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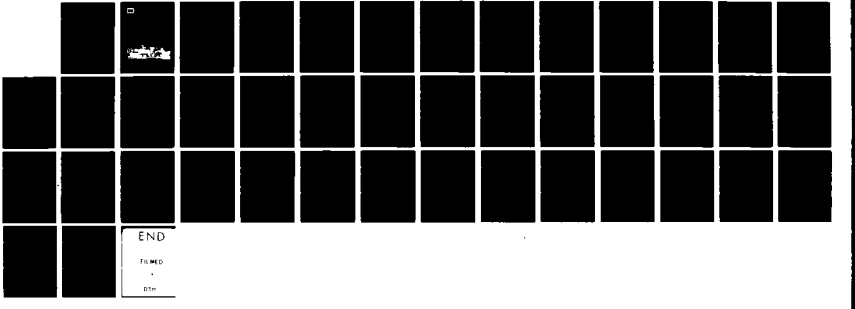

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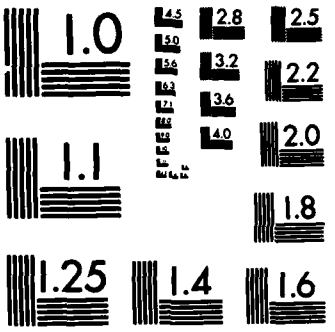

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SELECTED BIBLIOGRAPHY ON FIBER-REINFORCED CEMENT AND CONCRETE

SUPPLEMENT NO. 4

by

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Asbestos	Fiber reinforcement	Portland cement
Carbon fibers	Glass fibers	Steel fibers
Concretes	Gypsum cements	
Fiber-reinforced cement	Mortars (cement)	
Fiber-reinforced concrete	Polymeric fibers	

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

A listing of 365 additional references with author index is given for fiber-reinforced cement and gypsum matrices, mortars, and concretes. Fiber types include steel, glass, plastic, asbestos, organic, carbon, and others.

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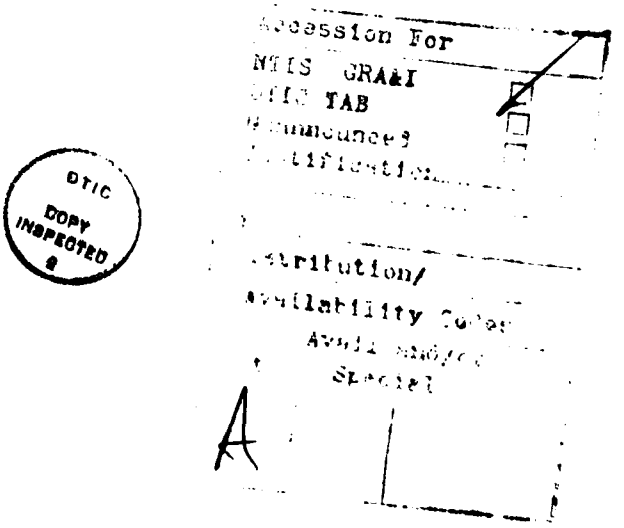

PREFACE

This bibliography supplement was prepared from source material provided to and obtained by the author during normal conduct of business at the U. S. Army Engineer Waterways Experiment Station (WES), Vicksburg, Mississippi. It was compiled for use in the operation of the Concrete Technology Information Analysis Center (CTIAC).

Funds for the publication of this bibliography supplement were provided from those made available for operation of the CTIAC. This is CTIAC Report No. 48. The report was prepared by Dr. G. C. Hoff, Chief, Materials and Concrete Analysis Group of the Structures Laboratory, WES, under the general supervision of Messrs. Bryant Mather, Chief, Structures Laboratory, and J. M. Scanlon, Chief, Concrete Technology Division.

The Commander and Director of WES during the preparation and publication of this bibliography supplement was COL Tilford C. Creel, CE. Technical Director was Mr. F. R. Brown.

CONTENTS

SELECTED BIBLIOGRAPHY ON FIBER-REINFORCED CEMENT AND CONCRETE

INTRODUCTION

The initial publication of this bibliography* and its first three supplements** included a total of 1519 references and 29 patents pertaining solely to fiber reinforcement of cement and gypsum matrices, mortars, and concrete. This supplement provides 365 additional references of which approximately 40 percent were published during and after 1979. The following references were compiled from publications available directly to the author and from bibliographies existing in other published works on the subject. Attempts were made to provide as much information as possible for each reference, although in some instances, where the reference information was not obtained directly from the publication, the reference may not be as complete as it could be. In general, papers solely on the theory of fiber reinforcement and composite materials which did not explicitly include fiber reinforcement of cements and concretes were not listed.

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* G. C. Hoff, C. M. Fontenot, and J. G. Tom, "Selected Bibliography on Fiber-Reinforced Cement and Concrete," Miscellaneous Paper C-76-6, June 1976, U. S. Army Engineer Waterways Experiment Station, CE, Vicksburg, Miss.

** G. C. Hoff, "Selected Bibliography on Fiber-Reinforced Cement and Concrete, Supplement 1," "Supplement 2," and "Supplement 3." Miscellaneous Paper C-76-6, September 1977, July 1979, and September 1980, respectively, U. S. Army Engineer Waterways Experiment Station, CE, Vicksburg, Miss.

BIBLIOGRAPHY

1. "A Substitute for Asbesto Cement?" Precast Concrete (London), Vol 9, No. 4, Apr 1978, p 193.

2. Advances in Cement-Matrix Composites Proceedings, Symposium L, Nov 17-18, 1980, Boston Mass., Materials Research Society, University Park, Pennsylvania, 263 pp.

3. Alexander, D. J., "High Tensile Wire Reinforced Fibrous Ferrocement," New Zealand Concrete Construction, Vol 24, Oct 1980, pp 9-16.

4. Alexander, D. J., Modern Concepts in the Construction of Concrete Barges, Alexander & Poore, Huckland, Apr 1977, 14 p.

5. Alexander, D. J., "The Use of High Tensile Wire Reinforced Fibrous Ferrocement in Marine Applications," Journal of Ferrocement (Bangkok), Vol 10 No. 3, Jul 1980, pp 223-229.

6. Ali, M. A., Majumdar, A. J., and Rayment, D. L., "The Strength and Durability of Carbon-Fibre-Reinforced Cement Composite," Conference Proceedings, The Properties of Fibre Composites, National Physical Laboratory, (Nov 1971), IPC Science and Technology Press, Guildford, 1972, pp 27-28.

7. Ali, M. A., Majumdar, A. J., and Singh, B., "Properties of Glass Fibre Cement--The Effect of Fibre Length and Content (CP 94/75)," Fibre Reinforced Materials, BRE Building Research Series, Vol 2, The Construction Press, London, 1978, pp 69-76.

8. Allen, H. G., "Creep of Glass-Fibre Reinforced Cement Composites in Tension," The International Journal of Cement Composites, Vol 2, No. 4, Nov 1980, pp 185-191.

9. Allen, H. G., "Tensile Creep of Glass Fibre Reinforced Cement Composites," International Report, Dept. of Civil Engineering, Southhampton University (England), Oct 1975.

10. Alvi, A. Q., Steel Fiber Reinforced Concrete in Axial Compression, Ph. D. Dissertation, Cornell University, Ithaca, N. Y., 1977, 258 pp.

11. Andonian, R., Strength and Fracture Properties of Cement-Based Composites, B. E. Thesis, University of Sydney, 1979.

12. "ARC Cuts Wide Path in British Market," Concrete Products, Vol 78, No. 5, May 1975, pp 60-61.

13. Argon, A. S., Hawkins, G. W., and Kuo, H. Y., "Reinforcement of Mortar with Metglas Fibres," Journal of Materials Science, Vol 14, No. 7, Jul 1979, pp 1707-1716.

14. Babu, K. G., "Discussion on a Paper Published in the Magazine of Concrete Research, Vol 28, No. 96, Sep 1976, 'Characteristics of Akwara as a Reinforcing Fiber," by Uzomaka, O. J., Magazine of Concrete Research, Vol 29, No. 100, Sep 1977, pp 161-164.

15. Babu, K. G., "Discussion of a Paper Published in the Magazine of Concrete Research, Vol 28, No. 96, Sep 1976, 'The Workability of Steel-Fibre-Reinforced Concrete," by B. P. Hughes and N. I. Fattuchi, Magazine of Concrete Research, Vol 29, No. 100, Sep 1977, pp 159-160.

16. Babu, K. G. and Subrahmanyam, B. V., "Discussion on a Paper Published in the Magazine of Concrete Research, Vol 28, No. 36, Sep 1976, 'An Assessment of the Commercial Prospects for Fibre-and Polymer-Modified Concretes," by C. D. Pomeroy, Magazine of Concrete Research, Vol 29, No. 100, Sep 1977, pp 153-154.

17. Backy, E. and Rammant, J. P., "Behaviour of Fiber Reinforced Concrete Structures in Sea Environments," Proceedings, International Symposium on Offshore Structures, RILEM-FIP-CEB, Vol I-2, Rio de Janeiro, Oct 1979, 29 pp.

18. Baldacci, R., "Fibro-cement Products for the Building Industry," L'Industria Italiana del Cemento, Vol 50, No. 12, Dec 1980, pp 1135-1144.

19. Bartos, P., "Pullout Failure of Fibres Embedded in Cement-Based Matrices," Proceedings, Symposium L., Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 93-94.

20. Bassan, M., "Fibrous Concrete-Important Parameter-Production Possibilities," Betonwerk + Fertigteil-Technik, Vol 43, No. 11, Nov 1977, pp 561-564.

21. Bassan, M., "Model of Behavior of Fiber-Reinforced Concretes Under Impact Stresses," il Cemento, Vol 74, No. 4, Oct/Dec 1977, pp 157-170.

22. Bassan, M., "Stahlfaserbewehrter Beton," Element und Fertigbau, Vol 13, No. 5, 1976, pp 23-26.

23. Batson, G., "Steel Fiber Reinforced Concrete," Material Science and Engineering, Vol 25, No. (1/2), Sep/Oct 1976, pp 53-58.

