

BAB 6

KESIMPULAN

6.1. Kesimpulan

Kesimpulan yang didapatkan dari penelitian ini adalah pemodelan tekan pada material SRCGF dengan *flat indenter* S45C dapat dilihat dan disajikan pada subbab 5.2., halaman 43. Langkah – langkah pembuatan model dan simulasi yang dilakukan dengan menggunakan software Abaqus 6.13. di PC milik Laboratorium Proses Produksi UAJY berjalan lancar. Hasil verifikasi dari pemodelan material SRCGF dan Sil8800 yang dilakukan menunjukkan bahwa kurva SEF *silicone rubber* untuk SRCGF dan Sil8800 memiliki nilai tegangan maksimal yang hampir sama sebesar 11,7056 MPa pada regangan (*strain*) 400%. Sehingga *present model* kurva SEF pada material SRCGF yang dibuat memiliki kemiripan terhadap model kurva SEF Sil8800 Shergold dkk (2005). Persamaan matematis yang terbentuk adalah $y = -0.003x^2 + 0.399x + 0.770$, dengan harga *R-Squared* sebesar $R^2 = 0.990$.

Hasil simulasi dengan software Abaqus 6.13. mendapatkan kontur dan regangan maksimal ketika terjadi kontak antara *flat indenter* dan material *viscoelastic* dari material SRCGF yang disajikan pada lampiran 1 gambar 1 sampai dengan gambar 240.

Proses simulasi juga menunjukkan bahwa semakin tinggi tekanan yang diberikan pada material SRCGF maupun Sil8800 maka nilai konsentrasi tegangan *Von Misses Stress* yang dihasilkan akan semakin tinggi yang berkisar mulai 0.6156 MPa sampai 4.698 MPa untuk material SRCGF, sedangkan untuk material Sil8800 berkisar 0.6146 MPa sd 4.723 MPa dengan *flat indenter* rata 180° dan ketebalan layer 20 mm.

6.2. Saran

Penelitian selanjutnya dapat dilakukan untuk mengoptimasi persamaan matematis yang terbentuk dari kurva yang dihasilkan. Selain itu penelitian juga dapat dilakukan untuk topik yang sama namun dengan perlakuan material atau jenis material yang akan digunakan. Penelitian selanjutnya diharapkan tidak hanya terbatas pada pengembangan model Mooney – Rivlin saja, tetapi dapat juga pengembangan model Neo – Hookean, Ogden, Yeoh, Arruda – Boyce, Gent, Blatz – Ko.

Perlunya penelitian lebih lanjut mengenai analisis FEA pada master produk SSS sebelum dilakukan proses manufaktur pada mesin EDM (*Electrical Discharge Machining*) dan CNC (*Computerize Numerical Control*). Selain itu perlunya CAE sebelum masuk ke proses CAM guna mengantisipasi besarnya biaya yang dibutuhkan.



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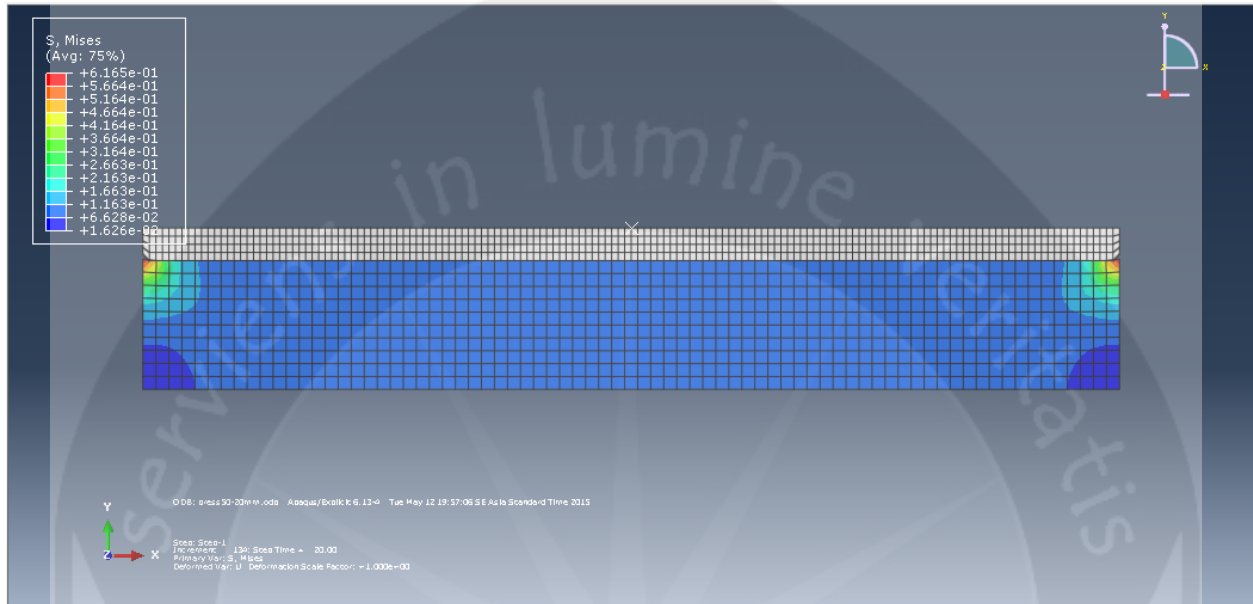
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Lampiran 1

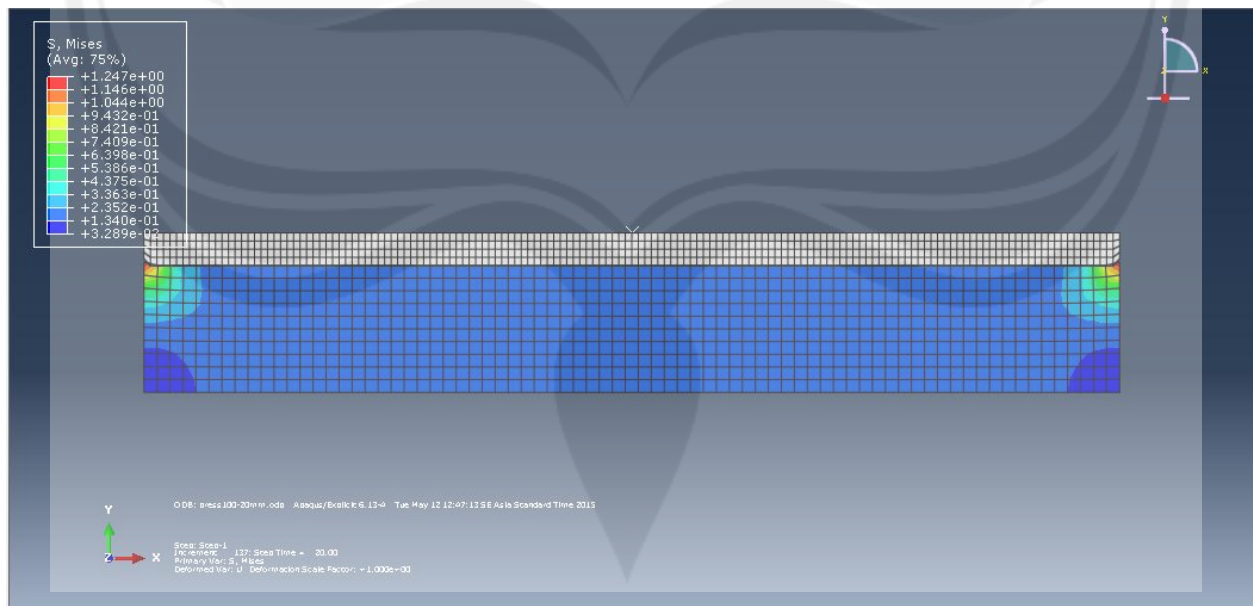
Silicone Rubber Castaldo Gellato Fuschia (SRCGF)

