

AVI MOR, Dr. Eng.

Dr. Mor & Associates, Inc.



Doctor Mor is an expert in the areas of concrete technology, construction methods, and construction materials with over 30 years' experience in the industry. His expertise includes construction, problem solving, testing and evaluation, quality assurance, nondestructive evaluation, and research. He is an expert consultant, lecturer and author with numerous articles and presentations to his credit. His background as a scientist, lecturer and builder provides a solid basis of technical and practical knowledge for evaluation of complex **construction failure** and personal injury cases

Education

Doctor of Engineering, Concrete Technology, University of California Berkeley, 1987

M.Eng. in Construction Management, University of California Berkeley, 1984

M.Sc. in Construction Materials, Technion, Israel Institute of Technology, 1982

B.Sc. in Civil Eng., Technion, Israel Institute of Technology, 1980

Experience

Consultant, Dr. Mor & Associates, Inc., Los Angeles, CA, 1991 - present

Forensic engineering and construction consulting on concrete technology.

Quality Control, Parsons/Dillingham JV, Pasadena, CA, 1992

Quality assurance of concrete construction on the Metro Red Line, LA.

Dr. Engineering, Twining Laboratories, Long Beach, CA, 1989-1991

Engineering supervision of testing and inspection activities. Performed special testing services, including non-destructive testing and load testing. Provided consulting services and expert advice to clients on construction materials and methods.

Associate Specialist, University of CA, Berkeley, 1987-1988

Responsible for test program evaluating the marine uses and **durability** of structural LWA concrete - for the US Navy.

Consultant, Ben C. Gerwick, Inc., San Francisco, CA, 1984-1989

Provided consulting services on construction materials for construction companies and public agencies, with emphasis on marine and **sulfate** attack durability.

Research Assistant, University of CA, Berkeley, 1982-1987

Investigated fatigue of high-strength concrete, **sulfate** and acid resistance of concrete, prestressed lightweight concrete, and freeze-thaw resistance.

Supervising Engineer and General Contractor, 1980-1982

Development and construction of single-family residential units.

Other

- Guest editor and contributing author for the international magazine Concrete Construction.
- Authored numerous articles and technical presentations.
- Lectured on concrete construction at the University of California, Berkeley and at the Technion.
- Provide advise and information through a Web Site dedicated to concrete technology – <http://drmor.com/>

Professional Membership

- American Society for Testing and Materials (ASTM)
 - ASTM Technical committee C09 -- Concrete
- American Concrete Institute (ACI)
 - ACI Technical committee 201 - Durability of Concrete
 - ACI Technical committee 213 - Lightweight Aggregate and Concrete
 - ACI Technical committee 214 - Evaluation of Results of Tests Used to Determine the Strength of Concrete
 - ACI Technical committee 215 - Fatigue of Concrete
 - ACI Technical committee 228 - Nondestructive Testing of Concrete
 - ACI Technical committee 304 - Measuring, mixing, transporting, and placing concrete
 - ACI Technical committee 311 - Inspection of Concrete
- International Conference of Building Officials (ICBO)
- International Code Council

Registration

- CE, Israel, 1982 (#00030627)
- Certified Special Inspector - Reinforced Concrete (ICBO #1028361-88)

Areas of Expertise

- **Concrete** problems:
 - Sulfate attack
 - ASR (AAR) damage
 - Cracking of floors, walls, and structural members
 - Corrosion of embedded steel
 - Low strength
 - Surface defects
- **Water intrusion**
- **Personal Injury** related to:
 - Construction defects
 - Code requirements
 - Improper use of materials
- General Civil Engineering Construction issues
- Load tests on structural members and full structures
- ASTM testing
- Materials testing and evaluation
- Measurement of flatness and levelness of super flat floors
- Non-destructive testing
- Construction quality control
- Research and development
- State-of-the-art reports on construction related subjects
- Forensic analysis

Teaching Experience

- Spring 1988 **Lecturer**, "CE-161, Concrete Making Materials". (UC Berkeley).
- 1981-1982 **Instructor**, "Properties of Construction Materials". (Technion).
- 1985-1986 **Teaching Assistant**, "Construction of Offshore Structures" (UC Berkeley).

