

### **Proof loads and choosing the correct nylon insert or conelock**

If a customer asked you for high tensile bolts with nuts and you asked whether they would like mild steel or high tensile nuts the chances are your customer will think you were stupid and he would be right. However, if the original request was for high tensile bolts and nylon insert nuts, the probability is that questions would not be asked and mild steel nylon insert nuts would be supplied.

Current engineering design principles stipulate that the proof load of a nut should equal or exceed the bolt's minimum tensile strength. Simply put, if there is going to be a failure during assembly caused by over tightening then it is preferable for the bolts to snap than a thread to strip. The theory here is that even the biggest maintenance gorilla is going to notice a bolt in two pieces whilst a stripped thread could go un-noticed.

Bolt type	M24 8.8	M24 10.9	1" Gr 8 UNC	
Min Breaking load KN	293	353	90900	Min Breaking load lbf
Proof Load Class 6 nut KN	254	254	54500	Proof Load Gr 2 Nut lbf
Proof Load Class 8 nut KN	324	324	72700	Proof Load Gr 5 Nut lbf
Proof Load Class 10 nut KN	374	374	90900	Proof Load Gr 8 Nut lbf
Proof Load Nylox Conelock	374	374	90900	Proof Load Nylox Conelock

As can be seen from the table some combinations of nylon insert nuts and bolts should never be considered but how many grade 2 nylon inserts or class 6 nylon inserts are purchased without any consideration to their final application. It is a fair bet that virtually every 1" UNC grade 2 nyloc sold is mated with a grade 8 bolt. To confuse matters even more, not all boxes of nylon insert nuts are clearly marked with their class or grade. Furthermore not all nylon insert nuts are clearly stamped with their property class. Many a class 6 metric nylon insert has a figure 8 stamped on it.

Nylox has the widest range of nylon insert nuts and can supply the required class or grade in suitably marked boxes. Nylox also stocks the largest range of conelocks in Australia, all are either class 10 for metric or grade 8 for imperial. They can be sold in conjunction with 8.8, 10.9 and grade 8 bolts in the knowledge that the proof load of the nut is appropriate for the bolt.

For more information please contact as on 02 9724 1023 or [marketing@holdite.com.au](mailto:marketing@holdite.com.au)