

CreepLife™ SOFTWARE - LIFE PREDICTION SOFTWARE

The CreepLife™ computer program is now available from CC Technologies Systems, Inc. This computer program provides state-of-the-art methodology for assessing the creep-rupture life, creep-crack-growth life, and fracture potential of cylindrical pressure vessels and pipes. CC Technologies Systems, Inc. is licensing CreepLife™ for individual use on MS-DOS and Macintosh personal computers equipped with math co-processors.

Program Development

The CreepLife™ computer program was developed by Dr. C. E. Jaske of CC Technologies Systems, Inc.. It is a user-friendly, interactive computer program that employs both creep-rupture modeling and inelastic fracture mechanics to assess the life of high-temperature cylindrical pressure vessels and pipes. The CreepLife™ software is designed for easy use on personal computers. The key feature of the CreepLife™ program is an interactive data entry. The input data can be saved in a file for later editing and re-use. Material properties and damage models are incorporated for two alloys: 2-1/4Cr-1Mo steel and 1-1/4Cr-1/2Mo steel. Properties are included for both welds and base metal. The user can add properties for other alloys by preparing a text file of materials data and materials constants. The CreepLife™

software comes with an extensive user manual that describes the theoretical basis of the analytical methods, provides instructions for using the software, and presents sample problems. Results of CreepLife™ calculations can be easily saved to a text file for subsequent printing and graphing.

The CreepLife™ program has been used to assess the life of seam-welded hot reheat steam lines, main steam lines, and welded petro-chemical process vessels.

Model Operations

CreepLife™ can model cyclic operations. The operating history is simulated by a series of up to 100 load steps. The series of unique load steps is defined as a block of the operating history. A block of simulated operation is repeated a specified number of times or until failure is predicted.

CreepLife™ computes both creep-rupture and creep-crack-growth life. The Larson-Miller parameter is used to model creep-rupture behavior, and the Robinson time-fraction rule is used to compute creep damage. The Cj parameter is used to model creep-crack-growth behavior. The J integral or the flow strength is used to compute estimates of critical crack size using Jlc fracture-toughness or tensile-strength data, respectively.

For more information, please visit our websites.

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PRODUCTS

HARDWARE:

CS 3100 Coupon Test Station

CM 3400-Coupon Monitor

PR 4500 - Polarization Resistance Measurement Instrument

EI-120 Electrochemical Interface

PS-140 Potentiostat

ZR-120 Zero Resistance Ammeter

Inline Separation System

Ultrasonic Monitoring System

SOFTWARE:

pcTUBE™ Software - Life Prediction Software

CreepLife™ Software - Life Prediction Software

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