. 1789-1796.
9. Berube, M.A., Tremblay, C., Fournier, B., Thomas, M.D. and Stokes, D.B. 2004. "Influence of lithium-based products proposed for counteracting ASR on the chemistry of pore solution and cement hydrates." Cement and Concrete Research, Vol. 34, pp. 1645-1660.
10. Ramlochan, T., Thomas, M.D.A. and Hooton, R.D. 2004. "The effect of pozzolans and slag on the expansion of mortars cured at elevated temperature; Part II: Microstructural and microchemical investigations". Cement and Concrete Research, Vol. 34, pp. 1341-1356.
11. Stanish, K., Hooton, R.D. and Thomas, M.D.A. 2004. "A novel method for describing chloride ion transport due to an electrical gradient in concrete: Part 1. Theoretical description." Cement and Concrete Research, Vol. 34 (1), pp 43-49.

12. Stanish, K., Hooton, R.D. and Thomas, M.D.A. 2004. "A novel method for describing chloride ion transport due to an electrical gradient in concrete: Part 2. Experimental study." Cement and Concrete Research, Vol. 34 (1), pp 51-57.
13. Thomas, M.D.A. and Matthews, J.D. 2004. "Performance of PFA concrete in a marine environment – 10 year results." Cement and Concrete Composites, Vol. 26 (1), pp. 5-20.
14. Obla, K.H., Hill, R.L., Thomas, M.D.A., Shashiprakash, S.G. and Perebatova, O. 2003. "Properties of Concrete Containing Ultra-Fine Fly Ash". ACI Materials Journal, Vol. 100, pp. 426-433
15. Boddy, A.M., Hooton, R.D., and Thomas, M.D.A. 2003. "The effect of the silica content of silica fume on its ability to control alkali-silica reaction." Cement and Concrete Research, Vol. 33, pp. 1263-1268.
16. Thomas, M.D.A., Rogers, C.A. and Bleszynski, R.F. 2003. "Occurrences of thaumasite in laboratory and field concrete." Cement and Concrete Composites, Vol. 25 (8), pp. 1045-1050.
17. Ramlochan, T., Zacarias, P., Thomas, M.D.A. and Hooton, R.D. 2003. "The effect of pozzolans and slag on expansion of mortars cured at elevated temperature: Part 1: Expansive Behaviour" Cement and Concrete Research, Vol. 33, pp. 807-814.
18. Stanish, K. and Thomas, M.D.A. 2003. "The use of bulk diffusion tests to establish time-dependent concrete chloride diffusion coefficients." Cement and Concrete Research, Vol. 33 (1), pp. 55-62.
19. Bleszynski, R., Hooton, R.D., Thomas, M.D.A. and Rogers, C.A. 2002. "Durability of ternary blend concrete with silica fume and blast-furnace slag: laboratory and outdoor exposure site studies." ACI Materials Journal, Vol. 99, No. 5, pp. 499-508.
20. Shehata, M.H. and Thomas, M.D.A. 2002. "Use of ternary blends containing silica fume and fly ash to suppress expansion due to alkali-silica reaction in concrete." Cement and Concrete Research, Vol. 32 (3), pp. 341-349.
21. Thomas, M.D.A. 2001. "Using silica fume to combat alkali-silica reaction in concrete." Indian Concrete Journal, October, pp.
22. Martin-Perez, B., Pantazopoulou, S.J. and Thomas, M.D.A. 2001. "Numerical solution of mass transport equations in concrete structures." Computers and Structures, Vol. 79, pp. 1251-1264.
23. Gruber, K.A., Ramlochan, T., Boddy, A., Hooton, R.D. and Thomas, M.D.A. 2001. "Increasing concrete durability with high-reactivity metakaolin." Cement and Concrete Composites, Vol. 23 (6), pp. 479-484.