Layer 20 mm

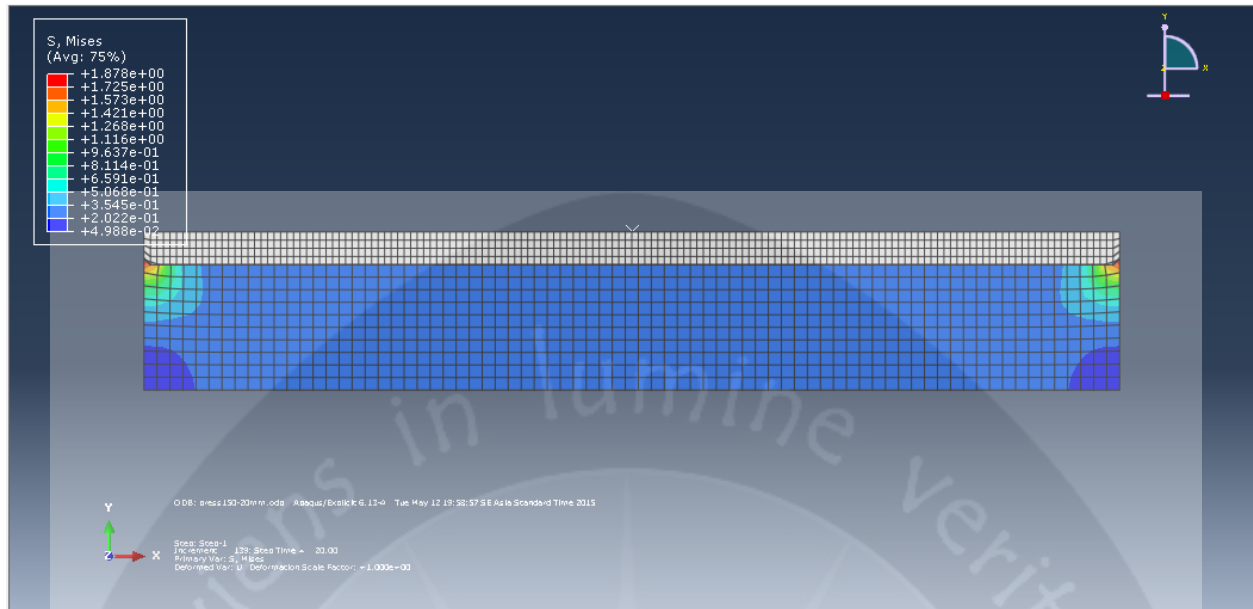
Indenter Chamfer 45°



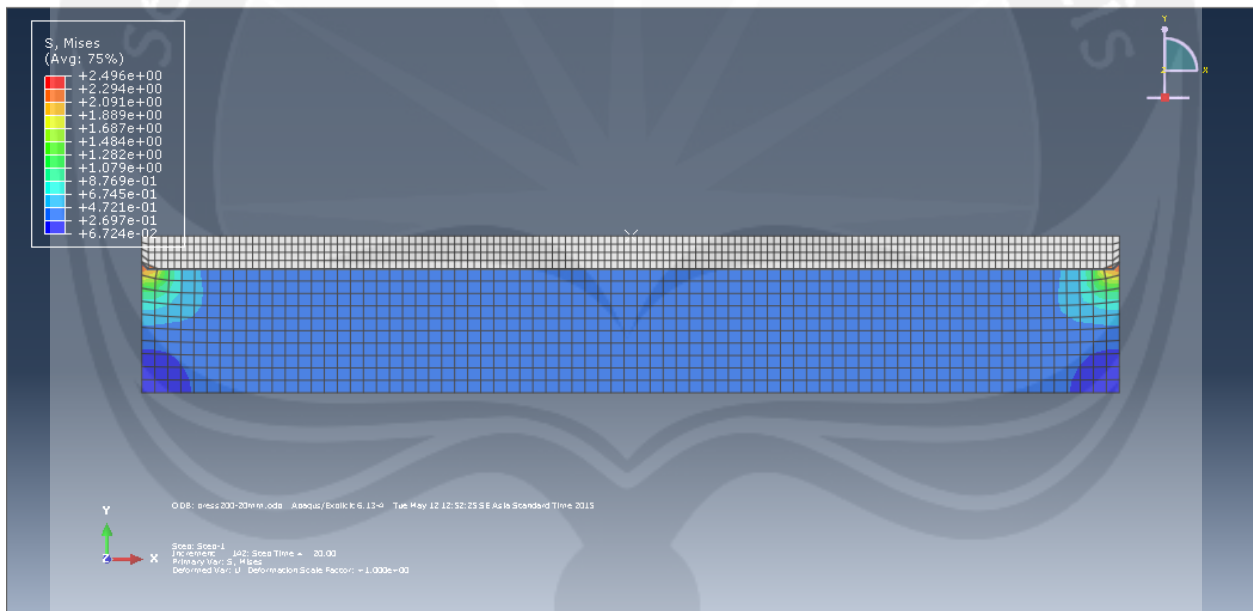
Gambar 1. SRCGF dengan Tekanan 50 N



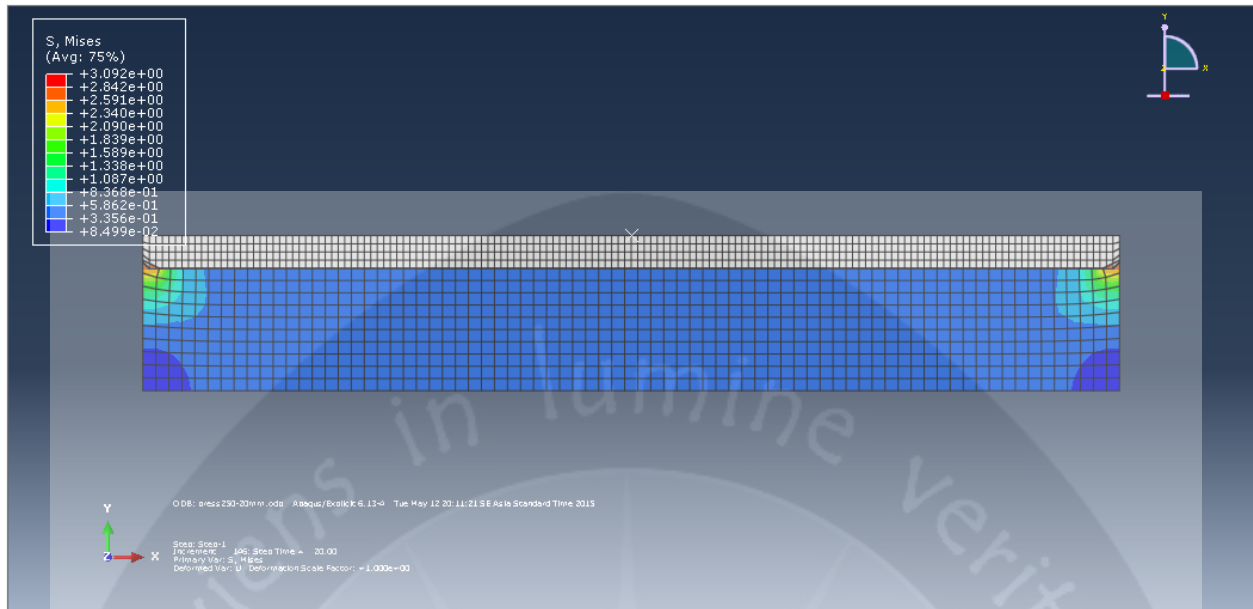
Gambar 2. SRCGF dengan Tekanan 100 N



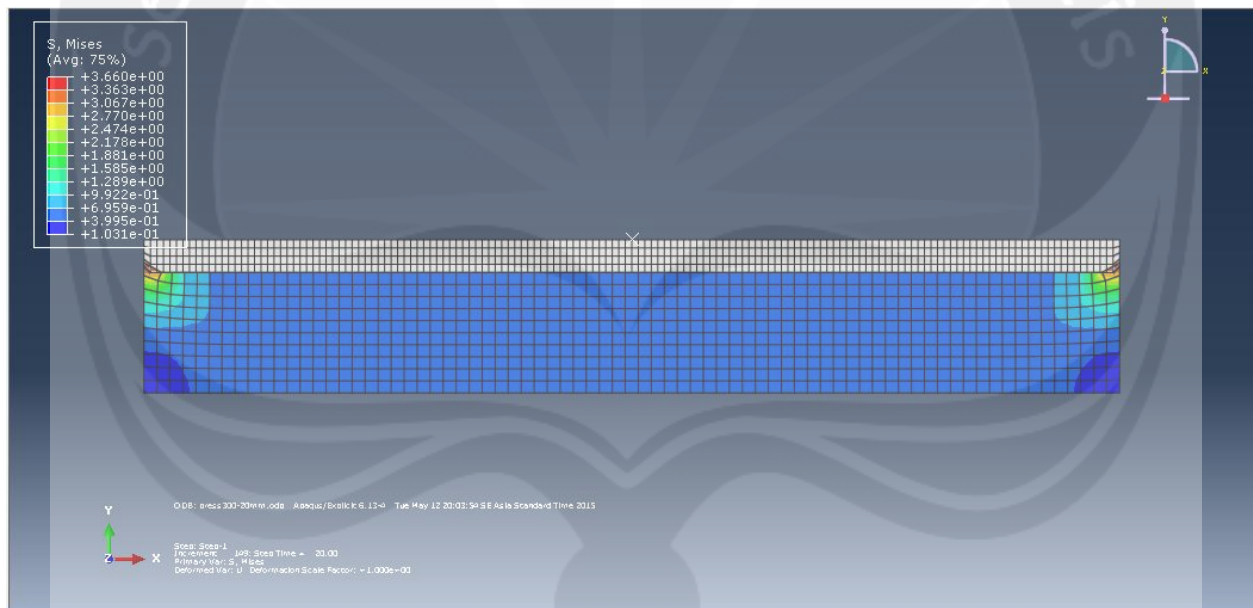
Gambar 3. SRCGF dengan Tekanan 150 N



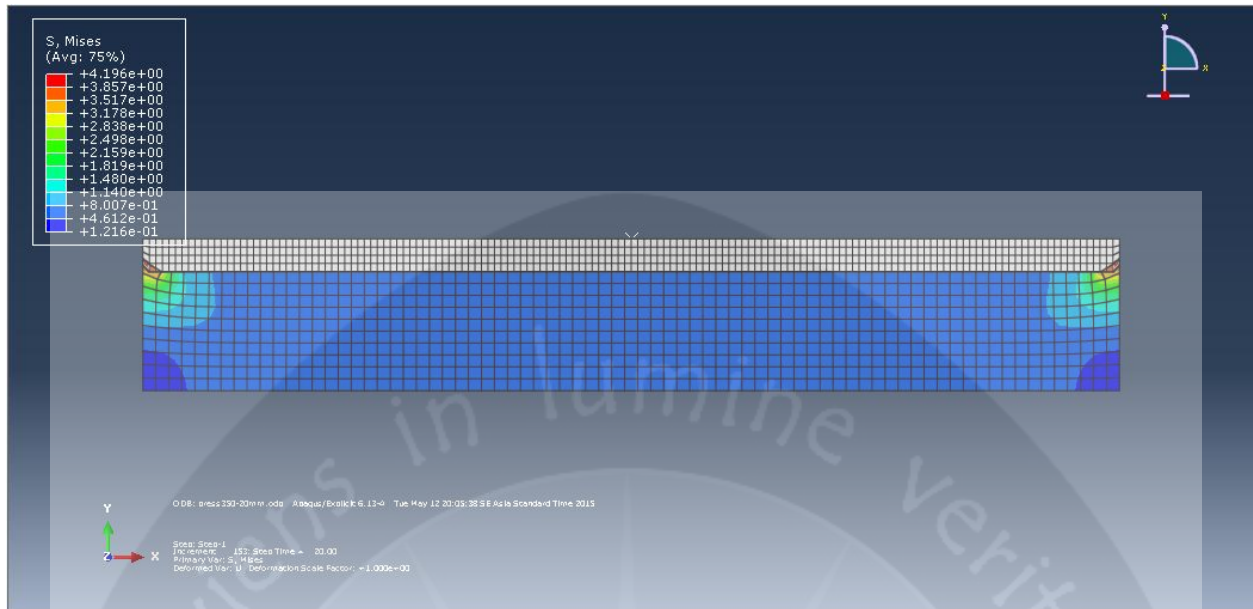
Gambar 4. SRCGF dengan Tekanan 200 N



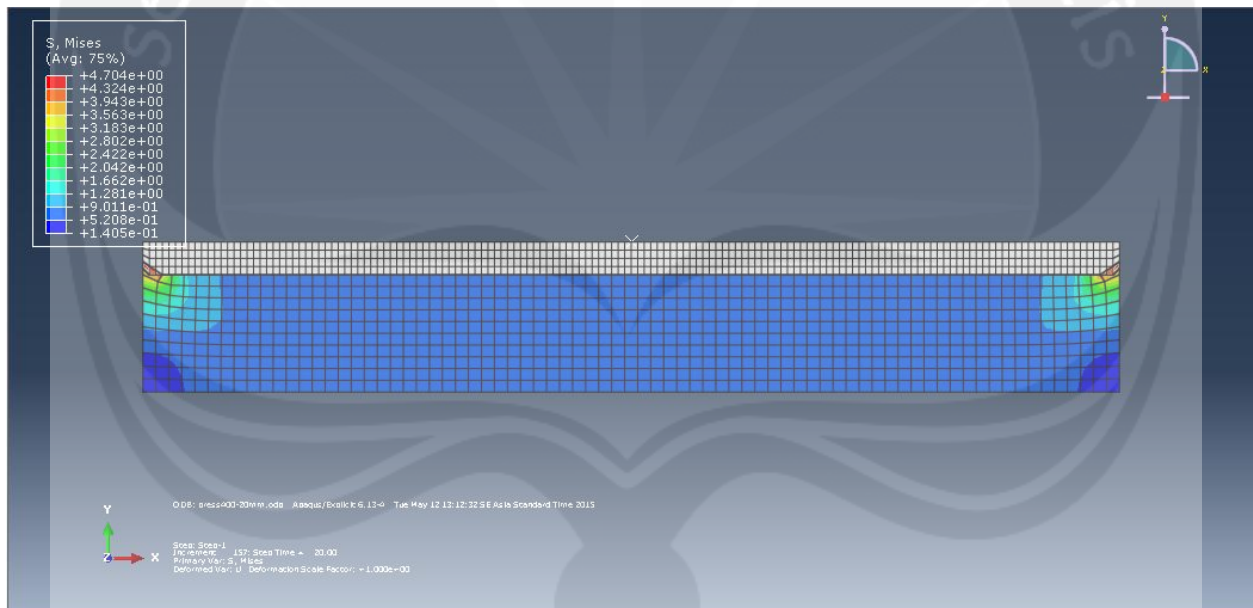
Gambar 5. SRCGF dengan Tekanan 250 N



