



In today's manufacturing environment, it is likely that you will frequently encounter challenging tapping applications due to the type and condition of the material being tapped.

Allen Benjamin color-coded HSSE taps simplify the process of selecting the right tap for specific materials and are designed and manufactured to handle tough tapping applications in a variety of materials. Based on the tap design, most color ring taps can handle several materials with successful results. Special designs are available to suit your specific application.

Each of the six color ring taps - black, white, yellow, green, blue and red - are manufactured with application-specific design criteria based on characteristics and hardness range of various part materials.

These taps are manufactured using HSSE material which is commonly referred to as 'premium high speed steel' as it has a higher content of cobalt and vanadium. As compared to HSS taps, HSSE taps provide greater wear resistance for increased tap life.

See next page for a 'Material Type/Color Code Table' which illustrates which color ring tap is best suited to the material being threaded. Any given list of part materials can be long and tedious, so the reference list in this catalog concentrates on relatively common materials. However, if you do not see a specific material or have questions regarding performance enhancing tool coatings, please contact us with the details.

(See next page for color ring taps guide.)

MATERIAL TYPE / COLOR CODE TABLE

Material application ranges organized by Allen Benjamin color code.

Work Material*	Color Ring	Brinell Hardness Range**
Steel - Low Carbon	○ Yellow	125-275
Steel - Med. Carbon	○ Yellow	180-425
Steel - High Carbon	○ Yellow	180-425
Alloy Steel	○ Green	225-400
Stainless - 300 Series	○ Blue	135-185 annealed
		225-275 cold drawn
Stainless - 400 Series	○ Red	135-425
Stainless - PH Series	○ Red	150-440
High Nickel Alloy	○ Blue	150-360 Monel
		200-400 Inconel
Titanium Alloy	○ Blue	310-440
Die Steel	○ Red	250-350
Hardened Steel - <325 BHN	○ Red	300-350
Hardened Steel - 325-426 BHN	○ Red	300-440

* **NOTE:** For material or material group not shown (such as No Lead Brass), please consult Customer Service.

** **BHN hardness range may vary depending on steel/workpiece condition. See the Allen Benjamin Catalog for Rockwell-Brinell Hardness Data chart.**

AVAILABLE SURFACE TREATMENTS

See Allen Benjamin catalog for surface treatment recommendations.

AlCrN:	Aluminum Chromium Nitride	TiAlN+WC/C:	'Hardlube' - Titanium Aluminum Nitride
CrC:	Chromium Carbide		Aluminum Nitride
CrN:	Chromium Nitride		+Tungsten Carbide/Carbon
DLC:	Diamond-like Carbon	TiCN:	Titanium Carbonitride
N:	Nitride	TiN:	Titanium Nitride
N + Ox:	Nitride + Oxide*	WC/C:	Tungsten Carbide/Carbon
Ox:	Steam Oxide*	WS2:	Tungsten Disulfide
	*Oxide (Ox) may also be shown as 'O'	ZrN:	Zirconium Nitride
TiAlN:	Titanium Aluminum Nitride		

In many applications, a tap that is properly designed and used under recommended conditions will produce acceptable results without the use of surface treatments. However, under some conditions, such as tapping excessively hard, abrasive or challenging materials, the use of performance enhancing surface treatments will be beneficial to the overall results of your tapping operation in terms of improved tool life and internal thread quality. Coolant-through taps may also be a consideration. Contact Allen Benjamin for tapping and treatment recommendations.