24. Martin Perez, B., Zibara, H., Hooton, R.D. and Thomas, M.D.A. 2000. "A study of the effect of chloride binding on service life predictions." Cement and Concrete Research, Vol. 30 (8), pp. 1215-1223.
25. Ramlochan, T., Thomas, M.D.A. and Gruber, K.A. 2000. "The effect of metakaolin on alkali-silica reaction in concrete" Cement and Concrete Research, Vol. 30 (3), pp. 339-344.
26. Rogers, C.A., Grattan-Bellew, P.E., Hooton, R.D., Ryell, J. and Thomas, M.D.A. "Alkali-aggregate reactions in Ontario." Canadian Journal of Civil Engineering, Vol. 27, 2000, pp. 246-260.
27. Shehata, M.H. and Thomas, M.D.A. "The effect of fly ash composition on the expansion of concrete due to alkali silica reaction." Cement and Concrete Research, Vol. 30 (7), 2000, pp. 1063-1072.
28. Shehata, M., Thomas, M.D.A. and Bleszynski, R.F. 1999. "The effect of fly composition on the chemistry of pore solution." Cement and Concrete Research, Vol. 29 (12), pp. 1915-1920.
29. Boddy, A.M., Hooton, R.D. and Thomas, M.D.A. 2000. "The effect of product form of silica fume on its ability to control alkali-silica reaction." Cement and Concrete Research, Vol. 30 (7), 2000, pp. 1139-1150.
30. Pantazopoulou, S., Bonacci, J., Sheikh, S., Thomas, M.D.A. and Hearn, N. 2001. "Repair of Corrosion-Damaged Columns with FRP Wraps", J. of Composites for Construction, ASCE, Jan, 2001.
31. Lee, C. Bonacci, J. Thomas, M.D.A, Maalej, M., Khajehpour, S., Hearn, N., Pantazopoulou, S. and Sheikh, S. 2000. "Accelerated corrosion and repair of reinforced concrete columns using CFRP sheets," Canadian Journal of Civil Engineering, Vol. 27, No. 5, 941-948.
32. Thomas, M.D.A. and Innis, F.A. "Use of the accelerated mortar bar test for evaluating the efficacy of mineral admixtures for controlling expansion due to alkali-silica reaction." Cement, Concrete, and Aggregates, Vol. 21 (2), 1999, pp. 157-164.
33. Thomas, M.D.A., Shehata, M.H., Shashiprakash, S.G., Hopkins, D.S. and Cail, K. "Use of ternary cementitious systems containing silica fume and fly ash in concrete." Cement and Concrete Research, Vol. 29 (8), 1999, pp. 1207-1214.
34. Boddy, A., Bentz, E., Thomas, M.D.A. and Hooton, R.D. "An overview and sensitivity study of a multi-mechanistic chloride transport model." Cement and Concrete Research, Vol. 29 (6), 1999, pp. 827-837.
35. Thomas, M.D.A. and Stokes, D. "Use of a lithium-bearing admixture to suppress expansion in concrete due to alkali-silica reaction." Transportation Research Record, No. 1668, 1999, pp. 54-59.

