

Nosler E-Tip excels as lead alternative

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Already sharing a competitive field of bullet designs, Nosler's answer to the all-copper projectile is the E-Tip bullet. Although not a concern in Australia for the time being, some state jurisdictions in the US have banned traditional copper-jacketed lead projectiles for hunting and manufacturers have returned fire with a barrage of all-copper projectiles to effectively suit the needs of hunters in restricted areas.

It's fair to say Nosler bullets take up the majority of shelf space on my reloading bench and I was keen to put their E-Tips to the test. Supplied for the purpose of review by Nioa were a variety of E-Tips in 6.5mm 120-grain, 7mm 140-grain and .308 calibre 150- and 168-grain. Deliberately omitting any political argument on the environmental comparison of an all-copper bullet to a lead core projectile, E-Tip stands for Expansion Tip, a pretty mundane name though an easily identifiable product title by Nosler for their all-copper bullet nonetheless. After all, a good hunting bullet's sole purpose is to expand on impact and kill effectively.



Achieving great results at the range (as evident on the bottom left target) and calculating muzzle velocity of the E-Tip handloads aided by a chronograph.

Bullet design

Apart from its shape, the Nosler E-Tip has considerably different characteristics and features from a lead core bullet.

- Starting with the pointy bit at the business end is Nosler's easily recognisable olive-coloured polymer tip which initiates rapid expansion on impact for deep penetration. It's important to note that E-Tip bullets have a recommended minimum impact velocity of 1800fps in order to effect expansion.
- The Expansion Control Ring (ECR) ensures controlled expansion over a wide array of velocities and conditions.
- Nosler's E2 Cavity or Energy Expansion Cavity provides a dual-purpose chamber for

serious stopping power and uniform expansion with a claimed 95 per cent-plus weight retention for superior penetration through hide, bone and vital organs.

- The solid all-copper alloy construction meets all the lead-free hunting regulations where lead core projectiles are banned.
- The boat-tail design of Nosler's E-Tip combines with the polymer tip to provide extreme long-range performance and easier loading (see photo on Page 68).

Handloading the E-Tip

Nosler's E-Tip, as with most of their hunting bullets such as Ballistic Tip and AccuBonds, are designed dimensionally similar but the all-copper construction of the E-Tip will

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Adjusting for correct seating depth is vital to E-Tips' accuracy.

mean a 'longer for weight' projectile (or higher ballistic coefficient) than its lead core brothers of the same weight. For example, a 7mm 140-grain Nosler Ballistic Tip has a marginal but noticeably smaller ballistic coefficient (BC) of 0.485 and shorter overall length (OAL) of 1.29" compared with the 140-grain E-Tip's BC of 0.489 and longer

OAL of 1.3". Alternatively, when comparing a lighter Nosler Ballistic Tip bullet of 120-grain with a 140-grain E-Tip of 6.5mm diameter, you'll notice both are similar in length (see photo below).

Obviously both bullets of the same diameter have an equal sectional density, but in principle lead weighs more than copper

and in most cases a conventional lead core bullet with similar ogive and boat-tail design to the E-Tip will be shorter in OAL. I feel it's important to understand these basic comparisons of the bullet variants, particularly for handloaders.

My own experience in reloading them has revealed vastly different performances, and testing showed a .308 diameter 168-grain all-copper projectile will perform ballistically similar to a 180-grain copper-jacketed lead projectile out to 300m. It's crucial to note that E-Tips and other makes of all-copper projectiles characteristically shoot better when backed off the lands because of their dense copper construction and seating them free helps reduce higher pressures after ignition. Chamber throat length and maximum allowable Cartridge Overall Length (COAL) are two serious considerations for correct seating of the E-Tip projectile and reaching its full accuracy potential while keeping pressures to a safe level.

