



# SYSTEM FOCUS



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## Can an A194 Grade 2H nut be substituted for an A563 Grade DH nut? And vice versa, can an A563 Grade DH nut be used in place of an A194 Grade 2H nut?

Both ASTM A194 Grade 2H nuts and ASTM A563 Grade DH nuts are considered high-strength nuts, and they undergo a specific heat treating process to achieve their respective strength characteristics. However, it is important to note that these nuts are not universally interchangeable.



When it comes to substituting nuts, an A194 Grade 2H nut can always be used in place of an A563 Grade DH nut. In fact, the ASTM A563 nut specification explicitly permits the substitution of an A194 Grade 2H nut.

In some situations, due to factors such as availability and cost considerations, ASTM A194 Grade 2H nuts may be preferred over ASTM A563 Grade DH nuts. There are instances where A563 Grade DH nuts may not be available in certain diameters or finishes, making A194 Grade 2H nuts a more practical choice. Similarly, the reverse is also true for A194 Grade 2H nuts, as they might be unavailable or not cost-effective in specific diameters and finishes.

However, it is crucial to understand that this doesn't mean we should always replace A194 Grade 2H nuts with A563 Grade DH nuts.

The answer to whether an ASTM A563 Grade DH nut can be used as a substitute for an ASTM A194 Grade 2H nut is generally no. Although A563 Grade DH nuts can be used in most circumstances as replacements for A194 Grade 2H nuts, there are exceptions. The reason lies in the additional heat treating and testing processes that A194 Grade 2H nuts undergo, which are not applied to A563 Grade DH nuts. This additional treatment and testing give A194 Grade 2H nuts the capability to withstand high-temperature applications, making them suitable for certain scenarios.

For example, in applications that require ASTM A193 Grade B7 high-temperature bolts, it is essential to use A194 Grade 2H nuts as specified. Although both nut grades possess similar strength characteristics, A563 Grade DH nuts are not an acceptable substitution for this specific bolt specification due to the lack of the necessary heat treating and testing processes.

While A194 Grade 2H nuts can generally replace A563 Grade DH nuts, the reverse substitution is not always acceptable, especially in high-temperature applications where the specific properties of A194 Grade 2H nuts are required to meet certain standards.