

# Martin Thermal Engineering, Inc.



Richard J. Martin, PhD, PE, CFI  
Principal



## About Us

Martin Thermal Engineering, Inc. was founded in 2009 to provide consultation to clients on the full range of thermal engineering concerns. Our expertise includes: combustion science; technology innovation and patents; fire and explosion investigations; safety and environmental consulting; technical publications and undergraduate instruction in thermal sciences.

**Principal:** Dr. Rick Martin is a licensed mechanical engineer in California (since 1987) and is also licensed in several other states. He has managed hundreds of projects and investigations, and has testified at more than twenty trials, arbitrations, and depositions.

**Business Manager:** Dawn Martin (MBA, Management) is responsible for the financial and administrative aspects of the business and provides assistance with technical research.

**Senior Associate:** Martin Thermal Engineering retains a licensed chemical engineer to assist with technical analyses and quality assurance.

**Regulatory Affairs Consultant:** Martin Thermal Engineering retains a licensed chemical engineer to assist with regulatory analyses.

## Case Studies

Dr. Martin has served as consulting and/or testifying expert on approximately 200 cases. Below are several examples of projects and issues he has addressed.

- ❖ Residence Fires
- ❖ Restaurant Fires
- ❖ Rotary Screw Compressor Fires
- ❖ Hair Care Product Fires
- ❖ Spray Booth Fires
- ❖ RV Explosions
- ❖ Incendiary Fires
- ❖ Boiler Failures
- ❖ Freezer Failures
- ❖ Compressed Natural Gas Tank Ruptures
- ❖ Hot Beverage Scalds
- ❖ Bath and Sauna Scalds
- ❖ Drift Boat Fire
- ❖ Kerosene Heater Fire
- ❖ Chemical Warehouse Fire
- ❖ OSB Plant Fire and Explosion
- ❖ Coke Calciner Fire
- ❖ Agricultural Equipment Fire
- ❖ Hydrometallurgical Plant Fire
- ❖ Drying Oven Explosion
- ❖ Coffee Roasting Oven Explosion
- ❖ Brick Kiln Explosion
- ❖ Catalytic Oxidizer Fire
- ❖ Water Damage Causation
- ❖ Heated Massage Bed Injury
- ❖ Trash Incinerator Ash Assessment
- ❖ Baghouse Failure Assessment
- ❖ Fluid Heater Explosion
- ❖ Butane Cookstove Explosions
- ❖ Pipeline Heat Loss Assessment
- ❖ Solar Thermal Safety Assessment
- ❖ Cement Plant Fuel Safety Assessment

# Areas of Expertise

The following disciplines of thermal and mechanical engineering are among those in which Martin Thermal Engineering provides consultation:

## FIRES & EXPLOSIONS

- Origin & Cause Investigation
- Flash Fires, Deflagrations, Overpressure
- Dust & Vapor Explosions
- Fires in Structures, Vehicles and Vessels
- Fire Spread Analysis

## INDUSTRIAL HEATING

- Boilers
- Burners
- Dryers
- Fluid Heaters
- Furnaces
- Kilns
- Ovens
- Thermal Oxidizers

## INDUSTRIAL REFRIGERATION

- Compressors
- Condensers
- Evaporators
- Frost and Humidity Control
- Inventory Loss

## RESIDENTIAL & COMMERCIAL COOKING APPLIANCES

- Broilers
- Deep Fryers
- Exhaust Fans/Flues
- Griddles
- Ranges
- Water Heaters

## THERMAL & CHEMICAL ACCIDENT RECONSTRUCTION

- Scald & burn injuries

- Process upsets
- Process logic, safety devices, interlocks
- Source term computation for fate and transport studies

## REGULATION & CODE COMPLIANCE

- NFPA
- ANSI
- API
- ASHRAE
- ASME
- ASTM
- EPA
- OSHA
- UFC
- UMC
- UPC
- UL

## AIR POLLUTION ABATEMENT

- Third party review of regulatory compliance and process guarantees
  - Fume Incinerators
  - Dust Collectors
  - Flares
  - Adsorption

## HAZARDOUS WASTE

- Third party evaluation of waste characteristics (e.g., reactivity, ignitability) and proposed waste treatment options

## ENERGY CONSERVATION

- Third party evaluation of energy efficiency
- Technology due diligence of innovative thermal systems for investors

*For more information, please contact us:*

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