

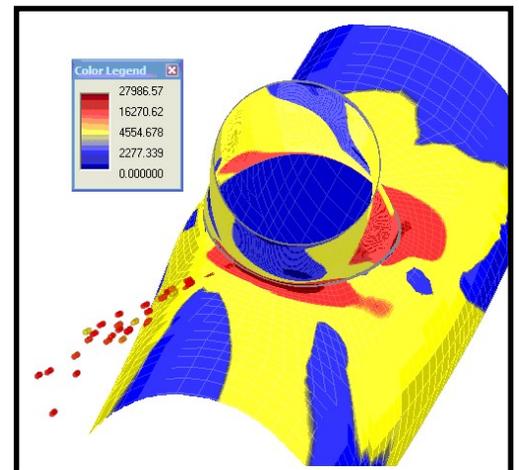
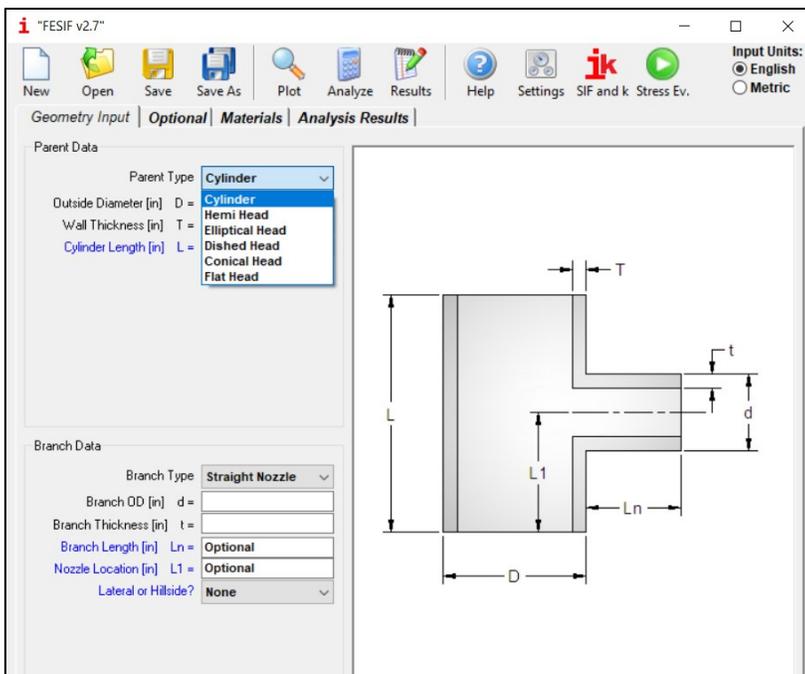
FESIF v2.7

FESIF is a finite element based program that automatically calculates stress intensification factors (SIFs) and flexibility factors for a wide range of piping intersections not covered by the B31 piping codes. B31.3 states that for certain intersections, “selection of the appropriate SIF is the designer’s responsibility”. FESIF automatically produces these “appropriate SIFs” for geometries where the B31 codes are not suited.

WHY SHOULD I USE FESIF?

B31.3 states that for certain intersections, “selection of the appropriate SIF is the designer’s responsibility.” FESIF automatically produces these appropriate SIFs for geometries where the B31 Codes are not suited. One example is unreinforced branch intersections where the d/D ratio is between 0.5 and 1.0. SIFs can be generated for the run or the branch pipe eliminating obvious errors. (See WRC 329 Para. 4.4.) Results are easy to use with any pipe stress analysis program, and reports are inspector ready and include all graphs and tables.

Allowable external loads and the maximum allowable pressure are also calculated by FESIF. Pipe stress analysts can use these tables to evaluate piping loads on vessels or heat exchangers.



Animated Graphical Output

PRG RECOMMENDS USING FESIF WHEN...

- $1.0 > d/D > 0.5$ for unreinforced for pad reinforced branch connections.
- Pad reinforced reducing branch connections
- Hillside or laterals
- $D/T > 100$
- Area replacement rules for pressure are only barely satisfied and $D/T > 50$.
- Temperatures exceed 750F for ferritic steels and 850F for austenitic steels.
- The number of Thermal or Pressure cycles are greater than 5000.
- Design and operating conditions are approximately the same and stresses at the branch are $> 85\%$ of the allowable.
- Piping attached to the nozzle is long, flexible, and somewhat unrestrained and $D/T > 50$
- Branch connections are present in cones, spherical, flat, dished or elliptical heads.
- $d/D < 0.5$ for run SIFs

FESIF is only available as a part of the annual Software Maintenance Service (SMS) for FEPIPE and NozzlePRO. It is not sold as an independent program.