

REFERÊNCIAS BIBLIOGRÁFICAS

ABNT (1971a) - *Determinação da Ductilidade de Materiais Betuminosos*. Associação Brasileira de Normas Técnicas. ABNT/P-MB-167/NBR6293

ABNT (1971b) - *Determinação da Viscosidade Saybolt de Materiais Betuminosos a Alta Temperatura*. Associação Brasileira de Normas Técnicas. ABNT/P-MB-517

ABNT (1972) - *Determinação do Ponto de Amolecimento de Materiais Betuminosos - Método do Anel e Bola*. Associação Brasileira de Normas Técnicas. ABNT/MB-164/NBR 6560

ABNT (1990) - *Produtos de Petróleo - Determinação do Ponto de Fulgor e de Combustão em Vaso Aberto de Cleveland*. Associação Brasileira de Normas Técnicas. ABNT/NBR 11341

ABNT (1998) - *Materiais Betuminosos - Determinação da Penetração*. Associação Brasileira de Normas Técnicas. ABNT/NBR 6576

ALL STATES ASPHALT Inc. (1999) - Asphalt-Rubber. www.allstatesasphalt.com (14 jul.)

ANDERSON, D.A.; CHRISTENSEN, D.W. e BAHIA, H. (1991) - *Physical Properties of Asphalt Cement and the Development of Performance-Related Specifications*. Asphalt Paving Technology. Journal of the Association of Asphalt Paving Technologists. vol. 60, p. 437-475

- ANIP** (1996) - *Associação Nacional de Indústrias de Pneumáticos*
- ARPG** (1993) – *Uses of Asphalt Rubber*. Asphalt Rubber Producers Group, Phoenix, Arizona
- ASPHALT INSTITUTE** (1995) - *Performance Graded Asphalt Binder Specification and Testing - SP-1*
- ASPHALT INSTITUTE** (1989) – *The Asphalt Handbook*. Manual Series No.4 (MS-4)
- ASTM** (1995) – *Standard Test Method for Viscosity Determinations of Unfilled Asphalts Using Brookfield Thermosel Apparatus*. American Society for Testing and Materials. ASTM D4402-1987
- ASTM** (1997) – *Standard Specifications for Asphalt-Rubber Binder*. American Society for Testing and Materials. ASTM D6114-1997
- BAHIA, H.U.; HISLOP, W.P.; ZHAI, H.; RANGEL, A.** (1998) – *Classification of Asphalt Binders Into Simple and Complex Binders*. Proceedings of Association of Asphalt Paving Technologists. p.01-41
- BAKER RUBBER Inc.** (1988) - *Production of Crumb Rubber Modifier (CRM) Material - FHWA - Federal Highway Administration*. Workshop Notes. Session 3.0. Design Procedures and Construction Practices
- BAKER, R.F.; CONNOLLY, E.** (1995) - *Mix Designs and Air Quality Emissions Tests of Crumb Rubber Modified Asphalt Concrete*. Transportation Research Record 1515, TRB, Washington, DC, p.18-27
- BARTH, E.J.** (1968) - *Asphalt. Science and Technology*. Gordon and Breach Science Publishers. New York
- BILLITER, T.C.; CHUN, J.S.; DAVISON, R.R.; GLOVER, C.J.; BULLIN, J.A.** (1996) - *Investigation of the Curing Variables of Asphalt-Rubber Binder*. Proceedings of Association of Asphalt Paving Technologists. p.1221-1226

- BLOOMQUIST, D.; DIAMOND, G.; ODEN, M.; RUTH, B.; TIA, M.** (1993) - *Engineering and Environmental Aspects of Recycled Material for Highway Construction*. FHWA-RD-93-088. Final Report. July.
- BOX, G.E.P.; HUNTER, W.G.; HUNTER, J.H.** (1978) - *Statistics for Experimenters. An Introduction to Design, Data Analysis, and Model Building*. Ed. John Wiley & Sons. 652p.
- BROWN, D.R.; JARED, D.; JONES, C.; WATSON, D.** (1997) - *Georgia's Experience with Crumb Rubber in Hot-Mix Asphalt*. Transportation Research Record 1583, TRB, Washington, DC, p.45-51
- BROWN, R.** (1988) - *Historical Development*. National Center for Asphalt Technology. FHWA - Federal Highway Administration - Workshop Notes. Session 4.0. Design Procedures and Construction Practices
- CEMPRE** (1998) - *Pneus*. Ficha Técnica 8. Compromisso Empresarial para Reciclagem. www.cempre.org/ficha8.htm (15 abr.)
- CHARANIA, E.; CANO, J.O.; SCHNORMEIER, R.H.** (1991). *Twenty-Year Study of Asphalt Rubber Pavements in Phoenix, Arizona*. Transportation Research Record 1307. TRB. National Research Council. Washington, D.C., p.29-38.
- CHEHOVITS, J.; MANNING, M.** (1984) - *Materials and Methods for Sealing Cracks in Asphalt Concrete Pavements*. Transportation Research Record 990, TRB, Washington, DC, p.21-30
- COELHO, V.** (1996) - *Contribuição ao Estudo das Deformações Permanentes, nas Condições do Brasil, em Camadas de Concreto Asfáltico de Pavimentação*. Tese de Doutorado. Escola de Engenharia de São Carlos – USP

