

REFERENCES FOR VOLUMES 1 AND 2

Generally the references have been formatted according to the recommendations given in 'Guide for the preparation of theses, dissertations and projects, Faculty of Engineering, University of the Witwatersrand.'

This format essentially takes the following form:

(a) Common format: author ; title ; **publication**, (incl. place, date, pages) ; publisher (where this is appropriate).

(b) Format for a standard or code of practice: title ; publisher

The full reference is given in the second column, while the first column is its abbreviation, generally consisting of the author's surname followed by the date in brackets. Note that it is this abbreviated form that is used in the document whenever reference is made to an author/specification. (This is based on the Harvard system).

My sincere thanks go to the staff of the C&CI library, Portland Park, Halfway House for their kind assistance. A special word of appreciation to Ms Magda van den Berg for finding, removing and afterwards replacing the various materials that I requested. I am also indebted to Mrs Hanlie Turner for checking/correcting the general format of the many citations.

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|----------------|---|
| A'Court (1954) | A'Court, C.L. ; <u>Mix design and abrasion resistance of concrete</u> ; Proceedings : Symposium on Mix Design and Quality Control of Concrete , May 1954, pp.77-91 ; Cement and Concrete Association, London, 1954. |
| Abrams(1916) | Abrams, D.A. ; <u>A method of making wear tests on concrete</u> ; Proceedings of the American Society for Testing and Materials , Vol.16, Part 2, 1916, pp. 194-208. |
| Abrams(1921) | Abrams, D.A. ; <u>Wear tests of concrete</u> ; Proceedings of the American Society for Testing and Materials , Vol. 21, Part 2, 1921, pp.1013-1038. |
| ACI (1995) | <u>ACI Committee 234 : Abstract of guide for the use of silica fume in concrete</u> ; ACI Materials Journal , Title No. 92-M47, July-August 1995, pp. 437-440. |
| ACI(1962) | <u>ACI Committee 201 : Durability of concrete in service</u> ; Journal of the American Concrete Institute , Vol.59, No.12,1962, pp.1792-1796. |
| Addis(1989) | Addis, B.J. & Doulgeris, N.P. ; <u>The development of a method for determining the abrasion resistance of concrete</u> ; Proceedings : Annual Transportation Convention , Pretoria, South Africa, Aug 1989. |
| Addis(1991) | Addis, B.J. ; <u>Properties of high strength concrete made with South African materials</u> ; PhD thesis , Faculty of Engineering, University of the Witwatersrand, Johannesburg, 1991. |
| Agron(1998) | Agron, J.G. ; <u>Durability study of Mount Pinotubo ejecta concrete paving blocks</u> ; Proceedings : 6th CANMET/ACI International Conference on Fly Ash, Silica Fume, Slag & Natural Pozzolans in Concrete , Vol 1, SP-178, Bangkok, Thailand, 1998. |
| Ahlers(1928) | Ahlers, J.G., Lindon, J.J. & Bird, M.F. ; <u>Wear tests on floor finishes at warehouse of R.H. Macy Co., Long Island</u> ; New York Journal of the American Concrete Institute , Vol. 25, 1929, pp.778-788. |

- Alexander(1984) Alexander, M.G. ; Towards standard tests for abrasion resistance of concrete; Report on a limited number of tests studied, with critical evaluation ; **RILEM Concrete Permanent Committee, CPC-14**, Jun 1984, pp297-307 ; Bordas-Gauthier-Villars, 1984.
- Alexander(1987) Alexander, M.G. ; Abrasion Resistance of Concrete Paving Block and Paving ; **First Report prepared for Concrete Masonry Association** ; Department of Civil Engineering, University of the Witwatersrand, Johannesburg, 1987.
- Alexander(1989) Alexander, M.G. ; Abrasion Resistance of Concrete Paving Blocks, Review of Concrete Masonry Association Research Programme ; University of the Witwatersrand, Department of Civil Engineering, Johannesburg, Feb 1989.
- Alexander(1991) Alexander, M.G. & Davis, D.E. ; Aggregates in concretes - a new assessment of their role ; **Concrete Beton**, July 1991, pp10-20.
- Archard(1953) Archard, J.F. Contact and rubbing of flat surfaces; **Journal of Applied Physics**, Vol 24, No 8, Aug 1953, pp. 981–988.
- AS/NZS-4456.9 **AS/NZS-4456.9.1997 : Masonry units and segmental pavers - Methods of test : Method 9 determining abrasion resistance** ; Australia/New Zealand Standards, 1997, Homebush, NSW, Australia, 1997.
- ASTM C1138 ASTM C1138-97 ; **Test Method for Abrasion Resistance of Concrete (Underwater Method)** ; American Society for Testing and Materials, 1997.
- ASTM C131. ASTM C131-96 ; **Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine** ; American Society for Testing and Materials, West Conshohocken, 1996.
- ASTM C192 ASTM C192/C 192M-98 ; **Practice for Making and Curing Concrete Test Specimens in the Laboratory** ; American Society for Testing and Materials, West Conshohocken, 1998.
- ASTM C501 ASTM C501-84(1996) ; **Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser** ; American Society for Testing and Materials, Philadelphia, 1984.
- ASTM C672 ASTM C672/C672M-98 ; **Test Method for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals** ; American Society for Testing and Materials, West Conshohocken, 1998.
- ASTM C957 ASTM C957-93(1998) ; **Standard Specification for High-Solids Content, Cold Liquid Applied Elastomeric Waterproofing Membrane with Integral Wearing Surface** ; American Society for Testing and Materials, West Conshohocken, 1993.
- ASTM-936 **ASTM-C 936-96 : Standard Specification for Solid Concrete Interlocking Paving Units** ; American Society for Testing and Materials, 1996, West Conshohocken, 1996.
- ASTM-C140 **ASTM-C140-75 : Standard Methods of sampling and testing concrete masonry units** ; American Society for Testing and Materials, Philadelphia, 1987.
- ASTM-C418 **ASTM-C418-90 : Standard test method for abrasion resistance of concrete by sandblasting** ; American Society for Testing and Materials, Philadelphia, 1990.
- ASTM-C642 **ASTM-C642-82 : Standard Test Method for Specific gravity, absorption, and voids in hardened concrete** ;