36. Thomas, M.D.A., Shehata, M., Shashiprakash, S.G. "The use of fly ash in concrete: classification by composition." Cement, Concrete and Aggregates, Vol. 12 (2), 1999, pp. 105-110.
37. Holley, J., Thomas, M.D.A., Hopkins, D.S., Cail, K. and Lanctôt, M.-C. "The production of high-performance concrete for the Confederation Bridge." ACI Concrete International, Vol. 21 (9), 1999, pp. 43-48.
38. Pantazopoulou, S.J. and Thomas, M.D.A. "Modeling stress-strain behavior of concrete damaged by alkali-aggregate reaction (AAR)." ACI Structural Journal, Vol. 96, No. 5, 1999, pp. 790-798.
39. Thomas, M.D.A. and Bamforth, P.B. "Modelling chloride diffusion in concrete: effect of fly ash and slag." Cement and Concrete Research, Vol. 29, 1999, pp. 487-495.
40. Thomas, M.D.A. and Innis, F.A. "Effect of slag on expansion due to alkali-aggregate reaction in concrete." ACI Materials Journal, Vol. 95, No. 6, 1998.
41. Thomas, M.D.A., Cail, K. and Hooton, R.D. 1998. "Development and field applications of silica fume concrete in Canada - A retrospective." Canadian Journal of Civil Engineering, June, 1998.
42. Bleszynski, R.F. and Thomas, M.D.A. 1997. "Microstructural studies of alkali-silica reaction in fly ash concrete immersed in alkaline solutions." Advanced Cement Based Materials, Vol. 7, 1997, pp. 66-78.
43. Thomas, MDA, Hooton, RD and Rogers, CA. 1996. "Prevention of damage due to AAR in concrete construction – Canadian Approach." Cement, Concrete, and Aggregates, Vol. 19, 1997, pp. 26-30.
44. Thomas, MDA, Blackwell, BQ and Nixon, PJ. 1996. "Estimating the alkali contribution from fly ash to expansion due to the alkali-aggregate reaction in concrete." Magazine of Concrete Research, Vol 48 (177), 1996, pp 251-264
45. Thomas, MDA. "Field studies of fly ash concrete structures containing reactive aggregates." Magazine of Concrete Research, Vol 48 (177), 1996, pp 265-279.
46. Thomas, MDA. "Chloride thresholds in marine concrete." Cement and Concrete Research, Vol. 26, No. 4, pp. 513-519, 1996.
47. Martin Perez, B, Panatzopoulou, SJ and Thomas, MDA. 1996. "Understanding corrosion of reinforcement in concrete through F.E. modelling." Canadian Civil Engineer, CSCE, 13 (3), pp. 8-9. (Invited contribution).
48. Kennedy S, Detwiler R, Bickley J, Thomas MDA. 1995. "Results of an interlaboratory test program: compressive strength of concrete." Cement, Concrete, and Aggregates, Vol. 17, No. 1, pp. 3-10.

49. Thomas MDA, Matthews JD. 1995. "Durability of fly ash concrete - Effect of curing." Transportation Research Record 1458, pp. 99-108.
50. Thomas MDA, Matthews JD. 1993. "Performance of Fly Ash Concrete in U.K. Structures." ACI Materials Journal, 90 (6), Nov/Dec, pp. 586-593.
51. Hampton JHD, Thomas MDA. 1993. "Modelling relationships between permeability and cement paste pore microstructure." Cement and Concrete Research, Vol. 23 (6), November, pp 1317-1330.
52. Thomas MDA, Matthews JD. 1992. "Carbonation of fly ash concrete." Magazine of Concrete Research, 44 (158), pp 217-228.
53. Thomas MDA, Matthews JD. 1992. "The permeability of fly ash concrete." Materials and Structures, 25, pp 388-396.
54. Thomas MDA. 1991. "Marine performance of pfa concrete." Magazine of Concrete Research, 43 (156), pp 171-185.
55. Thomas MDA, Osborne GJ, Matthews JD, Cripwell JB. 1990. "A comparison of the properties of opc, pfa and ggbs concretes in reinforced concrete tank walls." Magazine of Concrete Research, 42 (152), pp 127-134.
56. Thomas MDA. 1989. "The effect of curing on the hydration and pore structure of hardened cement paste containing pulverized-fuel ash." Advances in Cement Research, 2 (8), pp 181-188.
57. Thomas MDA. 1989. "An investigation of 10-year-old concrete bridges constructed with conventional opc and pulverized-fuel ash concretes." Proceedings of the Institution of Civil Engineers, Part 1 Design and Construction, 86, pp 1111-1128.
58. Thomas MDA. 1989. "The suitability of solvent exchange techniques for studying the pore structure of hardened cement paste." Advances in Cement Research, 2 (5), pp 29-34.
59. Thomas MDA, Kettle RJ, Morton JA. 1989. "The oxidation of pyrite in cement stabilized colliery shale." Quarterly Journal of Engineering Geology, 23, pp 207-218.
60. Thomas MDA, Kettle RJ, Morton JA. 1989. "The expansion of cement stabilised minestone due to the oxidation of pyrite." Transportation Research Record 1219, Transportation Research Board, Washington, pp 113-120.

Discussions in Journals:

61. Stanish, K., Hooton, R.D. and Thomas, M.D.A. 2006. A reply to the discussion by S. Chatterji of the papers "A novel method for describing chloride ion transport due to an electrical gradient in concrete: Parts 1 and 2." Cement and Concrete Research, in press.

