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Ground breaking development sees thread inserts lock in on plastics

The latest news from Cross Manufacturing reports on an unexpected development in the application of locking wire thread inserts that is truly ground breaking. A pioneering and lengthy programme of vibration testing on Spirallock® thread inserts manufactured by Cross has demonstrated a locking performance that is equally good in steel, aluminium – and plastic.

These extraordinary results offer the possibility of using Cross's Spirallock® inserts in a multitude of new industries where plastics are in common use. The ability of the insert to grip with immunity to the effects of vibration and allow dismantling and reassembly with no deterioration in performance should prove attractive in many applications. For example, one of the plastics tested, Sustarin C, is widely used for precision machined components in the food, pharmaceutical and hygienic industries, whilst GRP (glass reinforced plastic), which was also tested, is the staple diet of the boat building industry. In addition, plastics are increasingly used for motor car panels, where the capability for swift assembly and replacement is a positive advantage.

Spirallock® wire thread inserts manufactured by Cross rely on a unique thread profile which transmits the tightening loading down the full length of the bolt to achieve their proven locking performance and resistance to vibration. This is an innovative departure from the distorted thread design of conventional prevailing torque alternatives. The Spirallock® profile not only produces a free running performance when inserting the bolt but is also unique in enabling multiple re-use with no deterioration in the locking performance.

Comprehensive testing programmes in metals have confirmed an unrivalled resistance to vibration induced loosening, however the equally good performance in plastics was not expected and has surprised the engineers at Cross. In addition to Sustarin C and GRP, the inserts have been tested in Nylon 6 and even PET, the low grade plastic typically used for bottles and packaging. In all cases an M6 x 3D insert was used with an ordinary bolt and the results were virtually identical in all these materials. Cross's Spirallock® insert test engineer Chris Whittock enthuses:

"We didn't expect this and further testing is now taking place, but designers and engineers in the manufacturing industries should definitely watch this space."

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