24. Baxter, M., "Glass Fibre--A Winner?," Civil Engineering, No. 817, Sep 1974, pp 25-27.

25. Beckett, P. E., "Steel Fibre Concrete in the Ready Mixed Industry," Proceedings, Advances in Ready Mixed Concrete Technology (The 1st International Conference on Ready Mixed Concrete, 29 Sep-1 Oct, Dundee 1975). Pergamon, Oxford, 1976, pp 127-133.

26. Berlin, H. T., "Glasfaserverstärkter Schaumbeton," Beton; Herstellung, Verwendung, Vol 29, No. 12, Dec 1979, pp 427-428.

27. Bijen, J., "E-Glass Fibre-Reinforced Polymer-Modified Cement," Precast Concrete, Vol 11, No. 12, Dec 1980, pp 551-560.

28. Bijen, J., "Glassfibre Reinforced Cement; Improvements by Polymer Addition," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 239-249.

29. Birchall, J. D., "The Nature and Role of the Matrix in Cement/Fibre Composites," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 25-35.

30. Blaha, B., "Bank Kiosks of GFRC Pay Handsome Dividends," Concrete Products, Vol 84, No. 6, Jun 1981, pp 40-42.

31. Blaha, B., "GFRC Panels from Basalt Draw Heightened Interest," Concrete Products, Vol 83, No. 8, Aug 1980, pp 48-50.

32. Bonzel, J. and Dahms, J., "Schlagfestigkeit von faserbewehrtem Beton (Impact Resistance of Fibre-Reinforced Concrete)" (in German), Beton; Herstellung, Verwendung Vol 31, No. 3, March 1981, pp 97-101 and Vol 31, No. 4, Apr 1981, pp 136-142.

33. Bottfeld, S. G., "Stamped Concrete," Concrete Construction, Vol 24, No. 7, Jul 1979, pp 440-449.

34. Bowen, G. L., "Wire Fiber Reinforced Mortar Stoves," Journal of Ferrocement (Bangkok), Vol 11, No. 2, Apr 1981, pp 169-175.

35. Bowling, J. and Groaves, G. W., "The Debonding and Pull-Out of Ductile Wires from a Brittle Matrix," Journal of Materials Science, Vol 14, No. 2, Feb 1979, pp 431-442.

36. Bowling, J. and Groaves, G. W., "The Propagation of Cracks in Composites Consisting of Ductile Wires in a Brittle Matrix," Journal of Materials Science, Vol 14, No. 2, Feb 1979, pp 443-449.

37. Brauschweig, G. R., "Faserbewehrte Betone-Welche Probleme Ergeben Sich?," Betonwerk und Fertigteil-Technik, Vol 39, No. 9, Sep 1973, pp 638-641.

38. Bruggeling, A. S. G. and Boer, L. J. D., "Eigenschaften von Stahlfaserbewehrtem Kiesbeton, (Properties of Steel Fiber-Reinforced Gravel Concrete)," Betonwerk + Fertigteil-Technik, Vol 40, No. 6, Jun 1974, pp 424-429.

39. Buckley, E. L. and Clines, W. A., "Rigid Pavements on Interstate Highway Using Glass Fiber Reinforcement," Research Report TR-5-74, Construction Research Center, The University of Texas at Arlington, Arlington, Texas, Jul 1974, 25 pp.

40. Budnikov, P. P. and Goryainov, K. E., "Reaction of Lime and Portland Cement Hydration Products with Rock Wool Fibers," Journal of Applied Chemistry, Vol 28, 1955, pp 780-785.

41. Budnikov, P. P., Pashchenko, A. A., and Serbin, V. P., "Investigation of the Microstructure of Cement Stone, Reinforced with Mineral Fiber," Inorganic Materials, Vol 2, 1966, pp 636-639.

42. "Building Research Report," Precast Concrete (London), Vol 8, No. 11, Nov 1977, pp 555-556.

43. Butler, J. E. and Keating, J., "Preliminary Data Derived Using a Flexural Cyclic Loading Machine to Test Plain and Fibrous Concrete," Materials and Structures, Research and Testing, Vol 14, No. 79, Jan-Feb 1981, pp 25-33.

44. Castro, J. and Naaman, A. E., "Cement Mortar Reinforced with Natural Fibers," ACI Journal, Proceedings, Vol 78, No. 1, Jan-Feb 1981, pp 69-78.

45. "Ceiling Panels in GRC," Precast Concrete (London), Vol 6, No. 12, Dec 1975, p 671.

46. Chakraborty, M., "Corrosion Behaviour of a ZrO_2 Containing Glass in Aqueous Acid and Alkaline Media and in a Hydrating Cement Paste," International Journal of Cement Composites, (England), Vol 1, No. 3, Oct 1979, pp 103-109.

47. Chan, H. C. and Pathan, I. A., "An Experimental Study of the Effect of Fibre Spacing on Cracking Stress," The International Journal of Cement Composites, Vol 2, No. 2, May 1980, pp 65-69.

48. Chang, M-S. C., Fiber Reinforced Concrete Beams Subjected to Combined Bending and Torsion, Master's Thesis, Clarkson College of Technology, Department of Civil and Environmental Engineering, Potsdam, New York, Sep 1977, 85 pp.

49. Chao, P. C., "Tarbela Dam--Problems Solved by Novel Concretes," Civil Engineering--ASCE, Vol 50, No. 12, Dec 1980, pp 58-64.

50. Christensin, R. M. and Waals, F. M., "Effective Stiffness of Randomly Oriented Fibre Composite," Journal of Composite Materials, Vol 6, Oct 1972, pp 518-532.

51. "Composites News," Composites, Vol 5, No. 1, Jan 1974, pp 2-5.

52. "Concrete--an Unlimited Choice of Properties," Concrete Construction, Vol 25, No. 1, Jan 1980, pp 31-33.

53. "Concrete in Great Britain," Concrete Products, Vol 78, No. 5, May 1975, pp 36-39.

54. "Concrete Rocks for Landscaping," Concrete International: Design and Construction, Vol 2, No. 11, Nov 1980, p 44.

55. Cook, D. J., "Natural Fibre Reinforced Concrete and Cement--Recent Developments," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 251-258.

56. Cornelius, D. F., "A Study of the Properties of CEM-FIL/OPC Composites," Building Research Establishment Current Paper CP38/76, Building Research Station, Jun 1976, 14 pp.

57. Cost, V. T and Watt, J. M., "Static Loading of Shallow-Buried Model Cylinders, Phase III," Report No. AFWL-TR-79-172, Final Report, Sep 77-Jun 78, Air Force Weapons Laboratory, Kirtland AFB, New Mexico, Oct 1980, 293 pp.

58. Cox, H. L., "The Elasticity and Strength of Paper and Other Fibrous Materials," British Journal of Applied Physics, Vol 3, No. 3, Mar 1952, pp 72-79.

59. Cziesielski, E., "Possibilities for the Application of Glass Fibre Reinforced Concrete in the Building Industry, Part 2," Betonwerk + Fertigteil-Technik, Vol 44, No. 6, Jun 1978, pp 312-316.

60. Dahms, J., "Manufacture and Properties of Fibre-Reinforced Concretè" (in German), Beton; Herstellung, and Verwendung (Dusseldorf), Vol 29, No. 4, Apr 1979, pp 130-143.

61. Dardare, J., "Apptitude a L'emploi du Beton de Fibres de Polyproylene Dans L'indlustrie du Beton Manufacture," Betons Industries, Vol 13, No. 50, 1975, pp 57-62.

62. Davis, H. C., Morrill, K. B., and Merritt, J. L., "Continuation of Static Tests of Segments of Tunnel Linings, Volume II Data," Report No. 78-004-T2, Vol 2, Merritt-Cases, Inc., Redlands, California, Jun 1979, 519 pp.

63. De Haan, Y. M., "Some Introductory Remarks," Proceedings, Fibre Reinforced Concrete--Conference on Properties and Applications of Fibre Reinforced Concrete and Other Fibre Reinforced Building Materials, Stevin Laboratory, Delft, Netherlands, Sep 1973, pp 11-12.

64. Dehousse, N. M. and Lejeune, M., "Metal Fibre Reinforced Mortars and Concrete," Proceedings, Fibre Reinforced Concrete--Conference on Properties and Applications of Fibre Reinforced Concrete and Other Fibre Reinforced Building Materials, Stevin Laboratory, Delft, Netherlands, Sep 1973, pp 71-96.

65. Dempster, D. P., "Polyethylene Fiber Reinforced Concrete," World Construction, Vol 27, No. 3, Mar 1974, pp 51-52.

66. "Development of a New Concrete Spraying Method," International Bulletin, No. 12, U. S. Dept. of Housing and Urban Development, Office of International Affairs, Washington, D. C., Sep 1980, 5 pp.

67. Dickerson, R. F., A New Pavement Material, Battelle Columbus Laboratories, Columbus, Ohio, Apr 1972, 20 pp.

68. Dickerson, R. F., Reduced Maintenance Cost, Battelle Columbus Laboratories, Columbus, Ohio, Apr 1972, 20 pp.

69. Dickerson, R. F., Would You Believe--A Major New Market for Fine Ferrous Wire?, Presentation to: Ferrous Division, The Wire Association, Apr 9, 1973, Battelle Columbus Laboratories, Columbus, Ohio, 24 pp.

70. Dixon, J., "Glass Reinforced Cement," Concrete, Vol 14, No. 12, Dec 1980, pp 35-37 (Current Practice Sheet No. 59).

71. Eckernförde, V. J. D., "Herstellung und Eigenschaften von Faserbeton," Beton; Herstellung, Verwendung, Vol 29, No. 4, Apr 1979, pp 139-143.

72. Edgington, J., Hannant, D. J., and Williams, R. I. T., "Steel Fibre Reinforced Concrete," Precast Concrete, Vol 6, No. 7, Jul 1975, pp 367-370.

73. Edgington, J., Hannant, D. J., and Williams, R. I. T., "Steel Fibre Reinforced Concrete (CP 57/74)," Fibre Reinforced Materials, BRE Building Research Series, Vol 2, The Construction Press, London, 1978, pp 112-128.