62. Hertford, D., Thomas, M.D.A. and Scrivener, K. 2003. A discussion of the paper “Role of delayed release of sulfates from clinker in DEF” by Water Kurdowski. Cement and Concrete Research, Vol. 33 (3), pp. 455-456.
63. Thomas, MDA. Reply to discussion contribution by LJ Parrott on “Marine performance of PFA concrete.” Magazine of Concrete Research, 44 (159), 1992, pp. 141-142.
64. Thomas, MDA. Reply to discussion contributions by GM Idorn and H Grube on “The Permeability of fly ash concrete.” Materials and Structures, 26, 1993, pp. 245-250.
65. Thomas, MDA. Reply to discussion contribution by DB McDonald on “Chloride thresholds in marine concrete.” Cement and Concrete Research, 26 (10), 1996, pp. 1603-1604.
66. Thomas, MDA. “DEF – The rest of the story.” PCI Journal, 1999.

Refereed Conference Proceeding:

67. Thomas, M.D.A. 2006. “Chloride diffusion in high-performance lightweight aggregate concrete.” Proceedings of the 7<sup>th</sup> CANMET/ACI International Conference on the Durability of Concrete, ACI SP 234, American Concrete Institute, Detroit, pp. 797-812.
68. Thomas, M.D.A. and Stokes, D.B. 2004. “Lithium impregnation of ASR-affected concrete: preliminary studies.” Proceedings of the 12<sup>th</sup> International Conference on Alkali-Aggregate Reaction in Concrete, Beijing World Publishing Corporation, Beijing, October, Vol. 1, pp. 659-667.
69. Feng, X., Young, J.J., Thomas, M.D.A., Balcom, B.J. and Bremner, T.W. 2004. “Lithium measurements by magnetic resonance imaging and pore solution expression.” Proceedings of The 12<sup>th</sup> International Conference on Alkali-Aggregate Reaction in Concrete, Beijing World Publishing Corporation, Beijing, October, Vol. 1, pp. 505-511.
70. Hooper, R.L., Nixon, P.J. and Thomas, M.D.A. 2004. “Considerations when specifying lithium admixtures to mitigate the risk of ASR.” Proceedings of the 12<sup>th</sup> International Conference on Alkali-Aggregate Reaction in Concrete, Beijing World Publishing Corporation, Beijing, October, Vol. 1, pp. 554-563.
71. Hooper, R.L., Matthews, J.D., Nixon, P.J. and Thomas, M.D.A. 2004. “The introduction of BS EN 450 fly ash and mitigating the risk of ASR in the U.K.” Proceedings of the 12<sup>th</sup> International Conference on Alkali-Aggregate Reaction in Concrete, Beijing World Publishing Corporation, Beijing, October, Vol. 1, pp. 544-553.
72. Barborak, R., Folliard, K.J. and Thomas, M.D.A. 1004. “Using lithium to treat hardened concrete suffering from ASR: preliminary laboratory results.” Proceedings of the 12<sup>th</sup> International Conference on Alkali-Aggregate Reaction in Concrete, Beijing World Publishing Corporation, Beijing, October, Vol. 1, pp. 483-489.