- COETZEE, N.F.; MONISMITH, C.L.** (1979) - *Analytical Study of Minimization of Reflection Cracking in Asphalt Concrete Overlays by Use of a Rubber-Asphalt Interlayer*. Transportation Research Record 700, TRB, Washington, DC, p.100-108
- COOMARASAMY, A.; MANOLIS, S.; HESP, S.** (1996) - *High Temperature Performance of Scrap Tire Rubber Modified Asphalt Concrete*. Proceedings of Association of Asphalt Paving Technologists. p.1322-1326
- CRAFCO INC.** (1980) - *Produtos e Técnicas para Selamento de Trincas como um Sistema de Manutenção Viária para Pavimento de Concreto Asfáltico*
- CHRISTENSEN; ANDERSON** (1992) - *Interpretation of Dynamic Mechanical Test Data for Paving Grade Asphalt Cements*. Proceedings of Association of Asphalt Paving Technologists. V.61, p.67-116
- DALY, W.H.; NEGULESCU, II.** (1997) - *Characterization of Asphalt Cements Modified with Crumb Rubber from Discarded Tires*. Transportation Research Record 1583, TRB, Washington, DC, p.37-44
- EMERY, J.** (1995) - *Evaluation of Rubber Modified Asphalt Demonstration Projects*. Transportation Research Record 1515, TRB, Washington, DC, p.37-46
- EPPS, J.A.** (1994) - *Uses of Recycled Rubber Tires in Highways*. National Cooperative Highway Research Program. Synthesis of Highway Practice 198, Transportation Research Board, Washington, DC
- ESCH, D.C.** (1982) - *Construction and Benefits of Rubber-Modified Asphalt Pavements*. Transportation Research Record 860, TRB, Washington, DC, p.05-13

- ESTAKHRI, C.K.; BUTTON, J.W.; FERNANDO, E.G.** (1992) - *Use, Availability, and Cost-Effectiveness of Asphalt Rubber in Texas*. Transportation Research Record 1339, TRB, Washington, DC, p.30-37
- FARRO, W.** (1997) - *Sucata Vira Matéria-Prima e Gera Lucro*. Desenvolvimento Sustentado. Revista de Indústria. Setembro, p. 22-26
- FERNANDES, JR., J. L.** (1995) - *Investigação dos Efeitos das Solicitações do Tráfego sobre o Desempenho de Pavimentos*. Tese de Doutorado. Escola de Engenharia de São Carlos – USP
- FERNANDES, JR., J. L.; ODA, S.; ZERBINI, L. F.** (1999) - *Defeitos e Atividades de Manutenção e Reabilitação em Pavimentos Asfálticos*. Apostila. Escola de Engenharia de São Carlos - USP
- FERREIRA, A.B.H.** (1986) - *Novo Dicionário da Língua Portuguesa* - Aurélio Buarque de Holanda Ferreira - Ed. Nova Fronteira, RJ
- FHWA** (1993) - *A Study of the Use of Recycled Paving Material* - Report to Congress - Final Report. Federal Highway Administration - FHWA-RD-93-147 - EPA/600/R-93/095. June
- GOODYEAR** (1999) – *Charles Goodyear and the Strange Story of Rubber*. http://www.goodyear.com/corporate_information (15 fev.)
- HARRIGAN, E.T.; LEAHY, R.B.; YOUTCHEFF, J.S.** (1994) - *The SUPERPAVE Mix Design System manual of Specifications, Test Methods, and Practices*. SHRP-A-379. Strategic Highway Research Program. National Research Council. Washington, DC
- HEITZMAN, M.** (1992a) - *Design and Construction of Asphalt Paving Materials with Crumb Rubber Modifier*. Transportation Research Record 1339, TRB, Washington, DC, p.01-08
- HEITZMAN, M.** (1992b) – *State of the Practice - Design and Construction of Asphalt Paving Materials with Crumb Rubber Modifier*. FHWA-SA-92-022. Final Report. May