Gambar 6. SRCGF dengan Tekanan 300 N



Gambar 7. SRCGF dengan Tekanan 350 N

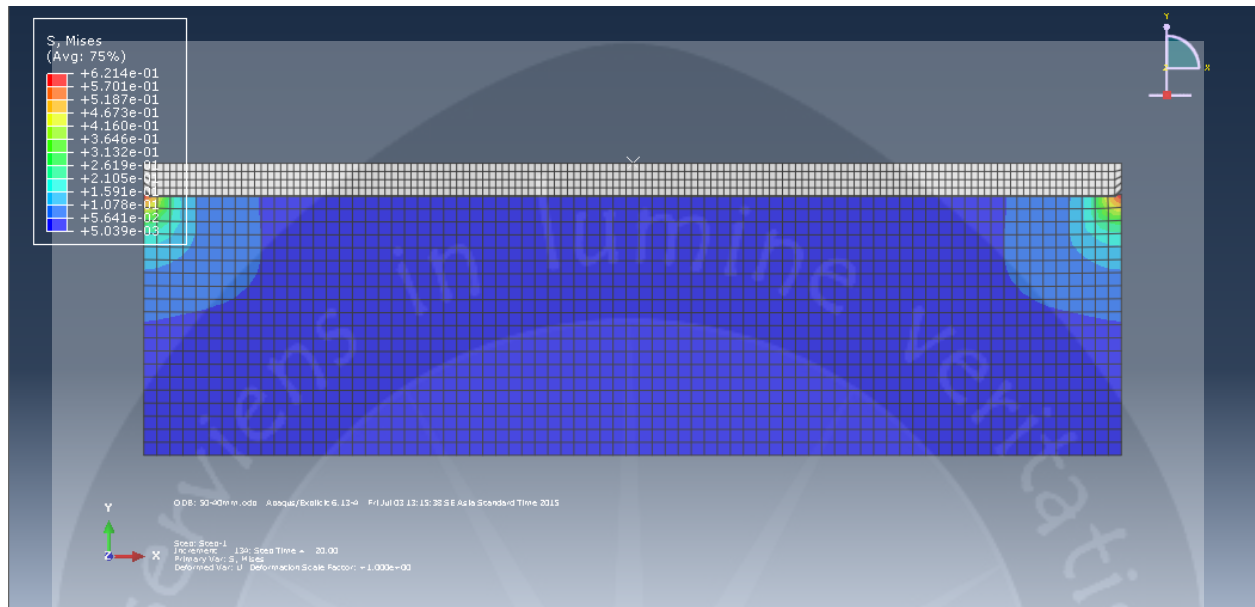


Gambar 8. SRCGF dengan Tekanan 400 N

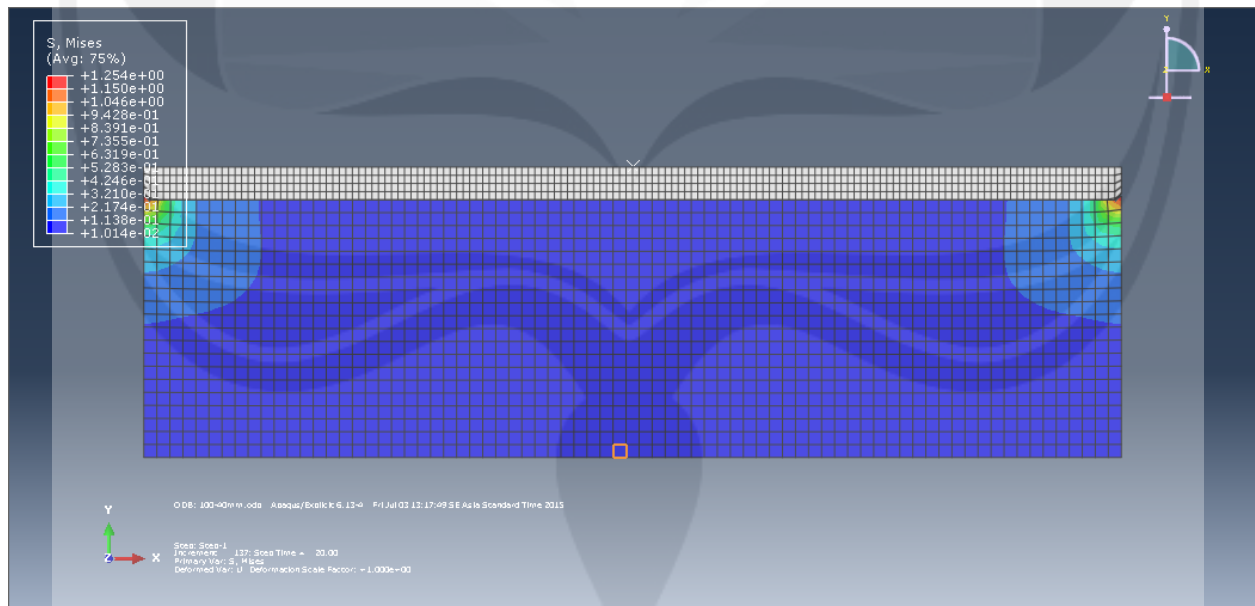
Silicone Rubber Castaldo Gellato Fuschia (SRCGF)

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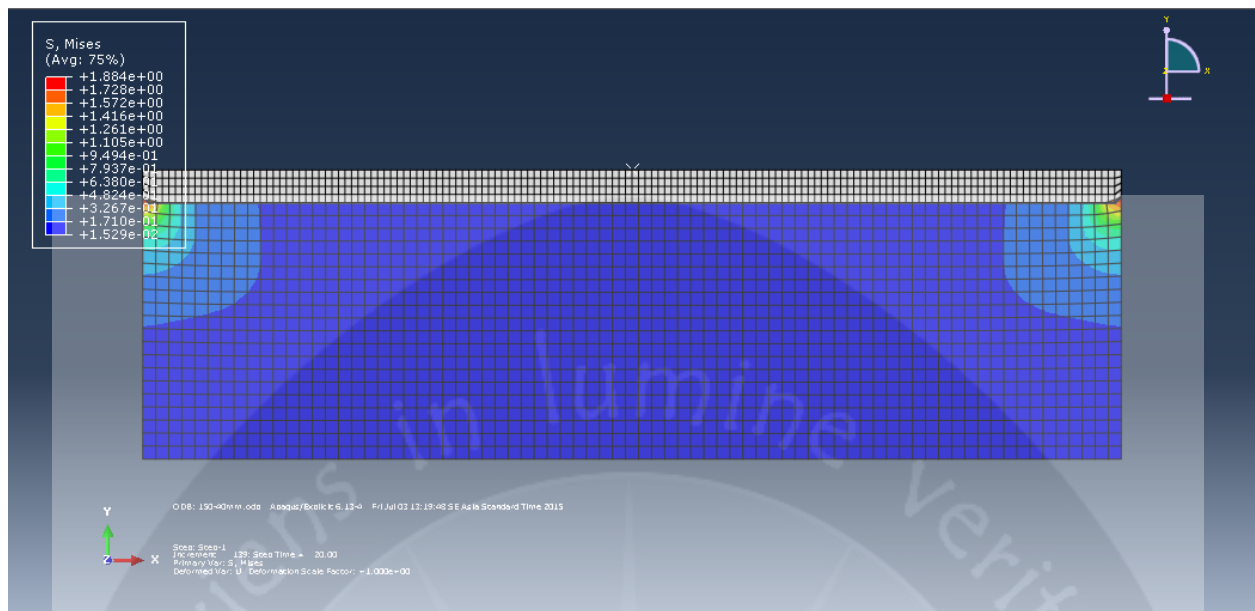
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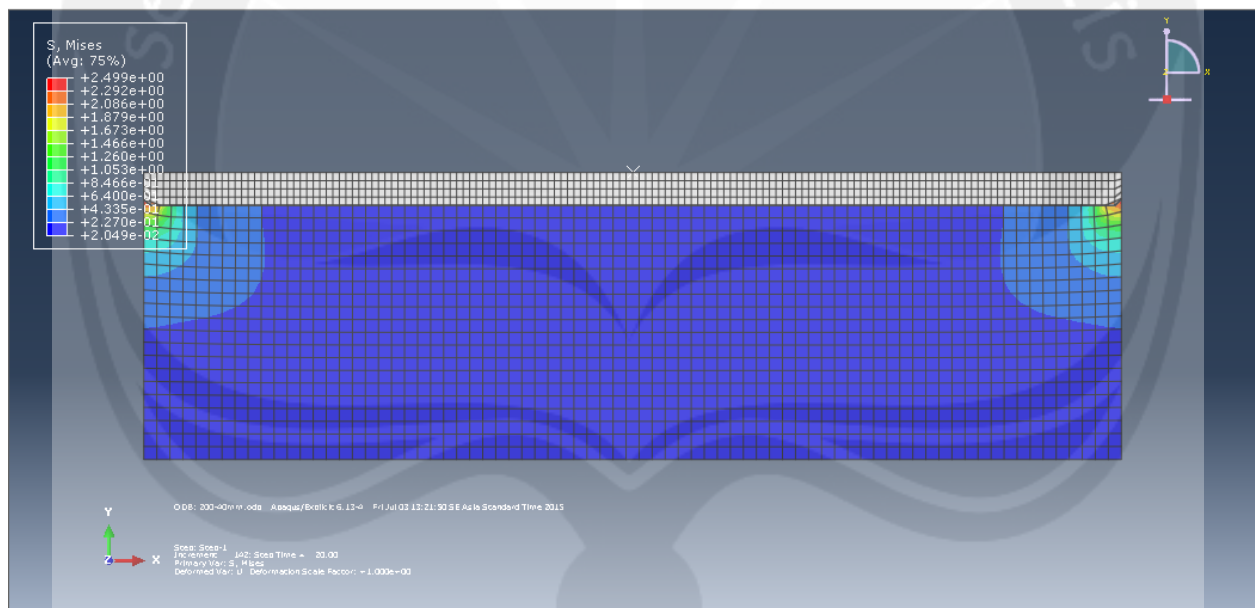
Gambar 9. SRCGF dengan Tekanan 50 N