- American Society for Testing and Materials, Philadelphia, Oct 1982.
- ASTM-C779 **ASTM-779-96 : Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces** ; American Society for Testing and Materials, 1986, Philadelphia, 1986.
- ASTM-C88 **ASTM-C88-99 : Standard test method for soundness of aggregates by use of Sodium Sulphate or Magnesium Sulphate** ; American Society for Testing and Materials, West Conshohocken, PA, 1999.
- ASTM-C902 **ASTM-C902-92 : Standard test method for pedestrian and light traffic paving brick** ; American Society for Testing and Materials, Philadelphia, 1992.
- ASTM-C944 **ASTM-C 944-95 : Standard test method for abrasion resistance of concrete or mortar surfaces by the rotating-cutter method** ; American Society for Testing and Materials, 1980, Philadelphia, 1980.
- Ballim(1997) Ballim, Y. ; Durability concepts ; **ACT (Advanced concrete technology) course notes**, Portland Park, Halfway House ; Author's lecture notes, 1997.
- Basson(1989) Basson, J. J. ; **Deterioration of concrete in aggressive water – measuring aggressiveness and taking countermeasures** ; Portland Cement Institute, Midrand, South Africa, 1989.
- Basson(1994) Basson, J.J. and Ballim, Y. ; Durability of concrete ; **Fulton's Concrete Technology**, 7th addition ; Portland Cement Institute, Midrand, 1994.
- Beningfield(1995) Beningfield, N., Hodgkinson, L. & Hughes, D.W. ; The abrasion resistance properties of a polymer modified mortar screed ; **ERMCO 95 Proceedings of the XIth European ready mix congress**, Jun 1995, Istanbul, Turkey, pp.501-512.
- Bettencourt (1998) Bettencourt Ribeiro, A. & Vale, J. ; Abrasion resistance of roller compacted concrete, **Proceedings: 8th International Symposium on Concrete Roads**, Sept 1998, Lisbon, Portugal.
- Bib - Maynard(1970) Maynard, D.P.& Weller, D.E. The influence of materials and mix design on the skid resistance value and texture depth of concrete, **Technical Report 42.430** ; Cement and Concrete Association, London, 1970, pp19.
- Bowden(1964) Bowden, F.P. & Tabor, D. ; **The Friction and Lubrication of Solids**, Part 2 ; Clarendon Press, Oxford, 1964.
- BS 1881:122 **BS 1881 : Part 122 : Method for determination of water absorption** ; British Standards Institution, London, 1983.
- BS 1881:202 **BS 1881 : Part 202 : Recommendations for surface hardness testing by rebound hammer** ; British Standards Institution, London, 1986.
- BS 1881:203 **BS 1881 : Part 203 : Recommendations for measurement of velocity of ultrasonic pulses in concrete** ; British Standards Institution, London, 1986.
- BS 1881:5 **BS 1881 : Part 5 : Initial surface absorption test** ; British Standards Institution, London, 1970.
- BS 6431 BS 6431, Part 14-1983 ; **Ceramic floor and wall tiles: method for determination of resistance to deep abrasion - unglazed tiles** ; British Standards Institution, 1983.
- BS 6717, BS 6717: Part 1: 1993 ; **Precast concrete paving blocks, Part 1 Specification for paving blocks** ; British Standards

- Institution, London, 1993.
- BS 812 **BS 812 : Methods for sampling and testing of mineral aggregates, sands and fillers** pp104 ; British Standards Institution, London, 1967.
- BS 8204: Part 2 BS 8204: Part 2-1999 ; **Screeds, bases and in-situ floorings. Part 2: concrete wearing surfaces – code of practice** ; British Standards Institution, London, 1999.
- BS 882 **BS 882 : Aggregates from natural sources (for concrete)**, pp22 ; British Standards Institution, London, 1992.
- BS CP 204 **BS CP 204. In situ flooring Part 2: Concrete-wearing surfaces** Draft revision ; British Standards Institution, London, Jul 1986.
- Büchner(1987) Bücher, G. Experience in the production of coloured concrete paving blocks ; **Bayer Technical Publication no. PK 13850 DE, 1987** ; Bauverlag GmbH, Wiesbaden, 1987.
- Bullen (1994) Bullen, F. ; Controlling quality in concrete segmental paving units ; **Proceedings : 2nd International Workshop on Concrete Block Paving**, Oslo, Norway, Jun 1994, pp67-75.
- C&CA-NZ(1999) **C&CA NZ Concrete Ground Floors and Pavements for Commercial & Industrial Use : Part 1** pp17,88,89 ; Concrete Society, Wellington, New Zealand, Cement & Concrete Association of New Zealand, 1999.
- C&CA-UK(1970) In-situ concrete floor finishes ; **C&CA Publication 35.002**, 4th edition, Aug 1970, pp14 ; Cement & Concrete Association, London, 1970.
- C&CA-UK(1971) Specification for granolithic floor toppings laid on in-situ concrete ; **C&CA Publication 35.016**, Feb 1971, pp12 ; Cement & Concrete Association, London, 1971.
- C&CA-UK(1986) Paper PP/468 ; **Second presentation at International Colloquium on Industrial Floors**, Stuttgart, Sep. 1986.
- CCA:TM6 **CCA:TM6:1991 : Cement and concrete Association of New Zealand Test Method : Determination of abrasion index for concrete paving units** ; C&CaofNZ ; New Zealand, 1991.
- Cernica(1982) Cernica, J. N. ; **Geotechnical Engineering** ; CBS College Publishing, New York, 1982.
- Chaplin(1987) Chaplin, R.G. ; The influence of cement replacement materials, fine aggregates and curing on the abrasion resistance of concrete floor slabs ; **Proceedings : International Colloquium 'Industrial Floors'**, pp15, Stuttgart, West Germany, Jan1987.
- Chaplin(1990) Chaplin, R.G. ; The influence of ggbs and pfa additions and other factors on the abrasion resistance of industrial concrete floors ; **BCA Publication C/6**, pp1-64, Apl 1990 ; British Cement Association, Wexham Springs, 1990.
- Chisholm(1994) Chisholm, D.H. ; The abrasion resistance of industrial concrete floor slabs ; **New Zealand Concrete Construction**, Porirua, New Zealand, Aug/Sept 1994, pp 5-9.
- Chisholm(1997) Chisholm, D.H. ; Performance characteristics of concrete incorporating a natural Amorphous Silica ; **Proceedings : 3rd CANMET/ACI International symposium on Advances in Concrete Technology**, pp. 271-295, 1997.
- Chryssafis(1988) Chryssafis, C. ; Interlocking Block Pavements ; **Postgraduate Course in Bound Materials for Structures and Roads**, Dept of Civil Engineering, University of the Witwatersrand, April, 1988.

- Clark (1980) Clark, A.J. ; Freeze-thaw durability test upon concrete paving specimens ; **Proceedings : 1st International conference on Concrete Block Paving**, University of Newcastle-Upon-Tyne, Department of Civil Engineering, Newcastle-Upon-Tyne, England, Sept 1980, pp.12:1-7.
- Clifford(1984) Clifford, J.M. ; Some aspects of the structural design of segmental block pavements in Southern Africa ; **D.Ing.Thesis**, ch8, Oct 1984 ; University of Pretoria, 1984.
- CMA(1982) Precast concrete paving blocks: specification, **Concrete Masonry Association**, Benrose, Sandton, 1982.
- Connel(1985) Connel, M.D. ; A study of an abrasion test for concrete and some of the factors affecting abrasion resistance ; **ACT Project No. 85/5** (report in partial completion of City and Guilds Advanced Concrete Technology Course) ; Institute of Concrete Technology, Beaconsfield, Buckinghamshire, UK, Jun 1985.
- Crepps(1920) Crepps, R.B. ; Wear and Compression Tests of Concrete ; **Proceedings of the American Concrete Institute**, Vol. 16, 1920, pp108-119.
- Dahir(1981) Dahir, S.H. ; Relative resistance of rained-on concrete pavements to abrasion, skidding and scaling Cement ; **Cement, Concrete and Aggregates**, Vol. 3, No.1, Summer 1981, pp13-20.
- De Belie(1997) De Belie, N. ; Use of fly ash or silica fume to increase the resistance of concrete to feed acids ; **Magazine of Concrete Research**, 49, No 181, Dec 1997, pp.337-334.
- DeAlmeida(1994) De Almeida, I.R. ; Abrasion resistance of high strength concrete with chemical and mineral admixtures ; **Proceedings: 3rd International Conference on Durability of Concrete** ; Nice, France, 1994, pp1099-1113.
- Dhir(1991a) Dhir, R.K. ; PFA concrete: Abrasion resistance ; **Report : RKD/BCC/8** ; Concrete Technology Unit, Department of Civil Engineering, The University, Dundee, Scotland, Nov 1991, pp. 1-20.
- Dhir(1991b) Dhir, R.K. ; Hewlett, P.C., & Chan, Y.N. ; Near-surface characteristics of concrete : abrasion resistance ; **Materials and Structures**, 24, 1991, pp122-128.
- Dhir(1998) Dhir, R.K., McCarthy, M.J. & Magee, B.J. ; Impact of BS EN 450 PFA on concrete construction in the U.K. ; **Construction and Building Materials**, Vol. 12, No 1, 1998, pp. 59-74.
- Di Maio(1999) Di Maio, A., Giaccio, G. & Zerbino, R. ; Physico Mechanical Properties of High-Performance Concrete ; **Proceedings : 2nd CANMET/ACI International Conference** ; Gramado, RS, Brazil, 1999, pp275-289.
- DIN 51951 **DIN 51951(1953)** ; German Wear Test, referred to as 'Method of testing hard concrete surfaces through the pressure of rolling balls' by E Plassman, Zement-Kalk-Gips, pp 213-216, May 1954.
- DIN 52018 **DIN 52018(1968) : Wear test with the grinding wheel according to Bohme grinding wheel method** ; German Standards Institute, Dusseldorf, Germany, Aug 1968.
- Doulgeris(1987) Doulgeris, N.P. ; **Notes on NBRI test apparatus and wirebrush test** ; Portland Cement Concrete, Halfway House, 1987, pp2-12.
- Doulgeris(1995) Doulgeris, N.P. ; Review of three abrasion resistance tests for concrete paving blocks ; **Concrete Beton**, No 77, Aug 1995,

