Fastening Solutions
for Aerospace

CONTI / REMINC Product Portfolio for Aerospace
Product Details
Test results

CONTI / REMINC TEAM from AIX 2025

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Fastening Solutions
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CONTI / REMINC Product Portfolio for Aerospace

Steel / Aluminum

Unthreaded

TAPTITE PRO®

Thread forming in metals w/
Torque-Tension characteristics
that match ISO metric screws

Thin
Sheet
Metal

FASTITE 2000®

High resistance to stripping
during installation

Threaded

POWERLOK® II™

Mechanical Locking

Plastics

REMFORM® II™

Low Radial Stress
High Clamp load

Magnesium

TAPTITE 2000®
MAGTITE 2000®
REMFORM®II F™

Non-ductile soft metal
thread forming fastener

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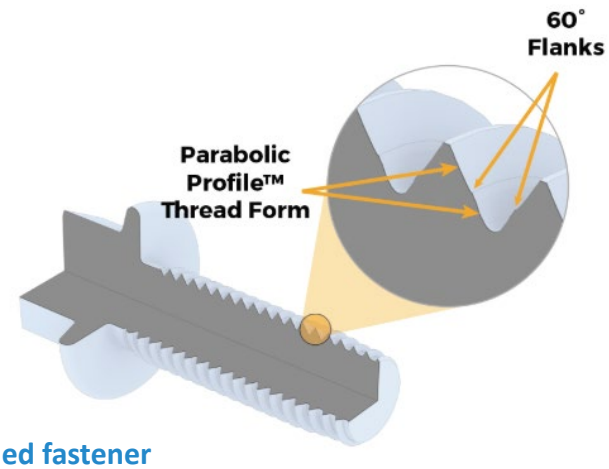
Product Details – TAPTITE PRO® fasteners



TAPTITE PRO®

TRILOBULAR® Parabolic Profile® threaded fastener

Parabolic Profile™ thread profile on TAPTITE PRO® fasteners maximize material engagement and clamp load without the use of metal inserts. This means robust, reliable joints while significantly reducing overall weight and number of components in a joint.

Reduce Weight
Reduce Complexity
Increase Recyclability

Eliminates cost additive elements:
nuts, threaded inserts, etc.

Eliminates cost additive processes:
tapping, cleaning, cross-threading and its repair

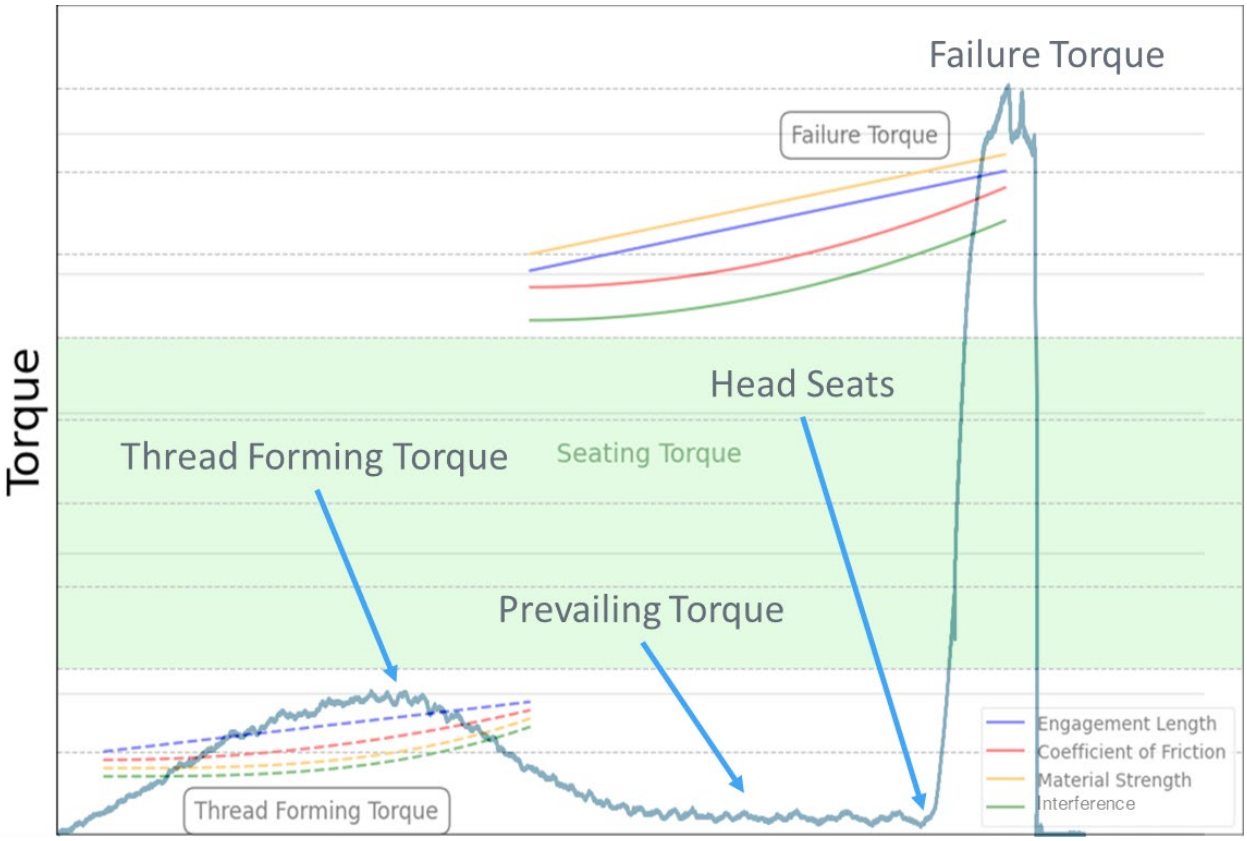
Reduces Operator Fatigue:
Low thread forming end load