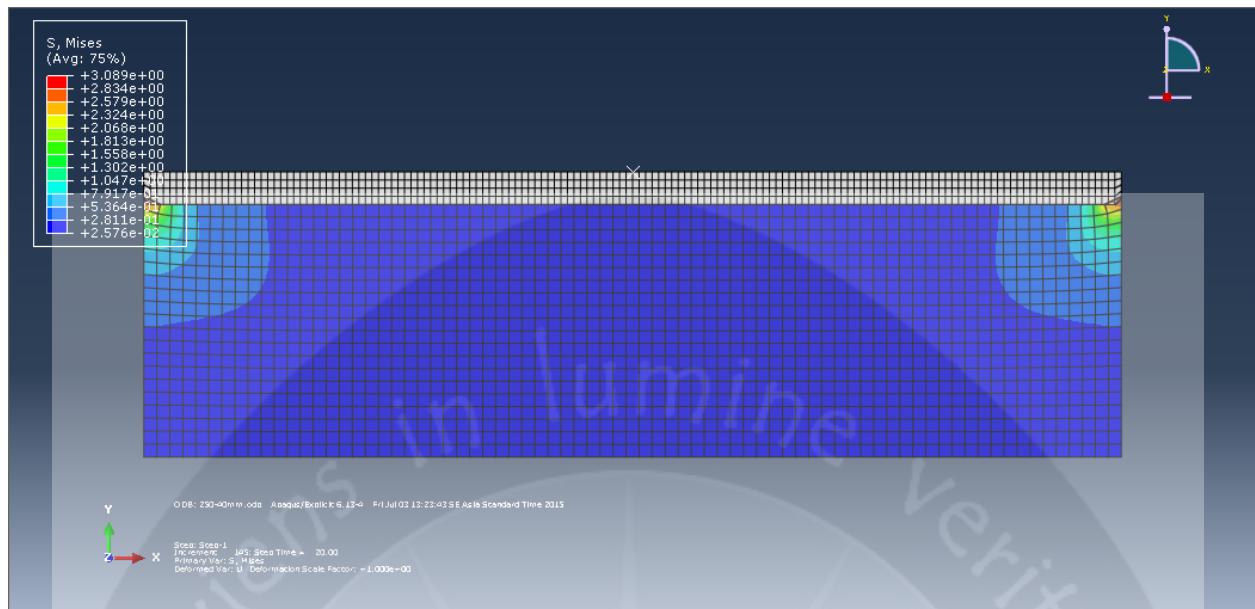
Gambar 10. SRCGF dengan Tekanan 100 N



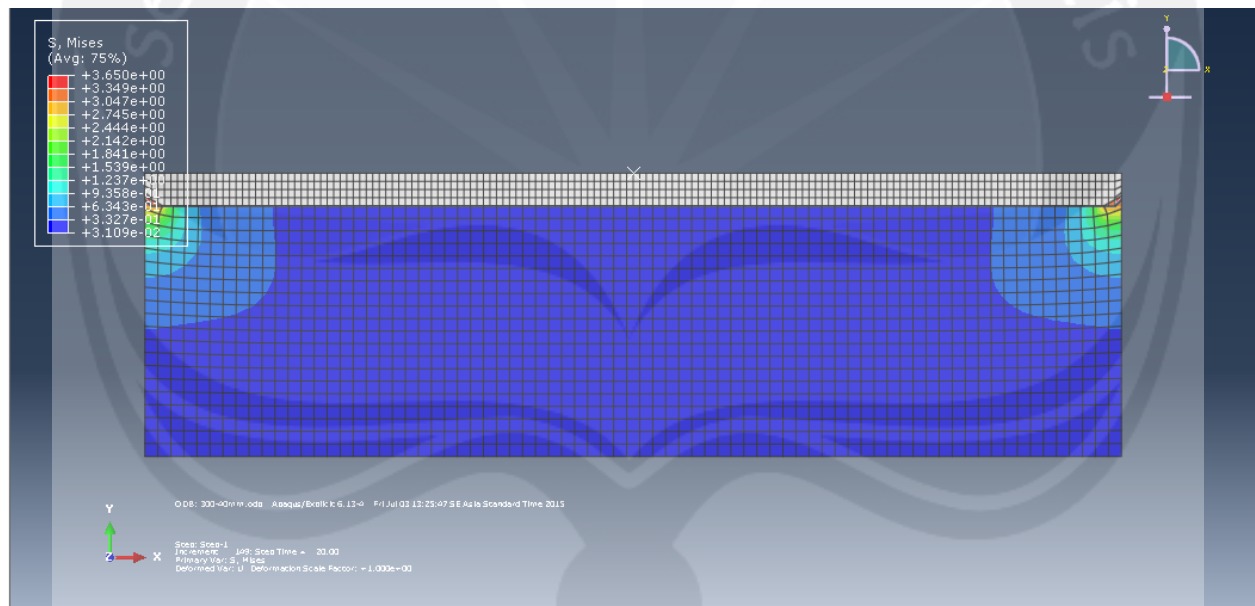
Gambar 11. SRCGF dengan Tekanan 150 N



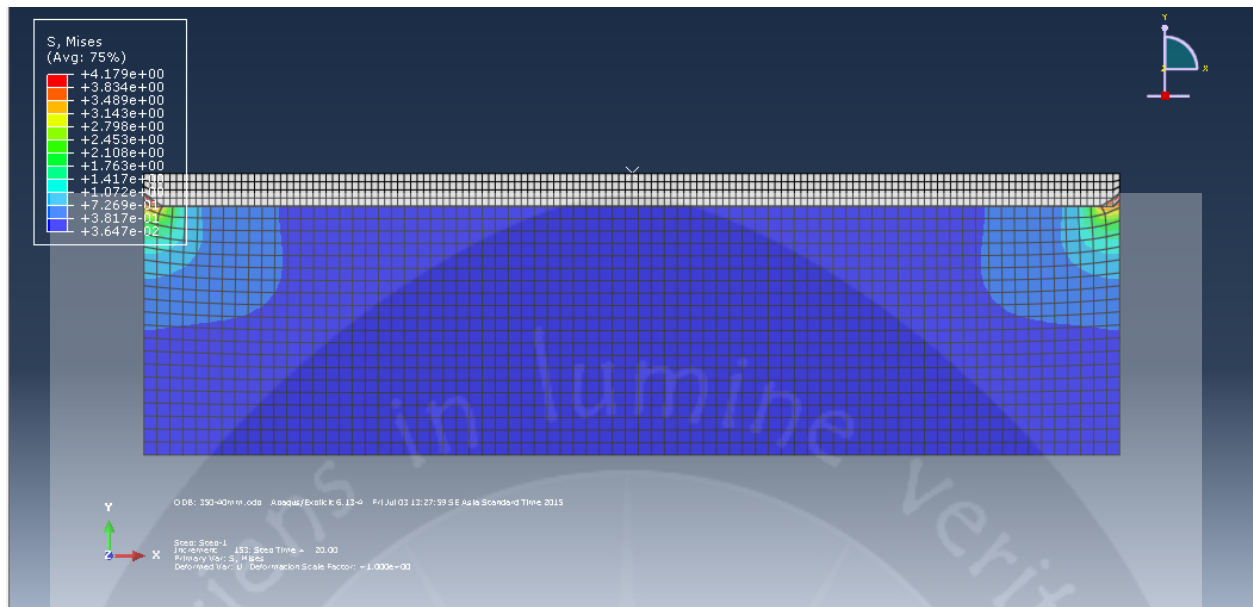
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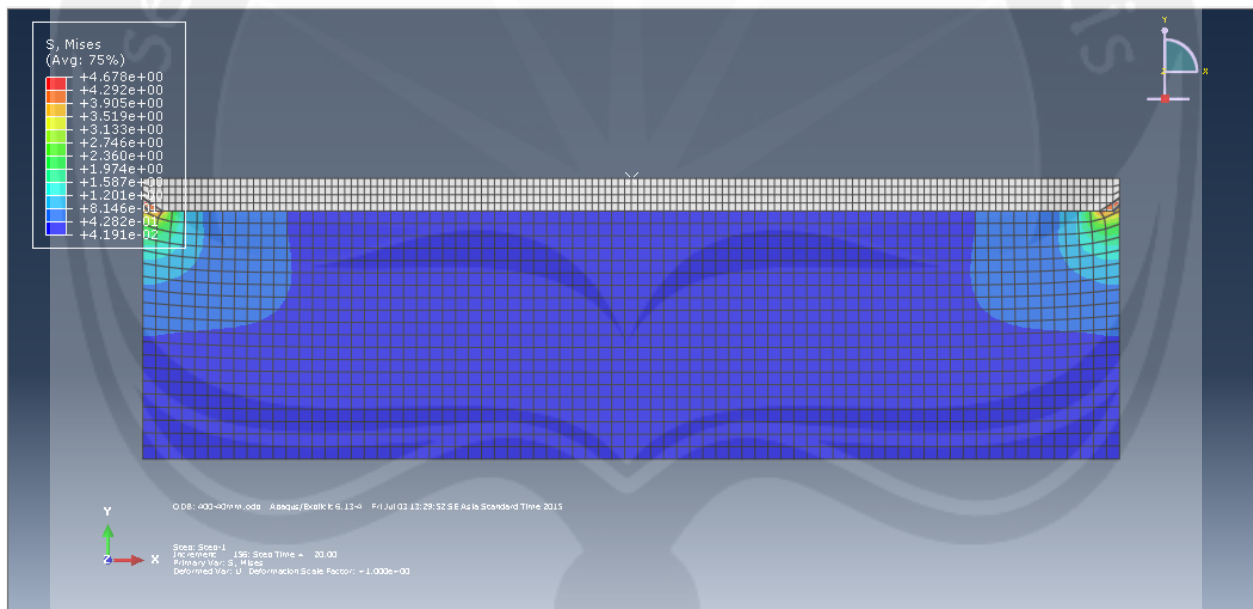
Gambar 13. SRCGF dengan Tekanan 250 N



