

Gene Crever, PE | Forensic Mechanical Engineer

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Professional Summary:

Mr. Crever is a licensed Mechanical Engineer and has worked for over ten years in the mechanical engineering profession as a consultant and forensic engineer. During his career he has designed many residential and commercial HVAC and plumbing projects as well as conducted numerous mechanical forensic investigations.

Mr. Crever has participated in hundreds of assignments in several states. These projects included HVAC equipment inspections, building envelope inspections, and plumbing system inspections. Mr. Crever has also performed material failure analysis, vehicle hail damage inspections, and vehicle accident reconstruction. Mr. Crever routinely assists in fire investigations when there is a possibility of mechanical equipment involvement.

Mr. Crever has a strong background and experience in commercial HVAC and commercial plumbing design, mining operation and design, as well as vehicle accident reconstruction.

Licenses and Certifications:

Professional Engineer, Arizona, 67863

Professional Engineer, California, 37123

Professional Engineer, Colorado, 54803

Professional Engineer, Idaho, 19284

Professional Engineer, Kansas, 26588

Professional Engineer, Montana, 61018

Professional Engineer, Nebraska, 17324

Professional Engineer, New Mexico, 25131

Professional Engineer, South Dakota, 14733

Professional Engineer, Utah, 11027161-2202

Professional Engineer, Wyoming, 16937

Project Experience (not exhaustive):

Zurich North America, Breckenridge, CO

Whole House Window Inspection

Homeowner claimed windows were scratched throughout large custom home (approx. 7,259 SF) after a professional window cleaning. The windows were inspected and found to have scratch markings which could not have been produced by natural phenomena.

State Farm Insurance, Denver, CO

Refrigerator Water Filter Damage

Homeowner claimed refrigerator water filter failed and caused large-scale water damage to the home. A cracked refrigerator filter was sent to EFI for analysis. An exemplar filter was filled with water and frozen. A frozen water filter within the refrigerated compartment was determined to have been the likely cause of failure.

Project Experience (Continued):

State Farm Insurance, Conifer, CO Boiler Related to Fire

A gas-fired boiler was determined to have been the origin of a fire in a residential home. The boiler was inspected and found to have been installed not in accordance with the manufacturer's installation instructions. The boiler had been installed directly supported by combustible materials without the recommended heat shield and air gap.

Claims Consultants, LLC, Golden, CO Window Hail Damage

Homeowner Reported hail damage to property, most notably to the windows. The homeowner shared photos of the hail which was approximately 3/8-inch to 1/2-inch diameter. Damage to the windows was not consistent with hail impacts. Hail damage was noted around the property which indicated similar sized hail impacts. A hail report was procured which further corroborated the hail size. The damage to the windows was determined to have not been created by hail impacts.

The Hartford, Denver, CO Water Damage in Business Suite

Domestic water leaked from a fitting in a restroom group in a business suite. The pipes making up the connections were found to have been galvanized pipe connected to brass valves. The galvanized pipe had broken off when the brass valve handle was twisted to the off position. It was determined there was no dielectric barrier installed to electrically separate the galvanized pipe from the brass valve. This resulted in a galvanic reaction which corroded and weakened the galvanized pipe causing the water loss.

Allianz Global Corporate and Specialty, Hays, KS Crop Sprayer Frame Failure

A crop sprayer suffered a frame failure whereby the middle of the machine's frame collapsed into a vee configuration while the sprayer was being driven. The sprayer was inspected and it was determined using classical beam calculations the C-channel frame of the sprayer could only just support the 300 gallon tank of liquid fertilizer in addition to the dead load of the rest of the sprayer. It was further determined that driving the sprayer through farm fields likely set up a cyclic loading condition which significantly shortened the service life of the sprayer.

Zurich North America, Fort Collins, CO Water Damage to House Under Construction

Approximately four feet of water leaked and collected in the basement of a house under construction. The leak was inspected and determined to have been due to a polyethylene water entry pipe which had become separated from the brass coupling fitting used to connect to water distribution pipe. The adapter fitting used by the plumber in the polyethylene pipe was determined to have been the incorrect size and type for the application which led to the separation once the system was under pressure.

Project Experience (Continued):

United Services Automobile Association (USAA), Colorado Springs, CO
Haile Damage to a Vehicle

An owner/driver of a vehicle reported significant hail damage to a while driving. The vehicle was inspected and determined not to have been caused by hail impacts. The shape of the impacts and the severity of the damage to the vehicle was consistent with vandalism. A hail report was procured which indicated no hail had been reported around the time of the reported date of loss.

Sedgwick, Fruitland, ID
Large Food Product Syrup Tank Collapse

A large syrup mixing tank collapsed causing a large loss of product and equipment. The tank was inspected and was found to have a long slender central-axis mixer. The mixer spanned vertically from the top of the tank to the bottom. The mixer operated at a particular rotational speed, and the syrup was at a particular viscosity which set up an oscillatory action. This generated a wave motion in the syrup which acted against the support structure of the tank over a long period which led to the ultimate tank failure.

Professional Experience:

EFI Global, Forensic Engineer, 2018 – Present
MEP Engineering, Project Engineer and Project Lead Mechanical Engineer, 2015 – 2018
Jacobs Engineering, Project Engineer, 2014 – 2015
M3 Engineering and Technology, Project Engineer, 2011 – 2014
MER Corp, Design Engineer, 2010 – 2011

Specialized Education:

IPTM At-Scene Traffic Crash/Traffic Homicide Investigation (tested)
IPTM Traffic Crash Reconstruction (tested)
IPTM Bosch CDR Tool Technician (tested)
National Association of Forensic Engineers Conference (tested content)
Colorado Chapter – IAAI, Annual Training Conference, 2018 (tested content)
Boiler Inspections – Engineering Continuing Education (tested)
Open Channel & Box Culvert Fluid Flow – SunCam (tested)
Practical Forensic Engineering – SunCam (tested)
Arc Mapping Basics, IAAI (tested)
Fire Investigator Scene Safety, IAAI (tested)
Thermometry, Heat, and Heat Transfer, IAAI (tested)
Hazwoper 29 CFR 1910.120 (e)(p), OSHA (tested)
Asbestos Awareness Training, OSHA (tested)

Education:

Bachelor of Science, Mechanical Engineering, University of South Alabama, Mobile, AL,
2009

Affiliations:

National Academy of Forensic Engineers



Courses Instructed/ Guest Lecturer:

Determining Plumbing Water Loss Causes - Wyoming Claims Adjuster Conference