- pp 6-12.
- Doulgeris(1996) Doulgeris, N.P. ; **TIP 199 : Commentary of the impact abrasion test : PCI Test Method 7.8** ; Cement and Concrete Institute, Halfway House, Oct 1996, pp1-10.
- Dowson(1980) Dowson, A.J. ; Mix design for concrete block paving ; **Proceedings : 1st International conference on Concrete Block Paving**, University of Newcastle-Upon-Tyne, Department of Civil Engineering, Newcastle-Upon-Tyne, England, Sept 1980, pp.13:1-7.
- Dowson(1996) Dowson, A. J. ; The development of the abrasion test for concrete paving ; **Proceedings : 5th International Conference of Concrete Block Paving : Pave Israel '96**, Tel-Aviv, Israel, Jun 1996, pp571-578.
- Dowson(1998a) Dowson, A.J. ; The benefits of working together as a trade association ; **Proceedings : 3rd International Workshop on Concrete Block Paving : Pave Colombia'98**, Cartagena de Indias, Medellín, Colombia, May 1998, pp. 6:1-4.
- Dowson(1998b) Dowson, A.J. ; A manufacturer's perspective of variation within the production process of concrete paving blocks ; **Proceedings : 3rd International Workshop on Concrete Block Paving : Pave Colombia'98**, Cartagena de Indias, Medellín, Colombia, May 1998, pp10:1-5.
- Dreijer(1980) Dreijer, P.A. ; Laboratory and Fieldwork on block paving ; **Proceedings : 1st International conference on Concrete Block Paving**, University of Newcastle-Upon-Tyne, Department of Civil Engineering, Newcastle-Upon-Tyne, England, Sept 1980, pp. 9:1-12.
- Du Plessis(1989) Du Plessis, J.J. ; **'n vergelyking van die druksterktoets en die treksplitstoets om die materiaalkwaliteit van plaveiblokke van beton te bepaal**, Higher National Diploma Research Project - Materials Testing, School of Civil Engineering, Technikon, Pretoria, June 1989.
- Dumitru(1999) Dumitru, I. Smorchevsky, G. Caprar, V. ; Trends in the utilization of recycled materials and by-products in the concrete industry in Australia ; **Concrete 99 – Our Concrete Environment : Proceedings of the Concrete Institute of Australia 19th Biennial Conference**, Sidney, Australia, May, 1999, pp288-297.
- Fentress(1973) Fentress, B. ; Slab construction practices compared by wear tests (ACI Committee 302 syposium paper) ; **ACI Journal**, July 1973.
- Fenwick(1988) Fenwick, R.G. ; Curing regimes necessary for the production of top quality concrete paving blocks at minimum cost ; **Proceedings : 3rd International Conference on Concrete Block Paving**, Roma, Italy, May 1988, pp.332-337.
- Fernandez(1990) Fernandez, L. & Malhotra, M.V. ; Mechanical Properties, Abrasion Resistance, and Chloride Permeability of Concrete Incorporating Granulated Blast-Furnace Slag ; **Cement, Concrete and Aggregates**, Vol.12, No.2, Winter 1990, pp.87-100.
- Fiola(1988) Fiola, C. ; Concrete quality versus mixing time ; **Proceedings : 3rd International Conference on Concrete Block Paving**, Roma, Italy, May 1988, pp252-272.
- Fowler(1935) Fowler, T.B. ; **Highways and Bridges**, 9 Oct 1935, London, UK.
- Frearson (1984) Frearson, J.P.H. Air Entrainment, **Developments in Testing**

- Fruchtbaum (1938) Fruchtbaum, J. ; Concrete Wearing Surfaces for Floors ; Proceedings of the American Concrete Institute, (Report of Committee 804), Vol 35, Sept 1938, pp.21-30.
- Fukado (1984) Fukado, T., Sato, I., Komura, M. & Tsuda, T. ; Improvements of wear resistance of concrete surface by polymer impregnated concrete and its application to urban block paving ; Proceedings : 2nd International Conference on Concrete Block Paving, Delft University of Technology, Netherlands, Apr 1984, pp 270-275.
- Fulton(1986b) Fulton's Concrete Technology ; Construction of concrete floors ; Fulton's Concrete Technology, 1986, pp791-3 ; Portland Cement Institute, Midrand, 1986.
- Fwa(1989) Fwa, T.F. ; Effect of cyclic wetting-drying weathering on wear resistance of concrete pavement ; Transportation Research Record, 1234 : Concrete and Construction - New Developments and Management, pp87-93 ; Transport Research Board, Washington, D.C. 1989.
- Fwa(1990) Fwa, T.F. & Paramasivam, P. ; Surface-deterioration resistance of concrete pavement materials ; Surface Characteristics of Roadways: International Research and Technologies, ASTM STP 1031, pp327-343 ; American Society for Testing and Materials, Philadelphia, 1990.
- Ghafoori(1992) Ghafoori, N. ; Abrasion Characteristics of Concrete Paving Blocks, Final research report #2 ; Unpublished report, Dept. of Civil Engineering and Mechanics, Southern Illinois University, Carbondale, IL, July 1992.
- Ghafoori(1995) Ghafoori, N. & Sukandar, B.M. ; Abrasion resistance of concrete block pavers ; ACI Materials Journal, V.92, No.1, Jan-Feb 1995, pp25-36.
- Ghafoori(1997) Ghafoori, N. & Mathis, R.P. ; Scaling Resistance of Concrete Paving Block Surface Exposed to Deicing Chemicals ; ACI Materials Journal, V. 94, No. 1, Jan-Feb 1997, pp32-37.
- Ghafoori(1999) Ghafoori, N. & Diaware, H. ; Abrasion Resistance of Fine Aggregate Replaced Silica Fume Concrete ; ACI Materials Journal, V. 96, No.5, Sept-Oct 1999, pp. 559-567.
- Gill(1996) Gill, J. & Hayes, C. ; A look at liquid floor hardeners ; Concrete Construction, Jan 1996; pp36-41.
- Gjorv(1990) Gjorv, O.E., Baerland, T. & Ronning, H.R. ; Abrasion resistance of high strength pavements ; Concrete International, Jan 1990, pp 45-48.
- Goncalves(1998) Goncalves, A.F., Vierra, M. & De Almeida, I.R. ; Influence of fly ash on abrasion resistance of concrete for road pavements ; Proceedings : 8th International Symposium on Concrete Roads : Theme II – Progress in Concrete Road Materials and in the Construction Process, Lisbon, Portugal, Sept 1998, pp313-318 .
- Gordon(1991) Gordon, D. ; Lethabo field 2 PFA in pavement concrete ; Concrete Beton, 1991, pp15-19.
- Grayston (1994) Grayston, H. ; The history of Concrete Paving Blocks in Norway ; Proceedings : 2nd International Workshop on Concrete Block Paving, Oslo, Norway, Jun 1994, pp.67-75.
- Greenhill(1901) Greenhill, A. & Eisdien, V. ; Roads, their construction and maintenance ; Whittaker and Co., 1901.
- Grieve(1993) Grieve, G. ; The effect of ambient exposure on the compressive strength and abrasion resistance of in situ

