

Nut & Bolt Grade Compatibility

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The nut has to be as strong as the bolt — or the threads strip before the bolt ever does its job. Here’s which nut goes with which grade.

A bolt is only as strong as the nut on it. Pair a high-grade bolt with a soft nut and the **nut threads strip out** long before the bolt reaches its rated strength — a quiet, dangerous failure. The fix is simple: **match the nut to the bolt grade** (or go stronger). Here are the standard pairings.

The one rule that matters

Use a nut that is **at least as strong as the bolt**. Stronger is fine; weaker is not. When in doubt, step up — an over-strong nut never hurt a joint.

✓ Same grade nut

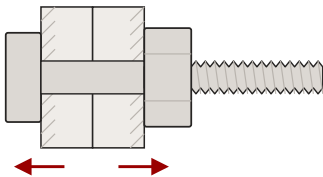
The standard pairing. Always right.

✓ Stronger nut

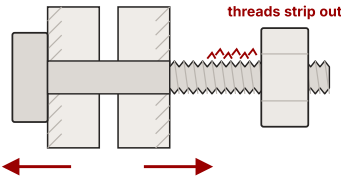
Fine every time — it can’t hurt the joint.

✗ Weaker nut

Never. The nut strips before the bolt does its job.



✓ **GRADE 8 BOLT + GRADE 8 NUT**
the bolt carries its full load



✗ **GRADE 8 BOLT + SOFT NUT**
the nut lets go first — the joint opens

Why it matters: a soft nut fails quietly. Nothing snaps — the nut threads just give way under load.

The common pairs at a glance

Heavy hex structural nuts carry their grade letters on the face. Full list, including stainless, in the table below.

BOLT GRADE	USE THIS NUT	NOTES
SAE Grade 2	SAE Grade 2 hex nut, or ASTM A563 Grade A	General-purpose, low-strength work.
SAE Grade 5	SAE Grade 5 hex nut, or ASTM A563 Grade A	The common shop pairing for Grade 5 bolts.
SAE Grade 8	SAE Grade 8 hex nut, or ASTM A563 Grade DH	Don't drop below Grade 8 here — the nut must keep up.
ASTM A307	ASTM A563 Grade A hex nut	Low-strength structural / anchor bolts.
ASTM A325	ASTM A563 DH or A194 Grade 2H heavy hex nut	Structural steel connections; nuts marked "DH" or "2H."
ASTM A490	ASTM A563 DH or A194 Grade 2H heavy hex nut	High-strength structural; same heavy nuts as A325.
18-8 / 304 stainless	18-8 (304) stainless nut	Match the alloy — corrosion resistance is the point.
316 stainless	316 stainless nut	For marine / chemical exposure; match 316 to 316.

Standard pairings per SAE J995 / ASTM A563 / A194. "At least as strong" is the governing rule — a stronger nut is always acceptable.

A couple of things worth knowing

Stainless can gall. Stainless nuts and bolts run together can seize from friction (galling), especially if driven fast and dry. Slow it down and use an anti-seize on the threads — ask us which.

Not sure of the bolt grade? Read the head markings on the bolt grades & strength chart, then come back here for the matching nut. Or bring the bolt in and we'll match the whole set — nut, washer, and grade.

Reference values drawn from the governing standards. For critical applications, confirm against the standard and the manufacturer's published data. Technical information disclaimer →



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