Gambar 14. SRCGF dengan Tekanan 300 N



Gambar 15. SRCGF dengan Tekanan 350 N

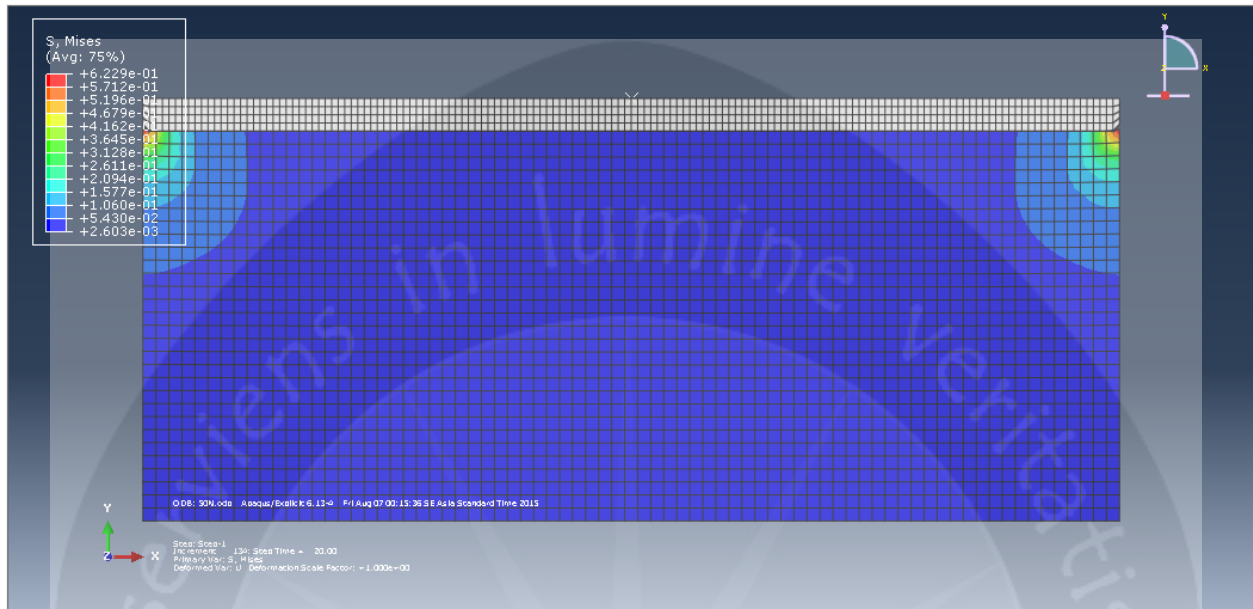


Gambar 16. SRCGF dengan Tekanan 400 N

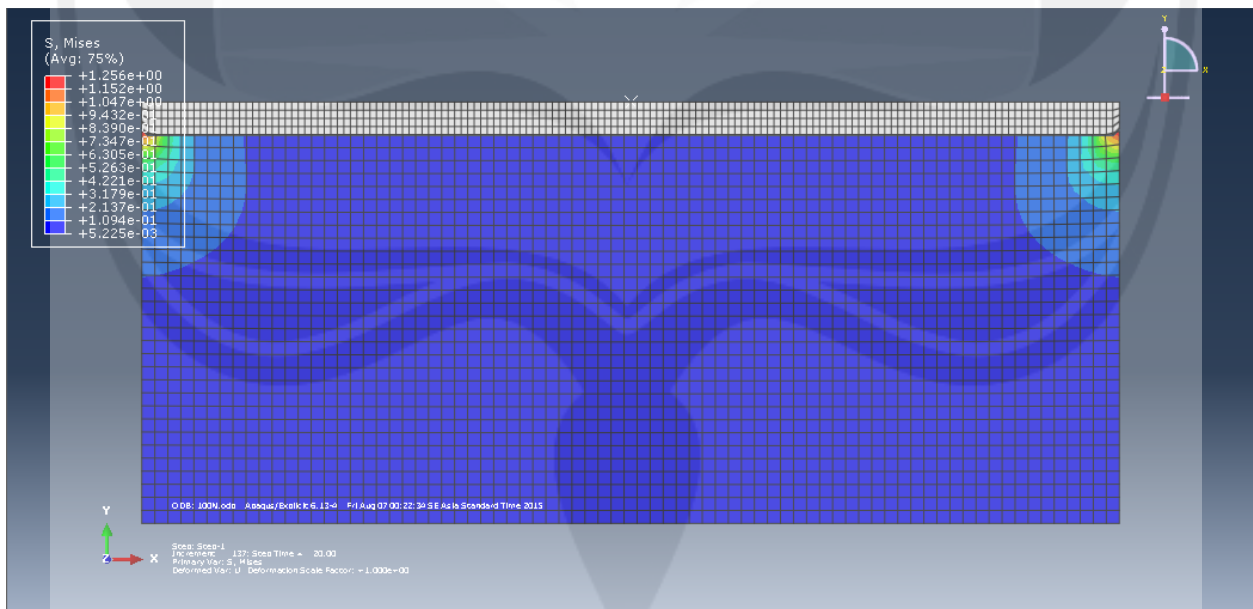
Silicone Rubber Castaldo Gellato Fuschia (SRCGF)

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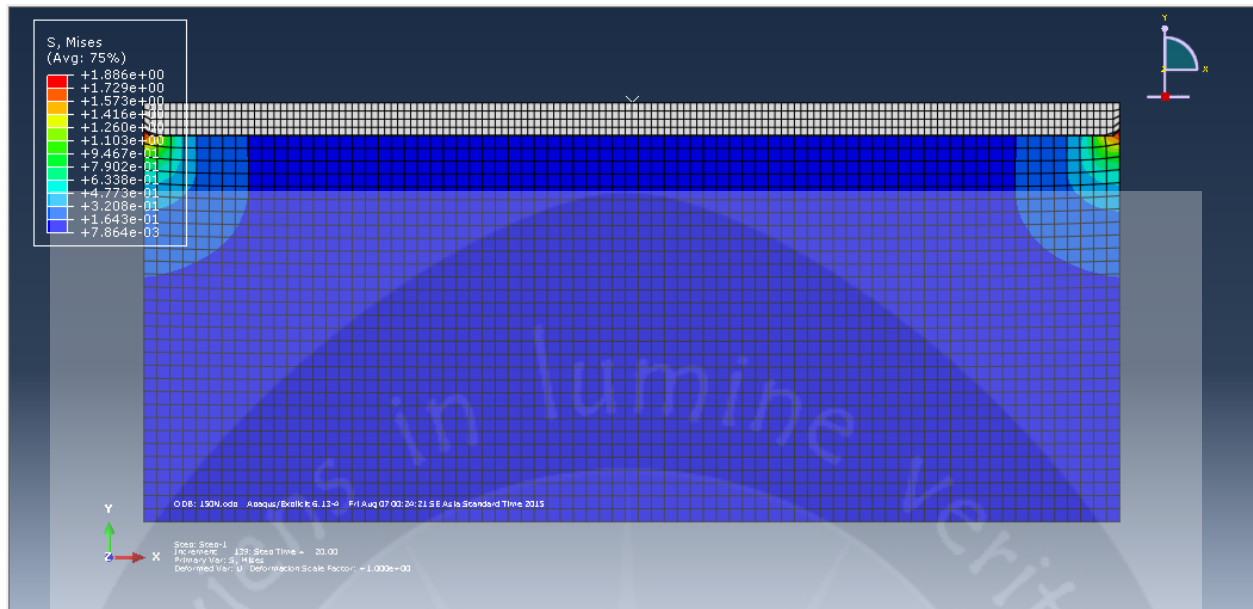
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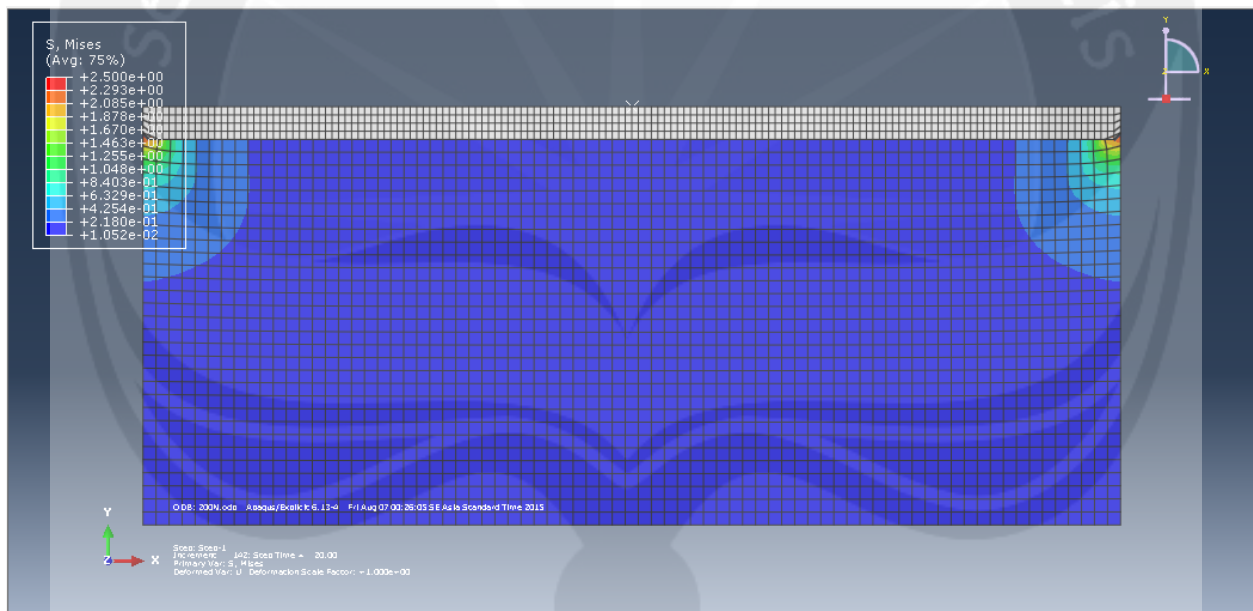
Gambar 17. SRCGF dengan Tekanan 50 N