74. Eguia, R., Strength and Fracture Properties of Kevlar Cement Composites, B. E. Thesis, University of Sydney, 1979.

75. Eirls, J. L., "Use of Glass Reinforced Concrete (GRC) as a Substrate for Photovoltaic Modules," Report No. DOE/JPL/955281-80/06, MB Associates, San Ramon, California.

76. Elliott, C. A., "Research Project Studies Fibrous Concrete," Public Works, Vol 105, No. 7, Jul 1974, pp 52-55.

77. Enzler, R., "Kunststoff-Faserarmierung von Beton," Schweizeriche Bauzeitung, Vol 93, No. 44, Oct 1975, pp 713-715.

78. Essen, G. R., "Erfahrungen mit Stahlfaserspritzbeton," Tiefbau, Vol 16, No. 12, Dec 1974, pp 905-907.

79. Fadden, P. H., Fracture Testing of Steel Fiber Reinforced Concrete, Master's Thesis, Clarkson College of Technology, Department of Civil and Environmental Engineering, Potsdam, New York, Dec 1977, 53 pp.

80. Faninger, G., Grünthaler, K. H., and Schwalbe, H. J., "Fibre-Reinforced Concrete and Acoustic Emission," Betonwerk + Fertigteil-Technik, Vol 43, No. 2, Feb 1977, pp 82-86.

81. Fergusson, L. J., "An Opening for Fibre Concrete in New Zealand," New Zealand Concrete Construction, Vol 18, No. 1, Feb 1974, p 31.

82. Ferry, R., "Glass Fibre Reinforced Cement," Proceedings, International Conference on Materials of Construction for Developing Countries, Vol 1, Bangkok, Aug 22-24, 1978, pp 329-342.

83. "Fiber-Cement Corrugated Roofing Panels," Journal of Ferrocement (Bangkok), Vol 11, No. 2, Apr 1981, pp 183-184.

84. "Fiberglass Reinforced Cement--The British Building Bomb," Nyteknik, No. 32, 1971, p 8.

85. "Fibre Cement Composites," Concrete, Vol 12, No. 1, Jan 1978, p 10.

86. "Fibre Concrete," New Zealand Concrete Construction, Vol 24, Nov 1980, pp 4-14.

87. "Fibre Reinforced Cement Composites," New Zealand Concrete Construction, Vol 18, No. 1, Feb 1974, pp 16-21.

88. "Fibre-Reinforced Cement, Mortar, and Concrete," Concrete/Beton, No. 5, Mar 1977, pp 17-21.

89. "Fibre Reinforced Concrete--New Developments," Building Materials, Nov/Dec 1974, pp 22-23, 26.

90. "Fibre Reinforced Concrete--The Present Scene," Precast Concrete, Vol 11, No. 8, Aug 1980, pp 358-362.

91. "Fibre Reinforcement for Concrete," New Zealand Concrete Construction, Vol 18, No. 1, Feb 1974, pp 8-11.

92. "Fibrous Concrete Experiments Show Promising Future As Paving Material," New Zealand Concrete Construction, Vol 18, No. 1, Feb 1974, pp 32-33.

93. "Fibrous Concrete Makes Thinner Overlays Possible," World Construction, Vol 30, No. 11, Nov 1977, p 61.

94. Fletcher, W. H., "Concrete Products Plants," Quarry Management and Products, Vol 3, Sep 1976, pp 228-230.

95. "Fluctuating Loads, Murals and Cladding," Precast Concrete, Vol 5, No. 5, May 1974, pp 267-268.

96. Foote, R. M. L., Cotterell, B., and Mai, Y. W., "Crack Growth Resistance Curve for a Cement Composite," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 135-144.

97. Ford, J. B., "GRC Wall Panel Projects in the USA," Precast Concrete (England), Vol 12, No. 5, May 1981, pp 214-217.

98. Forzani, A. A., Environmental Effects on Fiber Reinforced Concrete, Master's Thesis, Department of Civil and Environmental Engineering, Clarkson College of Technology, Potsdam, New York, May 1972, 82 pp.

99. Fowler, D., "Carbon-Fibre Reinforced Concrete," Proceedings, Conference on Fibre Reinforced Concrete and Other Fibre Reinforced Building Materials, Stevin Laboratory, Delft, Netherlands, Sep 1973, pp 139-149.

100. Fukuchi, T., Ohama, Y., Nishimura, T., and Sugahara, T., "Flexural Behaviour of Steel Fiber Reinforced Autoclaved Concrete," Proceedings, Twenty-Third Japan Congress on Materials Research, Kyoto, Japan, Mar 1980, pp 262-266.

101. Gera, L., "Vorausbestimmen der 28-Tage-Standarddruckfestigkeit von Beton druch Frühfestigkeitskennwerte," Tonindustrie Zeitung, Vol 97, No. 12, Dec 1973, p 320.

102. Ghaboussi, J. and Ranken, R. E., "Tunnel Design Considerations: Analysis of Medium-Support Interaction," FRA-ORD & D 75-24, University of Illinois at Urbana-Champaign, Urbana, Nov 1974, 84 pp.

103. Ghalib, M. A., "Moment Capacity of Steel Fiber Reinforced Small Concrete Slabs," ACI Journal, Proceedings, Vol 77, No. 4, Jul-Aug 1980, pp 247-257.

104. "Glassfaser Beton," Beton; Herstellung, Verwendung, Vol 24, No. 5, May 1974, pp 167-169.

105. "Glassfaserbeton mit Cemfil," Schweizerische Bauzeitung, Vol 92, No. 40, Oct 1974, pp 923-926.

106. "Glass Fibers Reinforced Concrete," Engineering News-Record, Vol 182, No. 5, Jan 10, 1969, p 19.

107. "Glassfibre Reinforced Cement Composites-2," Precast Concrete, Vol 8, No. 10, Oct 1977, pp 493-496.

108. "Glass Fibre Reinforcement," Middle East Construction, Vol 3, No. 8, 1978, pp 80-81.

109. "Glass Reinforced Cement," Australian Chemical Engineering, Vol 17, No. 3, Mar 1976, pp 9-11.

110. "Glass Reinforced Cement (GRC) Manufacture," New Zealand Concrete Construction, Vol 18, No. 1, Feb 1974, pp 12-15.

111. "Glass Reinforced Concrete," Engineering Materials and Design, Apr 1965, pp 239-245.

112. "Glass-Reinforced Concrete Shapes Million-Dollar Landscape," Concrete Products, Vol 83, No. 10, Oct 1980, pp 60-62.

113. Gokoz, U. N. and Naaman, A. E., "Effect of Strain-Rate on the Pull-Out Behaviour of Fibers in Mortar," Second Progress Report for U. S. Army Research Office by Department of Materials Engineering, University of Illinois at Chicago Circle, Chicago, Illinois, Jan 1981, 49 pp.

114. Gram, H. E., "Research in the Field of Natural Fibre Reinforced Concrete--An Overview," Report 12:80, Swedish Cement and Concrete Research Institute, Stockholm, 1980, 23 pp.

115. "GRC Elegance," Precast Concrete, Vol 7, No. 8, Aug 1976, p 415.

116 "GRC in Kuwait," Precast Concrete (England), Commercial, Trade and Business Reports, Vol 12, No. 2, Feb 1981, p 86.

117. "GRC in the '80s," Precast Concrete (England), Miscellaneous News and Views, Vol 12, No. 2, Feb 1981, p 59.

118. "GRC Makes Good," BRE News, No. 28, Summer, 1974, pp 5-7.

119. "GRC Mini-Mixer," Precast Concrete, Vol 9, No. 4, Apr 1978, p 193.

120. "GRC Screens in Saudi Arabia," Concrete, Vol 12, No. 1, Jan 1978, p 11.

121. Gupta, N. C. D., Paramasivam, P., and Lee, S. L., "Mechanical Properties of Coir Reinforced Cement Paste Composite," Housing Science, Vol 2, No. 6, 1978, pp 391-406.

122. Halvorsen, G. T., "J_m Toughness Comparison for Some Plain Concretes," The International Journal of Cement Composites (England), Vol 2, No. 3, Aug 1980, pp 143-148.

123. Halvorsen, G. T., Toughness of Portland Cement Concrete, Ph. D. Thesis, University of Illinois, Urbana-Champaign, Urbana, May 1979.

124. Hannant, D. J., "Polymer Fibre Reinforced Cement and Concrete," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 171-182.

125. Hannant, D. J., "The Mechanical Behaviour of Steel Fibre Reinforced Concrete," Proceedings, Fibre Reinforced Concrete--Conference on Properties and Applications of Fibre Reinforced Concrete and Other Fibre Reinforced Building Materials, Stevin Laboratory, Delft, Netherlands, Sep 1973, pp 63-70.

126. Hara, T. and Kitada, V., "Steel Fibers as Shear Reinforcement in Reinforced Concrete Corbels," Transactions of the Japan Concrete Institute 1979, Japan Concrete Institute, pp 147-153.

127. Henager, C. H., "Discussion of the Paper by Halvorsen, G. T., and Kesler, C. E., 'Moment-Curvature Relationships for Concrete Beams with Plain and Deformed Steel Fibers,'" Proceedings, Journal of the American Concrete Institute, Vol 76, No. 12, Dec 1979, pp 1351-1353.

128. Henager, C. H., "Earthquake-Resistant Connection Uses Steel Fibrous Concrete," Concrete Construction, Vol 25, No. 7, Jul 1980, pp 529-531.

129. Henager, C. H., "Flip-Lip Spillway--Lower Monumental Dam," Battelle Pacific Northwest Laboratories, Bellevue, Washington, Nov 1972, 10 pp.

130. Henager, C. H., "Proposed Test for Energy Absorption Index of Fibrous Concrete," Battelle Columbus Laboratories, Columbus, Ohio, Oct 1976, 2 pp.

131. Henager, C. H., "Steel Fibrous Shotcrete: A Summary of the State-of-the-Art," Concrete International: Design and Construction, Vol 3, No. 1, Jan 1981, pp 50-58.