Selected Publications

- Mor, A., "Quality control of high-performance concrete," *Concrete Construction magazine*, Vol. 37, No. 5, May 1992, pp. 363-366.
- Mor, A., "High-performance concrete becoming a practical option," *Concrete Construction magazine*, Vol. 37, No. 5, May 1992, pp. 351-353.
- Mor, A., Hester, W.T., and Gerwick, B.C., "Fatigue of High-Strength Reinforced Concrete," *ACI Materials Journal*, V. 89, NO. 2, March-April 1992.
- Mor, A., "Steel-Concrete Bond in High-Strength Lightweight Concrete," *ACI Materials Journal*, V. 89, NO. 1, January-February 1992, pp. 76-82.
- Mor, A., Monteiro, P.J.M., and Hester, W.T., "Observations of Healing of Cracks in High-Strength Lightweight Concrete," *Cement Concrete and Aggregates*, CGAGDP. Vol. 11, No. 2, Winter 1989, pp. 121-125.
- Mor, A., Hester, W.T., and Gerwick, B.C., "Fatigue of Submerged Concrete under Low Cycle, High-Magnitude Loads," *Journal of Testing and Evaluation*, ASTM, Vol. 17, No. 3, May 1989.
- Mor, A., and Ravina, D., "The DIN Flow Table," *Concrete International, Design & Construction*, V. 8, No. 12, December 1986, pp. 53-56.
- Ravina, D., and Mor, A., "Effects of Superplasticizers," *Concrete International, Design & Construction*, V 8, No 7, July 1986, pp 53-55.
- Mor, A., and P.K. Mehta, "Effect of Superplasticizing Admixtures on Cement Hydration," *Cement and Concrete Research*, Vol. 14, 1984, pp. 754-756.

Selected Conferences

- "Effect of Superplasticizers on the Workability of High Strength Concrete," *CSCE Conference*, Vancouver, B.C., May, 1991.
- "Blending Aggregates," *ACI Convention*, Toronto, Canada, 1990.
- "Fatigue of High-strength Concrete," *ACI Convention*, San Diego, Fall 1989.

Selected Technical Reports

Other Relevant Experience

- State of the art report on "Lightweight Aggregate Concrete Used in Marine Structures," for NCEL, July, 1988.
- "Durability of Structural Lightweight Aggregate Concrete," for Norwegian Contractors, October, 1987.
- "Effects of Superplasticizers under Hot Weather Conditions," for the Building Research Station at the Technion, Israel Institute of Technology, 1982.
- Extensive experience in the application of computers, including Data Acquisition and Control, Statistical analysis, Desktop Publishing, CAD, and Programming.
- Inspection and testing of construction operations.
- Hands-on experience in quality assurance on the Metro Red Line Project, including audit and surveillance of contractor operations, preparation of QA procedures, and evaluation of QA submittals.

REPRESENTATIVE CLIENTS

- | | | |
|--|---|---------------------------------------|
| • Aklufi & Wysocki | • Fitzgerald, Agular, Sherwood, Michner & Durante | • Lowthrop, Richards, McMillan |
| • American States Insurance | • Foster & Driscoll | • Luna, Brownwood & Rice |
| • Anwyl, Wiesenfeld & Rushford | • Golden Eagle Insurance Co. | • Mower, Koeller, Nebeker & Carlson |
| • Argonaut Insurance | • Haight, Brown & Bonesteel | • Murchison & Cumming |
| • Assicurazioni Generali S.P.A | • Harrington, Foxx, Dubrow & Canter | • Nationwide Indemnity |
| • Booth, Mitchell & Strange | • Howard, Moss, Loveder, Strickroth & Walker | • Quinlivan, Kaniewski & Rozakis |
| • Brady, Vorwerck & Ryder | • Kirtland & Packard | • Selman, Breitman & Burgess |
| • Chapman & Glucksman | • Law Offices of John Donovan | • St. Paul, Insurance Co. |
| • City of Los Angeles | • Law Offices of Oddenino & Gaule | • Tharpe & Howell |
| • Claremont Unified School District | • Law Offices of Timothy R. Lee | • Tramell Crow |
| • CNA Insurance | • Letofsky • McClain | • Travelers Insurance |
| • Davis and Balmuth | • Liberty Mutual Insurance Group | • Wausau Insurance Co. |
| • Federman, Gridley, Gradwohl & Flaherty | • Long, Williamson and Delis | • Wingert, Grebing, Anello & Brubaker |
| • Fireman's Fund | | • Zurich-American Insurance Group |

REPRESENTATIVE PROJECTS

Wholesale Produce Market, Los Angeles, CA

Investigated failure of concrete pavements under heavy traffic loads. Provide testing, reports, and mediation support.

Residential project, San Juan Capistrano, CA

Led defense expert team investigation of **sulfate** attack allegations. Provide complete program of inspection, testing, analysis, and supporting research.

Nuclear Power Plant, Crystal River, FL

Led expert team investigation of concrete containment building failure. comprehensive report to owner and NRC.

Residential project, San Clemente, CA

Investigation of defective construction and **sulfate** attack allegations.

Residential project, Orange County, CA

Investigate allegations of defective concrete and **sulfate** attack.

Residence, Mission Viejo, CA

Investigated failure of garage slab due to **Sulfate** attack. Tested to determine cause and recommended repair methods – Plaintiff.

Citadel, multi purpose center, Industry, CA

Conducted site investigation to determine **sulfate** attack damage to existing structure and potential for rehabilitation. Evaluated **fire** damage to concrete and steel elements.

Villa Balboa, Newport Beach

Led defense expert team investigation of defective construction on a high-scale condominium project.

Apartment Building, Beverly Hills

Led defense expert team investigation of excessive deflections and structural damage.

