

Computational models in VERB

Component	Crack	Location	Orientation	Load components	Stress profile 1D	Stress profile 2D
plate	extended surface	-	-	•	•	-
	extended embedded	-	-	•	•	-
	semi-elliptical surface	-	-	•	•	•
	semi-elliptical embedded ⁽³⁾	-	-	•	•	•
	quarter-elliptical corner	-	-	•	•	•
	elliptical embedded	-	-	•	• ⁽¹⁾	-
	through-thickness	-	-	•	-	-
plate with hole	semi-elliptical, one crack	bore surface	-	•	-	-
	semi-elliptical, two cracks	bore surface	-	•	-	-
	quarter-elliptical, one crack	bore surface	-	•	-	-
	quarter-elliptical, two crack	bore surface	-	•	-	-
	through-thickness, one crack	bore surface	-	•	-	-
	through-thickness, two cracks	bore surface	-	•	-	-
hollow cylinder	extended surface	internal	circumferential	•	•	-
		external	circumferential	•	•	-
		internal	axial	•	•	-
		external	axial	•	•	-
	extended embedded	-	circumferential	•	•	-
		-	axial	•	•	-
	semi-elliptical surface	internal	circumferential	•	•	•
		external	circumferential	•	•	-
		internal	axial	•	•	•
		external	axial	•	•	-
	elliptical embedded	-	circumferential	•	• ⁽¹⁾	-
		-	axial	•	• ⁽¹⁾	-
	through-thickness	-	circumferential	•	•	-
		-	axial	•	•	-
round bar	extended surface	-	circumferential	•	-	-
	circular embedded	-	circumferential	•	-	-
	semi-elliptical surface	-	circumferential	•	•	•
rotating round bar	semi-elliptical surface	-	circumferential	•	•	•
sphere	extended surface	internal	-	•	•	-
		external	-	•	•	-
	extended embedded	-	-	•	•	-
	semi-elliptical surface	internal	-	•	•	-
		external	-	•	•	-
	elliptical embedded	-	-	•	• ⁽¹⁾	-
through-thickness	-	-	•	•	-	

⁽¹⁾ Stress intensity factor for an elliptical embedded crack subjected to a non-uniform 1D stress distribution is calculated by replacing the stress distribution by a conservative linear profile