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Bradley N. Plank, P.E.
Mechanical & Metallurgical Engineer



Curriculum Vitae

Using his combination of mechanical and metallurgical (including plastics) experience and education, Mr. Plank provides forensic and consulting engineering services to attorneys, insurance professionals, and manufacturing companies. A registered engineer in Texas and 24 other states, his experience includes 32 years in manufacturing in the metals processing industries, 32 years performing failure analyses, and 28 years investigating claims. Mr. Plank has testified in a wide variety of matters including personal injury and property damage, in both state and federal court, and his testimony has never been excluded. Assignments have involved mechanical equipment, appliances, oil and gas transmission equipment, plumbing, HVAC, heavy equipment, machine tools, cranes and wire cables, manufacturing processes, and thermal processes, among many others.

PROFESSIONAL EXPERIENCE

MME FORENSIC CONSULTING, INC., July 2018 to Present
Mechanical and Metallurgical Engineer

Responsibilities like those listed below for the prior employer, but now providing engineering expert services directly to attorneys, insurance professionals, and manufacturing companies. Performing engineering investigations with failure analyses and providing expert witness testimony in property damage and personal injury matters. One area of expanded experience has been HVAC system design and installation investigations.

EFI GLOBAL, INC., 2008 to June 2018
Senior Engineer, Mechanical and Metallurgical

Responsibilities included the evaluation of failures of mechanical equipment, appliances, and systems that resulted in loss or injury. Experience in large losses included oilfield rig collapses, gas compression failures, crane and wire cable failures, manufacturing processes, machine tools, and heavy equipment used in oilfield and industrial settings. Experience also included gas fired and electrical appliances, a wide variety of plumbing components, materials selection, failure analysis, and thermal processing, fire and water damage losses, as well as personal injury claims.

A. O. SMITH WATER PRODUCTS COMPANY, 1993 to 2007

Product Safety Manager

Responsibilities included overall product safety for residential and commercial water heaters and boilers. Reviewed and wrote warnings and instructions, oversaw product recalls and retrofits, reviewed competitors' products and ensured that A. O. Smith water heaters were safe for their intended purposes. Resolved customer complaints and performed field inspections on products involved in property damage and personal injury for claims and litigation. Resolved claims both directly and by working with a third party claims management partner.

THE STANLEY WORKS, 1982 to 1993

Manager of Product Development

Responsibilities included managing the product engineering department for the Industrial Tools Division. Duties included development of new product concepts through direct customer contact, performing product feasibility and design, project planning, existing product modification and maintenance, competitive analysis, vendor qualification, field failure analysis, and lab testing. Also served as division metallurgist, performing materials selection and specifying metallurgical processes. Represented the company on industry standards committees and drafted three ANSI safety standards for hand tools.

DRESSER INDUSTRIES, INC., 1975 to 1981

Plant Metallurgist and Heat Treating Supervisor

Responsibilities included plant metallurgist and managing the Heat Treating Department for an engineered chain manufacturer. Processes included hardening, carburizing, and induction hardening. Materials included carbon, alloy and stainless steels, cast and malleable irons. Performed materials selection, failure analysis, and specified metallurgical processes.

EDUCATION

Ohio State University, Columbus, Ohio

Bachelor of Science, Metallurgical Engineering, 1975

University of Tennessee, Knoxville, Tennessee

Master of Business Administration, 1981

SPECIALIZED TRAINING

- PDH Engineer.com, Basics of Water Treatment, Live Webinar, November 22, 2021, 2 hours, tested.
- PDH Engineer.com, Programmable Logic Controllers: How They Work and How to Make Them Work for You, Live Webinar, September 28, 2021, 3 hours, tested.
- PDH Engineer.com, Engineering Ethics, Principles, and Case Studies, Live Webinar, July 26, 2021, 2 hours, tested.
- PDH Engineer.com, Plate Heat Exchangers, Live Webinar, May 21, 2021, 3 hours, tested.
- PDH Engineer.com, Design for Stress and Strain, Live Webinar, April 9, 2021, 4 hours, tested.
- PDH Engineer.com, Design for Fatigue Analysis, Live Webinar, March 12, 2021, 4 hours, tested.
- ASPE Online Webinar, “Electric Tankless Heater Design, Application and Pitfalls, November 26, 2020, 1 hour.
- SPE Online Webinar, “The Consequences of Ductile-to-Brittle Transitions in Plastics, December 10, 2020, 1 hour.
- SPE Online Webinar, “Fractography in Plastics Failures,” September 3, 2020, 1 hour.
- SPE Online Webinar, “Understanding Wear of Plastics,” October 29, 2020, 1 hour.
- ASPE Online Webinar, “Introduction to Heat Pump Water Heaters,” September 22, 2020, 1 hour.
- ASHRAE Online Webinar, “Humidity Control: Avoiding Five Common Design Problems,” September 22, 2020, 1 hour.
- PDH Engineer.com, Laws and Rules for Florida Engineers (Renewal Cycle 2019-2021), Live Webinar, September 15, 2020, 1 hour, tested.
- ASHRAE Online Webinar, “COVID-19 Pandemic Technology Considerations,” September 9, 2020, 1 hour.
- ASPE Online Webinar, “Application for Smart Management in Commercial Buildings,” June 24, 2020, 1 hour.
- ASHRAE Online Course, “Guideline 36: Best in Class HVAC Control Sequence,” Live Webinar, May 28, 2020, 3 hours.
- ASHRAE Learning Institute Online Course, “Variable Refrigerant Flow Systems: Design and Applications,” Live Webinar, April 30, 2020, 3 hours.