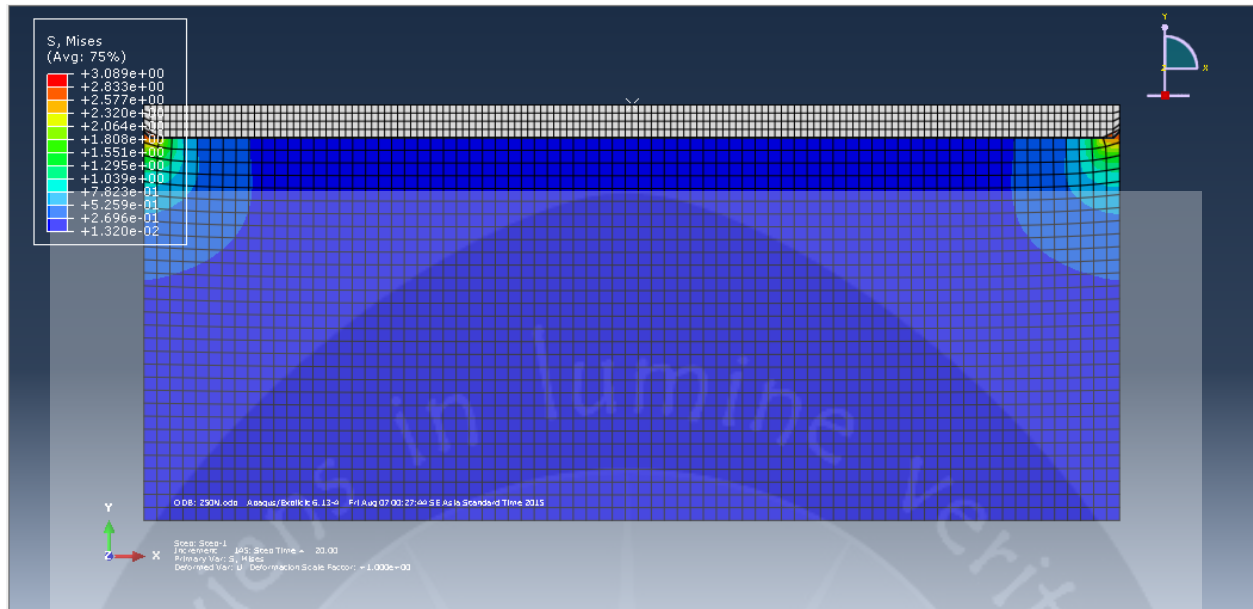
Gambar 18. SRCGF dengan Tekanan 100 N



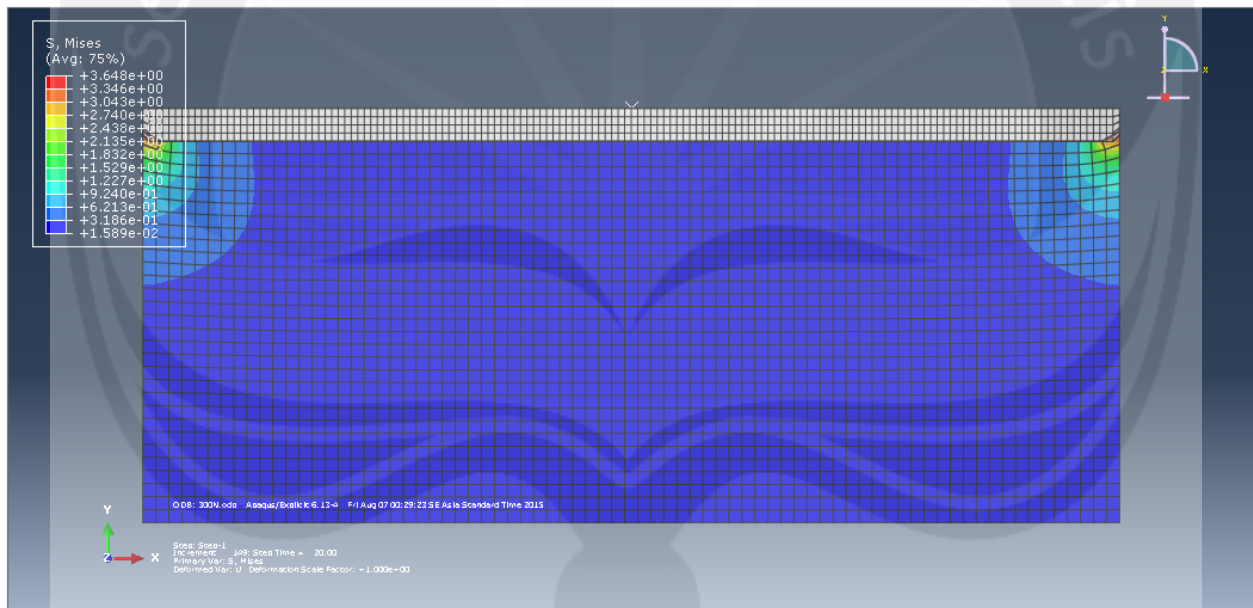
Gambar 19. SRCGF dengan Tekanan 150 N



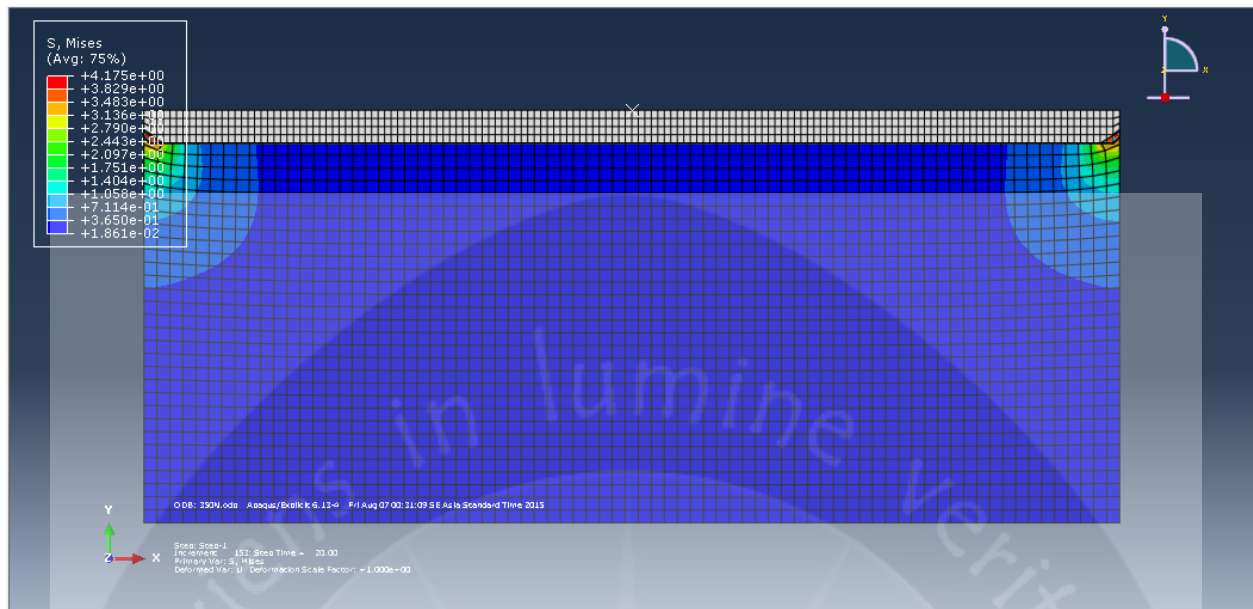
Gambar 20. SRCGF dengan Tekanan 200 N



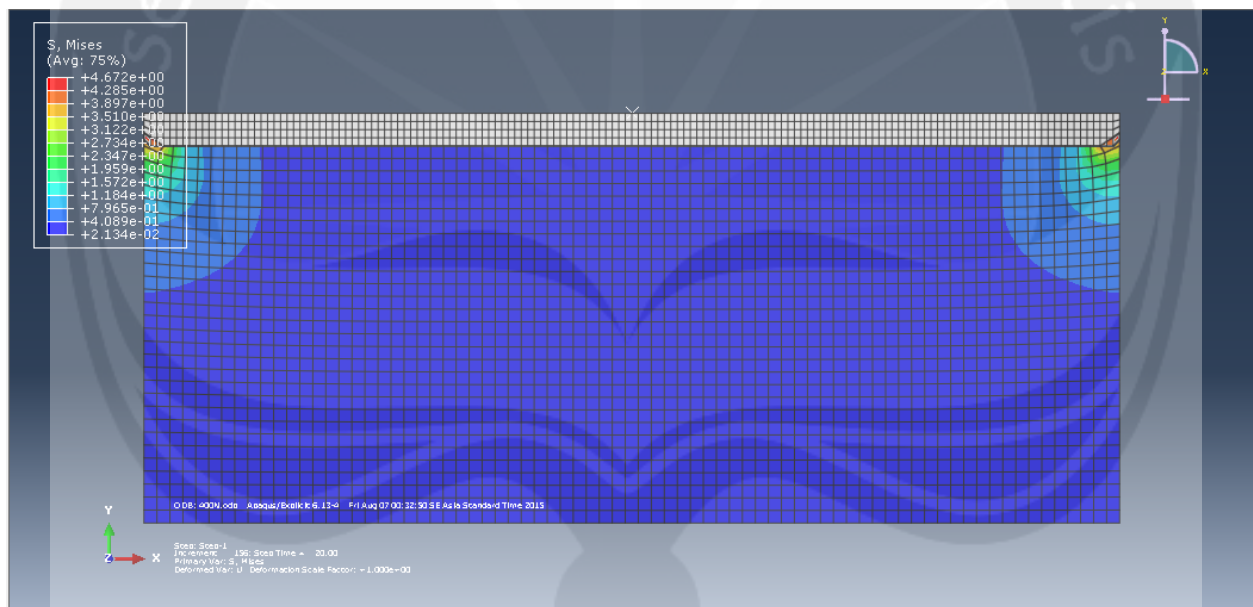
Gambar 21. SRCGF dengan Tekanan 250 N



Gambar 22. SRCGF dengan Tekanan 300 N



Gambar 23. SRCGF dengan Tekanan 350 N