- HICKS, R.G.; LUNDY, J.R.; LEAHY, R.B.; HANSON, D.; EPPS, J.** (1995) - *Crumb Rubber Modifier (CRM) in Asphalt Pavement: Summary of Practices in Arizona, California, and Florida*. FHWA-SA-95-056. September
- HUFF, B.J.; VALLERGA, B.A.** (1981) - *Characteristics and Performance of Asphalt-Rubber Material Containing a Blend of Reclaim and Crumb Rubber*. Transportation Research Record 821, TRB, Washington, DC, p.29-37
- IBP** (1990) – *Informações Básicas sobre Materiais Asfálticos*. 5^a ed. Instituto Brasileiro de Petróleo. Rio de Janeiro, RJ. 68 p.
- IBP** (1996) - *Informativo. O Asfalto*. Instituto Brasileiro de Petróleo. Rio de Janeiro, p.01-06.
- IESS, J.J.** (1998) - *Um Fim para os Restos da Indústria*. Revista Globo Ciência. Ano 8, n^o85, Agosto, p.26-31
- JIMENEZ, R.A.** (1982) - *Laboratory Measurements of Asphalt-Rubber Concrete Mixtures*. Transportation Research Record 843, TRB, Washington, DC, p.04-11
- JIMENEZ, R.A.; MEIER, JR, W.R.** (1985) - *Laboratory Evaluation of Asphalt-Rubber SAL*. Transportation Research Record 1034, TRB, Washington, DC, p.86-96
- KANDHAL, P.; HANSON, D.** (1988) - *Crumb Rubber Modifier (CRM) Technologies* - National Center for Asphalt Technology. FHWA - Federal Highway Administration - Workshop Notes. Session 5.0 - Design Procedures and Construction Practices

- KHOSLA, N.P.** (1991) - *Effect of the Use of Modifiers on Performance of Asphaltic Pavements*. Transportation Research Record 1317, TRB, Washington, DC, p.10-22
- KRUTZ, N.C.; STROUP-GARDINER, M.** (1992) - *Permanent Deformation Characteristics of Recycled Tire Rubber-Modified and Unmodified Asphalt Concrete Mixtures*. Transportation Research Record 1339, TRB, Washington, DC, p.38-44
- LEITE, L.F.M.** (1990) - *Estudos Reológicos de Cimentos Asfálticos* - Dissertação de Mestrado. COPPE/UFRJ. Rio de Janeiro, RJ
- LEITE, L.F.M.** (1999) - *Estudos de Preparo e Caracterização de Asfaltos Modificados por Polímero* – Tese Doutorado. COPPE/UFRJ. Rio de Janeiro, RJ
- LIANG, R.Y.; LEE, S.** (1996) - *Short-Term and Long-Term Aging Behavior of Rubber Modified Asphalt Paving Mixture*. Transportation Research Record 1530, TRB, Washington, DC, p.11-17
- LING, M.; CURTIS, C.W.; HANSON, D.I.; HOLL, J.N.** (1997) – *Quantitative Analysis of Polymers and Crumb Rubber in Hot-Mix Asphalts*. Transportation Research Record 1586, TRB, Washington, DC, p.57-67
- MADAPATI, R.R.; LEE, K.W.; MANNING, F.J.; FRANCO, C.A.** (1996) – *Feasibility of Crumb Rubber Use for Pavement Asphalt Construction*. Transportation Research Record 1530, TRB, Washington, DC, p.64-71
- MALPASS, G.A.; KHOSLA, N. P.** (1995) - *Use of Ground Tire Rubber in Asphalt Concrete Pavements. A Design and Performance Evaluation*. Transportation Research Record 1515, TRB, Washington, DC, p.11-17
- MAUPIN, JR., G.W.** (1992) - *Virginia's Experimentation With Asphalt Rubber Concrete*. Transportation Research Record 1339, TRB, Washington, DC, p.09-15

