

CLAIMS

- 1 1. A fastener comprising:
2 a shaft having a cross-sectional profile having an entrance point at a first end and
3 a head at a second end,
4 wherein the shaft has inscribed thereon a first thread profile in a first zone and a
5 second zone,
6 wherein the first zone begins at the entrance point and extends for approximately a
7 first predefined number of thread pitches along the shaft,
8 wherein a second zone extends for approximately a second number of predefined
9 thread pitches, and
10 a third zone having a second thread profile extending from a transition from the
11 second zone along a substantial portion of the remainder of the shaft towards a bottom
12 of the head.
- 1 2. The fastener of claim 1, wherein the first thread profile has an approximately
2 60° angle.
- 1 3. The fastener of claim 1, wherein the first thread profile as an approximately
2 radius thread profile.
- 1 4. The fastener of claim 1, wherein the first thread profile as an approximately
2 parabolic thread profile.
- 1 5. The fastener of claim 1, wherein the cross-sectional profile is substantially
2 circular.
- 1 6. The fastener of claim 1, wherein the cross-sectional profile has three or more
2 lobes.
- 1 7. The fastener of claim 1, wherein a cross-sectional profile of the shaft
2 transitions from a substantially circular cross section to a substantially non-circular
3 cross section.

- 1 8. The fastener of claim 1, wherein a cross-sectional profile of the shaft
2 transitions from a substantially non-circular cross section to a substantially circular
3 cross section.
- 1 9. The fastener of claim 1, wherein the first predefined number of thread pitches
2 is three.
- 1 10. The fastener of claim 1 wherein the second predefined number of thread
2 pitches is six.
- 1 11. The fastener of claim 1 wherein the first thread profile is a thread forming
2 thread profile.
- 1 12. The fastener of claim 1 wherein the second thread profile is a thread locking
2 thread profile.
- 1 13. The fastener of claim 1, wherein the first thread profile is sized to create an
2 optimized internal thread for engagement with the second thread profile.