

# Impedance boundary condition in the boundary element-vector potential formulation

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## Abstract

The impedance boundary condition has been used with great profit to eliminate large regions from the solution to solve eddy current problems. In the boundary element formulation, the reduction of the order of singularities is convenient, if not critical. A vector-potential boundary-element formulation with the impedance boundary condition has a lower order of singularity in relation to the magnetic field intensity and has computational simplicity compared to the finite-element implementation. It offers great advantages in open boundary problems. Some important lessons are offered for those accustomed to finite-element formulations.

## Indexed keywords

**Engineering controlled terms:** Magnetic Fields; Mathematical Techniques--Boundary Element Method

**Engineering uncontrolled terms:** Boundary Element-Vector Potential; Impedance Boundary Condition; Magnetic Field Intensity; Singularities

**Engineering main heading:** Eddy Currents