Large assembly torque range:
Low thread forming torque

Resistance to vibrational loosening:
Excellent clamp load retention in Aluminum

Designed to **prevent thread stripping**

Test Results – TAPTITE PRO® fasteners



- **Typical Torque Curve for thread forming fastener in a thru-hole application.**
  - Initial increase = **thread forming torque**
  - **Torque drop-off:** thread forming zone exits the material –**prevailing torque** observed from material relaxation around TRILOBULAR® body
  - **Sharp increase in Torque** as **Head seats** and tightening begins.
    - Once head of the fastener seats, k-factor is like a machine screw
  - Process continues until failure (for testing) OR **set assembly torque** from customer to attain **required clamp load**
- **Example:** TAPTITE PRO® fastener through a weld nut or plate

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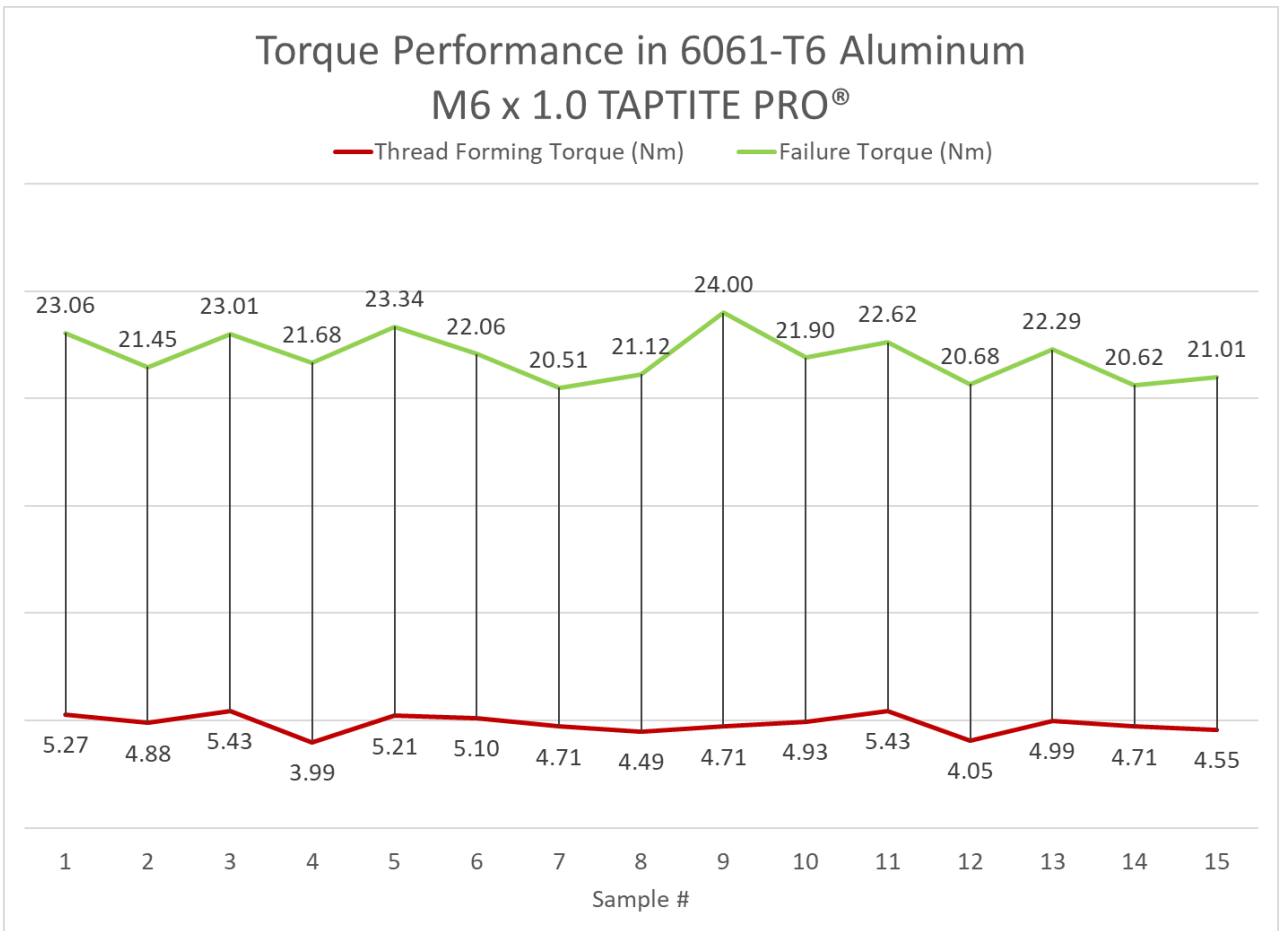
Test Results – TAPTITE PRO® fasteners

TAPTITE PRO® fasteners are ideal for eliminating fastener joint processes to create internal threads. As the TAPTITE PRO® fastener is driven into the material, the point threads called "Sharp crested tapered lead threads" deform the material to create cold-formed grain-preserving threads. This forming process translates to Thread Forming Torque as shown below.

For an assembly process, a failure torque vs. thread forming torque ratio of greater than 3 is required and easily achieved with TAPTITE PRO® fasteners. This gap in thread forming and failure torques provides sufficient torque window to set an assembly torque to achieve the required clamp load for the joint.