- concretes made with OPC or OPC/Extender combinations ;
Concrete Beton, Special Issue, 1993, pp17-24.
- Harashima(1998) Harashima, K, Nishi, J. Ueno,. M. & Takada, T. ;
Development of high strength water permeable interlocking
block ; **Proceedings : 3rd International Workshop on
Concrete Block Paving : Pave Colombia'98**, Cartagena de
Indias, Medellín, Colombia, May 1998, pp.28:1-7.
- Hata(1998) Hata, M. Suda, S. & Ezumi, N. ; The properties of low noise
drainage-concrete block pavement ; **Proceedings : 3rd
International Workshop on Concrete Block Paving : Pave
Colombia'98**, Cartagena de Indias, Medellín, Colombia, May
1998, pp.29:1-7.
- Helland(1991) Helland, S. ; High strength concrete used in highway
pavements ; **Proceedings : 2nd International Symposium,
High-Strength Concrete**, 1991, pp. 757-766.
- Helland(1995) Helland, S. ; Application of high strength concrete in Norway ;
**Proceedings of ACI Convention : High-Strength Concrete
: An International Perspective**, SP-167, Montreal, Canada,
Nov 1995, pp28-53.
- Hendrikx(1994) Hendrikx, L., Helewaut, M. & Lambrechts, A. ; Concrete
paving blocks for Port and industrial areas - test with steel
fibre reinforced blocks ; **Proceedings : 2nd International
Workshop on Concrete Block Paving**, Oslo, Norway, Jun
1994, pp67-75.
- Hilsdorf(1995) Hilsdorf , H.K. ; Concrete Compressive Strength and
Transport Characteristics and durability ; **Performance
Criteria for Concrete Durability**, RILEM Report 12, pp 186-
197 ; E & F Spon, London, 1995.
- Hitotsuya(1988) Hitotsuya, K. & Omori, Y. ; Wear-resistant concrete block
paving at Gotsu tunnel in Niigata prefecture ; **Proceedings :
3rd International Conference on Concrete Block Paving**,
Roma, Italy, May 1988, pp393-397.
- Hodson(1996) Hodson, C. D. & Emery, J.A. ; Advances in mechanically laid
pavers ; **Proceedings : 5th International Conference of
Concrete Block Paving : Pave Israel '96**, Tel-Aviv, Israel,
Jun 1996, pp225.
- Holland(1991) Holland, B.P. ; Abrasion testing of precast concrete blocks ;
MSc (Eng) Project Report, May, 1991 ; University of the
Witwatersrand, Johannesburg, 1991.
- Holthaus(1988) Holthaus, E. W. ; Possibilities and limitations of modern
vibrating systems in concrete block machines ; **Proceedings
: 3rd International Conference on Concrete Block Paving**,
Roma, Italy, May 1988, pp289-304.
- Horiguchi(1994) Horiguchi, T. ; Wear tests on concrete block paving materials
; **Proceedings : 2nd International Workshop on Concrete
Block Paving**, Oslo, Norway, Jun 1994, pp67-75.
- Horiguchi(1995) Horiguchi, T. ; Wear resistance of concrete under low
temperature ; **Proceedings : International Conference on
Concrete under Severe Conditions, CONSEC '95**,
Sapporo, Japan, Aug 1995, pp514-520.
- Houben(1984) Houben, L.J.M., v.d.Kreeft, S.G. & Leewis, M. ; A World Wide
survey based on an Inquiry by the Programme Committee ;
**Proceedings : 2nd International Conference on Concrete
Block Paving**, Delft University of Technology, Netherlands,
Apr 1984, pp2.
- Humpola(1996b) Humpola, B. ; Some aspects of concrete block pavers quality

- ; **Proceedings: 5th International Conference of Concrete Block Paving, Pave Israel '96**, Tel-Aviv, Israel, Jun 1996, pp103-113.
- Hutchings(1992) Hutchings, I.M. ; **Tribology : Friction and wear of engineering materials** ; Edward Arnold, London, 1992.
- Inuzuka(1995) Inuzuka, M., Sasaki, K. & Yoshida, T. ; **Overlay of thin concrete blocks and adhesive layer ; Concrete under severe Conditions : Environment and Loading**, Vol 2, 1995, pp1378-1385 ; E & F Spon, London, 1995.
- Iron Roads(1938) **Iron Roads** ; Marble Hall lane Ltd., Albert Embankment, London SE 11, UK, 1938.
- ISE(1987) **Design and detailing of concrete structures for fire resistance** ; The Institute of Structural Engineers, London, Apl.1987.
- Ishai(1984) Ishai, I. & Livneh, M. ; **Interlocking concrete block pavement for heavy abrasive caterpillar loading ; Proceedings : 2nd International Conference on Concrete Block Paving**, Delft University of Technology, Netherlands, Apl 1984, pp183-190.
- Ishai(1988) Ishai, I. & Livneh, M. ; **Three year performance of concrete block pavements under heavy abrasive caterpillar loading ; Proceedings : 3rd International Conference on Concrete Block Paving**, Roma, Italy, May 1988, pp361-370.
- ISO 4108 **ISO 4108-1980 (E) : Concrete - Determination of tensile splitting strength of test specimens**, pp1-3 ; International Organization for Standardization, Geneva, Switzerland, 1980.
- Jackson(1924) Jackson, F.H. & Pauls, J.T. ; **Accelerated wear tests of concrete pavements ; Proceedings : American Society for Testing and Materials**, Vol. 24, Part 2, 1924. pp.864-900 ; ASTM, 1924.
- Justnes(1994) Justnes, H. ; **Polymer Cement concrete (PCC) of interest for concrete block paving? ; Proceedings : 2nd International Workshop on Concrete Block Paving**, Oslo, Norway, Jun 1994, pp67-75.
- Karasawa(1996) Karasawa, A. & Suda, S. ; **Characteristics of new type permeable concrete block paving system ; Proceedings : 5th International Conference of Concrete Block Paving : Pave Israel '96**, Tel-Aviv, Israel, Jun 1996, pp613-622.
- Keen(1967) Keen, R.A. ; **Surface treatments for concrete floors London ; C&CA : Advisory Data Sheet No.4**, (unpublished), London, Jan 1967 ; Cement and Concrete Association, 1967.
- Kellerman(1994) Kellerman, J. & du Preez H T R ; **Manufacture of concrete ; Fulton's Concrete Technology**, 7th edition ; Cement and Concrete Institute, Midrand, 1994.
- Kettle(1984) Kettle, R.J. & Sadegzadeh, M. ; **Developments in concrete testing for durability ; Proceedings of Symposium : Developments in testing Concrete**, Kensington, London, Sept 1984, pp 65-72.
- Kettle(1986) Kettle, R.J. & Sadegzadeh, M. ; **Recent research developments in abrasion resistance ; Concrete**, Nov. 1986, pp29-31.
- Kettle(1987a) Kettle, R. J. & Sadegzadeh, M. ; **The influence of construction procedures on abrasion resistance ; Proceedings : Katherine and Bryant Mather International Conference on Concrete Durability, ACI SP 100-71**, Vol2, 1987, pp1385-1410.
- Kettle(1987b) Kettle, R.J.& Sadegzadeh, M. ; **Field investigations of**