- MAUPIN, JR., G.W.** (1996) – *Hot Mix Asphalt Rubber Applications in Virginia*. Transportation Research Record 1530, TRB, Washington, DC, p.18-24
- McDONALD, C.H.** (1981) - *Recollections of Early Asphalt-Rubber History*. National Seminar on Asphalt-Rubber. FHWA. San Antonio, Texas. p.23-39
- McQUILLEN, JR., J.L.; TAKALLOU, H.B.; HICKS, R.G.; ESCH, D.C.** (1988) - *Economic Analysis of Rubber-Modified Asphalt Mixes*. Journal Transportation Engineering, ASCE, vol.114, N^o 3, May, p.259-277
- MONTGOMERY, D.C.** (1991) – *Design and Analysis of Experiments* – Ed. John Wiley & Sons
- MORRIS, G.R.; CHEN, N.J.; DI VITO, J.A.** (1982) - *Application of Asphalt Rubber on New Highway Pavement Construction*. Transportation Research Record 888, TRB, Washington, DC, p.43-47
- MORRIS, G.R.; McDONALD, C.H.** (1976) - *Asphalt-Rubber Stress-Absorbing Membranes: Field Performance and State of the Art*. Transportation Research Record 595, TRB, Washington, DC, p.52-58
- MORRISON, G.R.; VAN DER STEL, R.; HESP, S.A.M.** (1995) - *Modification of Asphalt Binders and Asphalt Concrete Mixes with Crumb and Chemically Devulcanized Waste Rubber*. Transportation Research Record 1515, TRB, Washington, DC, p.56-63
- OLIVER, J.W.H.** (1981a) - *Modification of Paving Asphalts by Digestion with Scrap Rubber*. Transportation Research Record 821, TRB, Washington, DC, p.37-44
- OLIVER, J.W.H.** (1981b) – *Research on Asphalt-Rubber at the Australian Road Research Board*. National Seminar on Asphalt-Rubber. FHWA. San Antonio, Texas. p.241-256

- OTOO, E.A.** (1999) – *Evaluation of Field Performance of Open Graded Asphalt Rubber Friction Course*. Thesis. Civil Engineering Department - University of Florida, 148p.
- PAGE, G.C.; RUTH, B.R.; WEST, R.C.** (1992) - *Florida's Approach Using Ground Tire Rubber in Asphalt Concrete Mixtures*. Transportation Research Record 1339, TRB, Washington, DC, p.16-22
- PATERSON, W.D.O.** (1991) - *Engineering and Economic Efficiency for Highways: An Introduction to the Highway Design and Maintenance Standards Model, HDM*. World Bank. Infrastructure Operations. Washington, DC.
- PETROBRÁS** (1996) - *Manual de Serviços de Pavimentação*. Petrobrás Distribuidora S.A., Rio de Janeiro, RJ
- REESE, R.E.** (1994) - *Development of a Physical Property Specification for Asphalt-Rubber Binder*. Proceedings of Association of Asphalt Paving Technologists. Vol 63, p.373-400
- ROBERTS, F.L.; KANDHAL, P.S.; BROWN, E.R.; LEE, D-Y; KENNEDY, T.W.** (1998) - *Hot Mix Asphalt Materials, Mixture Design, and Construction* – NAPA Educational Foundation – Lanham, Maryland
- ROBERTS, F.L.; LYTTON, R.** (1987) - *FAA Mixture Design Procedure for Asphalt-Rubber Concrete*. Transportation Research Record 1115, TRB, Washington, DC, p.216-225
- ROBERTS, F. L.; KANDHAL, P. S.; BROWN E. R.; DUNNING, R. L.** (1989) - *Investigation and Evaluation of Ground Tire Rubber in Hot Mix Asphalt*. National Center for Asphalt Technology. Auburn, n.89, 172p.
- ROMINE, R.A.; TAHMORESSI, M.; ROWLETT, R.D.; MARTINEZ, D.F.** (1991) - *Survey of State Highway Authorities and Asphalt Modifier*

Manufacturers on Performance of Asphalt Modifiers. Transportation Research Record 1323, TRB, Washington, DC, p.61-69

RUTH B.E.; TIA, M.; JONSSON, G.;h SETZE, J.C. (1997) – *Recycling of Asphalt Mixtures Containing Crumb Rubber.* Final Report. FL/DOT/MO D510717. University of Florida. Florida Department of Transportation. 221p.

SALTER, R.J.; MAT, J. (1990) - *Some Effects of Rubber Additives on Asphalt Mixes.* Transportation Research Record 1269, TRB, Washington, DC, p.79-86

SCHNORMEIER, R.H. (1980) – *Eleven-Year Pavement Condition History of Asphalt-Rubber Seals in Phoenix, Arizona.* Asphalt Pavement Construction: New Materials Techniques. ASTM Special Technical Publication 724. American Society for Testing and Materials. p.13-21

SCHNORMEIER, R.H. (1983) - *Use of Asphalt-Rubber on Low-Cost, Low-Volume Streets: A Review After 13 Years.* Transportation Research Record 898, TRB, Washington, DC, p.344-346

