



**FASTENER
TRAINING
INSTITUTE**

UNDERSTANDING FASTENER STRENGTH AND HARDNESS

Presented at the Pac-West Spring Conference

**MARCH 7, 2024
1:30 P.M. TO 2:45 P.M.
WESTIN ANAHEIM RESORT, ANAHEIM, CA
INSTRUCTOR, CARMEN VERTULLO**

COURSE DETAILS

When it comes to selecting and understanding fastener materials, one of the primary considerations is strength; and strength is directly related to hardness. In this class we will explore the relationship between strength and hardness in fastener materials and how the various fastener specifications, both Inch and Metric, classify fasteners according to both.

WHO ATTENDS?

- Ratings for the various types of strength fasteners
- Testing for strength parameters
- How specifications and standards define the strength of fasteners and what is and is not required in terms of testing
- The most important ASTM, ASME, SAE and ISO fastener standards
- How to properly define fastener strength requirements on drawings for special fasteners
- How manufacturing methods affect the strength of fasteners
- What exactly is hardness and why is it so important to understanding strength
- The various hardness testing methods and scales used in fastener specifications and testing
- How engineers select fastener materials – stronger is not always better
- What are the dimensional features of a fastener that affect its strength
- An introduction to fastener failure analysis
- What gets suppliers in trouble when customers do not understand fastener strength as it relates to applications and specifications

COST TO ATTEND

The session is free for anyone who registers for the conference or table-top event. The table-top event is free for distributors.

WHO SHOULD ATTEND

This is a highly technical presentation but is appropriate for all levels of experience and every position in the fastener industry. Students should bring a copy of IFI Inch book on Fasteners, 9th edition.

**LEARN MORE at
www.fastenertraining.org**

ABOUT THE INSTRUCTOR

Carmen Vertullo has been instructing fastener professionals in sales, purchasing and quality, as well as end-users, manufacturers and engineers for over 30 years. He established Fastener Testing Laboratories, Fastener Test Methods and sits on Fastener Technical Committees at ASTM, ASME, ISO and RCSC. He has trained our nation's defense professionals at Naval Nuclear Reactors, the US Army Helicopter Engine Aviation Engineering Directorate, the Pantex Plant - the primary United States nuclear weapons assembly and disassembly facility, as well as countless OEM's, Fastener Suppliers, Fastener Manufacturers and Secondary Processors.

His favorite fastener topics and particular areas of expertise include Hydrogen Embrittlement, Structural Bolting, Tightening Strategies, Failure Investigation, Fastener Testing, Manufacturing, Thread Inspection, Fastener Standards, Bolted Joint Design, CAD Fastener Drawings, and Compliance Issues. He is a degreed manufacturing engineer, a US Air Force Veteran and one of the very first Certified Fastener Specialists.

