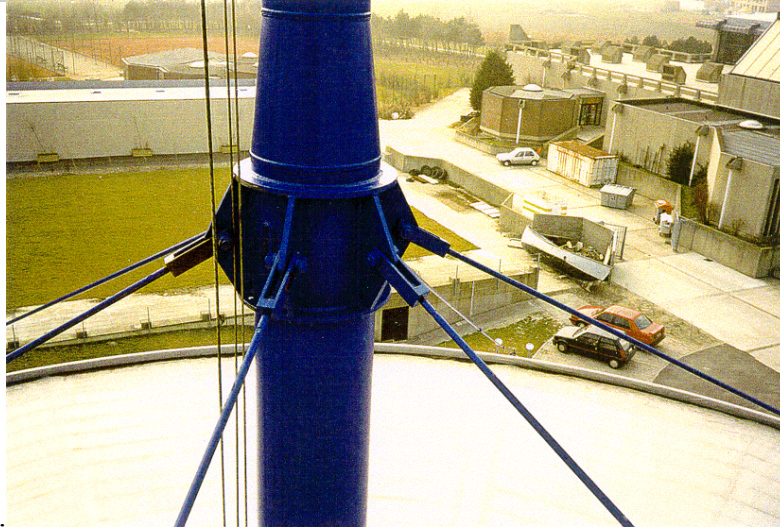


## ACFM INSPECTION THROUGH COATINGS

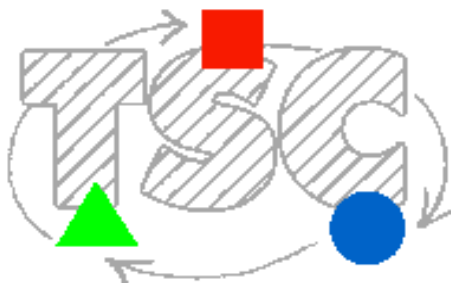


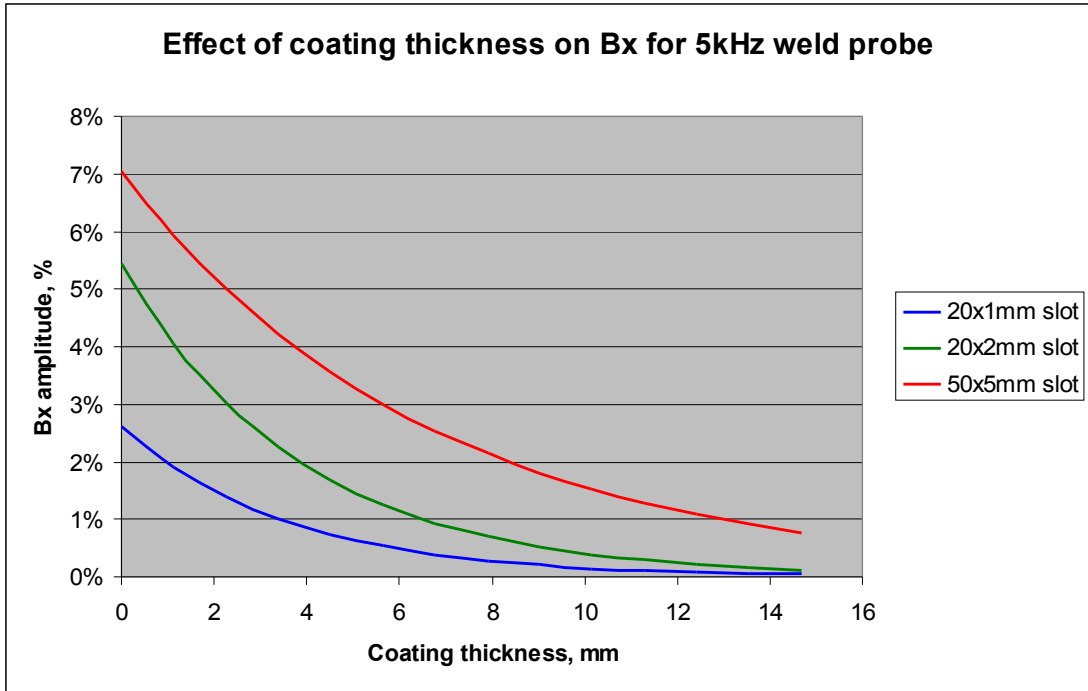
One of the main advantages of the uniform field used in the ACFM technique is that it results in a relatively small reduction in signal strength with probe lift-off. This means that ACFM is capable of crack detection through several millimetres of non-conducting coating. Typical applications of inspection through coatings include paint, epoxy coatings, oxide layers, fire protection layers and marine growth.