132. Herring, K. S., Laws, J. W., Kesler, C. E., Paul, S. L., and Robinson, A. R., "Concrete for Tunnel Liners: Behaviour of Steel Fiber Reinforced Concrete Under Combined Loads," Report No. FRA-ORDD 75-7 UILU-ENG-74-2025, University of Illinois at Urbana-Champaign, Urbana, Aug 1974, 78 pp (PB 237382).

133. Hillerborg, A., "Analysis of Fracture by Means of the Fictitious Crack Model, Particularly for Fibre Reinforced Concrete," The International Journal of Cement Composites, Vol 2, No. 4, Nov 1980, pp 177-184.

134. Hobbs, C., "Faircrete-ein Faberston," Beton; Herstellung, Verwendung, Vol 22, No. 3, Mar 1972, pp 99-102.

135. Hoff, G. C., Godwin, L. N., Saucier, K. L., Buck, A. D., Husbands, T. B., and Mather, K., "Identification of Candidate Zero Maintenance Paving Materials, Chapter 9, Fiber Reinforced Concrete," Report No. FHWA-RD-77-110, Vol 2, Final Report, Federal Highway Administration, Washington, D. C. May 1977, pp 264-439 (also Miscellaneous Paper C-77-14, Waterways Experiment Station, CE, Vicksburg, Miss. Vol 2, May 1977).

136. Hughes, B. P., "AGRC Composites for Thin Structural Sections," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 187-196.

137. Hughes, B. P., "Design of Prestressed Fiber Reinforced Concrete Beams for Impact," ACI Journal, Proceedings, Vol 78, No. 4, Jul-Aug 1981, pp 276-281.

138. Hummert, G., "Stahlfaserbeton in Maschinenbau "(in German), Beton; Herstellung, Verwendung, Vol 30, No. 9, Sep 1980, pp 323-324.

139. Inderwick, A. F., "Concrete Produced with Sulphur-Portland Cement Mixtures," Proceedings, 8th International Congress of the Precast Concrete Industry, BIBM '75, Fifth Session, May 1975, 13 pp.

140. "Immunizing Fibre Glass Against Concrete," New Scientist, Vol 59, No. 861, Aug 30, 1973, p 504.

141. "Industry News, Steel Fibrous Concrete for Las Vegas Airport Job," Concrete Products, Vol 79, No. 8, Aug 1976, p 9.

142. Instructions for Preparing and Curing Wirand Concrete Made with Aggregate, The Battelle Development Corporation, Columbus, Dec 1973, 8 pp.

143. "Interfacial Bond Strength of Glass Fiber Reinforced Cement Composities," Journal of Materials Science, Vol 5, No. 2, Feb 1970, pp 183-185.

144. "Internal Sealing of Fiber-Reinforced Concrete," Special Report by Monsanto Research Corporation, Report No. CERL-SR-M204, Construction Engineering Research Laboratory, Champaign, Illinois, Mar 1977, 32 pp.

145. "Iowa's Concrete Overlay Tests May Solve Rehabilitation Riddles," Rural and Urban Roads, Vol 14, No. 8, Aug 1976, pp 40-46.

146. Iyengar, M. K. N., Organic Fibre-Reinforced Concrete, Doctor's Thesis, University of Delaware, Newark, Delaware, May 1973, 165 pp.

147. Iyengar, M. K. N., Bacon, F., and Brockenbrough, D. T., "Mechanical Behaviour of Nylon Fiber Reinforced Concrete," Proceedings, Second International Conference on Mechanical Behaviour of Materials, Boston, Aug 1976, pp 1378-1382.

148. Jacques, N. W., "Assessing the Performance of GRC Components," Precast Concrete, Vol 11, No. 11, Nov 1980, pp 521-523.

149. Janisch, R. and Palazotto, A. N., "An Experimental Study of Mix Variations and Low Cycle Fatigue Characteristics of Steel Fiber Reinforced Concrete," Proceedings, Second International Conference on Mechanical Behaviour of Materials, Boston, Aug 1976, pp 791-795.

150. Jaras, A. C., "A Discussion of the Paper 'A Technique for Showing Microcracks in Fibre Reinforced Cement'," Cement and Concrete Research, Vol 7, No. 2, Mar 1977, pp 173-183.

151. Jenkins, E. L., The Shear Behaviour of Steel-Fiber Reinforced Concrete, Master's Thesis, Clarkson College of Technology, Department of Civil Engineering, Potsdam, New York, Sep 1969, 74 pp.

152. Johnston, C. D., "Fibre Reinforced Concrete," Progress in Concrete Technology, Edited by V. M. Malhotra, MPP/MSL 80-89(TR), CANMET, Energy, Mines, and Resources, Ottawa, Canada, 1980, pp 451-504.

153. Johnston, C. D., "Some Remarks Concerning the Mechanical Performance of Steel Fiber Reinforced Concrete," Proceedings, Fibre Reinforced Concrete--Conference on Properties and Applications of Fibre Reinforced Concrete and Other Fibre Reinforced Building Materials, Stevin Laboratory, Delft, Netherlands, Sep 1973, pp 107-114.

154. Jones, H. L., "The Structural Behaviour of Polymer-Based E-Glass Fiber Reinforced Concrete when Exposed to High-Temperature, Incendiary Condition," SPE Technical Paper. Annual Technical Conference, Vol 20, 1974, pp 436-439.

155. Jones, J., "Glass Fiber-Reinforced Cement," Glass Industry; The Journal of Glass Manufacturing, Vol 58, No. 6, Jun 1977, pp 26-28.

156. Josifek, C. W., "Technical Report--Fibre Concrete Aircraft Parking Ramp at McCarran International Airport," The International Journal of Cement Composites, Vol 2, No. 4, Nov 1980, pp 235-238.

157. Kajfasz, S., "Some Test on Beams Prestressed by Fiber-Glass Cords," Magazine of Concrete Research, Vol 12, No. 35, Jul 1960, pp 91-98.

158. Kameda, Y., et al., "Fire Resistant Properties of Steel Fibre Reinforced Lightweight Mortar Boards," Abstracts, General Meeting of the Architectural Institute of Japan, Sep 1978, pp 17-18.

159. Kameda, Y., et al., "Studies and Applications of Steel Fiber Reinforced Concrete," Report No. 31, Kajima Institute of Construction Technology, Tokyo, 1979, 46 pp.

160. Keeton, J. R., "Shrinkage-Compensating Cement for Airport Pavement, Phase 3, Fibrous Concretes, Addendum," Report No. CEL-TN-1561-ADD, Final Report, Jan 1979-May 1980, Civil Engineering Lab (Navy), Port Hueneme, California, Sep 1980, 28 pp.

161. Kelly, A., "Fibre Reinforced Cements in Context," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 3-16.

162. Kelly, A., "Microstructural Parameters of Aligned Fibrous Composites," Conference Proceedings, The Properties of Fibre Composites, National Physical Laboratory (Nov 1971), IPC Science and Technology Press, Guildford, 1972, pp 5-14.

163. Kelly, A., "Some Scientific Points Concerning the Mechanics of Fibrous Composites," Conference Proceedings, Composites-Standards Testing and Design, National Physical Laboratory (8/9 Apr 1974), IPC Science and Technology Press, Guildford, 1974, pp 9-16.

164. Khalaf, M. N. A., Page, C. L., and Ritchie, A. G., "Effects of Fibre Surface Composition on Mechanical Properties of Steel Fibre Reinforced Mortars," Cement and Concrete Research, Vol 10, No. 1, Jan 1980, pp 41-51.

165. Kobayashi, K., "Steel Fibre Reinforced Concrete," Institute of Industrial Science (Japan), Vol 25, No. 277, Jan 1972, pp 1-9.

166. Kobayashi, K. and Cho, R., "Mechanics of Concrete with Randomly Oriented Short Steel Fibers," Proceedings, Second International Conference on Mechanical Behaviour of Materials, Boston, Aug 1976, pp 1938-1942.

167. Kobayashi, K. and Mutsuyoshi, H., "Influence of Fiber Orientation and Distribution on Load-Deformation Characteristics of Steel Fiber Reinforced Concrete Members" (in Japanese), Proceedings of the Japan Society of Civil Engineers, No. 299, Jul 1980, pp 101-112.

168. Kobayashi, K. and Nakagawa, T., "New Steel Fiber for Concrete Reinforcement," Transactions of the Japan Concrete Institute 1979, Japan Concrete Institute, pp 231-237.

169. Koldewitz, V. W., "Anwendung von Kunststoff-Faserbeton," Beton; Herstellung, Verwendung, Vol 29, No. 6, Jun 1979, pp 203-206.

170. Komlos, K., "Influence of Type of Randomly Spaced Steel Reinforcement Wires on Concrete Strength" (in Slovak), Stavebnicky Casopis (Klemensova), Vol 28, No. 9, Sep 1980, pp 661-687.

171. Komlos, K., "Pevnostné Vlastnosti Betónov Vystuzených Náhodne Rozptýlenými Ocelovými Vláknami," Stavivo, Vol 53, No. 12, 1975, pp 373-377.

172. Komlos, K., "Rheological Characteristics of Fibre-Reinforced Concrete Mixes," Proceedings, Seventh International Congress on Rheology, Gothenburg, Sweden, 1976, pp 378-379.

173. Komlos, K., "Rheological Properties of Fibre Cement Composites," Materialpruefung, Vol 20, No. 10, Oct 1978, pp 29-30.

174. Komlos, K., "Workability of Concrete Mixes with Randomly Spaced Glass Fibres" (in Slovak), Stavebnicky Casopis (Bratislava), Vol 27, No. 6, Jun 1979, pp 361-376.

175. Kühne, G. and Handrek, H., "Einige Probleme bei der Entwicklung von Glasfaserzement," Baustoffindustrie, Ausgabe B: Bauelente, Vol 21, No. 4, Aug 1978, pp 22-26.

176. Kühne, G. and Handrek, H., "Zu Einigen Fragen der Faserbewehrung von Beton," Baustoffindustrie, Vol 22, Apr 1979, pp 13-15.

