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PRESS RELEASE

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TungStuds: Little helpers impress in operation

Betek TungStuds recently demonstrated sophisticated protection against wear in a tough road test in France. Launched in 2010, this range of anti-wear bolts with a core made of Betek tungsten carbide can be welded onto practically any metal surface and, if necessary, repeatedly replaced. At a French civil engineering firm these little helpers were recently tested in tough conditions on a trench-cutting wheel and won the company over even while still being tested with their long service life, minimal wear and optimum protection for the newly purchased milling/cutting segments. The company is now fully committed to tungsten carbide protection 'Made in Germany', fitting its trench cutters with TungStuds and thus avoiding the previous need to completely replace the cutting segments several times a year and saving on the associated downtime, dismantling and fitting costs.

At a company based in France specialising in local authority civil engineering work it was time to give one of the trench-cutting machines a general overhaul: badly worn down from working in difficult terrain, the cutting segments needed to be completely replaced - something, incidentally, that had to be done several times a year. Via the Betek agent in France the company had heard in 2010 of Betek's new anti-wear solution, which provides protection against abrasion and corrosion for construction machinery parts that are at particular risk of wear. The overhaul of the trench cutter in early 2011 was a welcome opportunity to test out the Betek solution, as Betek was known to the company as a partner for high quality tungsten carbide tool systems, having already provided the W6HR round-shaft bits for its cutters. The details were discussed on a visit to the company by the French agent and Betek's product manager.

The parts of the new milling/cutting wheel were then sent directly to Betek, where the wheel's side surfaces and blocks were completely fitted with TungStuds. The relatively small surface areas called for exact positioning and a very compact arrangement of the small anti-wear bolts. The material of the trench cutter wheel provided ideal conditions for welded joints, it being made of wear-resistant construction machinery steel.

After the TungStuds had been welded on, the client fitted the wheel into a Ditch Witch 7020 trench-cutting machine and immediately put it to the test in use in France. The company specialises in jobs such as digging cable ducts along the side of roads. The machine cuts trenches of between 10 and 22cm wide and to a depth of up to 70cm.

After 138 hours of operation spread over several different trench-cutting jobs and 23 working days, the cutting wheel and TungStuds were examined and inspected for wear. Apart from a few small places on the edge of the cutting wheel, nearly all of the TungStuds were still in place and in very good condition. The new cutting wheel had been extremely well protected and even after very close inspection showed no signs of wear at all.

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Prior to using TungStuds, the company used trench-digging cutter segments made of construction machinery steel with no additional protection against wear. The 8 parts of a new cutting wheel cost – excluding replacement work costs – c. €3,000 and, depending on how hard they were worked, would need to be completely replaced every 200 hours.

Further tests showed that a set of fitted TungStuds lasted approximately twice as long as a complete cutting wheel had previously done. Thereafter the TungStuds can be easily replaced, completely or partially depending on wear, while the cutting wheel itself remains totally as good as new.

These tests and the savings achieved by the TungStuds in terms of costs for spares and replacements convinced the client at once. As the company owns several trench cutters of varying sizes, it placed an order with Betek two weeks after the first interim tests for a KÖCO ELOTOP 2002 bolt-welding machine, for which Betek is a distributor, and a large stock of TungStuds, so that in future it could fit and maintain its cutting wheels itself.

Betek is a global leader in the production of tungsten carbide and special tungsten carbide tipped tools.

The core of the TungStuds is also made of tungsten carbide, i.e. of wolfram carbide and cobalt. Wolfram carbide is one of the hardest materials there is and at the same time very brittle. Combined with cobalt a material is produced that is very hard and resistant to wear, while at the same time being ductile enough to also withstand the most extreme loading. The tungsten carbide's quality is tailored at Betek to the application concerned. This ensures the necessary ductile characteristics while providing optimum resistance to wear. The tungsten carbide with all its excellent properties is created by sintering in an ultra-modern sinter/hip plant. TungStuds can be used to provide protection from wear not only on cutting wheels, but on all construction machinery components that come into contact with construction materials or with materials being excavated or conveyed, e.g. digger buckets, rotary grinder casing or crushing machine walls, to name but a few.



Picture 1: In order to achieve optimum protection, TungStuds were welded close together on the side of every segment of the new trench-cutting wheel. (Photo: Betek)



Picture 2: After a variety of different cutting jobs and 138 hours of use, the trench-cutting wheel was subjected to close inspection. (Photo: Betek)



Picture 3: Well protected in this way, the cutting wheel is still 'as good as new' even after many times the usual period of use. (Photo: Betek)

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