- ASHRAE Self Study Courses on Psychrometrics (1 hour), Refrigeration System Parameters and Key Performance Indicators (0.5 hour), Refrigerants (2 hours), and Compressors (2.5 hours), April 8, 2020, total of 6 hours, all tested.
- PDH Engineer.com, Hazardous Area & Electrical Equipment, Live Webinar, March 6, 2020, 2 hours tested.
- PDH Engineer.com, Overview of the Electric Power Industry, Live Webinar, January 28, 2020, 3 hours tested.
- PDH Engineer.com, The Greene Turbine, Live Webinar, January 20, 2020, 2 hours tested.
- University of Wisconsin, College of Engineering and Engineering Professional Development, PE Ethics Workshop IV: Truths, Half-truths, Deception, Omissions, and Outright Lies, September 27, 2019, 2 hours, tested.
- Alabama Board of Licensure for Professional Engineers and Land Surveyors, An Ethical Conversation, July 24, 2019, 1 hour, tested.
- Texas Board of Professional Engineers, Professional Engineering Practice Update/ Ethics, Live Webinar, July 11, 2019, 1 hour, tested.
- PDH Engineer.com, Forensics Engineering – An Overview, Live Webinar, April 18, 2019, 7 hours tested.
- PDH Engineer.com, Steel Design Introduction, Live Webinar, February 20, 2019, 7 hours tested.
- PDH Engineer.com, How Things Break: Fatigue, Live Webinar, January 30, 2019, 4 hours tested.
- PDH Engineer.com, Introduction to Fluid Mechanics, Live Webinar, May 23, 2018, 4 hours tested.
- PDH Engineer.com, Engineering Triumphs – Sports Projectiles, Live Webinar, February 28, 2018, 4 hours tested.
- PDH Engineer.com, How Things Break: Thermal Effects, Live Webinar, January 30, 2018, 4 hours tested.
- PDH Engineer.com, Engineering Triumphs – Cement Manufacture, Live Webinar, January 22, 2018, 4 hours tested.
- Unified Investigations & Sciences, In-Service Webinar Series, Essentials of NFPA 1033, June 2016-January 2017, 8 hours tested.
- CPE Solutions, LLC, Lubrication Principles, January 2, 2017, 2 hours tested.

- CPE Solutions, LLC, Fluid Power—Hydraulic Principles, January 2, 2017, 4 hours tested.
- PDHNow.com, Florida Ethics 2017-2019, June 18, 2018, 1 hour tested.
- PDHNow.com, Florida Laws and Rules for Professional Engineers, Biennium Cycle 2017-2019, June 16, 2018, 1 hour tested.
- CPE Solutions, LLC, Accident and Injury Protection Part 2, June 14, 2016, Live Webinar, taught by Derek Finger, PE, 2 hours tested.
- CPE Solutions, LLC, Cathodic Protection Systems for Civil Works Structures, May 30, 2016, 5 hours tested.
- CPE Solutions, LLC, An Introduction to Inspection of Boilers and Unfired Pressure Vessels, May 30, 2016, 3 hours tested.
- OSHA Asbestos Awareness Training, Safety Compliance Management, Inc., March 5, 2016, 2 hours tested.
- Hazwoper Refresher Course in Compliance with 29 CFR 1910.120 Standard, Dallas, Texas, February 13, 2016, 8 hours tested.
- Engineering Ethics 2016, Rossiter & Associates, Grapevine, Texas, February 9, 2016, 2 hours.
- Texas AgriLife Extension Service and Texas Sea Grant, Texas Commission on Environmental Quality Provider No. 0409, Course Code 923, Web-Based Soil and Site Evaluation Basic Introduction, August 27, 2015, 8 hours tested.
- International Association of Arson Investigators, CFITrainer.net, Explosion Dynamics, August 8, 2014, 4 hours tested.
- International Association of Arson Investigators (IAAI), CFITrainer.net, NFPA 921 and 1033 2014 Editions: Important Revisions, May 20, 2014, 3 hours (tested).
- CPE Solutions, LLC, An Introduction to Steam Boilers and Turbines for Power Plants, April 13, 2014, 4 hours tested.
- Unified Investigations and Sciences, Inc., OSHA 29 CFR 1910.1200-Globally Harmonized System of Classification and Labeling of Chemicals, February 3, 2014, 1 hour, tested.
- Genco Associates in cooperation with the University of North Texas, Asbestos 16 Hour O&M Worker, February 28, 2012, 16 hours tested.
- International Association of Arson Investigators, Fire Investigator Scene Safety, November 14, 2011, 3 hours tested.