Fastener: M6 TAPTITE PRO® fastener
Installed into:
t = 12.5 mm
Material = 6061-T6 Aluminum
Hole diameter = 5.53 mm hole
Thread Forming Torque = **4.83 Nm (Average)**
Failure Torque = **21.96 Nm (Average)**
Recommended Seating Torque = **15 Nm**

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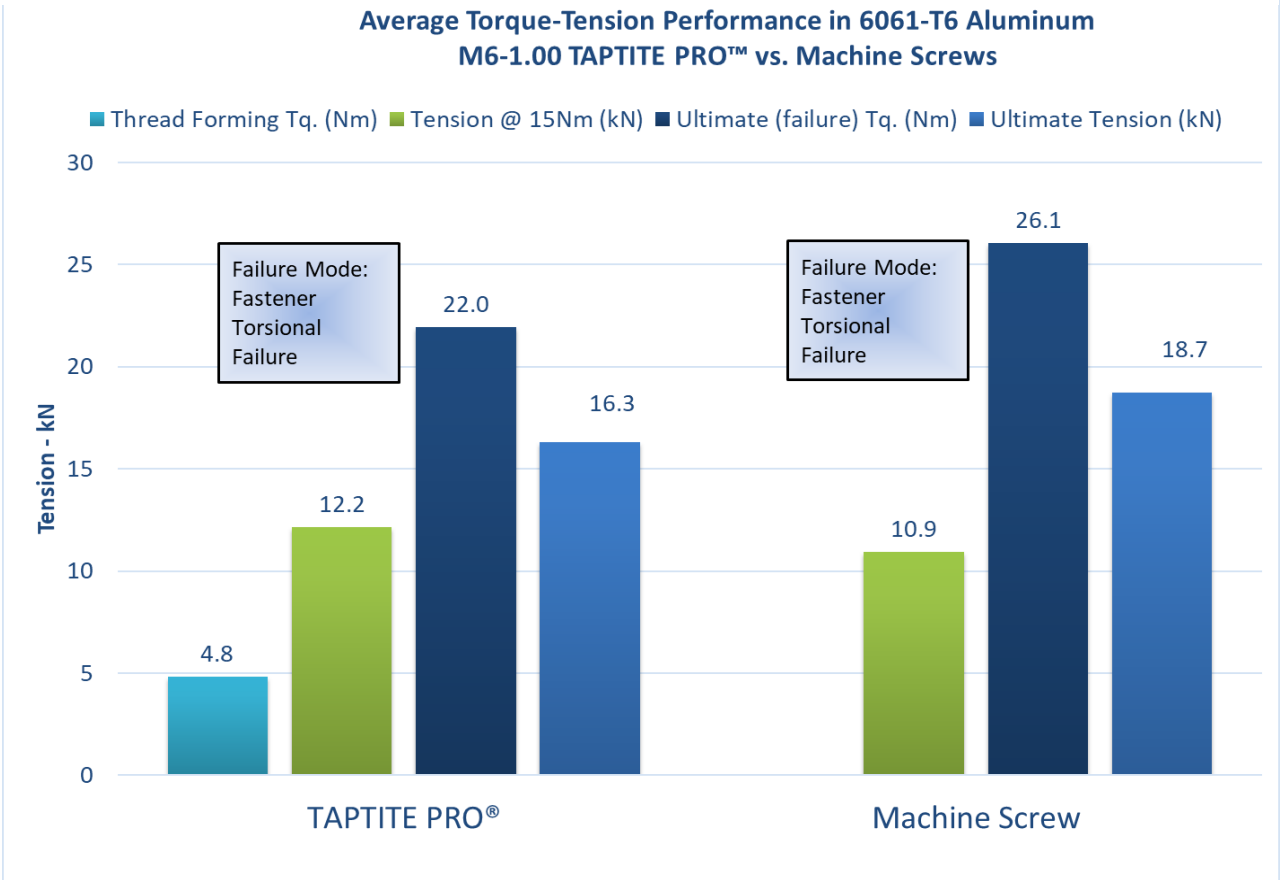
Test Results – TAPTITE PRO® fasteners

Once assembly torque is determined from the testing on the previous page, clamp load / tension in the joint can be measured. TAPTITE PRO® fasteners match the Torque-Tension characteristics of ISO metric machine screw.

When M6 machine screws are installed (in internally threaded Aluminum) and TAPTITE PRO® fasteners are installed (in unthreaded Aluminum) at the same assembly torque, the measured clamp load is within 10% and, the failure mode at ultimate tension is the same – torsional failure of the fastener



Fastener: M6 TAPTITE PRO® fastener vs. M6 Machine Screw
Installed into:

t = 12.5 mm
Material = 6061-T6 Aluminum

Tension / Clamp Load @ 15 Nm:

TAPTITE PRO® = **12.2 Nm (Average)**
Machine Screw = **10.9 Nm (Average)**

Ultimate Tension:

TAPTITE PRO® = **16.3 Nm (Average)**
Machine Screw = **18.7 Nm (Average)**

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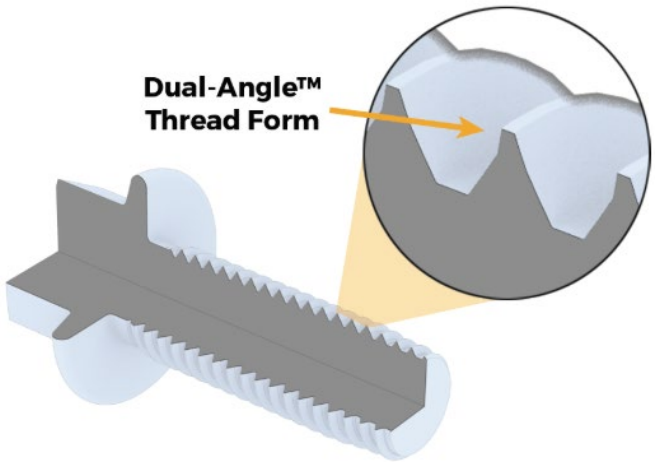
Product Details



POWERLOK® II™

Dual-Angle™ Thread-locking profile

POWERLOK® II™ screws are an all-metal locking fastener that resist vibrational loosening from its Dual-Angle™ thread design. POWERLOK® II™ screws provide locking without using patches, adhesives or other features and the locking action runs the entire length of the screw. POWERLOK® II™ screws also provide excellent grounding as the metal locking feature ensures metal-to-metal contact. POWERLOK® II™ screws do not have to be seated to lock, as the locking thread feature extends the entire length of the fastener. They resist vibration at any point along their body length. POWERLOK® II™ screws save time and money by allowing the use of standard nuts or Class 2B (6H) tapped holes.

