

pc-CRACK™ for Windows

For almost fifteen years, SI's **pc-CRACK** program has been an industry leader in fracture mechanics software. Now you can obtain this expertise in a user-friendly Windows environment. The nuclear version of **pc-CRACK for Windows** consists of the following four integrated modules.

Linear-Elastic Fracture Mechanics

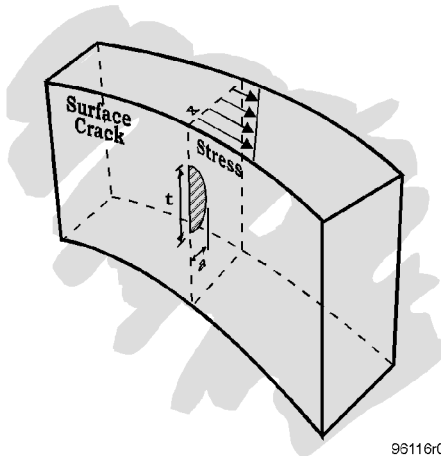
Linear-elastic fracture mechanics is the basic building block of most fracture mechanics analyses, and provides a measure of when a structure will fracture or at what rate a crack will propagate due to stress corrosion or fatigue.

pc-CRACK for Windows incorporates

This module allows the user to input K_I versus crack size data not available within **pc-CRACK** (e.g., from finite element analyses or newly published fracture mechanics solutions). The LEFM version of **pc-CRACK for Windows** contains only this module.

Elastic-Plastic Fracture Mechanics

The Elastic-Plastic module includes nine (9) models from the EPRI EPFM Handbook to characterize cracking for ductile and semi-ductile materials. This module also performs instability analysis based on the J-Integral/Tearing modulus approach.



twenty-five (25) fracture mechanics models for a wide variety of crack/structure configurations for computation of stress intensity factor (K_I) as a function of crack size (a). Fatigue and stress corrosion crack growth capability is also provided, along with built-in material properties for selected materials.

Creep Fracture Mechanics

Creep fracture mechanics is the study of time-dependent fracture at higher temperatures. The cracked component is characterized with a crack tip parameter (C^* , C_t , $C(t)$) much like the J-intergral in the elastic-plastic regime.

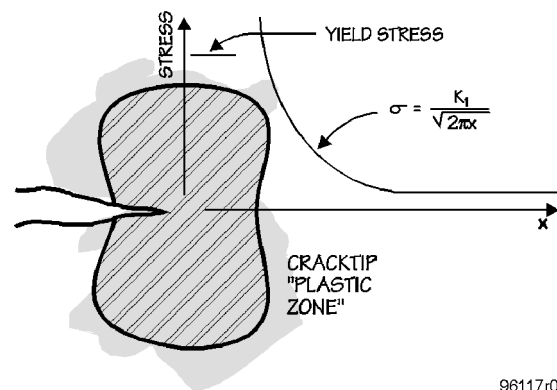
Interactive Graphics

pc-CRACK includes a versatile, interactive graphics program which provides immediate display of computations in the form of data plots that may be manipulated by the user, stored for later modification and use, or output to a plotter or printer.

What **pc-CRACK for Windows Can Do For You!**

pc-CRACK for Windows expands the capability of your engineering staff by providing an easy-to-use tool that allows users to rapidly perform highly sophisticated fracture mechanics analyses, with immediate graphics display of the results. With **pc-CRACK for Windows** you can easily formulate decisions (and generate support documentation) regarding the effects of structural flaws in a wide variety of materials and components.

Extensive effort has gone into verification of the various options and calculational algorithms in **pc-CRACK for Windows**. The nuclear version includes a separate Verification Manual and diskette with verification problems which have been run in **pc-CRACK** and checked against hand calculations and published results. SI conducts an on-going verification and support program for the current release of all nuclear versions, including audit support and error notification. SI maintains a controlled distribution of all "Nuclear Version" software copies. Software verification and validation has been performed in accordance with the applicable portions of the ASME NQA-1 and NQA-2, Part 2.7 Standards.



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