

The Heavy on Heavy Hex Nuts

Have you ever received a hex nut that was different in color? Perhaps what you received was a blue, green or brown nut. There is often confusion in the marketplace, from distributors to end users, as to why hex nuts look different than a standard galvanized nut and even vary in color between manufacturers. Let's explore why the color benefits installers and helps to ensure proper installation.



Why are Heavy Hex Nuts required in structural applications?

Fasteners are designed to be joined with the proper bolt for a reliable fit to last for years under heavy loads and extreme conditions. Galvanized hex bolts for structural applications need to be used with galvanized heavy hex nuts and galvanized washers. Heavy Hex Structural Nuts are a specialized nut manufactured with a thicker wall to incur a greater amount of force and load as compared to standard finished hex nuts. Heavy Hex Nuts are required in structural applications under the ASTM 563/ASTM A56M specification.

Why are Heavy Hex Nuts colored?

According to the ASTM A563/ASTM A563M specification, "Hot-dip galvanized Grade DH nuts shall be provided with an additional wax lubricant that must be clean to the touch." The lubricant is essential as it minimizes galling, or wear caused by adhesion between sliding surfaces. Galling is caused by a combination of friction and adhesion between the surfaces, followed by slipping and tearing of the structure beneath the surface. Galling is a serious issue as it compromises the integrity of the structure and weakens the nut.

How do you know you are using the proper Grade DH Heavy Hex Nuts for your structural hex bolts?

Easy. Most manufacturers have recognized the importance of identifying the presence of the wax coating and include a dye or contrasting color to the lubricant to allow a visible cue.

It is extremely difficult for the end user to be sure the wax coating is present if there is no visible differentiation between a standard galvanized hex nut. Supplementary Requirement S2 under ASTM A563 advises, but does not require, that the lubricant be dyed with a contrasting color, and many manufacturers still do not use coloring, or choose to not use the proper heavy hex nuts, causing confusion in the industry.

The best way to know you have the correct fastener for your structural application is to use a colored nut.

Why do I see different colored wax nuts?

It is very common to see a variety of colors when it comes to heavy hex wax coated nuts. There is no industry standard and no manufacturer requirement on the specific color to be used in these dyes and colors will often vary by manufacturer. Individual manufacturers are also known to use different colors to identify a heavy hex nut. The key takeaway is to verify the presence of a color.

The Heavy Hex Nut I have is brown, is this bad?

Blue, Brown, Green, Yellow - the color isn't specific to anything. Brown is a common color used in the wax coating. The ASTM 563/ASTM A563M standard does not specify that a particular color has to be used in order to identify the presence of wax coating. As long as a color is present, you can be assured you have the right nut for your structural application.