73. Tremblay, C., Berube, M.A., Fournier, B., Thomas, M.D.A. and Stokes, D.B. 2004. "Performance of lithium-based products against ASR: application to Canadian reactive aggregates, reaction mechanisms and testing." Proceedings of the 12<sup>th</sup> International Conference on Alkali-Aggregate Reaction in Concrete, Beijing World Publishing Corporation, Beijing, October, Vol. 1, pp. 668-677.
74. Ideker, J.H., Folliard, K.J., Juenger, M.G. and Thomas, M.D.A. 2004. "Laboratory and field experience with ASR in Texas, USA." Proceedings of the 12<sup>th</sup> International Conference on Alkali-Aggregate Reaction in Concrete, Beijing World Publishing Corporation, Beijing, October, Vol. 2, pp. 1062-1070.
75. Young, J.J., Balcom, B.J., Bremner, T.W., Thomas, M.D.A. and Deka, K. 2004. "A magnetic resonance imaging technique to determine lithium distribution in mortars." Proceedings of the 7<sup>th</sup> CANMET/ACI International Conference on Recent Advances in Concrete Technology, Las Vegas, May.
76. Thomas, M.D.A., Stokes, D.B., and Rogers, T. 2003. "The Effect of Lithium-Based Admixtures on the Properties of Concrete." Proceedings of the 7<sup>th</sup> CANMET/ACI Conference on Superplasticizers and Other Chemical Admixtures in Concrete, (Editor V.M. Malhotra), ACI SP-217, American Concrete Institute, Detroit, pp. 483-498.
77. Ramlochan, T., Thomas, M.D.A. and Hooton, R.D. 2002. "Investigation of the inner and outer C-S-H products in heat-cured mortars containing pozzolans and slag by SEM and EDS." Proceedings of the 8<sup>th</sup> Euroseminar on Microscopy Applied to Building Materials, pp. 239-246.
78. Thomas, M.D.A. and Ramlochan, T. 2002. "Diagnosing the cause of deterioration in prestressed concrete beams – ASR or DEF?" Proceedings of the 8<sup>th</sup> Euroseminar on Microscopy Applied to Building Materials, pp. 289-296
79. Thomas, M.D.A. 2001. "Influence of time-dependent diffusion on service-life estimates for reinforced concrete exposed to chlorides." Materials Science of Concrete Special Volume on Ion and Mass Transport in Cement-Based Materials, (Ed. R.D. Hooton, M.D.A. Thomas, J. Marchand and J.J. Beaudoin), American Ceramic Society, Westerville, OH, pp. 269-280.
80. Thomas, M.D.A. 2001. "The role of calcium hydroxide in alkali recycling in concrete." Materials Science of Concrete Special Volume on Calcium Hydroxide in Concrete, (Ed. J. Skalny, J. Gebauer, I. Odler), American Ceramic Society, Westerville, OH, pp. 269-280.
81. Pantazopoulou, V. and Thomas, M.D.A. "Mechanical behaviour of AAR-damaged r.c. members". Proceedings of the 11<sup>th</sup> International Conference on Alkali-Aggregate Reaction in Concrete, (Ed. M.A. Berube et al.), CRIB, Quebec City, June 2000, pp. 583-592.
82. Thomas, M.D.A., Hooper, R. and Stokes, D. "Use of lithium-bearing compounds to control expansion in concrete due to alkali-silica reaction." Proceedings of the 11<sup>th</sup> International Conference on Alkali-Aggregate Reaction in Concrete, (Ed. M.A. Berube et al.), CRIB, Quebec City, June 2000, pp. 783-792.