177. Kühne, G., and Jentsch, S., "Zur Entwicklung von Asbestzementahlichen Producten auf Glasfaser-Zenient-Basis," Baustoffindustrie, Ausgabe B, Vol 19, No. 4, Aug 1976, pp 32-34.

178. Kukreja, C. B., Kaushik, S. K., Kanchi, M. B., and Jain, O. P., "Tensile Strength of Steel Fibre Reinforced Concrete," Indian Concrete Journal, Vol 54, No. 7, Jul 1980, pp 184-188.

179. Kumar, A., "Tensile Strengths in Concrete by Adding Wire to Plain Concrete," Vishwakarma, Vol 12, No. 4, Apr 1972, pp 3-7.

180. Lai, K., Impact Capacities of Prestressed Beams Built with Plain, Polypropylene and Steel Fibre Concretes, Ph. D. Thesis, University of Birmingham, England, Aug 1979.

181. Langley, A. A., "The Air and Water-Vapour Permeability of Glass-Fibre-Reinforced Cement," Magazine of Concrete Research, Vol 33, No. 114, Mar 1981, pp 18-26.

182. Lankard, D. R., Tensile Creep of Wirand Concrete, Battelle Columbus Laboratories, Columbus, Ohio, Jul 1970, 13 pp.

183. Lankard, D. R. and Dickerson, R. F., "Fiberamerad WIRAND-Betongett Nytt Konstruktionsmaterial," Cement och Betong, No. 4, Apr 1971, pp 509-515.

184. Lankard, D. R. and Walker, A. J., "Field Work in New York City for the Trimborough Bridge and Tunnel Authority--East Side Airlines Terminal," Battelle Columbus Laboratories, Columbus, Ohio, Jul 1971, 11 pp.

185. Lankard, D. R. and Walker, A. J., "Installation of Wirand Concrete Slab--Ohio Highway Experiment, Ashland, Ohio," Battelle Columbus Laboratories, Columbus, Ohio, Aug 1971, 10 pp.

186. Lankard, D. R. and Walker, A. J., "Status Report on Laboratory and Field Investigations of the Durability of Wirand Concrete Exposed to Various Service Environments," Battelle Columbus Laboratories, Columbus, Ohio, May 1976, 36 pp.

187. Lankard, D. R. and Walker, A. J., "Wirand Field Trials--Detroit Metropolitan Airport," Battelle Columbus Laboratories, Columbus, Ohio, Nov 1971, 9 pp.

188. Lankard, D. R. and Walker, A. J., "Wirand Field Trials: Queens Midtown Tunnel Patch, New York, N. Y.," Battelle Columbus Laboratories, Columbus, Ohio, Jul 1971, 10 pp.

189. Lankard, D. R. and Walker, A. J., "Wirand Field Trials--Wirand Precast Slab Patching of New York City Expressway," Battelle Columbus Laboratories, Columbus, Ohio, Jul 1971, 11 pp.

190. Lazar, B. E., "Fiber RC Compaction by Vibration and Surface Pressure," Journal of the Construction Division, Proceedings, American Society of Civil Engineers, Vol 103, No. C04, Dec 1977, pp 651-654.

191. Leggatt, A., "GRC and Other Laminar Concrete," New Concrete Technologies and Building Design, The Constructin Press, Lancaster, 1979, pp 107-117.

192. Lewis, W. C., "Major Applications of Steel Fiber In Cement-Matrix Composition," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass, Materials Research Society, University Park, Pennsylvania, p 199.

193. Lilholt, H., "Tension-Compresion Experiments on a Fibre Reinforced Composite of Cu-W," Conference Proceedings, Composites-Standards Testing and Design, National Physical Laboratory (8/9 Apr 1974), IPC Science and Technology Press, Guildford, 1974, pp 17-19.

194. Litherland, K. L., Oakley, D. R., and Proctor, B. A., "The Use of Accelerated Agency Procedures to Predict the Long Term Strength of GRC Composites," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 61-74.

195. "Low Cost Building Panels Are Light and Strong," Engineering News-Record, Vol 195, No. 12, Sep 18, 1975, p 126.

196. Mai, Y. W., Andonian, R., and Cotterell, B., "Thermal Degradation of Polypropylene Fibres in Cement Composites," The International Journal of Cement Composites (England), Vol 2, No. 3, Aug 1980, pp 149-155.

197. Maidl, B., "Stand der Technologie fur den Einsatz von Stahlfaserspritzbeton" (in German), Beratende Ingenieune, Sep 1980.

198. Maidl, B. and Hahlhege, R., "Verstarkung eines Bahntunnels mit Stahlfaserspritzbeton" (Reinforcement of a Railway Tunnel With Steel Fibre Reinforced Shotcrete) (In German), Beton; Herstellung, Verwendung, Vol 30, No. 11, Nov 1980, pp 413-414.

199. Maidl, B. and Rapp, R., "Bauteile aus Stahlfaserbeton unter Schussbelastung," Beton; Herstellung, Verwendung, Vol 29, No. 11, Nov 1979, pp 393-395.

200. Majumdar, A. J., "Some Aspects of Glass Fibre Reinforced Cement Research," Proceedings, Sumposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass, Materials Research Society, University Park, Pennsylvania, pp 37-59.

201. Malmberg, B. and Skarendahl, A., "Polymer and Fibre Reinforcement of Concrete" (in Swedish), CBI Research Report No. 6:79, Swedish Cement and Concrete Research Institute, Stockholm, 1979, 48 pp.

202. Mathis, M. J., Fracture Testing of Fibre-Reinforced Concrete by Means of the Wedge Opening Loading Specimen, Master's Thesis, Clarkson College of Technology, Potsdam, New York, Apr 1974, 77 pp.

203. Mattisson, L. G., "Concrete Polymer Fibre Composites," Proceedings, Conference on Fibre Reinforced Concrete and Other Fibre Reinforced Building Materials, Stevin Laboratory, Delft, Netherlands, Sep 1973, pp 151-158.

204. Mattox, D. M. and Gunasekaram, M., "Benefit of $Y_2 O_3$ in Glasses for Concrete Alkaline Environments," Indian Concrete Journal, Vol 51, No. 4, Apr 1977, pp 125-126.

205. McChesney, M., "Modern Materials for Underground Support," Journal of South African Institute of Mining and Metallurgy, Vol 77, No. 5, Dec 1976, pp 114-118.

206. McCurrich, L. H. and Adams, M. A. J., "Composite Materials in Civil Engineering--Their Current Use, Performance Requirements and Future Potential," Conference Proceedings, Composites-Standards Testing and Design, National Physical Laboratory (8/9 Apr 1974), IPC Science and Technology Press, Guildford, 1974, pp 80-92.

207. "Merkblatt Stahlfaserspritzbeton," Beton; Herstellung, Verwendung, Vol 27, No. 2, Feb 1977, pp 66-68.

208. Meyer, A., "Erstes Schalendach aus Glasfaserbeton in Deutschland," Beton; Herstellung, Verwendung, Vol 27, No. 8, Aug 1977, pp 301-303.

209. Mikhail, R. S., Dollimore, D., and Stino, R., "Microstructure and Mechanical Properties of Fibre Reinforced Cement Pastes," il Cemento, Vol 75, No. 3, Jul-Sep 1978, pp 277-284.

210. Mills, R. H., "Age-Embrittlement of Glass-Reinforced Concrete Containing Blastfurance Slag," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 201-208.

211. Mills, R. H., "Preferential Precipitation of Calcium Hydroxide on Alkali-Resistant Glass Fibres," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 229-237.

212. Mindess, S., "Torsion Tests of Steel-Fibre Reinforced Concrete," The International Journal of Cement Composites, Vol 2, May 1980, pp 85-89.

213. Morgan, D. R., "Steel Fibre Concrete--A Review," 15th Annual Meeting and Convention, British Columbia Ready Mixed Concrete Association, Victoria, British Columbia, Sep 1977.

214. Morgan, D. R., "Steel Fibre Shotcrete--A Laboratory Study," Concrete International: Design and Construction, Vol 3, No. 1, Jan 1981, pp 70-74.

215. Morris, A. D. and Garrett, G. G., "Structure Variations Affecting Interfacial Failure in Steel Fibre Reinforced Cement," Proceedings of the Third International Conference of Mechanical Behavior of Materials, Vol 3, Cambridge, Aug 1979, pp 285-292.

216. Moss, R. S., Fatigue Characteristics of Concrete Beams Containing a Mixture of Normal Reinforcement and Steel Fibers, Master's Thesis, Clarkson College of Technology, Department of Civil Engineering, Potsdam, New York, Dec 1968, 78 pp.

217. Nakahara, K., et al., "Applications of Wet-Mix Steel Fibrous Shotcrete to Tunnel Linings," Annual Report of Kajima Institute of Construction Technology, Vol 25, Mar 1977, pp 25-30.

218. Neal, W., "Glass Reinforced Concrete, A New Composite for Construction," The Construction Specifier, Vol 30, No. 3, Mar 1977, pp 21-23, 26-28, 30-32.

219. Neuwerth, G. E., Fiber Glass as a Reinforcement Material for Reinforced Concrete Elements, Doctor's Thesis, Rutgers University, New Brunswick, May 1974, 388 pp.

220. "New Lightweight Precast Product Developed," Modern Concrete, Vol 41, No. 10, Feb 1978, pp 49-51.

221. "New Material from BRS," Building Material, Vol 30, No. 2, Feb 1970, pp 33-34.

222. "New Profiles in Plant," World Construction, Vol 30, No. 10, Oct 1977, p 12.

223. Newman, J. O., A Study of the Modulus of Elasticity of Steel Fiber-Reinforced Concrete Composites, Doctor's Thesis, The University of Maryland, College Park, 1972, 152 pp.

224. Ng, H. K., Nathan, G. K., Paramasivam, P., and Lee, S. L., "Tensile Properties of Steel Fibre Reinforced Mortar," Proceedings of the International Conference on Materials of Construction for Developing Countries, Vol 1, Bangkok, Aug 22-24, 1978, pp 343-356.

