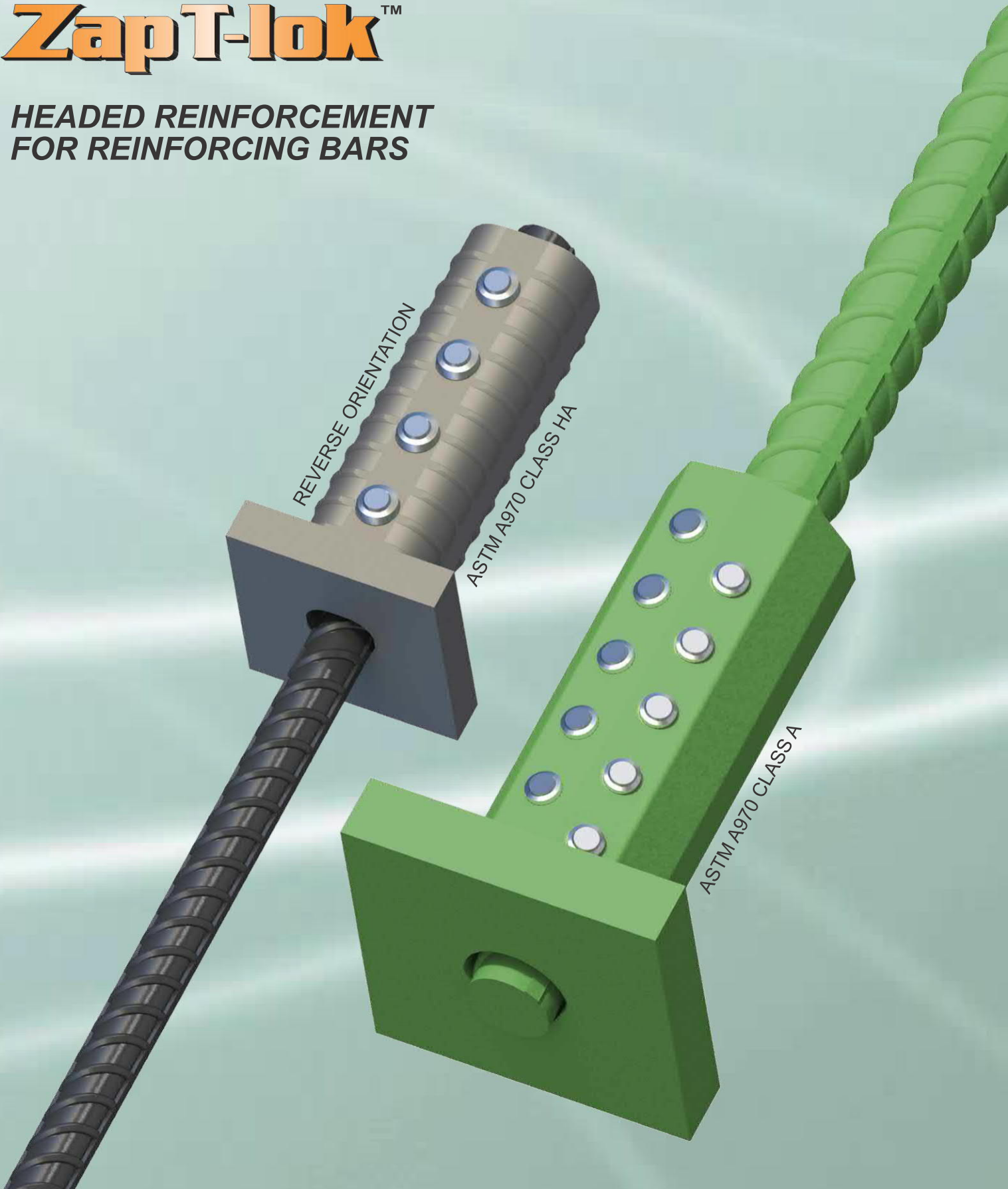


ZapT-lok™

HEADED REINFORCEMENT
FOR REINFORCING BARS





CHOICES AND PERFORMANCE

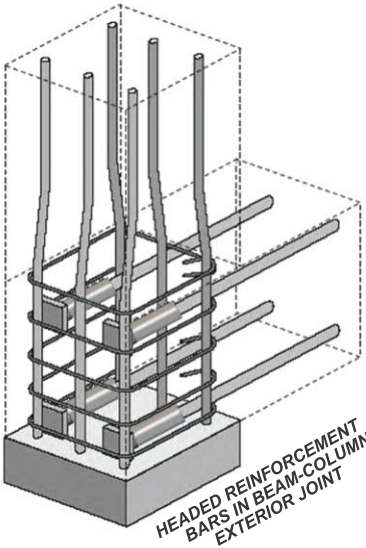
ZAP T-LOK™

HEADED REINFORCEMENT



- **ACI 318 & ASTM A970** – Connections to bar exceed the specified yield strength (f_y) of the bar for ASTM A615 and A706 Grade 60 reinforcing bar, as required by ACI 318. Confirming in-air tests exceed the specified tensile strength (f_u) per ASTM A970 Class A and Class HA (reverse orientation) for uncoated Grades 60 reinforcing bars.
- **KEY ADVANTAGES** – The T-LOK™ is easily installed in the field using an impact wrench replacing hooked bars as headed reinforcement in applications such as beam-column joints, knee joints, pile caps or column roof slab connections – anchors reinforcing steel replacing stirrups or ties in deep beam applications – alleviates congestion in heavily reinforced concrete members, facilitating bar placement and concrete consolidation.
- **DUAL ORIENTATION** – When installed in the standard (Class A) orientation, the net head bearing surface area exceeds 9x rebar area (A_b) transmitting bond force from reinforcing bar to concrete by a combination of head bearing and development length. When installed in the reverse (Class HA) orientation, the net head bearing surface area exceeds 14x A_b which transmits full force by head bearing alone without the need for additional development length.
- **SIMPLE DESIGN** – One piece device with converging sides manufactured as ductile casting with no welds.
- **EPOXY AND GALVANIZED APPLICATIONS** – Available with ether epoxy or hot dip galvanized coating for epoxy coated bars that comply with ASTM A775 Grade 60, or galvanized bars per ASTM A767 Grade 60. Connections to bar exceed the specified yield strength (f_y) of the bar.
- **CONVENIENCE** – No special bar end preparation or thread cutting required – reinforcing bar can be sheared, sawed or flame-cut. For bar sizes #4 – #18 (Ø 13 – 57 mm).

With the ZAP T-LOK™ Termination system, a head and short mechanical connector body with two converging sides are integrally manufactured for strength and compactness. A series of cone-pointed hex-head screws are arranged along the connector length. As the screws are tightened, they indent into the surface of the reinforcing bar, which in turn wedges the bar into the converging sides of the connector. When the screws are tightened using a suitable impact wrench, the head simply shears off at the prescribed tightening torque.