Reduce Weight
Reduce Complexity
Increase Recyclability

Eliminates cost additive elements:
Lock nuts, lock washers, adhesives and patches

Resistance to vibrational loosening:
Excellent clamp load retention in higher strength internal threads

Mechanical Locking:
Resilient against temperature changes

Excellent Grounding
Metal-to-metal contact in the threads

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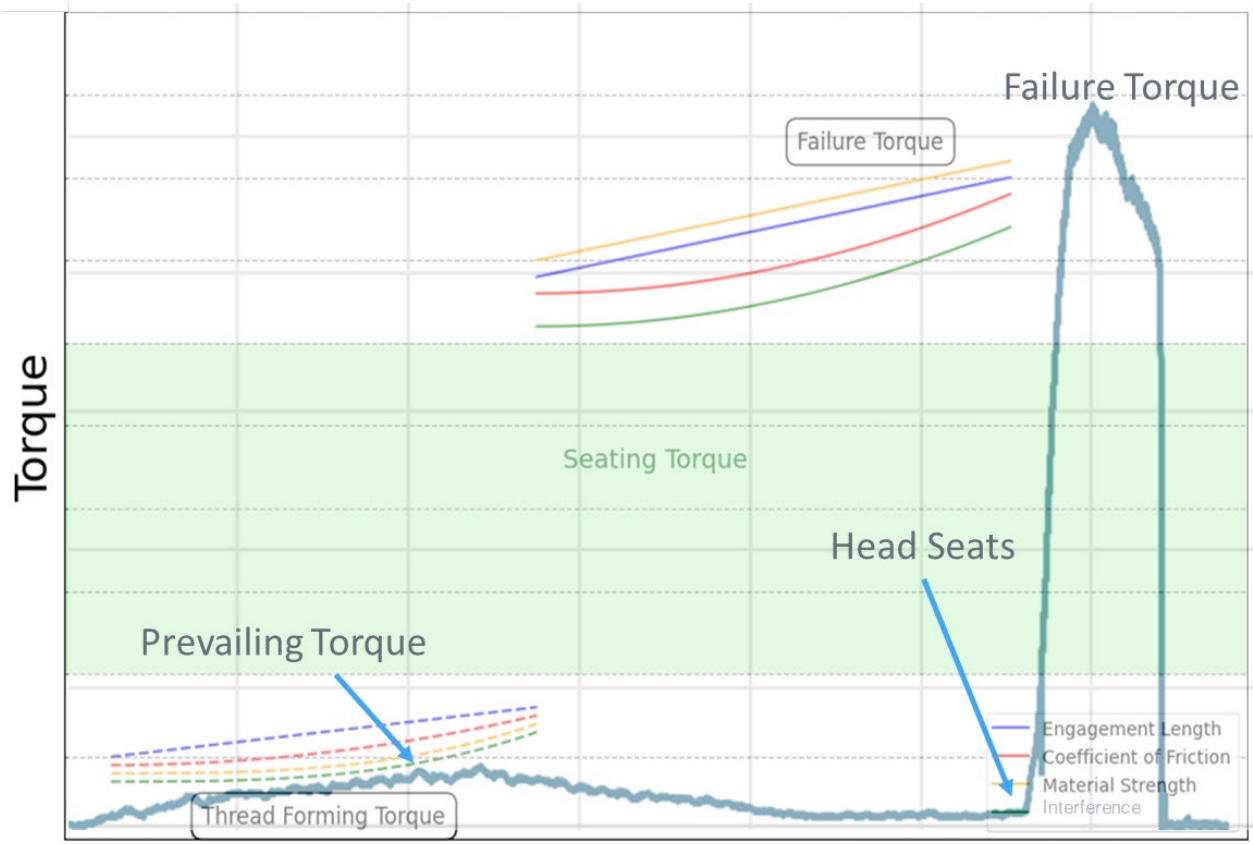
Test Results – POWERLOK®II™ fasteners



- **Typical Torque Curve for POWERLOK® fasteners**
  - Initial increase = **Fastener interference with root of nut threads**
  - **Reduction in Torque** as body threads move through interference nut root.
  - **Sharp increase in Torque** as **Head seats** and tightening begins.
  - Process continues until failure (for testing) OR **set assembly torque** from customer to attain **required clamp load**
- **Example:** POWERLOK® II™ fastener installed in internal threads