83. Bleszynski, R.F., Thomas, M.D.A. and Hooton, R.D. "Use of ternary blended cements to control ASR." Accepted for the 11<sup>th</sup> International Conference on Alkali-Aggregate Reaction in Concrete, Quebec City, June 2000.
84. Shehata, M.H. and Thomas, M.D.A. "The effects of silica fume and fly ash hydration products on the chemistry of the pore solution and portlandite consumption." Proceedings of the 11<sup>th</sup> International Conference on Alkali-Aggregate Reaction in Concrete, (Ed. M.A. Berube et al.), CRIB, Quebec City, June 2000, pp. 753-762.
85. Neal, R.E., Thomas, M.D.A. and Shashiprakash, S. "Innocuous behavior of alkalis derived from pulverized calcined shale: a natural pozzolan." Proceedings of the 11<sup>th</sup> International Conference on Alkali-Aggregate Reaction in Concrete, (Ed. M.A. Berube et al.), CRIB, Quebec City, June 2000, pp. 713-721.
86. Stokes, D.S., Thomas, M.D.A. and Shashiprakash, S.G. "Development of a lithium-based material for decreasing ASR-induced expansion in hardened concrete." Proceedings of the 11<sup>th</sup> International Conference on Alkali-Aggregate Reaction in Concrete, (Ed. M.A. Berube et al.), CRIB, Quebec City, June 2000, pp. 1079-1087.
87. Ramlochan, T. and Thomas, M.D.A. "The effect of metakaolin on external sulphate attack." Proceedings of the 4<sup>th</sup> ACI/CANMET International Conference on the Durability of Concrete, (Ed. V.M. Malhotra), ACI SP-192, Vol. 1, 2000, pp. 239-251.
88. Thomas, M.D.A. and Matthews, J.D. 2000. "Carbonation of fly ash concrete." Proceedings of the 4<sup>th</sup> ACI/CANMET International Conference on the Durability of Concrete, (Ed. V.M. Malhotra), ACI SP-192, Vol. 1, pp. 539-556.
89. Thomas, M.D.A., Sadri, A. and Tesfamariam, S. 1999. "The use of stress waves for evaluating AAR-affected concrete." Creating with Concrete, (Ed. R.K. Dhir), Dundee, Sept.
90. Thomas, M.D.A., Shehata, M.H., Shashiprakash, S.G., Hopkins, D.S. and Cail, K. 1999. "Use of ternary cementitious systems containing silica fume and fly ash in concrete." Proceedings of the American Coal Ash Association International Symposium on Utilization of Fly Ash, Florida, January.
91. Zacarias, P.S., Thomas, M.D.A. and Hooton, R.D. 1999. "The efficacy of fly ash in the reduction of expansion caused by delayed ettringite formation." Proceedings of the American Coal Ash Association International Symposium on Utilization of Fly Ash, Florida, January.
92. Ryell, J., Thomas, M.D.A. and Trunk, P.R. 1999. "Properties of and service-life predictions for high-performance concrete in transportation structures." Proceedings of the 8<sup>th</sup> International Conference on Durability of Building Materials and Components, Vancouver, June.
93. Thomas, M.D.A., Bleszynski, R.F. and Scott, C.E. 1999. "Sulphate attack in a marine environment." Materials Science of Concrete Special Volume on Sulphate Attack Mechanisms, (Ed. J. Marchand and J. Skalny), American Ceramics Society, Westerville, OH, pp. 301-314.



94. Thomas, M.D.A. 1998. "The role calcium in alkali-silica reaction." Materials Science of Concrete – The Sidney Diamond Symposium, (Ed. M. Cohen et al.), American Ceramics Society, Westerville OH, pp. 325-337.
95. Thomas, D.L., Thomas, M.D.A. and Ryell, J. 1998. "Suitability of fumed lead blastfurnace slag as a mineral admixture for concrete." Proceedings of the Sixth CANMET/ACI International Conference on Fly Ash, Silica Fume, Slag and Natural Pozzolans in Concrete, Bangkok, Thailand.
96. Thomas, M.D.A., Cail, K., Hopkins, D.S. and Woytowich, W. 1998. "The use of blended silica fume cement in precast concrete." Proceedings of the CSCE Annual Conference, Halifax.
97. Bonacci, J., Thomas, M.D.A., Hearn, N., Lee, C., Maalej, M., Pantazopoulou, S. and Sheikh, S. 1998. "Laboratory simulation of corrosion in reinforced concrete and repair with CFRP wraps." Proceedings of the CSCE Annual Conference, Halifax.
98. Thomas, M.D.A. and Evans, C.M. "Chloride penetration in high-performance concrete containing silica fume and fly ash." Second International Conference on Concrete Under Severe Conditions - CONSEC '98, Tromso, Norway, June, 1998.
99. Martin-Perez, B., Pantazopoulou, S.J. and Thomas, M.D.A. "Finite element modelling of corrosion in highway structures." Second International Conference on Concrete Under Severe Conditions - CONSEC '98, Tromso, Norway, June, 1998.
100. Thomas, M.D.A., Gruber, K.A. and Hooton, R.D. "The use of high reactivity metakaolin in high performance concrete." Engineering Foundations International Conference on High Strength Concrete, Kona, Hawaii, July, 1997.
101. Thomas, M.D.A. "Laboratory and field studies of salt scaling in fly ash concrete." Frost Resistance of Concrete (Ed. M.J. Setzer and R. Auberg), Essen, Germany, September, 1997.
102. Hart, A.J.R., Ryell, J. and Thomas, M.D.A. "High performance concrete in precast concrete tunnel linings, meeting chloride diffusion and permeability requirements." Proceedings of the PCI/FHWA International Symposium on High Performance Concrete, October, 1997, pp. 294-307.
103. Thomas, MDA. 1997. "Synergy between alkali-aggregate reaction and other deterioration mechanisms in concrete." Proceedings of the Fourth CANMET/ACI International Conference on Durability of Concrete, (Ed. V.M. Malhotra), ACI SP-170, Vol. 1, American Concrete Institute, Detroit, pp. 571-585.
104. Blackwell, BQ, Thomas, MDA and Sutherland, A. 1997. "Use of lithium to control expansion due to alkali-silica reaction in concrete containing U.K. aggregates." Proceedings of the Fourth CANMET/ACI International Conference on Durability of Concrete, (Ed. V.M. Malhotra), ACI SP-170, Vol. 1, American Concrete Institute, Detroit, pp. 649-663.