225. Nishioka, K., et al., "Mechanical Properties and Applications of Steel Fibre Concrete (Part 1), The Sumitomo Search No. 13, May 1975, pp 64-74 (also see Reference 294, MP C-76-6, Supplement 2).

226. Nishioka, K., et al., "Mechanical Properties and Applications of Steel Fibre Concrete" (Part 2), The Sumitoma Search, No. 19, May 1978, pp 118-139 (also see Reference 295, MP C-76-6, Supplement 2).

227. Nishioka, K., Yamakawa, S., Kameda, Y., and Akihama, S., "Present Status on Applications of Steel Fibre Concrete in Japan," The International Journal of Cement Composites, Vol 2, No. 4, Nov 1980, pp 205-232.

228. Nurnberg, V. R. G. and Hannover, K. K., "Schaumstoffkugeln im Beton," Beton: Herstellung, Verwendlung, Vol 26, No. 8, Aug 1976, pp 277-282.

229. Obszarski, J. M., The Effects of a Flowing Salt Water Environment on Steel Fiber Reinforced Concrete, Master's Thesis, Clarkson College of Technology, Potsdam, New York, Aug 1975, 65 pp.

230. Ohama, Y., Nishimura, T., and Hachisuka, H., Bibliography on Fiber Reinforced Cement and Concrete (in English and Japanese), Department of Architecture, College of Engineering, Nihon University Koriyama, Fukushima, Japan, Oct 1980.

231. Ohama, Y., Nishimura, T., and Hachisuka, H., "Strength Properties of Polystyrene-Impregnated Mortars Reinforced with Steel Fibers," Proceedings of the Twenty-Second Japan Congress on Materials Research, The Society of Materials Science, Japan, Mar 1979, pp 276-279.

232. Ohama, Y., Nishimura, T., and Hachisuka, H., "Strength Properties of Steel Fiber Reinforced Polystyrene-Impregnated Concrete," Proceedings of the Third International Conference of Mechanical Behaviour of Materials, Vol 3, Cambridge, Aug 1979, pp 151-158.

233. Ohigashi, T., Mishima, K., and Tahara, M., "Frost Resistance of Glass Fiber Reinforced Cement Composites," Transactions of the Japan Concrete Institute 1979, Japan Concrete Institute, pp 255-262.

234. Otto, H., "Das Grüne Erlebnis," Beton; Herstellung, Verwendung, Vol 27, No. 8, Aug 1977, pp 301-303.

235. Ozaki, S., and Shimura, M., "Bond Test on Steel Fibres by Means of a Uniaxial Tension Test for Concrete," Transactions of the Japan Concrete Institute 1979, Japan Concrete Institute, pp 207-213.

236. Palotás, L., "Design and Crack Prediction of Steel Wire Reinforced Concrete," Periodica Polytechnica, Civil Engineering, Vol 22, No. 1-2, Budapest, 1978, pp 69-79.

237. Parry, J. P. M., "Low-Cost Handmade Roof Sheets of Fibre Reinforced Cement," Appropiate Technology, Vol 15, No. 4, Feb 1979, pp 6-7.

238. Pashchenko, A. A., Startchevskaia, H., Serbin, V. P., and Kalita, L., "Application of Sulphating Cement in Glass Fibre Reinforced Concrete," CRI Abstracts (New Delhi), Vol 13, No. 4, Oct 1980, p 102.

239. Patel, S. J., Effectiveness of Steel Fibers as Shear Reinforcement in Concrete Slabs, Master's Thesis, Clarkson College of Technology, Potsdam, New York, Aug 1970, 49 pp.

240. Pathan, I. A., Tensile and Flexural Behaviour of Steel Fibre Reinforced Concrete, Ph. D. Thesis, Queen's University, Belfast, 1978.

241. Paturoyev, V. V., Serykh, P. L., Dzhabarov, V. M., and Yucupov, R. A., "Influence of the Reinforcement on the Stress-Deformation State of Fiber Reinforced Concrete" (in Russian), Beton i Zhelezobeton (Moscow), No. 5, May 1980, pp 25-26.

242. Paul, S. L. and Sinnamon, G. K., "Concrete Tunnel Liners: Structural Testing of Segmented Liners," FRA OR & D 75-93 UILU-ENG-75-2013, University of Illinois at Urbana-Champaign, Urbana, Aug 1975, p 170.

243. Paul, S. L., Sinnamon, G. K., and Ferrera-Boza, R., "Structural Test of Cast-In-Place Tunnel Liners," DOT-TST 76 T-18, UILU-ENG-76-2027, University of Illinois, Urbana, Aug 1976, 112 pp.

244. "PCI Committee on Glass Fiber Reinforced Concrete Panels," Recommended Practice for Glass Fiber Reinforced Concrete Panels, PCI Journal, Vol 26, No. 1, Jan-Feb 1981, pp 25-93.

245. Peterson, P. E., "Fracture Mechanical Calculations and Tests for Fibre-Reinforced Cementitious Materials," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 95-106.

246. Pfeifer, H. and Pätsch, P., "Moglichkeiten zur Bewehrung von Beton unter Verwendung von Kunststoffen," Verein Deutscher Ingenieure Berichte, No. 225, 1975, pp 35-43.

247. Pinchin, D. J., "Fibre-Cement Bond, Frictional Stress Transfer And Composite Properties--A Discussion," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass, Materials Research Society, University Park, Pennsylvania, pp 91-92.

248. Pinchin, D. J. and Flowers, E. S., "Evaluation of Surface Modified Asbestos for Asbestos Cement," Proceedings, Sumposium L, Advances in Cement-Matrix Compsites, Nov 17-18, 1980, Boston, Mass, Materials Research Society, University Park, Pennsylvania, pp 75-79.

249. Pinchin, D. J. and Tabor, D., "Inelastic Behaviour in Steel Wire Pull-Out from Portland Cement Mortar," Journal of Materials Science, Vol 13, No. 6, Jun 1978, pp 1261-1266.

250. Pomeroy, C. D., "The Commercial Prospects for Fibre- and Polymer-Modified Concretes," Precast Concrete, Vol 7, No. 11, Nov 1976, pp 563-564, 569-570.

251. Pomeroy, C. D. and Brown, J. H., "Problems in the Measurement of the Performance of Fibre Reinforced Cement Paste and Concrete," Fibre Reinforced Concrete--Conference on Properties and Applications of Fibre Reinforced Concrete and Other Fibre Reinforced Building Materials, Stevin Laboratory, Delft, Netherlande, Sep 1973, pp 43-51.

252. "Precast GRC Units as Permanent Formwork Kenfig Viaduct in South Wales," Precast Concrete, Vol 8, No. 7, Jul 1977, pp 353-354.

253. Priestner, R., "Fracture of Wire-Reinforced, Sprayed Aluminum Tubes and Rings," Conference Proceedings, the Properties of Fibre Composites, National Physical Laboratory (Nov 1971), IPC Science and Technology Press, Guildford, 1972, pp 89-90.

254. Proceedings of the Conference on the Properties of Fibre Composites, National Physical Laboratory (Nov 1971), IPC Science and Technology Press, Guildford, 1972.

255. Proctor, B. A., "Principle and Practice of GRC. A Review," Composites, Vol 9, No. 1, Jan 1978, pp 44-48.

256. Proctor, B. A., "Sources of Weakness in Reinforcing Fibres," Composites, Vol 2, No. 2, Jun 1971, pp 85-91.

257. Raithby, K. D., "Crack Control in Concrete Beams by Surface Reinforcement with Glass Fibres," Precast Concrete (London), Vol 11, No. 10, Oct 1980, pp 468-469 (Complete Report given in TRRL Laboratory Report 947, Transport and Road Research Laboratory, Crowthorne, Berkshire, England, 1980, 21 pp).

258. Raithby, K. D., Galloway, J. W., and Williams, R. I. T., "Polypropylene-Reinforced Cement Composites for Surface Reinforcement of Concrete Structures," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 197-198.

259. Rajagopalan, K., "Discussion on Paper Published in the Magazine of Concrete Research, Vol 28, No. 96, Sep 1976, 'An Assessment of the Commercial Prospects for Fibre- and Polymer-Modified Concrete'" by C. D. Pomeroy, Magazine of Concrete Research, Vol 29, No. 100, Sep 1977, pp 151-152.

260. Raju, N. K., Basavarajaiah, B. S., and Rao, K. J., "Compressive Strength and Bearing Strength of Steel Fibre Reinforced Concrete," Indian Concrete Journal, Vol 51, No. 6, Jun 1977, pp 183-188.

261. Ramakrishnan, V., "Performance Characteristics of Steel Fiber Reinforced Super Plasticized Concrete," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 145-147.

262. Ramakrishnan, V., Coyle, W. V., Dahl, L. F., and Schrader, E. K., "A Comparative Evaluation of Fiber Shotcretes," Concrete International: Design and Construction, Vol 3, No. 1, Jan 1981, pp 59-69.

263. Rammant, J. P., Laethem, L. V., and Backy, E., "Steel Fibre Concrete, A Safer Material for Reactor Construction, A General Theory For Rupture Prediction," Proceedings, International Conference on Structural Mechanics in Reactor Technology, Vol 4, No. H, 1977, pp (H5/4-1)-(H5/4-12).

264. Rao, C. V. S. K., "A Non-Destructive Identation Test for Fibre Reinforced Concrete," Proceedings, RILEM Symposium 1978, Testing and Test Methods of Fibre Cement Composites, The Construction Press, Lancaster, 1978, pp 525-530.

265. Rao, C. V. S. K., "Effectiveness of Random Fibres in Composites," Cement and Concrete Research, Vol 9, No. 6, Nov 1979, pp 685-693.

266. Rao, C. V. S. K., and Raghavan, T. M. S., "Use of Fibre Concrete in Overhead Tanks," The International Journal of Cement Composites (England), Vol 2, No. 3, Aug 1980, pp 157-160.

267. Rao, C. V. S. K. and Swamy, R. N., "A Material Science View of the Properties of Concrete," Proceedings, First Australian Conference on Engineering Materials, The University of New South Wales, 1974, pp 231-246.