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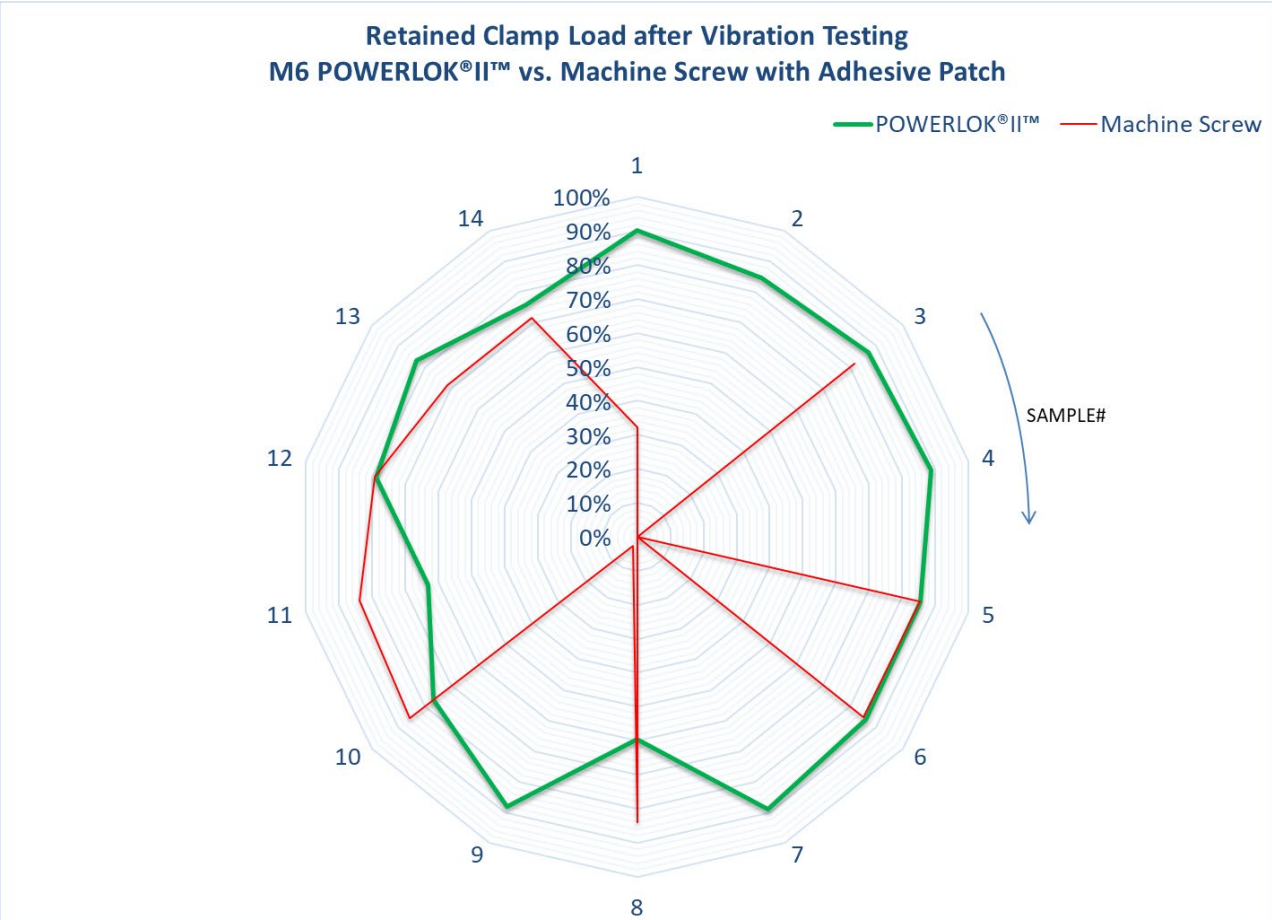
Test Results – POWERLOK®II™ fasteners

POWERLOK®II™ fasteners mechanically lock-into the internal threads through the Dual-Angle™ thread design. The thread flank locks into the root (major diameter) of the internal threads – considered to be the most consistent dimension on internal threads.

A vibration test for a fastened joint is defined as an application of transverse vibration with a known amplitude, frequency and number of cycles. This test is completed as a comparison only and is designed to show the difference in performance in varying methods for creating a joint that is resistant to vibration loosening.



Fastener: M6 POWERLOK® II™ fastener vs. M6 Machine Screw with adhesive patch
Installed into: M6 x 1.0 threaded steel nuts

Performance after 1,700 cycles at 32 Hz and 0.6 mm amplitude

Average retained clamp load

POWERLOK®II™ = **81%**
Machine Screw = **55%**

Min. Retained Clamp load

POWERLOK®II™ = **60%**
Machine Screw = **0%**

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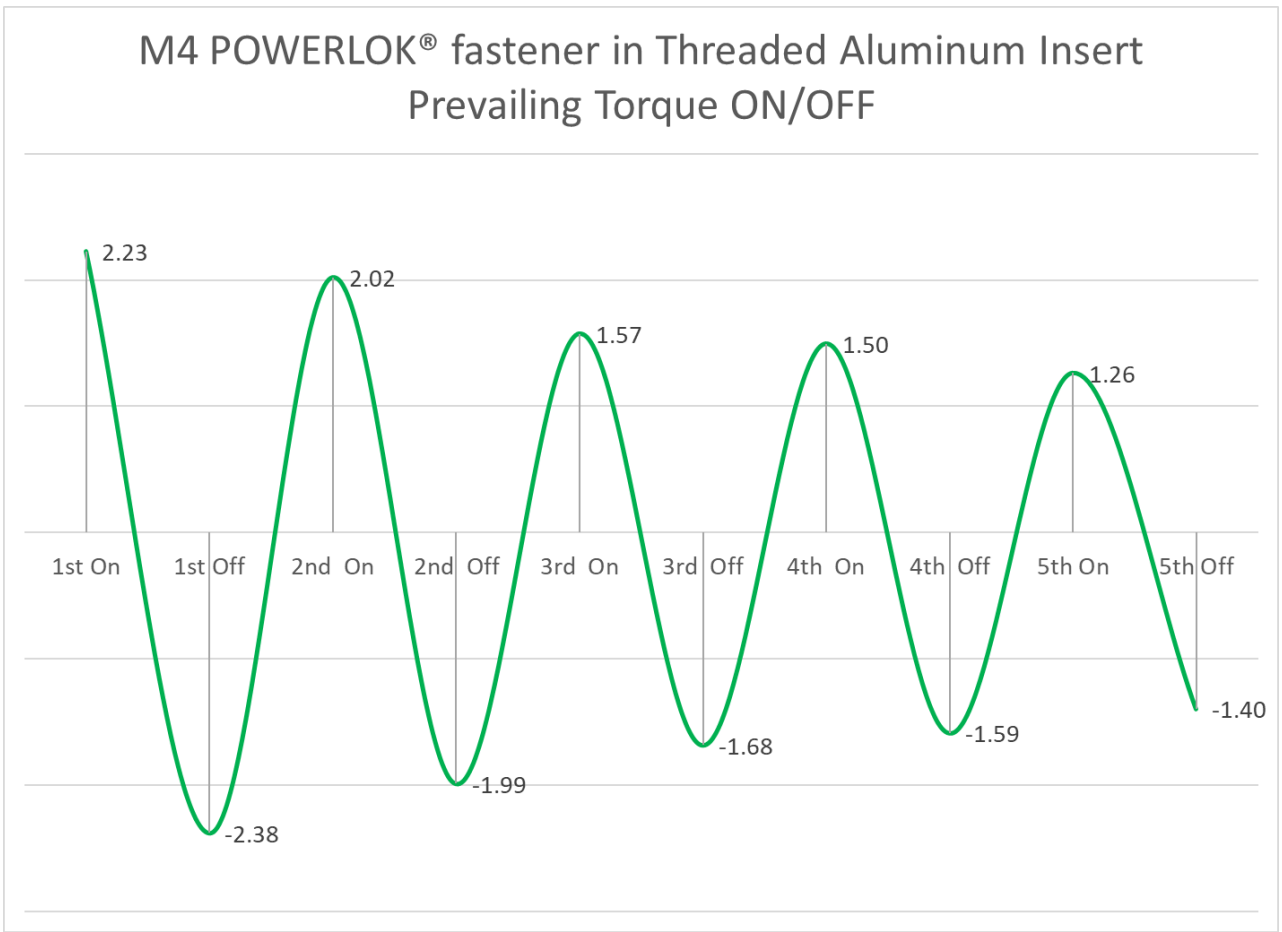
Test Results – POWERLOK®II™ fasteners

