

Z-set release notes

9.1.3

support@zset-software.com

September 2021

This document summarizes the principal enhancements and fixes with respect to the previous Z-set release (9.1.2).

1 Z-cracks

- Enhancements to Ansys interface (automatic preservation of various sets, handling of native Ansys boundary conditions like SF, contact and cyclic symmetry).
- Z-cracks interface to CodeAster (SIF and Propag simulations), that is capable of handling computations involving elastic materials along with contact (only Linux version is supported)
- Rainflow algorithm adaptations for handling complex loading conditions.
- User control over "kink" angle as an advanced option.
- Taking into account the contact forces in the calculation of G-integral (ANSYS/ ABAQUS/ SAMCEF/ Z-set).
- New DISTENE license key encryption, that embeds the key as an integral part of the Z-set distribution.

2 Z-post

- Updated FORGE interface results reader, to handle multi-domains.
- API based Ansys interface reader/writer.
- New interface results reader for the AdventureCluster code (Japan) .
- Cumulative non-linear fatigue analysis.
- Updated MED interface results reader to handle mixed meshes (tetra+hexa).

3 Zebulon

- Corrections for CB shells to take into account the local frame and plane stress capabilities.
- Enhanced Z-set python interface (Z-python).
- CPCG solver, extended to contact and mixed element formulation problems.

- Accelerated integ result writer.
- Translator to generate Z-set simulation files (input, geof, mat etc.) from Abaqus/Ansys input file.
- New penalty based mortar methods for frictional contact problems.
- MPC cyclic symmetry boundary conditions.
- Corrected local-frame handling for large deformation and contact elements.

4 Z-mat

- Convergence improvements for cast iron material model
- Interface FORGE/Z-mat (elasto-viscoplastic case).
- Interface AdventureCluster/Z-mat (Japanese HPC code).
- Plane stress conditions.
- Correction of the non-linear kinematic hardening model for anisothermal case (use of a variable fading memory parameter in respect to temperature).

5 Z-master

- Post processing on the lisets - acceleration.
- Auto input reader (AIR), GUI based input file generator.

6 Z-sopt

- Automatic creation of input file (.mast) for Z-sopt base on the experimental data.