

From AISC's publication, [\*A Guide to Engineering and Quality Criteria: Common Questions Answered\*](#):

**Question 6.2.5:** Is it acceptable to substitute SAE J429 grades 5 and 8 bolts for ASTM A325 and A490 bolts, respectively?

**Answer:** No. The strength properties of SAE J429 grade 5 bolts and ASTM A325 bolts are identical; likewise, SAE J429 grade 8 bolts are the strength equivalent of ASTM A490 bolts. These material specifications differ, however, in that ASTM A325 and A490 specify thread length and head size, whereas SAE J429 does not. Additionally, quality assurance and inspection requirements for ASTM A325 and A490 bolts are more stringent.

Since AISC and RCSC specifications call for pretensioned installation for your application (which involves fatigue), I would question whether the SAE fasteners that were installed were properly installed. Also, I'd question if the head size, threading and quality assurance were adequate for the application. Usually, the request to substitute an SAE fastener for A325 or A490 comes because SAE's are cheaper. Perhaps that gives you the answer right there.

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