The maximum coating thickness through which a defect can be detected depends on the defect size, the probe type, and the signal noise. The rate at which the Bx signal amplitude drops off with coating thickness for a standard 5kHz weld probe is shown overleaf. The signal variation due to surface roughness, material property variations etc. is usually less than 1%, so the data shows that, for example, a 5mm deep defect in a good surface should be detectable through more than 10mm of coating (for critical applications, users should measure the actual level of signal noise on site).

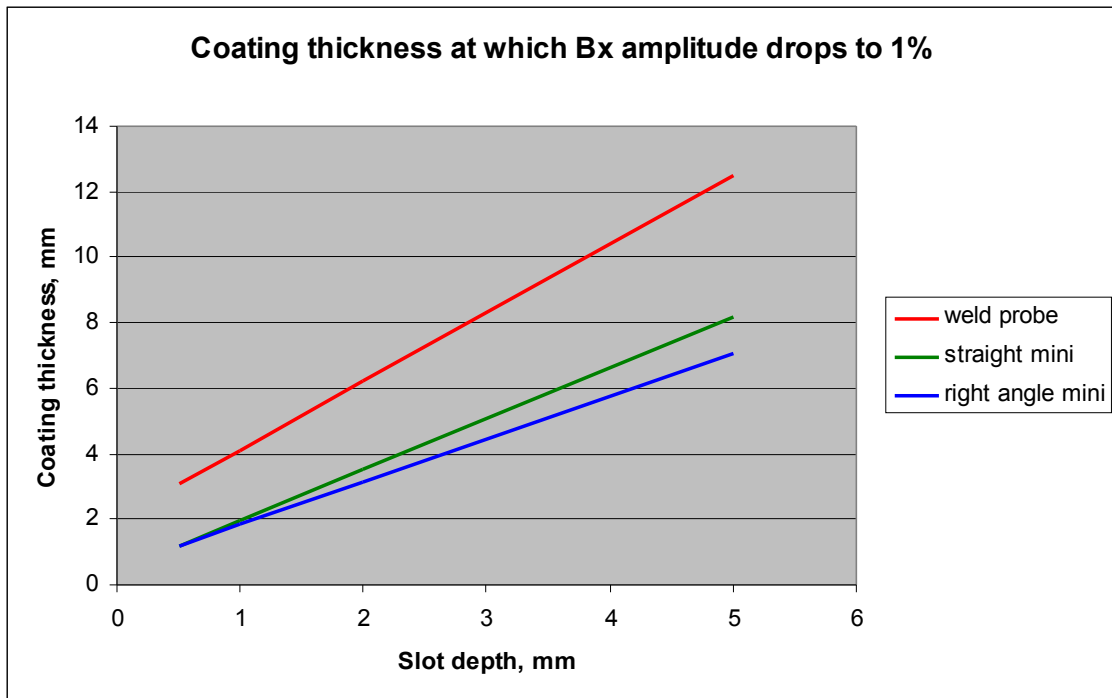
Defect sizing algorithms, incorporated in TSC software, compensate for coating thicknesses up to 4 or 5mm (depending on probe type). For sizing through thicker coatings, refer to TSC.

ACFM can also be used through thin conducting coatings, such as zinc galvanising and flame sprayed aluminium, although spurious signals can occur if the coating is unevenly applied or flaking off.





The maximum coating thickness through which a defect should be detectable (assuming a signal noise level of 1%) for three different probe types is shown below.



*Due to our policy of continual improvement, specifications are subject to change without prior notification. For critical applications, please contact TSC before ordering.*

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