POWERLOK®II™ fasteners mechanically lock-into the internal threads through the Dual-Angle™ thread design. The thread flank locks into the root (major diameter) of the internal threads – considered to be the most consistent dimension on internal threads.

Prevailing Torque is an indicator of locking performance in the application. Torque is measured during installation of the part as prevailing ON torque (positive number). Once a pre-defined length of fastener is installed, the drive gun is reversed to remove the fastener, the running torque during removal is measured as prevailing OFF torque (negative number).



Fastener: M4 POWERLOK® fastener
Installed into: M4 x 0.7 threaded aluminum inserts

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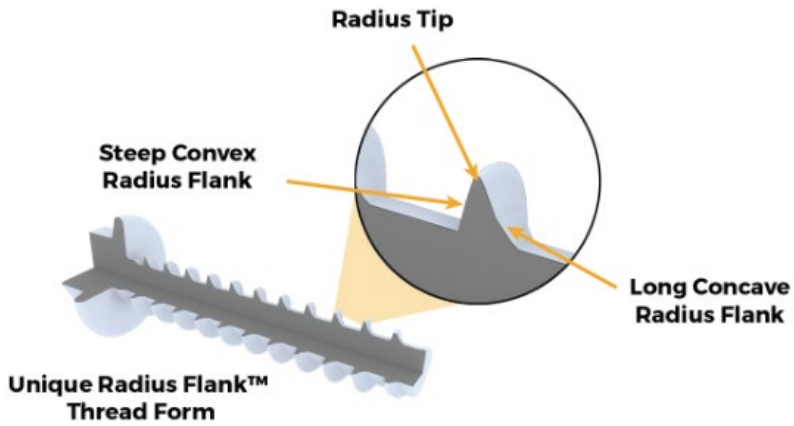
Product Details



REMFORM® II™

Unique Radius Flank™ Thread Profile

The REMFORM® II™ screw is a round-bodied thread forming fastener with a Unique Radius Flank™ asymmetrical thread form to provide superior performance in wide range of plastics. This unique thread and its narrow tip angle efficiently displace material and therefore require minimal energy to form an internal thread. The tip also utilizes a radius to create the internal thread without increasing hoop stress in the plastic.

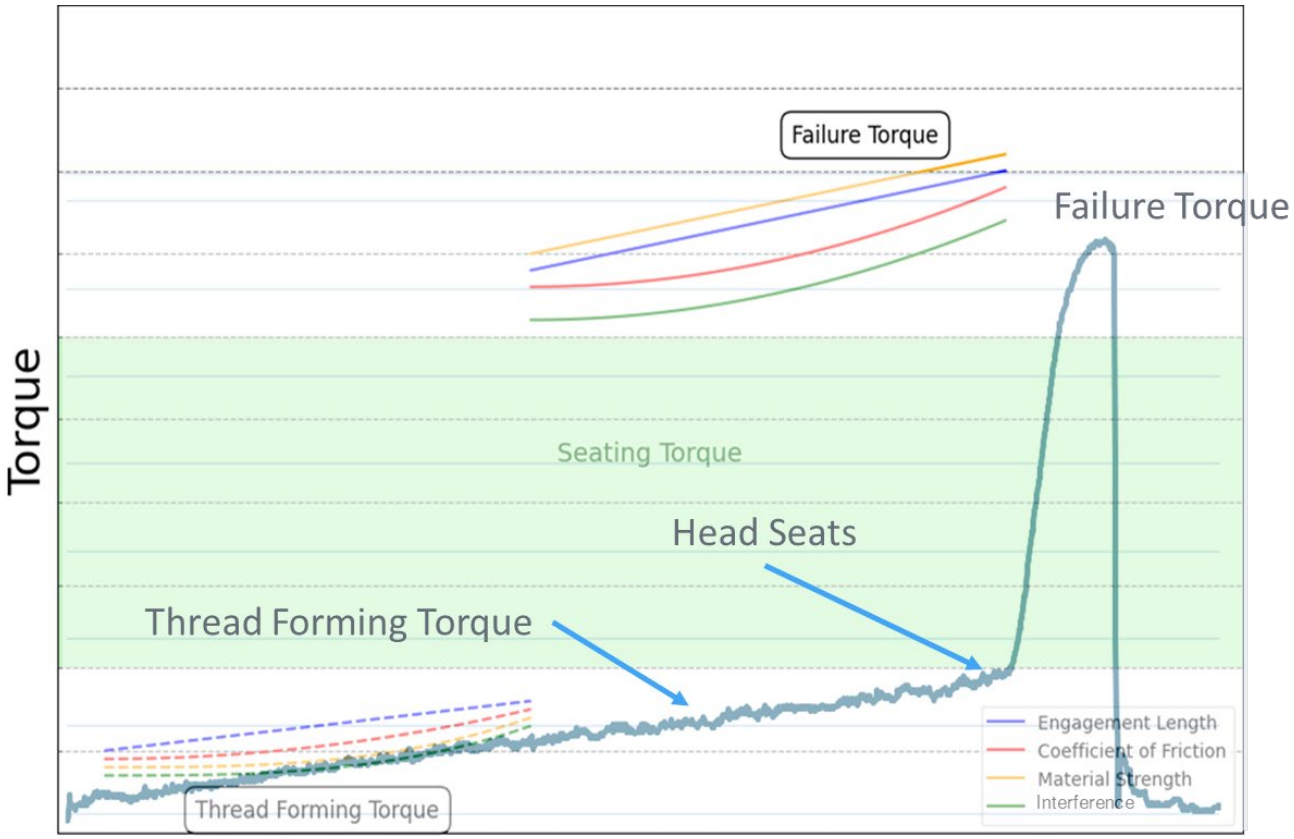
Reduce Weight
Reduce Complexity
Increase Recyclability