- abrasion resistance ; **Materials and Structures**,1987, 20, pp96-102.
- Kettle(2000) Kettle, R.J. & Sadegzadeh, M. Abrasion resistance of concrete and the new BS 8204: Part 2, **Concrete**, Feb 2000, pp. 18-21.
- Khalid(1993) Khalid, H. ; Safe and wear resistant precast concrete paving units (flags) ; **Betonwerk + Fertigteil - Technik** , Nov 1993, pp103-105.
- Khoury(1992) Khoury, G. A. ; Compressive strength of concrete at high temperatures ; **Magazine of Concrete Research**, 1992, 44, No. 161, Dec., 291-309.
- Knapton (1998) Knapton, J. ; Introducing cbp to the universities in the UK ; **Proceedings : 3rd International Workshop on Concrete Block Paving : Pave Colombia'98**, Cartagena de Indias, Medellín, Colombia, May 1998, pp.8:1-4.
- Komonen(1998) Komonen, J. & Penttala, V. ; Abrasion Resistance of Concrete block pavement and asphalt concrete ; **Proceedings : The 2nd International Conference on Concrete under Severe Conditions : CONSEC '98**, Tromso, Norway, Jun 1998, pp291-300.
- Kong(1980) Kong, F. K. & Evans, R. H. ; **Reinforced and Prestressed Concrete** 2nd edition ; Thomas Nelson and Sons Limited, Surrey, UK, 1980.
- Kuroiwa(2000) Kuroiwa, Y., Aiko, E., Matuzawa, Y. ; Development of interlocking block for drainage pavements ; **Proceedings : 6th International Conference on Concrete Block Paving**, Tokyo, Japan, Sept 2000, pp.522-529.
- Lamparter(2000) Lamparter, P. Knapton,J. ; Cbp sealing - Structural and environmental benefits ; **Proceedings : 6th International Conference on Concrete Block Paving**, Tokyo, Japan, Sept 2000, pp 195-201.
- Lane(1978) Lane, R.O. ; Chapter 22 : Abrasion resistance ; **Significance of Tests and Properties of Concrete and concrete making materials ASTM STP 169B** ; American Society for Testing and Materials, Philadelphia, 1978, pp332-350.
- Lane(1986) Lane, J. ; Semi-dry mixes for precasting ; **Fultons Concrete Technology**, pp 875-876 ; Portland Cement Institute, Midrand, 1986.
- Lane(1988) Lane,J.W. ; Specification of concrete block paving in the Republic of South Africa ; **Proceedings : 3rd International Conference on Concrete Block Paving**, Roma, Italy, May 1988, pp286-288.
- Laplante(1991) Laplante, P., Aitcin, P.C. & Vezina, D. ; Abrasion resistance of concrete ; **Journal of Materials in Civil Engineering**, Feb 1991, pp19-28.
- Li(1998) Li, X. Chung, D.D.L.; Improving silica fume for concrete by surface treatment ; **Cement and Concrete Research**, Vol 28, No4, 1998, pp493-498.
- Lilley(1980) Lilley, A.A. ; A review of concrete block paving in the U.K. over the last five years ; **Proceedings : 1st International conference on Concrete Block Paving**, University of Newcastle-Upon-Tyne, Department of Civil Engineering, Newcastle-Upon-Tyne, England, Sept 1980, pp. 8:1-5.
- Lilley(1981) Lilley, A.A. ; Concrete block paving, a review ; **The Highway Engineer**, London, Jun 1981.
- Lilley(1991) Lilley, A.A. ; Chapter 7 : Segmental Paving product

- specifications other than for the UK ; **A Handbook of Segmental Paving**, 1991 ; E&FN Spon, London, 1991.
- Liu(1981) Liu, T.C. ; Abrasion resistance of concrete ; **ACI Journal**, Sep-Oct 1981, pp341-350.
- Liu(1991) Liu, T.C. ; Abrasion resistance ; **ASTM STP 169C : Chapter 19: Significance of Tests and Properties of Concrete and Concrete-Making Materials**, pp182-191 ; American Society for Testing and Materials, Philadelphia, PA, 1916.
- MA15 **MA15-1982 : Interim Specification for Concrete Segmental Paving Units** ; Concrete Masonry Association of Australia, North Sidney, NSW, Australia, 1982.
- MA20 **MA20-1986 : Specification for Concrete Segmental Paving Units** ; Concrete Masonry Association of Australia, North Sidney, NSW, Australia, Jul 1986.
- Madrid(1992) Madrid, G.G. ; Standards and specifications for concrete paving blocks in Latin-American countries ; **Proceedings : 4th International Conference of Concrete Block Paving : Pave 92**, Auckland, New Zealand, 1992, pp345–354.
- Madrid(1994) Madrid, G. G ; Factors affecting the development of concrete block paving in undeveloped or developing countries, based on the Latin-American experience ; **Proceedings : 2nd International Workshop on Concrete Block Paving**, Oslo, Norway, Jun 1994, pp67-75.
- Malhotra(2000) Malhotra, V.M. Zhang, M.H. & Sarkar, S.L. ; Manufacture of concrete test panels and their performance after seven years of exposure in Arctic Marine Environment ; **ACI Materials Journal**, Mar-Apr 2000, pp99-107.
- Marais(1984) Marais, L. R. & Lane, J. W. ; Specifications for segmental concrete paving in the Republic of South Africa ; **Proceedings : 2nd International Conference on Concrete Block Paving**, Delft University of Technology, Netherlands, Apl 1984, pp289-292.
- Marais(1985) Marais, L.R. ; Concrete verses asphalt – setting the record straight ; **The Civil Engineering Contractor**, Sept 1985, pp36.
- Marakami(1998) Marakami, K. ; Study of wear resistant pavement on high strength concrete paving blocks ; **Proceedings : 3rd International Workshop on Concrete Block Paving : Pave Colombia'98**, Cartagena de Indias, Medellín, Colombia, May 1998.
- McGovern(1997) McGovern, M.S. ; Tough, yet flexible ; **Concrete Repair Digest**, Oct-Nov 1997, pp275-277.
- McGovern(2000) McGovern, M.S. ; A clear view of sealers ; **Concrete Construction**, Jan 2000, pp53-58.
- Meininger(1991) Meininger, R.C. ; Degradation resistance, strength, and related properties of concrete aggregates ; **ASTM STP 169C : Significance of tests and Properties of Concrete and Concrete-Making Materials**, pp388-400 ; American Society for Testing and Materials, Philadelphia, PA, 1991.
- Meyer(1980) Meyer, A. ; Materials and Specifications in West Germany ; **Proceedings : 1st International conference on Concrete Block Paving**, University of Newcastle-Upon-Tyne, Department of Civil Engineering, Newcastle-Upon-Tyne, England, Sept 1980, pp.3:1-3.
- Munn(1995) Munn, R.L. & Dumitru, I. ; High performance concrete floor construction and performance assessment ; **Proceedings :**