268. Rao, J. K. S., Paramasivam, P., and Bajaj, M., "Multiphase Behaviour of Unidirectional Fiber Reinforced Mortar Composites," Proceedings, Second International Conference on Mechanical Behaviour of Materials, Boston, Aug 1976, pp 1368-1372.

269. Rao, J. K. S. and Parini, S. R., "Size Effects of the Mechanical Behaviour of Fiber Reinforced Concrete Materials," Proceedings, Second International Conference on Mechanical Behaviour of Materials, Boston, Aug 1976, pp 209-213.

270. Rehsi, S. S., Khalid, M., and Garq, S. K., "Steel Fibre Reinforced Cement Flat Sheets," The Indian Concrete Journal, Vol 53, No. 9, Sep 1979, pp 247-248.

271. "Research by the C & CA," Precast Concrete, Vol 5, No. 7, Jul 1974, pp 406-407.

272. "Ringer Crane Places Dolosse to Armor Humboldt Bay Jetty," Contractor & Engineers Magazine, Vol 70, No. 9, Sep 1973, pp 24-25.

273. Roth, L., "Little Steel Fibers May Solve a Big Paving Problem," Michigan Contractor and Builder, Vol 68, No. 14, Jul 1974, pp 20-24.

274. Roy, D. M. , Majumdar, A. J., Shah, S. P. and Manson, J. A., "Advances in Cement-Matrix Composites," Report No. ARO 17594.1-MS, Final Report; 1 Jun 1980-31 Mar 1981, Pennsylvania State University, Materials Research Society, University Park, Pennsylvania, Mar 1981, 254 pp.

275. Rubinsky, I. A. and Rubinsky, I., "Preliminary Investigation of the Use of Fibre-Glass for Prestressed Concrete," Magazine of Concrete Research, Vol 6, No. 17, Sep 1954, pp 71-78.

276. Russell, L. and Vesper, P. E., "Evaluation of Halliburton TUF Cement for Use as a Cavity Liner Material," United States Atomic Energy Commission, Nevada Operations Office, Las Vegas, Nevada, Sep 1968, 52 pp.

277. Ryan, T. F., Gunite, a Handbook for Engineers, Cement and Concrete Association, London, 1973, 63 pp.

278. Sakurai, H., "Overlay on Asphalt with Steel Fiber Reinforced Concrete," Composite Materials II, Proceedings of 2nd Japan-USSR Symposium on Composite Materials, Japan Society for Composite Materials, 1980, p 151.

279. Sandell, B., "Sprayed Concrete with Wire Fibre Reinforcement," Tunnels & Tunnelling, Vol 10, Apr 1978, pp 29-30.

280. Schäfer, M. and Pförtner, E., "Herstellung und Anwendungsgebiete von Glasfaservliesstoff," Baustoffindustrie-Ausgabe B: Bauelente, Vol 20, No. 6, Dec 1977, pp 23-25.

281. Schneckenberg, H., Wasserbau, S., and Seller, R., "Alterungsbeständigkeit der im Wasser-und Tiefbau Eingestezten Plastfoliendichtung," Bauplanung-Bautechnik, Vol 33, No. 9, Sep 1978, pp 410-413.

282. Schorn, H. and Vissmann, H. W., "Complete Stress-Strain Relationship of Steel Fibre Reinforced Composites," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 149-157.

283. Schrader, E. K., "Impact Resistance and Test Procedure for Concrete," ACI Journal, Proceedings, Vol 78, No. 2, Mar-Apr 1981, pp 141-146.

284. Schrader, E. K., "Lower Monumental Lock Repair," Concrete Structures: Repair and Rehabilitation, Vol C-81-1, Feb 1981, pp 6-7 (available from Waterways Experiment Station, Corps of Engineers, Vicksburg, Mississippi).

285. "Schwimmstege für Boots-und Yachthäfen, Jetz auch aus Stahlbeton und Glasfaserbeton," Betonwerk + Fertigteil-Technik, Vol 45, No. 9, Sep 1979, pp 567-570.

286. Selde, V., "Fiber-Latex Approach to Concrete Facing Repair--A Project Report," Construction Specifier, Vol 33, No. 8, Aug 1980, pp 52-55.

287. Shah, S. P., "Fiber-Reinforced Concretes, a Review of Capabilities," Concrete Construction, Vol 26, No. 3, Mar 1981, pp 261-268.

288. Shah, S. P., "Fracture in Fiber Reinforced Concrete," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 83-89.

289. Shah, S. P. and Velazco, C., "Fracture Parameters for Concrete and Fibre Reinforced Concrete," Proceedings, Third Engineering Mechanics Division Specialty Conference, American Society of Civil Engineers, 1979.

290. Shead, F. A., "Low-Cost Housing in Africa: Is GRC A Solution?" African Construction, Vol 3, No. 1, Feb/Mar 1980, p 27.

291. Shibata, T., Joh, O., Konishi, H., and Tanaka, M., "Drying Shrinkage of Steel Fiber Reinforced Mortar," Transaction of the Japan Concrete Institute 1979, Japan Concrete Institute, pp 223-230.

292. Simeonov, Y. T. and Djabaron, N. B., "A Possibility to Improve Strength and Deformation Characteristics of Fiber Reinforced Concrete," Proceedings, Second International Conference on Mechanical Behaviour of Materials, Boston, Aug 1976, pp 1409-1413.

293. Singh, S. M., "Low Cost Material from Coconut Husk and Rice Husk," Proceedings, International Symposium on New Horizons in Construction Materials, Vol 1, 1976, pp 477-487.

294. Smith, P. D., "Bamboo Fibre as Reinforcing Material in Concrete," Appropriate Technology, Vol 6, No. 2, Aug 1979, pp 8-10.

295. Soane, A. J. M., "Glass-Fibre Reinforced Cement Composites," Betonwerk + Fertigteil-Technik, Vol 38, No. 12, Dec 1972, pp 900-901.

296. "Some Aspects of C & CA Research," Precast Concrete, Vol 7, No. 10, Oct 1976, pp 523-525.

297. "Something New in Cement," World Construction, Vol 30, No. 11, Nov 1977, p 16.

298. Sonneborn, R. H., "Market Trends in the GRC Industry," Precast Concrete (England), Vol 12, No. 1, Jan 1981, pp 27-28.

299. Spanty, R. C., Shear Span Determination of Steel-Fiber-Reinforced Mortar Beans, Master's Thesis, Clarkson College of Technology, Potsdam, New York, Sep 1970, 57 pp.

300. Spurrier, J. and Luxmoore, A. R., "The Critical Constrained Crack Length in Fibre-Reinforced Cementitious Matrices," Fibre Science and Technology, Vol 9, No. 3, 1976, pp 225-236.

301. Sriboqhlue, W. and Buckley, E. L., "Development Testing of E-Glass Fibre Reinforced Mortar," Research Report TR-3-76, Construction Research Center, University of Texas at Arlington, Arlington, Texas, Oct 1976, 53 pp.

302. Staff, E., "Developing the Market for Pattern-Stamped Concrete," Concrete Construction, Vol 24, No. 7, Jul 1979, pp 451-458.

303. Staff, E., "Pattern Stamping--Tools and Available Counsel," Concrete Construction, Vol 24, No. 7, Jul 1979, pp 459-462.

304. "Stahlfaserspritzbeton" (in German), Kolloquium fur Bauverfahrenstechnik, Heft 34, Berichte des Instituts fur Konstruktiven Ingenieurban der Ruhr-Universitat Buchum, Vulkan-Verlag, Essen, 1979.

305. Stapely, K. A., "Ceiling Units in GRC for Perth Art Gallery," Precast Concrete (England), Vol 12, No. 2, Feb 1981, pp 77-78.

306. "Steel Fiber Give Concrete Greater Strength," The Engineer, Vol 231, No. 5975, Jul 9, 1970, pp 34-35.

307. Steel Fiber Shotcrete, Schrader & Johnson, Ltd., Walla, Walla, Washington 1978, 28 pp.

308. "Steel Fiber, Shotcrete Mix Works," Engineering News-Record, Vol 199, No. 19, Nov 16, 1977.

309. Steinegger, H., "Faserbewehrter Mortel im Untertagebau" (Fibre-Reinforced Mortar in Underground Structures) (in German), Benton; Herstellung, Verwendung, Vol 31, No. 1, Jan 1981, pp 9-10.

310. Steinegger, H., "Industrial Manufacture of GRC Products with Regulated-Set Cement," Proceedings of the Interational Congress on Glass Fibre Reinforced Cement, The Glassfibre Reinforced Cement Association, Gerrards Cross, Mar 1978, pp 197-199.

311. Steinmetz, E., "Experience with the Construction of a Steel Fibre Reinforced Concrete Road," Proceedings, Conference on Fibre Reinforced Concrete and Other Fibre Reinforced Building Materials, Stevin Laboratory, Delft, Netherlands, Sep 1973, pp 181-185.

312. Strength Study of Steel-Fiber-Reinforced Concrete Dolosse, Department of the Army, South Pacific Division, Corp of Engineers Laboratory, Sausalito, California, Dec 1972, 10 pp.

313. Stroeven, P., Reinhardt, H. W., and Kormeling, H. A., "Fibre Concrete," Heron (Delft), Vol 24, No. 4, 1979, 65 pp.

314. Stromecki, J., Fiber Reinforced Concrete's Ability to Confine Compression Reinforcement, Master's Thesis, Clarkson College of Technology, May 1978, 78 pp.

315. Suaris, W., Gokoz, U., Youngquist, O., and Shah, S. P., "Analysis of Inertial Effects in the Instrumented Impact Testing of Fiber Reinforced Concrete," Progress Report, Dept. of Materials Engineering, University of Illinois at Chicago Circle, Aug 1980, 67 pp.

316. Swamy, R. N., "Anwendungsbereichefür Faser-und Polymerbeton," Baustoffindustrie Ausgabe B. Bauelente, Vol 19, No. 3, Jun 1976, pp 30-32.

