

THOR HELICAL “PRECISE PITCH”



Ties manufactured under Patent No WO0213990A1, (exclusive to Thor Helical products), and designed by the originators of helical-fin fixing technology.

These ties are engineered using precise pitch twisting technology, which delivers a device having a pitch consistency tolerance of within 0.5%, when measured along any probate pitch of the wire. The accurately twisted device forms a precise helical seating groove in the host building materials into which it is hammered to ease driving and to provide a consistent full interlock performance. The “pitch” is formed as part of the profile roll-forming process where the wire is passed through a specially designed die which imparts a rotational force creating the precise pitch.

The original Ollises profiles maintained a constant core size and increased the size of the fins for larger outside diameters, in comparison Thor wires maintain the core/helical fin dimensional ratio, as the diameter increases the core is proportionally increased, providing a greatly improved buckling resistance in compression and an obvious increase in tensile capacity.

“Precise Pitch” Twisting technology ensures accurate tracking whilst a tie is being driven across a cavity reducing the tendency for misalignment with far leaf pilot holes. Compression forces are more centrally transmitted through the core along the whole length of the tie further improving buckling resistance.

Cross Section of Thor 9mm Tie and Alternate 8mm Tie



Thor 9mm Tie 48% More Stainless Steel



Alternative Brands 8mm Less Core Strength

Original and Current Alternatives.

Ties manufactured under the originators early patents and designs. These wires have a published pitch variation tolerance of $\pm 2\text{mm}$ on rotation. The leading section forms a helical seating groove, which, in softer materials, may be widened by the remainder of the penetrating helix and which, in very hard materials may stress and distort the helical fins in an effort to follow the path cut by the leading end. Driving maybe more difficult, ties may bend and/or the helical interlocking seating groove may be highly distorted and damaged. Having a uniform central core the O.D. was varied by extending the width of the “fin”. The helical pitch is introduced through a clamping and twisting process where one end of the wire is clamped in a fixed position and the other end clamped and twisted, hence the variations in pitch as the “twisting forces” work their way along the length of the wire.

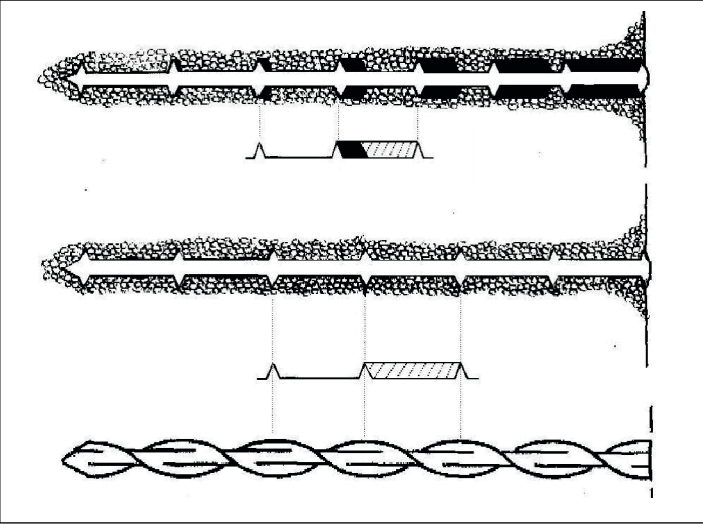




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The Ollis' earlier patented profiles, (known as Helifix Ltd, Brutt and Target Fixings U.K.), are still being formed from long lengths of profiled wire, (7-10metres), which are twisted by spinning the wire between two centres such as to provide a defined number of revolutions, (pitches), over the length. The resulting length of helical wire has a pitch that is invariably progressively tighter at one end than at its centre.

The upper portion of the adjacent illustration represents an exaggerated behavioural model of an inaccurately twisted helical tie that highlights the deficiencies of pitch variance whereby the angle of the leading end undercut is widened by the trailing threads, to the detriment of the interfacing connection. The lower portion represents the correct interface connection as provided by the “precise pitch” twisting die technology of Thor Helical ties and wires. (Patent No. EP 1307303B1)



Features	Benefits
Patented Precise Pitch Technology (EP 1307303B1)	Stronger, Reliable Helical Consistency Easier, Faster Installation Accurate Tracking Across Wide Cavities
Balance Robust Profile	Greater Torsional Strength Increased Compression Resistance (Reduces Buckling Tendencies)
Manufacturing	Innovative Design - Precise Engineering
Full In House Control	Continuous Improvements over 30 years

