



## **Total Carbide's Tungsten Carbide Crush Rolls Extend Life, Reduce Downtime And Save Costs For IncoTest**

Total Carbide, the leading European manufacturer of tungsten carbide wear parts, has proven that tungsten carbide crusher rolls last six times longer than D2 steel versions and that further time and cost savings are realised as regrinding is less frequent and labour and machine time are released to other operations.

Total Carbide first proved these savings for an aerospace test house before approaching IncoTest, part of Special Metals Corporation, the world leading innovator and manufacturer of nickel based superalloys, which annually grind approximately 25,000 test pieces of 30 different types for customers in a range of industries including aerospace, petrochemical and electronics.

IncoTest originally manufactured the crush rolls in-house using fully treated D2 tool steel. After producing approximately 200 test pieces, depending on the complexity of the form, the rolls then had to be reground. The combined operation of producing the new rolls and the regrinding of worn rolls was occupying around 20 hours per week of highly skilled labour and a precision grinding machine, both of which were needed to perform an additional finishing operation on an increasing number of special test pieces.

After initial discussions between the companies on the process to manufacture test pieces, Total Carbide developed a solution and identified a suitable tungsten carbide grade for the application. The first tungsten carbide crush roll was produced and delivered in May 2008. It took four months of continual use before the roll was sufficiently worn to return for regrinding. During this time, IncoTest produced six times as many test pieces as previously produced with the steel roll. This performance convinced IncoTest of the benefits of tungsten carbide rolls over steel rolls and justified the purchase of a further nine tungsten carbide crusher rolls. These were delivered in early 2009 and were in constant use throughout the year. In addition, a further tungsten carbide roll of the original test piece form has been ordered to ensure continuity of manufacture while the other is being reground at Total Carbide.

Total Carbide and IncoTest now have an ongoing technical co-operation to engineer solutions and are currently reviewing other applications which could prove beneficial in saving costs. The companies are currently in discussion to produce tungsten carbide thread form crush rolls.

### **Summary:**

Each of the tungsten carbide rolls has extended life by up to six times that of the D2 steel versions. Further time and cost savings have been achieved as regrinding is less frequent and carried out by Total Carbide. IncoTest estimate that at least 20 hours per week of labour and machine time has been released to other operations.

Benefits summary:

- extends life six-fold over steel crush rolls
- saves 20 hours per week of highly skilled operative's and grinding time
- eliminates need for in-house regrinding operations
- 15 hours of labour and machine time released to other operations
- 12 month payback