Recruiting some local SSAA range buddies and equipping them with different



Bullet comparisons of 6.5mm 140-grain Ballistic Tip and 120-grain E-Tip (left) are similar in length while the 7mm 140-grain E-Tip is noticeably longer than the 140-grain Ballistic Tip (right).

weights of bullets supplied, I tasked them with reloading duties to find a broad scope of research for this review. The task was gratefully accepted by all and we went about reloading our respective boxes of E-Tip bullets for various rifles. Results were not surprising and the E-Tips displayed similar characteristics to other all-copper projectiles I've loaded previously. The E-Tips proved a little fussy at first in the rifles tested, but once a correct load and seating depth was reached they shot beautifully.

For example, I fired test loads of AR2208 powder behind the 7mm 140-grain E-Tip and it didn't group as tight as I'd have liked. ADI's AR2208, a medium-burning powder, is perfect for the 140-grain Nosler Ballistic Tip in that test rifle but, as it turns out, the faster-burning AR2206H behind the 140-grain E-Tips printed consistent half-inch groups in almost all test loads. The best group, measuring .384 MOA, was all I needed to confirm my preferred load for the 7mm-08 Rem.

My mate John loaded 150-grain E-tips for his .308 calibre rifle and while they weren't the usual sub- $\frac{1}{2}$ MOA groups typically expected from his rifle, they printed satisfactory hunting groups averaging .959 MOA at 100m. Bill, on the other hand, set about loading 120-grain 6.5mm bullets in his Creedmoor with the best load powered by 40-grains of AR2209, backed 3mm off the lands and printing a .630 MOA group.

With an impending hunt and armed with my new load preference for the Savage Weather Warrior rifle in 7mm-08 Rem, I loaded my remaining batch of 140-grain E-Tips powered by the most accurate of all - 41-grains of AR2206H. Moving along at a chronographed 2770fps from the muzzle would provide the adequate, recommended impact velocity at 100 and 200m for deer hunting and I couldn't wait to put them to the test.



The 7mm 140-grain Nosler E-Tip helped down Carl's first boar of the trip.

Field testing

My son and I made plans for a week away during school holidays and he was keen to shoot the 7mm-08. Carl pre-sighted the rifle for himself prior to the hunt and was more than happy with the accuracy on paper from the Nosler E-Tip loads. Our first outing trailing along a timbered creek line was perfect for us to sneak up on a mob of feral pigs and, oblivious to our presence, the largest boar scavenged close to us while my son took aim. Carl fired and we had our first pig of the trip, the 140-grain E-Tip loaded for the 7mm-08 Rem proving more than adequate for the task.

Typically expected of all-copper projectiles, the Nosler E-Tip passed through both sides of the pig exiting with a tidy wound channel and taking out the vitals in

the process (see photo below). Obviously the bullet couldn't be recovered to verify Nosler's claimed 95 per cent weight retention but a dead pig at our feet was more than enough proof of effective projectile terminal performance.

Conclusion

There's no point banging on about a hunting projectile and all its advertised merits without trialling them for myself. Nosler E-Tips are great bullets but, as with all handloading, you must take care and work up from minimum listed loads. The projectiles supplied to me, once loaded to matching burning rates and barrel twist rates compatible with bullet weight, fell admirably into that 'sweet spot' of tight groups we all strive for.

I believe a rifle which doesn't shoot well on paper isn't going to instil confidence in the field, especially when lining up that one-shot kill at 200m. Our 7mm-08 Rem shooting 140-grain E-Tips performed accurately at the range and was replicated in the field when a shot presented. As expected, Nosler's E-Tip bullet did the job and my son was rewarded with a young boar for his efforts.

Nosler E-Tips in boxes of 50 are available in calibres of varying weight ranges from .22 to .375 and are priced competitively to similar makes of all-copper projectiles. For more on Nosler E-Tips visit the NIOA website and call your local stockist for current pricing. ●



Close-up of an expanded E-Tip retaining 95 per cent of its original weight.



An importantly characteristic tidy exit wound by an all-copper projectile. The E-Tip passes through both shoulders, taking out all vitals in the process.