T S I c a c a b c d:

OSHA safety requirements state that tie off points for fall protection be designed and evaluated for a 5000 lb. load. What is the correct load combination and associated steel member stress condition for acceptance for this required load?

T c (c a-) OSHA CFR 1926.502 (d) (15), c a a c a d a ac a a a b ....ca ab a a 5,000 b. a ac d. T d c c b d ad a ad c d. W a a ca ab a a 5,000 b ? T F d a R (. 59, N . 152, . 40707 da d A 9, 1994) d c a a d . T a 5,000 b. a c a c (. . b a a a d ad). C a , c b d ad a (ac d ad) c d a d c d , - a d ac a a c .

F a c a d , a a d a ac L a d a d R a c Fac D S c ca a a d 5,000 b. W c a d c b a a a a a , c d (a a ca c a d a ac d a d c b a). A c a d b a a a a d . A a ab a ac a a a .

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The structural steel design manuals establish a minimum length of thread on structural bolts, referencing ANSI B18.2.1. They also give a formula of 2D+¼" for bolts less than 6" in length, and 2D+½" for bolts longer than 6" long. What are the consequences if the bolts are fabricated with thread lengths less than this amount, but still capable of making up a proper connection? Is this grounds for rejecting the bolts? Why is this length the same regardless of what type of bolted connection (N, X, SC) is used? It would seem that the thread length values should differ depending on the type. Finally, the Specification for Structural Joints Using ASTM A325 or A490 Bolts states "The length of the bolts shall be such that the ends of the bolt will be flush with or outside the face of the nut when properly installed." With this added criteria, it would seem that the thread lengths could be shorter than those specified in the Table, because a single nut and washer is never greater than 2D in length.

V a d c d b b a ac d c- ad a c a - a ad ca b c a a b a ab d ad .T ad a a a acc a . T a a a a a a - , a , ad b a c - ac a d c b d a a d. P d a x a ad a d ' a , a d a a b d c c (N, X SC) d. T ad a ca d ANSI B18.2 d b ca c ca b d a d a a c c a b ad .

I a a d ¾ d a HS b (b a ac) a d ad *plus runout* a c a d 1½ . A a ac b d ad a d d a c a d ac b d. O b , d a c a 1¼ , d b 1⁵⁄₁₆ a d a b 1⅜ , a - x ad- c . N a a a a b ANSI c d d ad , a d a a d d a a add a a d b ad a d c . T a b ad - a a b .

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A typical lifting beam or strongback in the materials handling, crane and rigging industry take the form of either a horizontal pipe or wide flange beam, with padeyes top and bottom at both ends. The lifting wire rope bridle with 2 legs at about a 45 degree angel attaches to the top padeyes and the supported weight attaches to the bottom padeyes. (see sketch)

The wire rope bridle induces both compression and bending moment in the lifting beam. Again there is no lateral support.

What analysis would be used to solve for the safe lifting capacity of this form of lifting beam?

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