

# Roll Technology



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Swinden and Teesside Technology Centres have developed expertise in the area of Roll Technology over many years. This has included the development of improved metallurgical and engineering designs and appropriate supply specifications, together with in-situ performance analysis, wear monitoring and failure analysis techniques. In addition, finite element models have been developed which allow the prediction of roll wear in long product rolling which takes into account the effects of roll cooling and lubrication.



**METALLOGRAPHIC EXAMINATION**

Techniques utilised in support of roll development and fitness for purpose evaluations include surface and sub-surface non destructive inspection, together with in-situ metallographic techniques and a range of portable hardness measurement methods.



**ULTRASONIC EXAMINATION**

Post mortem failure analysis is also undertaken utilising the extensive machining and mechanical testing facilities at Swinden Technology Centre.

To improve roll utilisation an understanding of the roll wear mechanism is essential, to allow prediction of those locations at which the most severe wear is likely to occur. A portable Coordinate Measuring Machine which, allows the accurate measurement of roll profile in-situ, with immediate importing of data into a CAD software package, can be utilised to evaluate roll wear data.



**COORDINATE MEASUREMENT SYSTEM**

The Technology centres have been working closely with lubricant manufacturers, not only to assess the efficacy of roll gap lubrication, but also to optimise the method of lubricant delivery into the bite.

**Potential benefits from this technology include:-**

- improved product quality
- improved roll utilisation and reduced roll shop cost
- enhanced value in use of the roll fleet
- optimisation of roll cooling and lubricant application
- optimum roll technology selection for individual applications