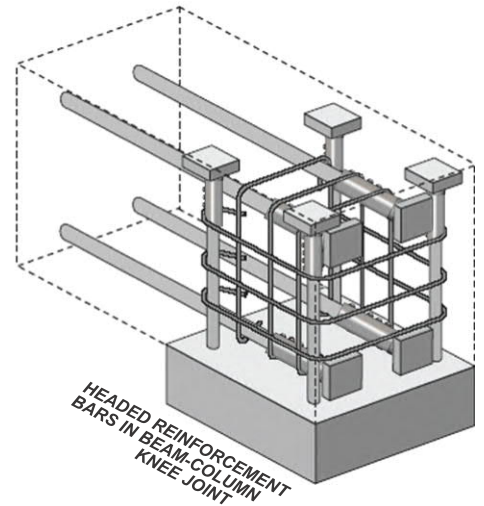


HEADED REINFORCEMENT BARS IN BEAM-COLUMN EXTERIOR JOINT

There are many situations in which the amount of space available is not sufficient to fully develop or anchor straight reinforcing bars subjected to tension. In the past, the most commonly used technique to reduce the required development length of bars subjected to tension was to terminate the bars using a 90 deg or 180 deg hook.

While hooks might be helpful in reducing development length, their use sometimes brings about congestion and other detailing problems. Sometimes, reinforcing bars can fracture prematurely at the hook region during or after fabrication. There are also times in which the reduction in development length is not large enough to satisfy the design constraints of a structural member. An alternative available to structural engineers, architects, and specifiers is the use of headed reinforcement to terminate reinforcing bars.

ZAP T-LOK™ Terminations require shorter development lengths than straight bars and most hooked bars because most of the bond force is transmitted to the concrete directly through bearing of the termination head.



HEADED REINFORCEMENT BARS IN BEAM-COLUMN KNEE JOINT

HOW TO SPECIFY ZAP T-LOK™ HEADED REINFORCEMENT

	By Name:	By Generic Description:
BAR-TO-HEAD	BPI® ZAP T-LOK™ ** by BarSplice Products, Inc., Dayton OH	Headed Reinforcement for reinforcing bars shall be the shear screw & wedge type, with cone-pointed hex-head screws opposite the wedge producing a field installed headed bar.

** Include bar size(s), bar type and grade. Include statement: "Parts shall be manufactured to the quality requirements of ISO 9001."

As mechanical headed anchorage, Zap T-lok™ headed reinforcement is an alternative to the embedment lengths of straight bars or hooks of deformed steel reinforcing bars in reinforced concrete specified in ACI 318-14 Section 25 (ACI 318-11 Section 12) and UBC Sections 1912.1.1 and 1912.6, for development of reinforcing bars in tension. Zap T-lok™ headed reinforcement also meets the requirements of ASTM A970-17 Class A in the standard orientation, and Class HA in the reverse orientation.

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