Flexible Interconnect Design Guide

Introduction:
For applications requiring flexible interconnect wire NEWTC offers a variety of options

Stranding

Flexible interconnect conductors are manufactured by combining smaller wire gauges into larger conductors, this serves to reduce the overall conductors geometric resistance to bending, and therefore it's stiffness. Below is a chart comparing the stiffness percentage of several different 28 AWG strandings. (7/36 is considered to be 100% for this exercise)

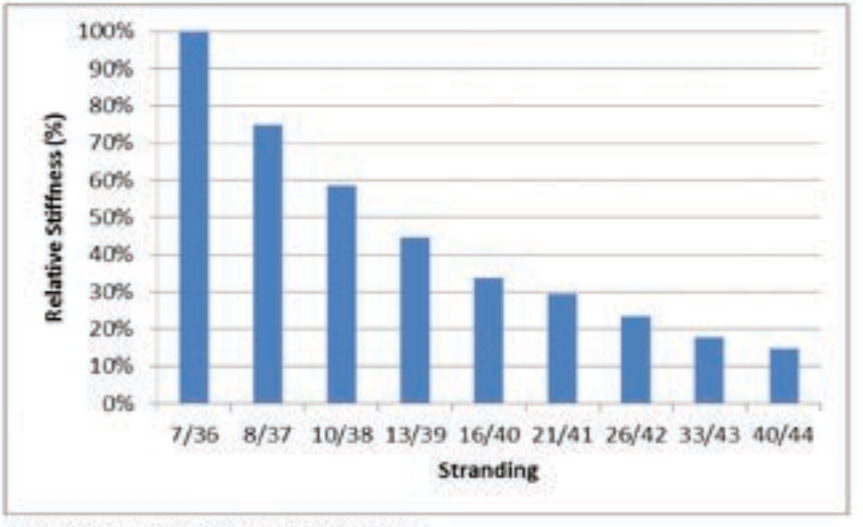

Fig. 1 Relative Stiffness of 28 AWG

In addition to reducing stiffness, smaller gauge sizes also develop less stress when subjected to bending. As a result conductors with finer stranding will survive a larger number of bending cycles without suffering fatigue in comparison to a conductor manufactured with a more coarse single end wire.

Construction

Bunching

In bunching operations a large number of wires are assembled by twisting them together through a rotating arm. Bunched conductors have higher packing density then cabled conductors, at the expense of reduced flexibility.

Cabling

Cabled Conductors are wrapped around a core conductor. Cabled conductors tend to maintain a circular shape better than a bunched conductor, in addition to having less strand to strand interaction when the conductors is bent which results in improved flexibility.