Low Radial Stress
No sharp edges on threads, prevents boss cracking

Eliminates cost additive elements:
Metallic inserts

Clamp Load maintained over multiple installations

Test Results – REMFORM®II™ fasteners



- **Typical Torque Curve for thread forming fastener in a blind hold application.**
  - Initial increase = **thread forming torque**
  - Thread forming torque **continues to rise until Head Seats because forming threads are working for the entire cycle**
  - **Spike in Torque** as **Head seats** and tightening begins.
  - Process continues until failure (for testing) OR **set assembly torque** from customer to attain **required clamp load**
- **Example:** REMFORM®II™ fastener in plastic boss

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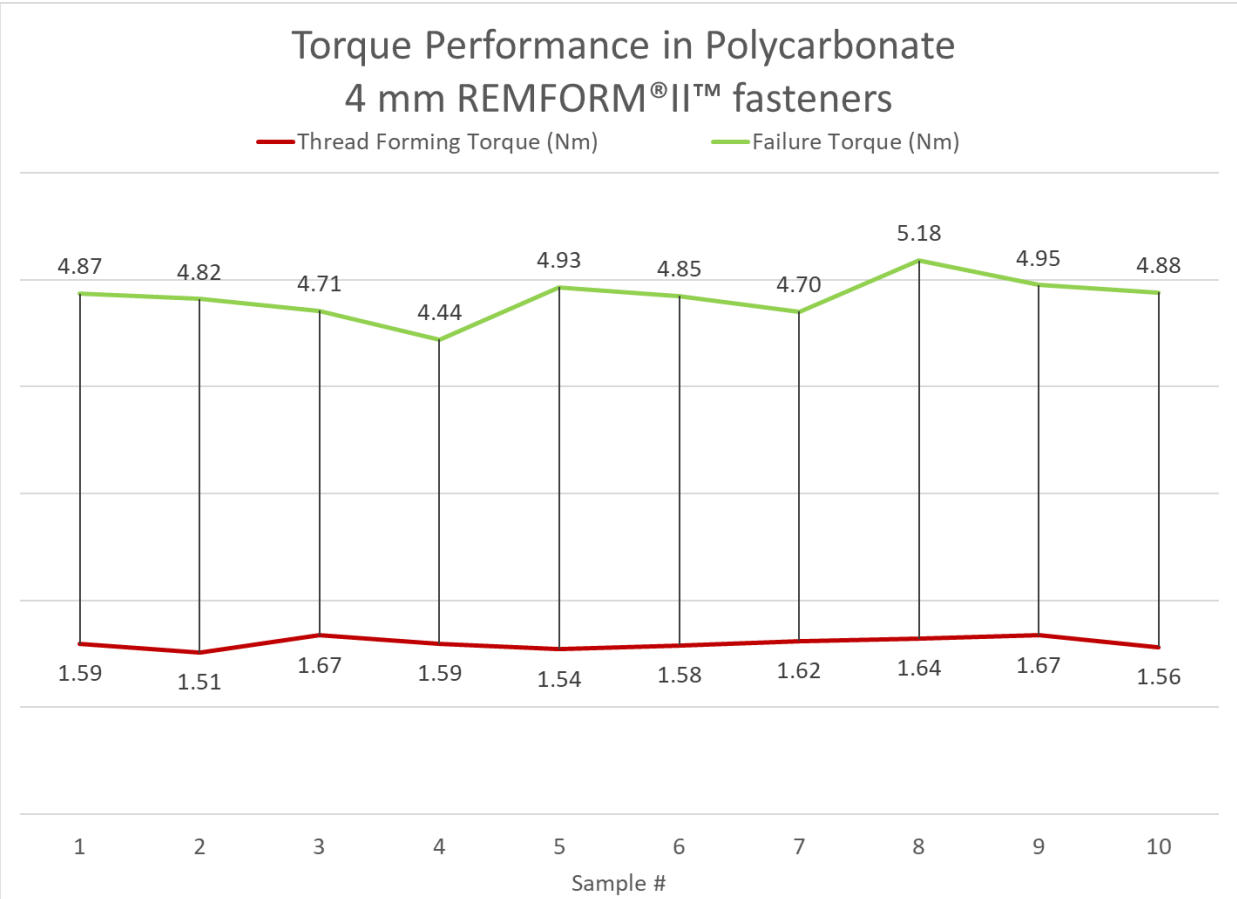
Test Results – REMFORM®II™ fasteners

The REMFORM® II™ screw is a round-bodied thread forming fastener with a Unique Radius Flank™ asymmetrical thread form to provide superior performance in wide range of plastics. This unique thread and its narrow tip angle efficiently displace material and therefore require minimal energy to form an internal thread. The tip also utilizes a radius to create the internal thread without increasing hoop stress in the plastic.