- Second CANMET/ACI International Symposium, 'Advances in Concrete Technology' : SP-154**, Las Vegas, Nevada, 1995, pp103-126.
- Murakami(1998) Murakami, K. Suda, S. Ezumi, N. Murakami, K. Suda, S. & Ezumi, N. ; Study of wear resistant pavement on high strength concrete paving blocks ; **Proceedings : 3rd International Workshop on Concrete Block Paving : Pave Colombia'98**, Cartagena de Indias, Medellín, Colombia, May 1998, pp26:1-5.
- Naik(1994) Naik, T.R., Singh, S.S. & Hossain, M.M. ; Abrasion resistance of concrete as influenced by inclusion of fly ash ; **Cement and Concrete Research**, Vol. 24, No.2, 1994, pp303-312.
- Naik(1995) Naik, T.R., Singh, S.S. & Hossain, M.M. ; Abrasion resistance of high-strength concrete made with class C fly ash ; **ACI Materials Journal**, Nov-Dec 1995, pp649-658.
- Naik(1997) Naik, T.R., Singh, S.S. & Ramme, B. ; Effect of source and amount of fly ash on mechanical and durability properties of Concrete ; **Fourth CANMET/ACI International Conference on Durability of Concrete**, 1997, pp157-183.
- Nanni(1989) Nanni, A. ; Abrasion resistance of roller compacted concrete ; **ACI Materials Journal**, Nov-Dec 1989, pp559-565.
- NEN 7000 **NEN 7000 : Betonstraatstenen** ; Nederlands Normalisatie-Instituut, Delft, The Netherlands, 1966.
- Newman(1997a) Newman, J. ; Strength and deformation of Concrete : Part 1 - Fracture and failure ; **ACT (Advanced concrete technology) course notes**, Portland Park, Halfway House ; Author's unpublished lecture notes, 1997.
- Newman(1997d) Newman, J. ; Compression testing ; **ACT (Advanced concrete technology) course notes**, Portland Park, Halfway House ; Author's unpublished lecture notes, 1997.
- Olorunsogo (1999) Olorunsogo, F.T. ; Early age properties of recycled aggregate concrete ; **Exploiting Wastes in Concrete** ; Thomas Telford, London, 1999, pp163-170
- Omata(1997) Omata, F., Kawakami, M., Kagaya, M. & Tokuda, H. ; Abrasion characteristics of MMA resin mortar overlaid on a pavement in a cold environment ; **ACI SP -169 : In-place Performance of Polymer Concrete Overlays**, Farmington Hills, MI, 1997. pp.180-199.
- Ozkul(1996) Ozkul, M.H. ; Properties of slag aggregate concretes ; **Concrete in the service of Mankind : Concrete for Environment Enhancement and Protection**, pp553-558 ; E&FN Spon, London, 1996.
- Ozturan(1987) Ozturan, T. & Kocataskin, F. ; Abrasion resistance of concrete as a two-phase composite material ; **International Journal of Cement Composites and Lightweight Concrete** , Volume 9, No.3. Aug 1987, pp169-176.
- Pagbilao(2000a) Pagbilao, D. Todoroki, Y. Miura, Y. ; Flexural and Compressive Strength Characteristics of Concrete Paving Block and Establishment of Strength Criteria ; **Proceedings : 6th International Conference on Concrete Block Paving**, Tokyo, Japan, Sept 2000, pp 232-240 ; Japan Interlocking Block Pavement Engineering Association, Tokyo 2000.
- Pagbilao(2000b) Pagbilao D, Almeniana Q, Iwai S ; Optimizing the use of Mt Pinotubo Lahar Sand for Concrete paving block production ; **Proceedings : 6th International Conference on Concrete Block Paving**, Tokyo, Japan, Sept 2000, pp 241-250 ; Japan

- Interlocking Block Pavement Engineering Association, Tokyo 2000.
- Page(1998) Page, G. K. ; Interlocking paver production on small pallet concrete block machines ; **Proceedings : 3rd International Workshop on Concrete Block Paving : Pave Colombia'98**, Cartagena de Indias, Medellín, Colombia, May 1998, pp9:1-7.
- Papenfus(1947) Papenfus, J. A. ; Theoretical laboratory and applied aspects of sedimentology ; **DSc thesis submitted to the University of South Africa**, Pretoria, 1947, pp.9-28.
- Papenfus(1989a) Papenfus, N.J. ; Review of CMA research programme ; Unpublished report to the CMA, Randburg, 1989.
- Papenfus(1989b) Papenfus, N.J. ; The abrasive strength of concrete paving blocks ; Unpublished paper.
- Papenfus(1992) Papenfus, N.J. ; Paving at St Dominics Hospital, East London ; Unpublished Report to Border Concrete, East London, Apl 1992.
- Papenfus(1993a) Papenfus, N.J. ; Towards improving abrasion resistance in concrete pavers and the contribution of fly ash ; **Second International Symposium : Ash – A valuable Resource**, Escom Conference Centre, Halfway House, Feb, 1994.
- Papenfus(1993b) Papenfus, N.J. ; Abrasion resistance in cbp ; Unpubl. Technical Note of the CMA, Randburg, Nov 1993.
- Papenfus(1994) Papenfus, N.J. ; A method of measuring and testing abrasion wear in concrete paving blocks ; **Proceedings : International Masonry and Paving Convention**, Sandton, May 1994, pp 371-402.
- Papenfus(1995) Papenfus, N.J. ; The effect of binder selection and natural exposure on the long term abrasion resistance of concrete pavers ; **Concrete Beton**, No 77, Aug 1995, pp. 19-27.
- Papenfus(1998) Papenfus, N.J. ; **Splitting cracks in pretensioned prestressed concrete turnout sleepers**, (Advanced Concrete Technology project) ; Institute of Concrete Technology, Beaconsfield, Buckinghamshire, UK, 1998.
- PCA(1996) Resurfacing Concrete Floors ; **Concrete Information**, 1996 ; Portland Cement Association, 1996.
- PCI.TM.7.11 PCI.TM.7.11 : Determination of abrasion resistance of concrete using a wire brush or silicon carbide grit ; **Laboratory manual**, Portland Cement Institute, Halfway House, 1990, (reproduced in appendix A.5).
- Pearson (1996) Pearson, A.R. & Shackel, B. ; Concrete segmental pavements aesthetic and performance solutions ; **Proceedings : 5th International Conference of Concrete Block Paving : Pave Israel '96**, Tel-Aviv, Israel, Jun 1996, pp669-678.
- Pesch(1980) Pesch, L. ; Concrete paving blocks in industrial construction in West Germany ; **Proceedings : 1st International conference on Concrete Block Paving**, University of Newcastle-Upon-Tyne, Department of Civil Engineering, Newcastle-Upon-Tyne, England, Sept 1980, pp. 20:1-4.
- PFA (1983) Strength development of PFA concrete ; **PFA Technical Information Bulletin**, Issue Number 3, Dec 1983 ; D & H Ash Resources, Johannesburg, 1983.
- PFA (1985) The design of PFA concrete mixes ; **PFA Technical Information Bulletin**, Issue Number 5, Nov 1985 ; D & H Ash Resources, Johannesburg, 1985.
- Pickel(1997) Pickel, U. ; Cast Stone – check for abrasion wear ; **Betonwerk + Fertigteil-Technik**, Jan 1997, pp152-157.
- Powers(1958) Powers, T.C. ; Structure and Physical Properties of Hardened

