

**Teacher**  
London Penland

**Subject**  
Metric Fastener  
Standards Comparison

**Date**  
4/9/20

## Comparing Structural Fasteners – Part 2: Digging deeper into the standards

### Objective:

- Viewers will review the differences between the DIN and ISO EN structural bolts
- Viewers will review the differences between structural bolts and other hex heads
- Viewers will learn the benefits and properties of hot dip galvanized structural bolts

### Essential Questions:

- What makes structural bolts great for infrastructure projects? Where might they be most applicable?
- Why are hot dip galvanized structural bolts important and how can they impact the application?

### Standards:

- DIN 6914 = EN 14339-4 = ISO 7412
- DIN 6915 = EN 14339-4 = ISO 7414
- DIN 6916 = EN 14399-6 = ISO 7416

### Lesson Plan:

#### Engage (30 sec)

- Welcome back to Eurolink’s Metric Fastener Standards Comparison VLOG series! This is episode 16 and today we are getting heavy with structural bolts, nuts and washers as we review some information from way back in Episode 4, when we first hit this topic, and going a bit more in-depth with some standards and discussion of hot dip galvanized structural fasteners particularly.
- To review remember...
  - The equivalent standards for structural bolts are DIN 6914, EN 14339-4, and ISO 7412.
  - The equivalent standards for structural nuts are DIN 6915, EN 14399-3, and ISO 7414.
  - The equivalent standards for structural washers are DIN 6916, EN 14399-6, and ISO 7416
  - Structural bolts are about 2-4mm larger in the WAF than normal hex bolts, the head height is either the same or slightly larger, and the thread length is actually a bit shorter than the DIN 931 hex bolts.

#### Explain (2 min)

- I’ve equated 14399-4 to DIN 6914 and DIN 6915 because those are the same items dimensionally, but EN 14399-4 is actually for a DIN 6914 and DIN 6915 (therefore bolt and nut) assembly, which means they have been manufactured together to ensure, especially with hot dip galvanized coated structural fasteners, that they fit and function so that the specified pre-load can be achieved.
- I want to mention here that EN 14399-3 is for the same dimensional standard as well, but that it’s preload specifications are according to the HR scale rather than the HV scale, whereas EN 14399-4 has preload specifications according to the HV scale, which (at least in our metric fastener community) is more common and is what Eurolink can readily source.
  - That said, the 14399-3 standard actually allows 8.8 or 10.9 options, whereas the EN 14399-4 standard only allows for the class 10.9 option.
  - Also, both standards call for the same washers (EN 14399-5 or EN 14399-6).
  - They also have the same marking of “H”

**Teacher**  
London Penland

**Subject**  
Metric Fastener  
Standards Comparison

**Date**  
4/9/20

- To ensure proper preload for the assembly, standard EN 14399-4 recommends a suitability test for preloading based on standard EN 14399-2.
- Because of their relatively high preload capacity and their ability to be hot dip galvanized, thereby providing excellent corrosion resistance, structural bolts, nuts and washers make a great option for infrastructure projects in general, especially for structures near coastlines or in relatively humid climates.
  - I'll circle back to this topic in a blog post soon.
- Another good thing about structural bolts is that they come in a relatively deep product range.
  - While the range of diameters might not be as large as some other hex heads, namely hex head cap screws, the variety of lengths that are commercially available is quite impressive.
  - I have a feeling this is why, in the U.S. at least, it seems the big guys in our industry all have their hands in the inch structural bolt game (as there is a large demand for inch structural items), but shy away from the metric structural bolt game (as there is a demand, but maybe not enough to stock all of the various sizes that a master stocking distributor in the states would want to stock before promoting they were carrying those product lines).
  - Never to fear! EuroLink is here! As EuroLink's partners in Europe has an amazing selection of metric structural bolts, nuts and washers, at reasonable pricing, and with our awesome consolidated air freights and sea freights, we can get them in quickly and with significantly reduced shipping costs.

**Extend (30 sec)**

- As a review, the metric structural bolts according to EN 14399-4 and EN 14399-6 (so DIN 6914, 6915, and 6916) make for great metric options for infrastructure projects, especially with the hot dip galvanized coating due to their awesome corrosion resistance, high strength and hardness, and wonderful product depth.
- As always, if you have any comments, questions or concerns or would like to request a quote for these items or any other hard to find metric fasteners, feel free to contact me directly at [london@eurolinkfss.com](mailto:london@eurolinkfss.com), or give us a call at (864) 801-0505.
- Thank you and continue to stay safe out there!