317. Swamy, R. N., Beton Met Vezelwapening; Technologie, Eigenschappen en Toepassingen," Cement, Vol 26, No. 2, 1974, pp 72-82.

318. Swamy, R. N., "Fibre Reinforcement of Cement Matrices," The Structural Engineer, Vol 52, No. 11, Nov 1974, pp A11, A13.

319. Swamy, R. N., "Prospects of Fiber Reinforcement in Structural Applications," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 159-169.

320. Swamy, R. N., "Some Practical Applications of Steel Fibre Reinforced Concrete," Proceedings, Conference on Fibre Reinforced Concrete and Other Fibre Reinforced Building Materials, Stevin Laboratory, Delft, Netherlands, Sep 1973, pp 159-176.

321. Swamy, R. N. and Bandyopadhyay, A. K., "The Elastic Properties of Structural Lightweight Concrete," Proceedings of Institution of Civil Engineers, Part 2, Research and Theory, Vol 59, Sep 1975, pp 381-394.

322. Swamy, R. N. and Ibrahim, A. B., "Flexural Behaviour of Reinforced and Prestressed Solite Structural Lightweight Concrete Beams," Buildng Science, Vol 10, 1975, pp 43-56.

323. Swamy, R. N. and Mangat, P. S., "The Interfacial Bond Stress in Steel Fiber Cement Composite," Cement and Concrete Research, Vol 6, No. 5, Sep 1976, pp 641-649.

324. Swamy, R. N. and Stravrides, H., "Shrinkage and Creep Characteristics of Glass-Fibre Reinforced Cement Composites," Proceedings of the International Congress on Glass Fibre Reinforced Cement, The Glassfibre Reinforced Cement Association, Gerrards Cross, Mar 1978, pp 75-96.

325. Swartz, S. E., Huang, C. M., and Jones, G. L., "An Apparatus for Tensile Testing of Concrete," Experimental Mechanics, Vol 19, No. 3, Mar 1979, pp 109-111.

326. Tallentire, A. G., "The Scope of Practical Application of Glass Fibre Reinforced Cement in Civil Engineering and Associated Industries, Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 183-185.

327. Tanigawa, Y., Yamada, K., and Hatanaka, S., "Inelastic Behavior of Steel Fiber Reinforced Concrete Under Compression," Proceedings, Symposium L, Advances in Cement-Matrix Composites, Nov 17-18, 1980, Boston, Mass., Materials Research Society, University Park, Pennsylvania, pp 107-118.

328. Tanigawa, Y., Yamada, K., and Hatanaka, S., "Size Effect in Mechanical Properties of Steel Fiber Reinforced RC Beans Under Flexural Load," Transactions of the Japan Concrete Institute 1979, Japan Concrete Institute, pp 239-246.

329. Tanigawa, Y., Yamada, K., and Hatanaka, S., "Statistical Aspects on Mechanical Properties of Steel Fiber Reinforced Concrete Under Compressive Loading," Transactions of the Japan Concrete Institute 1979, Japan Concrete Institute, pp 215-221.

330. Telser, W. "Some Practicle Experiences with Glass-Fibre Reinforced Concrete," Reports of the 9th International Congress of the Precast Concrete Industry, Bureau International du Beton Manufacture, Linz, 8-13 Oct 1978, pp (I-111)-(I-119).

331. Terry, T., The Effects of Combined Bending and Torsion on Fiber Reinforced Concrete Beans, Master's Thesis, Department of Civil and Environmental Engineering, Clarkson College of Technology, Potsdam, New York, May 1975, 200 pp.

332. Testing and Test Methods of Fibre Cement Composites, Edited by R. N. Swamy, RILEM Symposium 1978, Construction Press Ltd., Lancaster, 1978, 545 pp (Available in the U. S. from Concrete Construction Publications, Addison, Ill.).

333. "The Trouble with Fibrous Concrete and What's Being Done About It." World Construction, Vol 27, No. 2, Feb 1974, pp 39-40.

334. Thiede, H., "Glasfaserverstarkter Schaumbeton" (Glass-Fibre-Reinforced Foamed Concrete) (In German), Beton: Herstellung, Verwendung, Vol 29, No. 12, Dec. 1979, pp 427-428.

335. Tyson, S. S., "Two-Coarse Bonded Concrete Bridge-Deck Construction in Virginia," Transportation Research Record, No. 652, 1977, pp 15-21.

336. "Using Glass to Reinforce Concrete," World Construction, Vol 32, No. 8, Aug 1979, p 17.

337. Velazco, G., Visalvanich, K., Shah, S. P., and Naaman, A. E., "Fracture Behavior and Analysis of Fiber Reinforced Concrete Beams," Department of Materials Engineering, University of Illinois at Chicago Circle, Chicago, 1979, 115 pp (Replaces Reference 222 of Supplement 3).

338. Verhagen, A. H., "Enkele Aspecten in de Ontwikkeling van Vezelbeton," Cement, Vol 27, No. 1, 1975, pp 35-43.

339. Verhagen, A. H., "Enkele Praktische Wenken Bretreffende 'Met Vezels Gewapend Beton,'" Cement, Vol 27, No. 8, 1975, pp 342-345.

340. Wagner, H. D. and Tuler, F. R., "Failure Analysis of Unidirectional Glass-Reinforced Brittle Matrix Composites by the Fault-Tree Technique," Journal of Materials Science, Vol 14, No. 2, Feb 1979, pp 500-502.

341. Walker, A. J., "Chicago O'Hare International Airport Field Trial Wirand Concrete Overlay Patch Repair," Battelle Columbus Laboratories, Columbus, Ohio, Feb 1971, 17 pp.

342. Walker, A. J., and Lankard, D. R., Cost/Effectiveness Study Continuation--Coarse Aggregate Wirand Concrete, Battelle Columbus Laboratories, Columbus, Ohio, Aug 1972, 14 pp.

343. Walker, A. J., and Lankard, D. R., "Wirand Concrete Field Placements Cedar Rapids, Iowa, Summary Report," Battelle Columbus Laboratories, Columbus, Ohio, Feb 1973, 28 pp.

344. Walker, A. J., and Lankard, D. R., Wirand Concrete Field Projects, Contracted by the New York-New Jersey Port Authority, Jun 1975 to Sep 1976, Battelle Columbus Laboratories, Columbus, Ohio, Mar 30, 1977, 14 pp.

345. Walkus, B. R., Januszkiewicz, A., and Jeruzal, J., "Kompozyty Betonowe Z Cietym Microzbrojeniem Stalowym Poddane Osiowemu Rozciaganin (Cut Wire Reinforced Concrete Under Axial Tension)," Archiwum Inzynierii Ladowej, Vol 24, No. 3, 1978, pp 399-409.

346. Walton, P. L. and Majumdar, A. J., "Cement-Based Composites with Mixtures of Different Types of Fibres (CP 80/75)," Fibre Reinforced Materials, BRE Building Research Series, Vol 2, The Construction Press, London, 1978, pp 25-32.

347. Werse, H. P., "Erfahrungen bei der Prüfung des Frost-Tausalz-Widerstandes von Beton," Beton; Herstellung, Verwendung, Vol 29, No. 12, Dec 1979, pp 435-440.

348. "West Boost Pile Shell Production," Precast Concrete, Vol 5, No. 10, Oct 1974, pp 572-575.

349. West, J. M., "Lightweight Versions of GRC," Precast Concrete (London), Vol 11, No. 10, Oct 1980, pp 467-468.

350. West, J. M., Majumdar, A. J., and DeVekey, R. C., "Lightweight Glass-Reinforced Cement," Composites, Vol 11, No. 1, Jan 1980, pp 19-24.

351. West, J. M., Speakman, K., and Majumdar, A. J., "Glass Fibre Reinforced Autoclaved Calcium Silicate Insulation Material," Building Research Establishment Current Paper CP 62/74, Building Research Station, Garston, England, Jun 1974, 14 pp.

352. "West Piling-Driving Force in Concrete," Concrete Products, Vol 78, No. 5, May 1975, 2 pp.

353. "What's Happening in GRC?" Civil Engineering, No. 837, May 1976, pp 25, 27.

354. "What's New About Concrete?" Railway Track and Structures, Vol 70, No. 8, Aug 1974, pp 25-27.

355. Williamson, G. R., "Fibrous Concrete--A Versatile Construction Material," Proceeding of 8th International Congress of the Precast Concrete Industry, BIBM-75, Fifth Session, May 1975, 13 pp.

356. "Wirand Concrete Data Pack for Highway Applications," The Battelle Development Corporation, Columbus, Ohio, Dec 1973, 6 pp.

357. Wischers, G., "Faserbewehrter Beton," Beton; Herstellung, Verwendung, Vol 24, No. 4, Apr 1974, pp 137-141.

358. Yamakawa, S., et al., "Tested Pavements by Steel Fibre Reinforced Concrete," Journal of Pavement (Japan), Vol 13, No. 9, Sep 1978, pp 1-5.

359. Yannas, S. F., "Flexural Strength of Concrete with Randomly Oriented Glass Fibres," Magazine of Concrete Research, Vol 29, No. 100, Sep 1977, pp 142-146.

360. Young, J., "GRC 1: Properties," The Architect's Journal, Vol 167, No. 7, Feb 15, 1978, pp 311-316.

361. Young, J., "GRC 2: Case Studies," The Architect's Journal, Vol 167, No. 10, Mar 8, 1978, pp 467-473.

362. Young, J., "GRC 3: Design," The Architect's Journal, Vol 167, No. 13, Mar 29, 1978, pp 607-620.

363. Young, J., "GRC 4: Specification," The Architect's Journal, Vol 167, No. 16, Apr 19, 1978, pp 775-778.

364. Zollo, R. F., "Fibrous Concrete Flexural Testing-Developing Standardized Techniques," ACI Journal, Proceedings, Vol 77, No. 5, Sep-Oct 1980, pp 363-368.

365. Zurich, H. S., "Die Herstellung und Anwendung von Glasfaserbeton in der Schweiz," Betonwerk + Fertigteil-Technik, Vol 46, No. 1, Jan 1980, pp 48-50.

AUTHOR INDEX

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