- American Society of Plumbing Engineers, Radiant Cooling Webinar, May 25, 2011, 1 hour.
- American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., Ground Source Heat Pump Systems, April 21, 2011, 4 hours.
- Rossiter & Associates, Reported Violations of the Texas Engineering Practice Act and Board Rules, March 27, 2011, 1 hour tested.
- American Society of Plumbing Engineers, 55 continuing education self-study short courses since 2003, 55 hours tested.
- American Society of Plumbing Engineers, webinars on Gray Water Systems, Natural Gas and LP Sizing, LEED Point Strategies, all taken in 2010, 3 hours.
- Buehler LTD, Mr. George Vander Voort Summer Lecture Series on Micro-Indentation Hardness Testing, Advances in Metallography, World Trade Center, How to Conduct Failure Examination, August 13, 2009, 4 hours.
- Society for Plastics Engineers, multiple webinars including Introduction to Failure Analysis, Prevention of Plastic Product Failures, Polymer Failure Analysis, Polymer Degradation, Environmental Stress Cracking, Lifetime Prediction of Plastic Parts-Creep Failure, Fourier Transform Infrared Spectroscopy in Failure & Compositional Analysis, Rubber Technology, etc. Since November 2009, 14 hours.
- Hazwoper Course in Compliance with 29 CFR 1910.120 Standard, Dallas, Texas, July 2, 2009, 40 hours tested.
- Advanced Testifying Skills for Experts, SEAK, Inc., Naples, Florida, November 2007, 14 hours.
- Investigations of Electrical & Appliance Related Fires, IAAI/AHAM, Arlington, TX, June 2007, 22.5 hours tested.
- Communication Skills and Ethics, Rossiter & Associates, Dallas, Texas, March 2006, 4 hours.
- In Search of Professional Excellence, Rossiter & Associates, Dallas, Texas, March 2005, 4 hours.
- Failure Modes and Effects Analysis, University of Wisconsin Extension, Madison, Wisconsin, September 2000, 20 hours.
- Hydronic Heating Systems, A. O. Smith Water Products Company, Irving, Texas, August 1998, 24 hours tested.
- Managing Continuous Improvement, A. O. Smith Water Products Company, Irving, Texas, March 1998, 24 hours.

- Training the Engineering Expert, University of Wisconsin Extension, Madison, Wisconsin, October 1995, 24 hours.
- Role of Warnings and Instructions, University of Wisconsin Extension, Madison, Wisconsin, March 1994, 24 hours.
- Commercial Water Heater Sizing School, A. O. Smith Water Products Company, Irving, Texas, January 1994, 24 hours tested.

LICENSES AND REGISTRATIONS

Professional Engineer State Registrations (Licensed to practice as both Mechanical & Metallurgical except as noted):

Alabama (Mechanical)	Nevada (Mechanical)
Arizona	New Mexico
Arkansas	New York
California (Mechanical)	North Dakota
Colorado	Ohio
Florida (Mechanical)	Oklahoma
Georgia	Pennsylvania
Illinois	South Carolina
Kansas	Texas
Louisiana (Mechanical)	Utah
Michigan	Wisconsin
Mississippi	Wyoming
Missouri	

Certified Fire and Explosion Investigator, NAFI 4925-1142

PROFESSIONAL ORGANIZATIONS

- American Society of Heating, Refrigerating and Air Conditioning Engineers
- American Society of Plumbing Engineers
- ASM International (former Executive Committee local chapter)
- Society of Plastics Engineers
- AMPP (Association for Materials Protection and Performance, Formerly NACE)
- FEWA (Forensic Expert Witness Association)

PATENTS

- U.S. Patent 5,797,358 Control System for a Water Heater issued August 25, 1998
 - U.S. Patent RE 37,745 Control System for a Water Heater issued June 18, 2002
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AWARDS

- Unified Investigations & Sciences, Inc., Subsidiary of Sedgwick Corporation, Top Ten Award, Recognition for High Performance in Engineering Investigation, 2017
 - Unified Investigations & Sciences, Inc., Subsidiary of Sedgwick Corporation, Pinnacle Award, Recognition for High Performance in Engineering Investigation, 2016
 - Unified Investigations & Sciences, Inc., Subsidiary of Sedgwick Corporation, Pinnacle Award, Recognition for High Performance in Engineering Investigation, 2015
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