- Portland Cement Paste : Research Department Bulletin 94 ;
Journal of the American Ceramic Society, Jan1958.
- Prior(1966) Prior, M.E. ; Abrasion resistance ; **ASTM - STP 169A : Significance of Tests and Properties of Concrete Making Materials**, ASTM, Philadelphia, 1966, pp246-260.
- Puttbach(1987) Puttbach, E. ; The most important pigments – packaging – physiological aspects – disposal, **Bayer Technical Publication no. PK 13850 DE, 1987** ; Bauverlag GmbH, Wiesbaden, 1987.
- Qvist(1996) Qvist, P. S. & Kirk, J.S. ; Infiltration of water through concrete block pavements ; **Proceedings : 5th International Conference of Concrete Block Paving : Pave Israel '96**, Tel-Aviv, Israel, Jun 1996, pp645-668.
- Ramezaniapour (1999) Ramezaniapour, A.A., Ekliassi, M.R. & Miyamoto, A. ; Influence of silica fume and different aggregates on the abrasion of concrete ; **Concrete durability and repair technology**, Sept 1999, Thomas Telford, London, 1999.
- Reynolds(1972) Reynolds, C. E. ; **Reinforced Concrete Designer's Handbook** 7th edition ; Cement and Concrete Association, London, 1972.
- Robertson(1991) Robertson, J.A. ; **Report into Statistical Analysis of Abrasion Test Results – Report 110453/01** ; James A Robertson and Associates, Randburg, Feb 1991.
- Rocha(1994) Rocha, M.A. ; Abrasion resistance of concrete paving blocks ; **Proceedings : International Masonry and Paving Convention**, Sandton, May 1994, pp. 357-370.
- Rohn(1985) Rohn, R. & Pfeiffenberger, L. ; Abrasion test for concrete pavers ; **Besser Block**, Winter 1985, pp15.
- Rourke(1986) Rourke, J.T. ; Factors which were considered and a summary of research which was undertaken in the preparation of MA20 - 1986: Specification for concrete segmental paving units by the Concrete Masonry Association of Australia ; **Proceedings : [1st] International Workshop on Interlocking Concrete Pavements**, Melbourne, Australia, Sept 1986, pp155-164.
- Rushing(1968) Rushing, H.B. ; Concrete wear study – Report #34 – Louisiana highway research ; **Louisiana Department of Highways, Research & Development Section**, Louisiana, Jun 1968, pp1-40.
- SABS 0164 **SABS 0164 : Part I – 1980 : The Structural Use of Masonry, South African Bureau of Standards Specification** (see pp. 54-55 for Determination of Initial Rate of Absorption) ; South African Bureau of Standards, Pretoria, 1980.
- SABS 1058 **SABS 1058 - 1985 : Standard specification for concrete paving blocks** ; South African Bureau of Standards, Pretoria, 1985, pp1-12.
- SABS 1083 **SABS 1083 ; Aggregates from natural sources - aggregates for concrete** ; South African Bureau of Standards, Pretoria, 1994
- SABS 1200MJ **SABS 1200 MJ : Standard specification for civil engineering construction : segmented paving** ; South African Bureau of Standards, Pretoria, 1984 .
- SABS 541 **SABS 541-1971 ; Standard specification for precast concrete paving slabs** ; South African Bureau of Standards, Pretoria, 1971
- Sadegzadeh Sadegzadeh, M. ; Abrasion resistance of concrete ; **PhD**

- (1984) **Thesis, Department of Civil Engineering and Construction**, University of Ashton, UK, 1984.
- Sadegzadeh (1986) Sadegzadeh, M. & Kettle, R. ; Indirect and non-destructive methods for assessing abrasion resistance of concrete ; **Magazine of Concrete Research**, Vol. 38, No.137, Dec 1986, pp.183-190.
- Sadegzadeh (1987) Sadegzadeh, M., Page, C.L. & Kettle, R. ; Surface Microstructure and Abrasion Resistance of Concrete ; **Cement and Concrete Research**, Vol.17, 1987, pp581-590.
- Sadegzadeh (1988) Sadegzadeh, M. & Kettle, R. ; Development of an accelerated abrasion test apparatus with a standardized testing procedure ; **Materials and Structures**, 21, 47-56, 1988, pp47-56.
- Samson(2000) Samson Construction Products ; Epoxy Products for Civil, Commercial and Industrial Construction ; **Product List** ; Samson Construction Products (Pty) Ltd., Bedfordview.
- Sanchez(1884) Sanchez, A. ; Quality assurance in the manufacture of concrete paving blocks in France ; **Proceedings : 2nd International Conference on Concrete Block Paving**, Delft University of Technology, Netherlands, Apl 1984, pp293-300.
- Sato(1988) Sato, I., Shibuya, K. & Yasui, S. ; Common use of interlocking blocks in cold districts ; **Proceedings : 3rd International Conference on Concrete Block Paving**, Roma, Italy, May 1988, pp28-30.
- Sawyer(1957) Sawyer, J.L. ; Wear tests on concrete using the German standard method of test and machine ; **Proceedings : American Society for Testing and Materials**, Vol. 57, 1957, pp.143-1153.
- Schuman(1939) Schuman, L. & Tucker, J. jr. ; A portable apparatus for determining the relative wear resistance of concrete floors ; **Research Paper, No. RP1252 ; Journal of Research of the National Bureau of Standards**, Vol.23, Washington, DC, Nov 1939, pp. 549-574.
- Scripture(1954) Scripture, E.W.Jr., Benedict, S.W. & Bryant, D.E. ; Floor aggregates ; **Journal of the American Concrete Institute**, Vol 25, No.4, 1953, pp. 305–316.
- Scrivener(1999) Scrivener, K.L. ; Applications of calcium aluminate and other special cements ; **Modern concrete materials: Binders, additions and admixtures** ; Thomas Telford, Sept 1999, pp248-260.
- Shackel(1979) Shackel, B. ; A Pilot study of the performance of block paving under traffic using Heavy Vehicle simulator ; **Proceedings : Symposium on Precast Concrete Paving Block**, Johannesburg, 1979.
- Shackel(1986) Shackel, B. ; A review of research into concrete segmental pavers in Australia ; **Proceedings : [1st] International Workshop on Interlocking Concrete Pavements**, Melbourne, Australia, Sept 1986, pp11-18.
- Shackel(1985) Shackel, B. ; The Abrasion Resistance of Selected Concrete Pavers ; Confidential report prepared on behalf of Unisearch Ltd., for the Concrete Masonry Association of Australia, Oct 1985, pp1-13.
- Shackel(1990) Shackel, B. ; Design and Construction of Interlocking Concrete Pavements ; Elsevier Applied Science, London, 1990.
- Shackel(1992a) Shackel, B. & Shi, X. ; The abrasion testing of concrete pavements ; **Proceedings : 4th International Conference of Concrete Block Paving : Pave 92**, Auckland, New Zealand,

- 1992.
- Shackel(1992b) Shackel, B. ; Computer based procedures for the Design and specification of concrete block pavements, **Proceedings : 4th International Conference of Concrete Block Paving : Pave 92**, Auckland, New Zealand, 1992.
- Shackel(1993a) Shackel, B. ; Abrasion resistance of concrete road surfaces ; **Proceedings : Concrete 2000** ; University of Dundee, Scotland, Sept 1993, pp.1179-1188.
- Shackel(1993b) Shackel, B. & Pearson, A. Abrasion testing of concrete pavers, **BIBM '93**, Washington, D.C. Sept 1993.
- Shackel(1994a) Shackel, B. & Pearson, A. ; Developments in the specification of concrete segmental pavers for Australian conditions ; **Proceedings : 2nd International Workshop on Concrete Block Paving**, Oslo, Norway, Jun 1994, pp.56-66.
- Shackel(1994b) Shackel, B. & Yamin, S. ; Dlaboratory measurements of water infiltration through block pavements ; **Proceedings : 2nd International Workshop on Concrete Block Paving**, Oslo, Norway, Jun 1994, pp.127-133.
- Shackel(1996) Shackel, B., Kaligis, J.O., Muktiarto, & Pamudji ; Infiltration and structural tests of permeable eco-paving ; **Proceedings : 5th International Conference of Concrete Block Paving : Pave Israel '96**, Tel-Aviv, Israel, Jun 1996, pp623-632.
- Shaker(1997) Shaker, F.A., El-Dieb, A.S. & Reda, M.M. ; Durability of Styrene-butadiene latex modified concrete ; **Cement and Concrete Research**, Vol 27, No 5, 1997, pp.711-720.
- Sharp(1986) Sharp, K.G. ; The Australian Road Research Board's Program of Testing of Interlocking Concrete Block Pavementsmn ; **Proceedings : [1st] International Workshop on Interlocking Concrete Pavements**, Melbourne, Australia, Sept 1986, pp 31-48.
- Shi(1997) Shi Zeng-Qiang & Chung, D.D.L. ; Improving the abrasion resistance of mortar by adding Latex and Carbon Fibers ; **Cement and Concrete Research**, Vol 27 No 8 1997 pp1149-1153.
- Simon(1999) Simon, M. & Selih, J. ; Use of locally available aggregates for high strength, high abrasion resistant concrete in Slovenia ; **High-Performance Concrete and Performance and Quality of Concrete Structures, Proceedings: 2nd CANMET/ACI International Conference**, Gramado, RS, Brazil, 1999, pp.201-211.
- Simons(1992) Simons, B. P. ; Abrasion testing for suspended sediment loads ; **Concrete International**, Mar 1992 pp.58-61.
- Sior(1991) Siro, H. ; The wear caused by small hard wheels on concrete industrial floors ; **Proceedings: International Colloquium, Industrial Floors '91**, Stuttgart, West Germany, Jan 1991.
- Smith(1958) Smith, F.L. ; Effect of aggregate quality on resistance of concrete to abrasion ; **Cement and Concrete, ASTM STP 205**, pp91-105 ; American Society for Testing and Materials, Philadelphia, 1956.
- Smith(1987) Smith, D.R. ; Mechanized installation of concrete block paving ; **Concrete International**, Jul 1987, pp37-40.
- Smith(1988) Smith, D.R. ; Permeability of concrete block pavements ; **Proceedings : 3rd International Conference on Concrete Block Paving**, Roma, Italy, May 1988, pp217-223.
- Smith(1996) Smith, D. R. ; Achieving Excellence - Lessons from recent port and airport projects in America ; **Proceedings : 5th**