Industrial warehouse, Los Angeles, CA

Investigated **cracking** damage to structural frame of warehouse. Determined extent of damage and recommended **repair** methods. **Estimated** cost of repairs.

Residential development, Corona, CA

Tested over 100 houses to determine cause and extent of **moisture intrusion** through **concrete slab** and **windows**.

Estimated costs and recommended repair methods – Plaintiff.

Condominium complex, Agoura Hills, CA

Site investigation to evaluate condition of **concrete** pavements. Determine extent of problems, causes, methods and **estimated** cost of repair.

Residential development, Murphy Hill, CA

Investigated allegations regarding **code** compliance and defective construction on **concrete** stairs.

Warehouse, Rancho Cucamonga, CA

Investigated alleged failure of **concrete** floor in defense of developer.

Conduit Elementary School, Claremont, CA

Investigated failure of **concrete pavement**. Prepared report and repair recommendations – Plaintiff.

Storm drainage Canal, Temecula, CA

Conducted site investigation and mediation of failed concrete lining on storm drain canal.

Residential development, Palm Desert, CA

Site investigation and mediation on concrete sidewalk and pavement failures.

Dormitory building, UCLA

Site investigation to evaluate quality of gunite **concrete** for **earthquake** upgrade.

Floating concrete bridge, Seattle, WA

Analyzed reasons for failure that caused the bridge to sink. Prepared report to support litigation efforts – Plaintiff.

Tilt-up warehouse, Los Angeles, CA

Conducted site investigation to evaluate **cracking** damage to **structural** beams. Prepared report on test results and recommended **repair** methods.

Warehouse, San Francisco

Performed ultrasonic **non-destructive** evaluation to locate voids in **concrete** floor and determine responsibility and methods of repair.

Industrial steel frame building, Los Angeles, CA

Conducted site investigation to evaluate **fire** damage to **steel** structural elements.

Ritz Carlton, Pasadena, CA

Proof loading of ballroom floor in historic structure. Verified compliance with current **earthquake** requirements by applying full design load and monitoring deflections.

Refuse burning power station, Long Beach, CA

Conducted site investigation to determine causes for failure of **concrete** floor, and recommended rehabilitation procedures.

Storm drain system, Orange

Conducted site investigation utilizing **non-destructive** evaluation to determine extent of voids in **concrete** wall prior to remedial action.

Tilt-up construction, Los Alamitos, CA

Conducted investigation both on-site and in the laboratory to determine cause for blemished **concrete** finish. Prepared report and recommended methods for **repairs** and prevention.

CONSULTING AGREEMENT / FEE SCHEDULE

This agreement is made between Dr. Mor and Associates, Inc. ("Consultant") and _____, ("Client").

Dr. Mor has a background in Construction and Engineering and is willing to provide services to Client based on this background. Client desires to have services provided by Dr. Mor.

This agreement pertains to one project which will be identified as _____.

1. **SERVICES.** Dr. Mor agrees to use his best efforts to assist Client in analyzing Client's problems and to assist Client in retaining Others as needed for Client's benefit. Consultant is acting as Client's consultant and not as representative or agent of any other firm or company. It is agreed and understood that Consultant is not responsible, nor guarantee the work product of any other entity used by Client to solve its problems.
2. **FEES AND PAYMENT.** Client will pay a fee to Dr. Mor based on \$225.00 per hour for the Services. Deposition, arbitration and trial testimony will be billed at \$400.00 per hour. All consulting services away from Dr. Mor's office will be billed on a "portal-to-portal" basis.
Other applicable rates:
 - Associate Consultant - \$175/hr
 - Technical Assistant - \$85/hr
 - Clerical - \$45/hr
 These fees shall be due and payable upon invoice submission. Overdue balances may be subject to 1% re-invoicing surcharge per month.
3. **EXPENSE REIMBURSEMENT.** Dr. Mor shall be entitled to reimbursement from Client for the following "out-of-pocket" expenses:
 - travel expenses outside the Los Angeles area, or for activities requiring overnight stay
 - postage and messenger services
 - copying and reproduction, including plans, photographs, etc.
 - report preparation, including clerical support, and binding
 - exhibit preparation
 - other unusual expenses as approved by Client.
4. **RETAINER.** Client agrees to place with Consultant upon signing of this agreement an initial retainer of \$3000 to be applied toward Consultant's last invoice. Client shall not be authorized to use or disclose Consultant as an expert in any case before Consultant having received the retainer in advance. Once Retainer Agreement is executed, 50% of the above retainer will be non-refundable. No services shall be rendered by Consultant to Client until such time as the retainer has been paid and this Retainer Agreement signed.
5. **BILLING.** Consultant will present the Client with billings on a monthly basis. Client will review the billing and notify Consultant within three (3) days of any problems. Unless notified, Client accepts Consultant's fulfillment of Client's assignment, and shall pay invoice without dispute or delay.

Dated: _____ By: _____ (Consultant)

Dated: _____ By: _____ (Client)

Print name: _____