For an assembly process, sufficient failure torque vs. thread forming torque gap is required where an assembly torque can be selected to achieve the required clamp load for the joint.



Fastener: 4 mm REMFORM®II™ fastener
Installed into:
t = 10 mm
Material = Polycarbonate
Hole diameter = 3.20 mm
Thread Forming Torque = **1.60 Nm (Average)**
Failure Torque = **4.83 Nm (Average)**
Recommended Seating Torque = **3.8 Nm**

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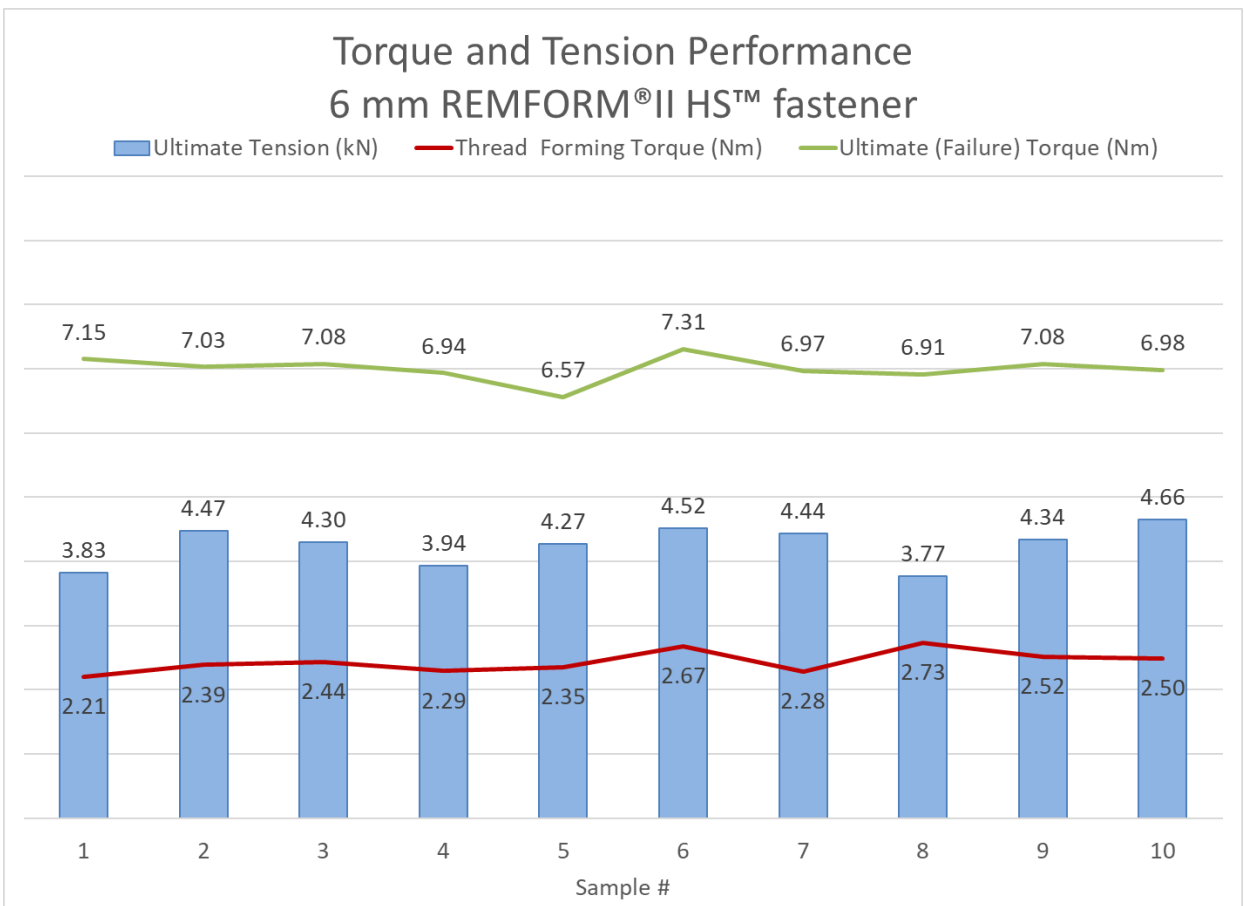
Test Results – REMFORM®II™ fasteners

The REMFORM® II™ screw is a round-bodied thread forming fastener with a Unique Radius Flank™ asymmetrical thread form to provide superior performance in wide range of plastics. This unique thread and its narrow tip angle efficiently displace material and therefore require minimal energy to form an internal thread. The tip also utilizes a radius to better create the internal thread without increasing hoop stress in the plastic.

For an assembly process, a failure torque vs. thread forming torque ratio of greater than 3 is required and easily achieved with REMFORM®II™ fasteners. This gap in thread forming and failure torques provides sufficient torque window to set an assembly torque to achieve the required clamp load for the joint.



Fastener: 6 mm REMFORM®II™ fastener
Installed into:
t = 10 mm (plastic boss)
Material = 30% Glass Filled PA6
Hole diameter = 4.77 mm
Thread Forming Torque = **2.44 Nm (Average)**
Failure Torque = **7.00 Nm (Average)**
Ultimate Tension = **4.25 kN (Average)**

Fastening Solutions for Aerospace

Contact us for solutions when an improvement over conventional fastening methods is necessary to

REDUCE WEIGHT
REDUCE COMPLEXITY
INCREASE RECYCLABILITY
and
SOLVE LINE INSTALLATION PROBLEMS

Website

Suppliers

Applications

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