Contour method for residual stress measurement

HILL ENGINEERING
Predict. Test. Perform.

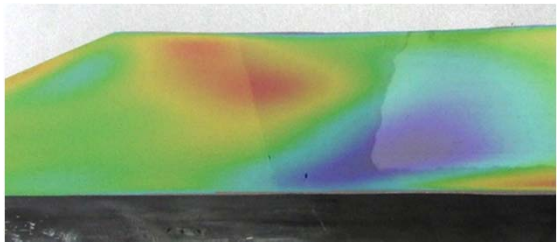
Contour method overview

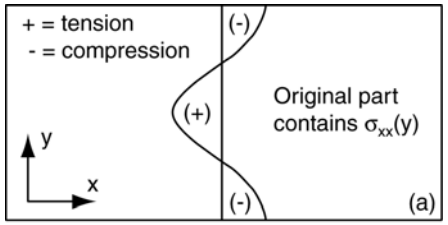
The contour method is useful for quantifying the distribution of bulk residual stress in 3D bodies.

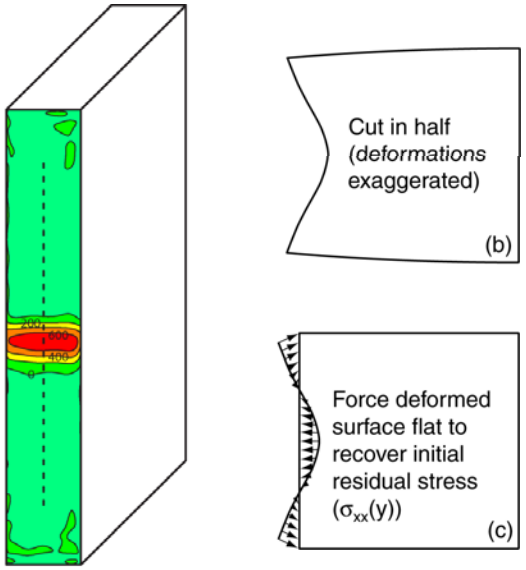
The contour method builds upon the principle that a body containing residual stress will deform as a result of sectioning, and that the tractions required to restore the deformed part to its original shape are equivalent to the residual stress released by sectioning.

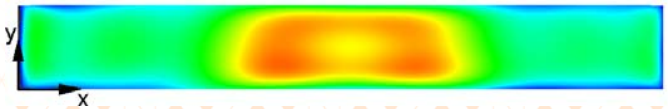
Through careful sectioning and precision inspection techniques, combined with a novel software package, it is possible to map complex 2D residual stress fields in a wide range of part geometries and materials.

The contour method was invented circa 2000, patented by Los Alamos National Laboratory, and was rapidly validated and accepted due to its unique capabilities. Hill Engineering personnel have been active in the development of the Contour Method and now, under license, use the method to meet the needs of customers worldwide.









"You get to a different level of confidence when you do it the right way."

Michael Glavicic, PhD
Rolls-Royce Corporation

Contour applications

Hill Engineering's contour method capability provides high-quality residual stress data for many applications including:

- Bulk residual stress measurement
- 2D and 3D residual stress variations
- Parts with large or complex geometry (accounted for using a finite element model of the part)
- Wide rage of material types (metallics, plastics, FGMs, and single crystals)
- Materials with variable microstructure and texture

Contact information

sales@hill-engineering.com
+1 (916) 635-5706
hill-engineering.com