SCHNORMEIER, R.H. (1986) - *Fifteen-Year Pavement Condition History of Asphalt-Rubber Membranes in Phoenix, Arizona.* Transportation Research Record 1096, TRB, Washington, DC, p.62-67

SHASHIDHAR, N.; CHOLLAR, B.N. (1994) - *Rheological Properties of Asphalts with Particulate Additives.* Proceedings of Association of Asphalt Paving Technologists. vol._, p.1307-1316

SHIH, C.; TIA, M.; RUTH, B.E. (1996) - *Evaluation of the Effects of Crumb Rubber and SBR on Rutting Resistance of Asphalt Concrete.* Proceedings of Association of Asphalt Paving Technologists. p.1227-1231

SHRP (1994) - *The SUPERPAVE Mix Design System Manual of Specifications, Test Methods, and Practices* - SHRP-A-379. Strategic

Highway Research Program - National Research Council, Washington, DC

SHULER, S. (1982) - *Specification Requirements for Asphalt-Rubber*. Transportation Research Record 843, TRB, Washington, DC, p.01-04

SHULER, T.S.; PAVLOVICH, R.D.; EPPS, J.A. (1985) - *Field Performance of Rubber-Modified Asphalt Paving Materials*. Transportation Research Record 1034, TRB, Washington, DC, p.96-102

SOUSA, J.B.; HARVEY, J.T.; BOULDIN, M.G.; AZEVEDO, C. (1994) - *Application of SHRP Mix Based Specifications*. Transportation Research Record 1454, TRB, Washington, DC, p.154-162

STEPHENS, J.E. (1982) - *Field Evaluation of Rubber-Modified Bituminous Concrete*. Transportation Research Record 843, TRB, Washington, DC, p.11-21

STROUP-GARDINER, M.; NEWCOMB, D.E.; TANQUIST, B. (1993) - *Asphalt-Rubber Interactions*. Transportation Research Record 1417, TRB, Washington, DC, p.99-108

TAKALLOU, H.B.; BAHIA, H.U.; PERDOMO, D.; SCHWARTZ, R. (1997) - *Use of Superpave Technology for Design and Construction of Rubberized Asphalt Mixtures*. Transportation Research Record 1583, TRB, Washington, DC, p.71-81

TAKALLOU, H.B.; HICKS, R.G. (1988) - *Development of Improved Mix and Construction Guidelines for Rubber-Modified Asphalt Pavements*. Transportation Research Record 1171, TRB, Washington, DC, p.113-120

TAKALLOU, H.B.; HICKS, R.G.; ESCH, D.C. (1986) - *Effect of Mix Ingredients on the Behavior of Rubber-Modified Asphalt Mixtures*. Transportation Research Institute 1096, TRB, Washington, DC, p.68-80

- TAKALLOU, H.B.; SAINTON, A.** (1992) - *Advances in Technology of Asphalt Paving Materials Containing Used Tire Rubber*. Transportation Research Record 1339, TRB, Washington, DC, p.23-29
- TROY, K.; SEBAALY, P.E.; EPPS, J.A.** (1996) – *Evaluation Systems for Crumb Rubber Modified Binders and Mixtures*. Transportation Research Record 1530, TRB, Washington, DC, p.03-10
- TUNES,** (1998) - *Um Fim para os Restos da Indústria*. Revista Globo Ciência. Ano 8, nº85, Agosto, p.26-31
- VALERGA, B.A.** (1981) – *Design and Specifications Changes for Paving Mixes with Asphalt-Rubber Binders*. National Seminar on Asphalt-Rubber. FHWA. San Antonio, Texas. p.209-217
- WAY, G.B.** (1999) – *Flagstaff I-40 Asphalt-Rubber Overlays Project. Nine Years of Success*. Paper Presented to Transportation Research Board. 78th Annual Meeting, TRB
- WEST, R.C.; PAGE, G.C.; VEILLEUX, J.G.; CHOUBANE, B.** (1998) – *Effect of Tire Rubber Grinding Method on Asphalt-Rubber Binder Characteristics*. Transportation Research Record 1638, TRB, Washington, DC, p.134-140
- ZAMAN, A.A.; FRICKE, A.L.; BEATTY, C.L.** (1995) - *Rheological Properties of Rubber-Modified Asphalt*. Journal Transportation Engineering, ASCE, vol.121, Nº 6, nov/ dec, p.461-467
- ZANZOTTO, L., KENNEPOHL, G.J.** (1996) – *Development of Rubber and Asphalt Binders by Depolymerization and Devulcanization of Scrap Tires in Asphalt*. Transportation Research Record 1530, TRB, Washington, DC, p.51-58