- International Conference of Concrete Block Paving : Pave Israel '96**, Tel-Aviv, Israel, Jun 1996, pp511-532.
- Speers(1999) Speers, S. ; Dry shake toppings for concrete floors ; **Concrete**, Mar 1999, pp.19-20.
- Spooner(1969) Spooner, D.C. ; Measurement of the tensile strength of concrete by an indirect method - the cylinder splitting test ; **Technical Report, TRA 419** ; Cement and Concrete Association, London, May 1969. pp1-8
- Stamatiou(1993) Stamatiou, A. ; Determining properties of the interfacial zone between cement and aggregate ; **Research report : FRD Special Programme : Research on Concrete Materials with an emphasis on achieving durable and economic construction under South African conditions** ; University of the Witwatersrand, Johannesburg, Feb 1993, pp.1-4.
- Steinkamp Dr Steinkamp ; Ultrasonic tester Type BP IV ; Rohloff (Pty) Ltd, Wynberg, Johannesburg, undated.
- Subramanian (1999) Subramanian, S. ; Interfaces in concrete – achieving performance ; **Role of interfaces in concrete**, Thomas Telford, London, 1999, pp.98-109.
- Suda(1990) Suda, S. & Kodama, O. ; Development of tile composite concrete paving block ; **Betonwerk + Fertigteil - Technik** , Issue 8/1990, pp47-52.
- Sukandar(1993) Sukandar, B. M. ; Abrasion Resistance of Concrete Paving Blocks : A Thesis submitted in Partial Fulfillment of the requirements for the Master of Science Degree ; Department of Civil Engineering & Mechanics, Graduate School Southern Illinois University, Jan 1993.
- Šuštešič(1996) Šuštešič, J., Zaje, A. & Komel, M. High performance concrete using high strength artificial aggregate, **Concrete for Environment Enhancement and Protection**, pp.569-577 ; E&FN Spon, London, 1996.
- Tam(1987) Tam, C.T., Lim, T.Y., & Lee, S.L. ; Relationship between strength and volumetric composition of moist-cured cellular concrete ; **Magazine of Concrete Research**, vol. 39, no. 138, Mar 1987, pp12-18.
- Tangtermsirikul (1997) Tangtermsirikul, S. & Aoyagi, Y. ; Mix proportioning and properties of roller- compacted concrete pavement using lignite fly ash ; **Proceedings: Third CANMET/ACI International Conference** : High-Performance Concrete : Design and Materials and Recent Advances in Concrete Technology, Kuala Lumpur, Malaysia 1997, pp769-784.
- TR34(1994) **Concrete Industrial Ground Floors** ; (Section 8, Abrasion resistance) ; **Technical Report No 34** ; The Concrete Society, 1994, pp.106-111.
- Tsur (1996) Tsur, Y. ; Acrylic Sealer for concrete block paving ; **Proceedings : 5th International Conference of Concrete Block Paving : Pave Israel '96**, Tel-Aviv, Israel, Jun 1996, pp.565-578.
- Tveter(1994) Tveter, T. ; Accelerated wear testing of high strength road concrete in Norway ; **Proceedings : 2nd International Workshop on Concrete Block Paving**, Oslo, Norway, Jun 1994, pp.67-75.
- Valles(1997) Valles, M. ; Abrasion test for precast concrete paving products ; **Materials and Structures**, vol. 30, Dec 1997, pp.631-633.
- Van der van der Klugt, L.J.A.R. ; The Abrasion Resistance of Floor

- Klugt(1989)
Van der Vlist
(1980)
Verbeek(1972)
Von Szadkowski
(1987)
Wagenmaker
(1984)
Wästlund
(1946)
Watz(1994)
Webb(1996)
White(1997)
Wu(1999)
Yates(2000)
- Tiles ; **Interbrick**, Vol 5, No.1, 1989, pp12-16.
van der Vlist, A.A. ; The development of concrete paving blocks in The Netherlands ; **Proceedings : 1st International conference on Concrete Block Paving**, University of Newcastle-Upon-Tyne, Department of Civil Engineering, Newcastle-Upon-Tyne, England, Sept 1980, pp. 4:1-9.
Verbeek, G. and Copeland L.E. ; Some physical and chemical aspects of high pressure steam curing ; **Menzel symposium on high pressure steam curing** ; ACI publication SP-32, 1972, 1-13.
von Szadkowski, G. ; The weathering behavior of pigmented concrete paving blocks ; **Bayer Technical Publication** no. PK 13850 DE ; Krefeld-Uerdingen, 1987.
Wagenmaker, F. ; Development of quality control and certification of concrete road paving blocks in the Netherlands ; **Proceedings : 2nd International Conference on Concrete Block Paving**, Delft University of Technology, Netherlands, Apl 1984, pp301-317.
Wästlund, G. & Eriksson, A. ; Wear resistance test on concrete floors and methods of dust prevention ; **Journal of the American Concrete Institute**, Vol.18, No.2, Oct 1946, pp.181-200.
Watz, U. ; Flags and block paving in Sweden ; **Proceedings : 2nd International Workshop on Concrete Block Paving**, Oslo, Norway, Jun 1994, pp473-477.
Webb, M., Kettle, R.J. & Collins, R.J. ; Abrasion resistance of concrete containing lower grade aggregates ; **Concrete for Environment Enhancement and Protection**, pp579-585 ; E&FN Spon, London, 1996.
White, D. & Montani, R. ; Thin-bonded polymer concrete overlays for exposed concrete bridge deck protection and maintenance ; **In-place performance of Polymer concrete overlays** ; American Concrete Institute, Farmington Hill, MI, SP-169, 1997, pp99-106.
Wu, Y., Parker, F. Jr. & Kandhal, P.S. ; Evaluation of tests for toughness/abrasion resistance and durability/soundness of coarse aggregates ; **Cement, Concrete and Aggregates** ; 1999. pp.12-22.
Yates, T.J.S. & Richardson, D. Flooring, paving and setts – requirements for safety in use ; BRE, Garston, UK, 2000.