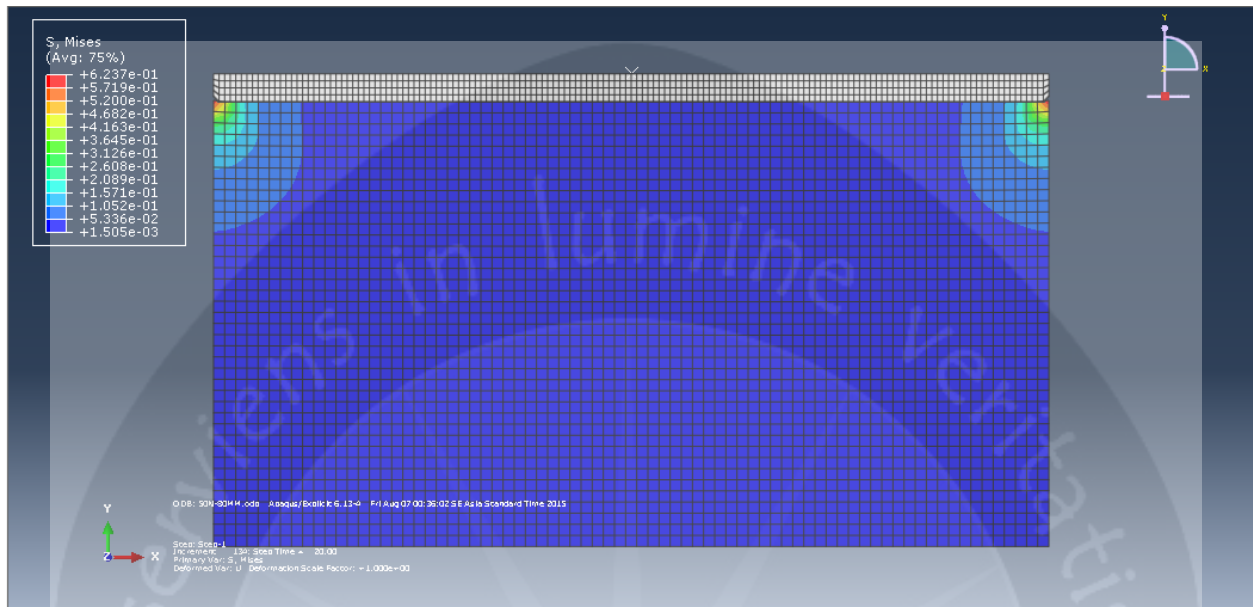


Gambar 24. SRCGF dengan Tekanan 400 N

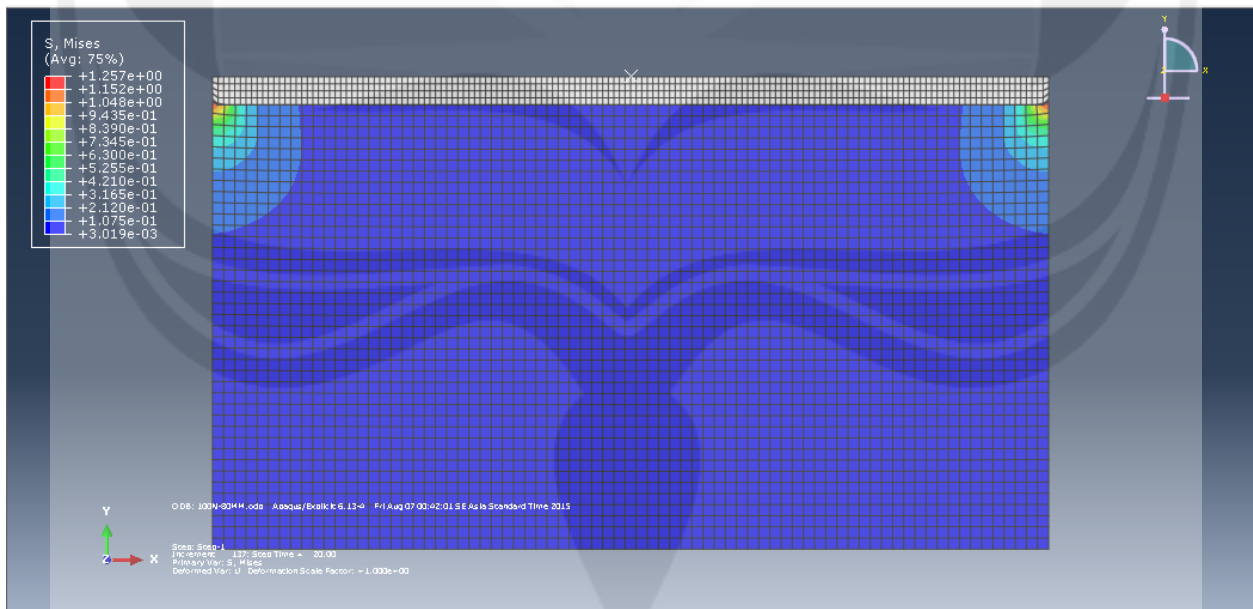
Silicone Rubber Castaldo Gellato Fuschia (SRCGF)

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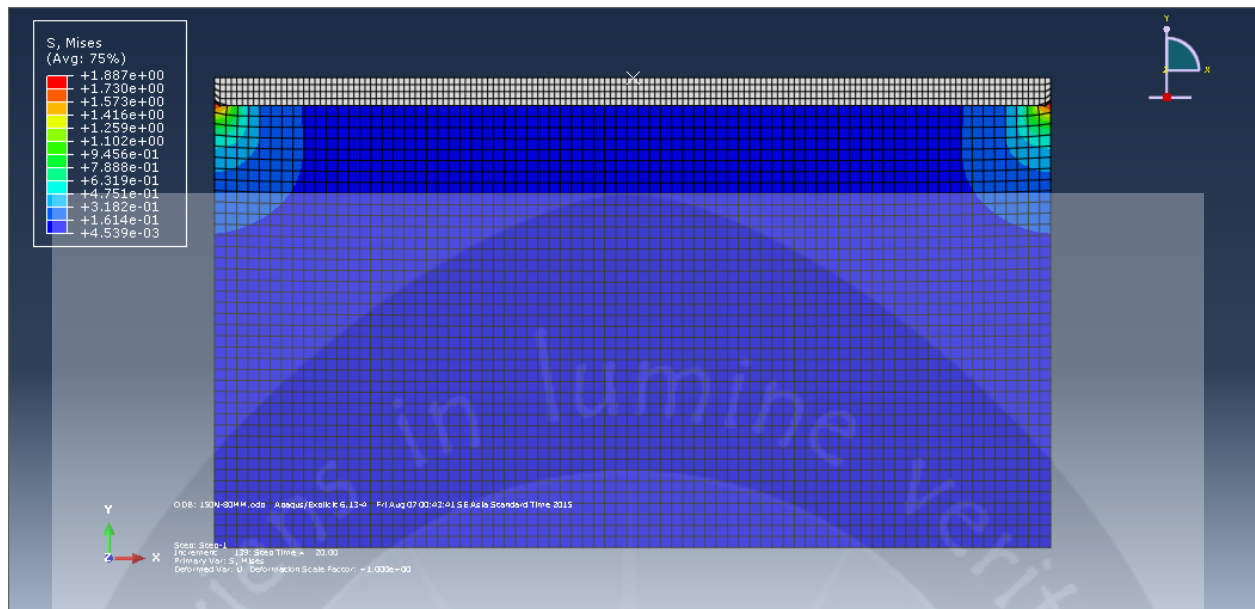
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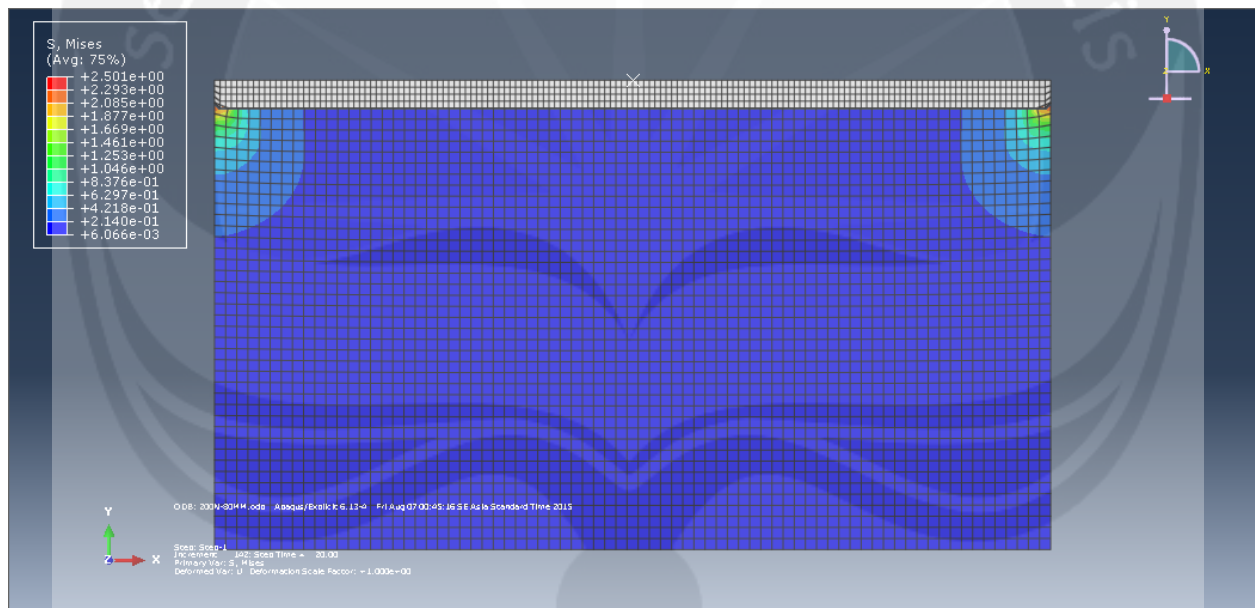
Gambar 25. SRCGF dengan Tekanan 50 N