105. Thomas, M.D.A., Caratin, H. and Wiese, D. 1997. "Three-dimensional visualization of concrete structures." In *Innovations in Non-Destructive Testing of Concrete* (Ed. S. Pessiki and L. Olson), ACI-SP 168, American Concrete Institution, Detroit, pp. 233-243.
106. Thomas, MDA and Blackwell, BQ. 1996. "Summary of BRE research on the use of fly ash to suppress AAR expansion." Tenth International Conference on Alkali-Aggregate Reaction in Concrete, Melbourne, August.
107. Blackwell, BQ, Thomas, MDA, Pettifer, K. and Nixon, P.J. 1996. "An appraisal of UK greywacke deposits and current methods of avoiding AAR." Tenth International Conference on Alkali-Aggregate Reaction in Concrete, Melbourne, August.
108. Dunbar, PA, Mukhejee, PK, Bleszynski, RF and Thomas, MDA. 1996. "A comparison of damage rating index with long-term expansion of concrete prisms due to alkali-silica reaction." Tenth International Conference on Alkali-Aggregate Reaction in Concrete, Melbourne, August.
109. Pantazopoulou, SJ, Bonacci, JF, Hearn, N, Sheikh, SA and Thomas, MDA. 1996. "Repair of corrosion damaged concrete using advanced composite materials." Second International Conference on Advanced Composite Materials in Bridges and Structures, Montreal, August.
110. Thomas, MDA and Matthews, JD. 1996. "Chloride penetration and reinforcement corrosion in marine-exposed fly ash concretes." *Third CANMET/ACI International Conference on Concrete in a Marine Environment* (Ed. V.M. Malhotra), ACI SP-164, American Concrete Institute, Detroit, 1996, pp. 317-338.
111. Bentz, EC, Evans, CM and Thomas, MDA. 1996. "Chloride diffusion modelling for marine exposed concrete." Corrosion of Reinforcement in Concrete Construction, (Ed. CL Page, PB Bamforth and JW Figg), Royal Society of Chemistry, Cambridge, pp. 136-145.
112. Thomas, MDA and Jones, MR. 1996. "A critical review of service life modelling of concrete structures exposed to chlorides." Radical Concrete Technology, (Ed. RK Dhir and PC Hewlett), E&FN Spon, London, pp. 723-736.
113. Pantazopoulou, SJ. and Thomas, MDA. 1996. "Modelling the effects of AAR on the mechanical properties of concrete." Concrete Repair, Rehabilitation and Protection, (Ed. RK Dhir and MR Jones), E&FN Spon, London.
114. Jones, MR, Thomas, MDA, Dhir, RK and Ng, SLD. 1996. "Estimating chloride ingress into concrete." Proceedings of the 7th International Conference on the Durability of Building Materials and Components, Stockholm.
115. Gheshlaghi, F., Santamarina, C., Wiese, D, Thomas, MDA, Polak, M and Caratin, G. 1995. "Tomographic imaging concrete structures." Proceedings of the International Symposium on Non-Destructive Testing in Civil Engineering (NDT-CE), Vol. 1, pp. 297-304.

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