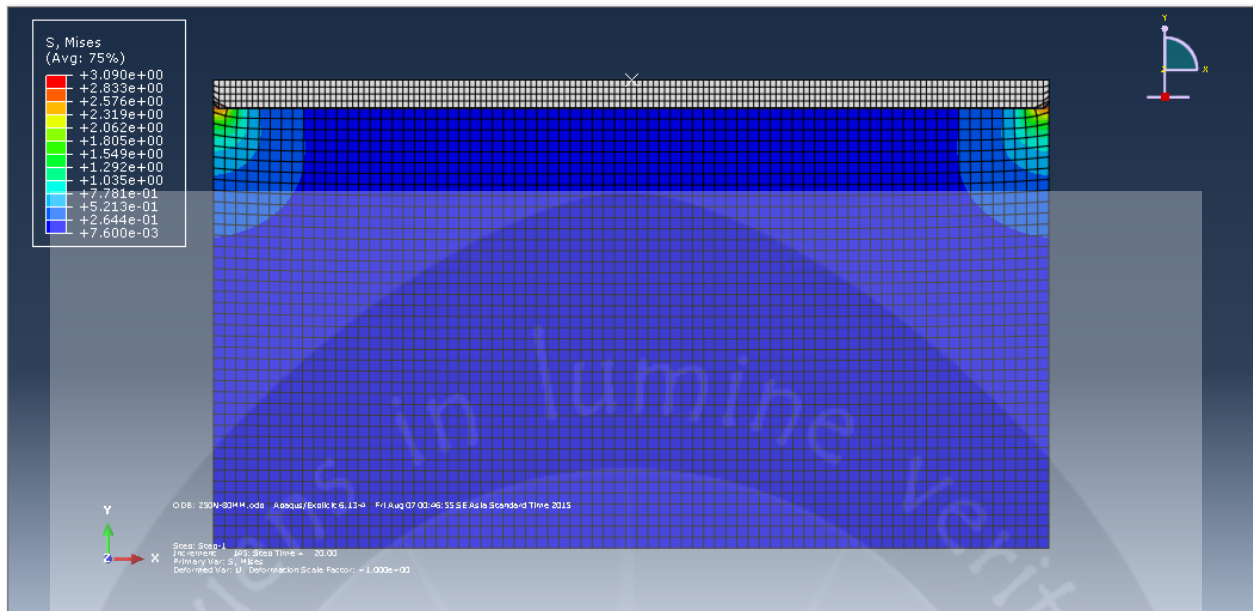
Gambar 26. SRCGF dengan Tekanan 100 N



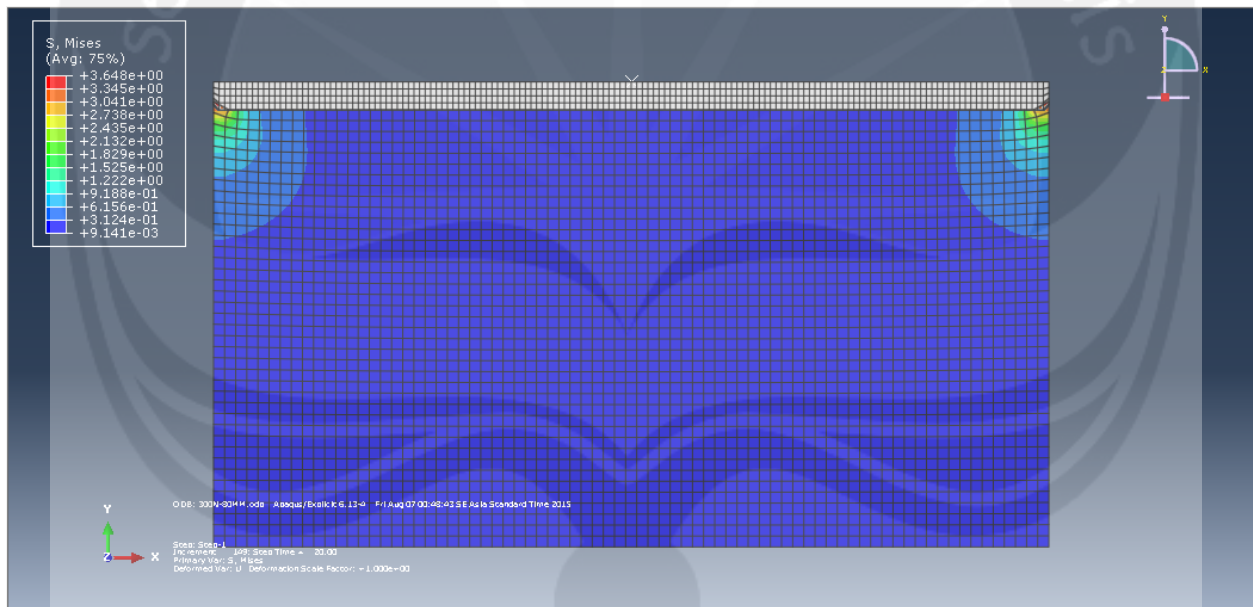
Gambar 27. SRCGF dengan Tekanan 150 N



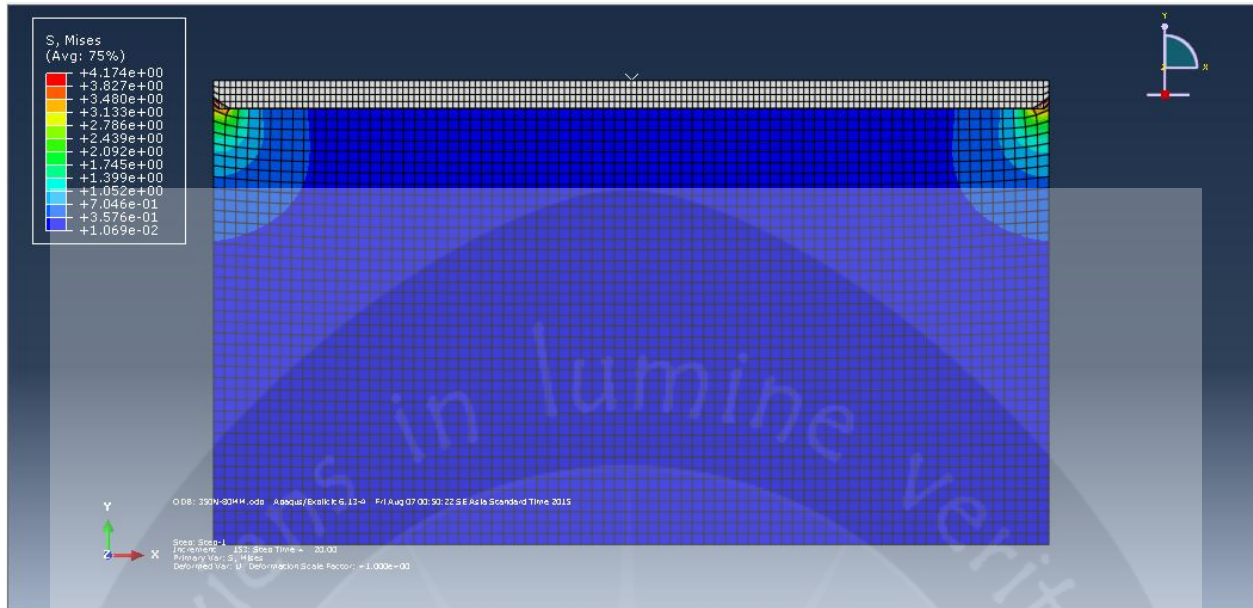
Gambar 28. SRCGF dengan Tekanan 200 N



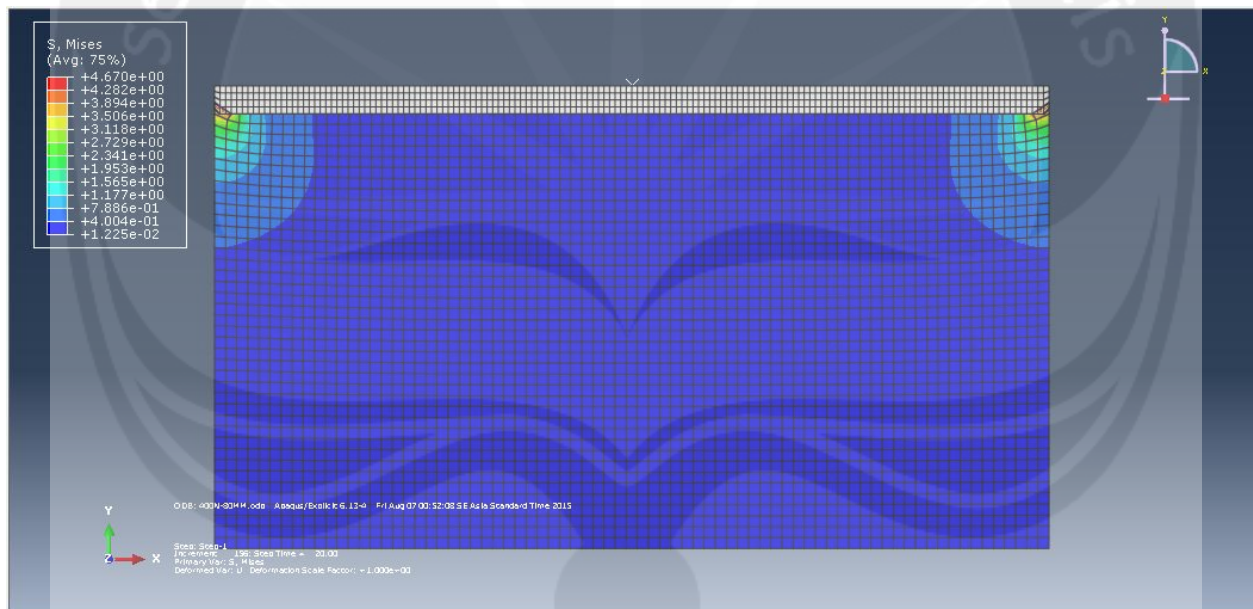
Gambar 29. SRCGF dengan Tekanan 250 N



Gambar 30. SRCGF dengan Tekanan 300 N



Gambar 31. SRCGF dengan Tekanan 350 N

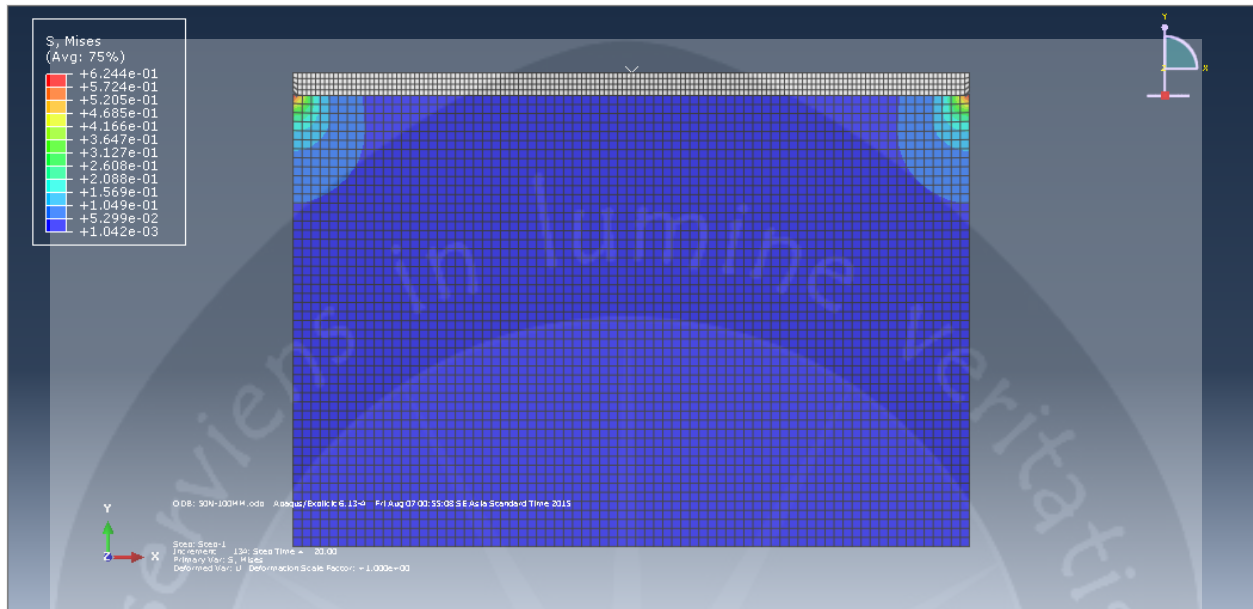


Gambar 32. SRCGF dengan Tekanan 400 N

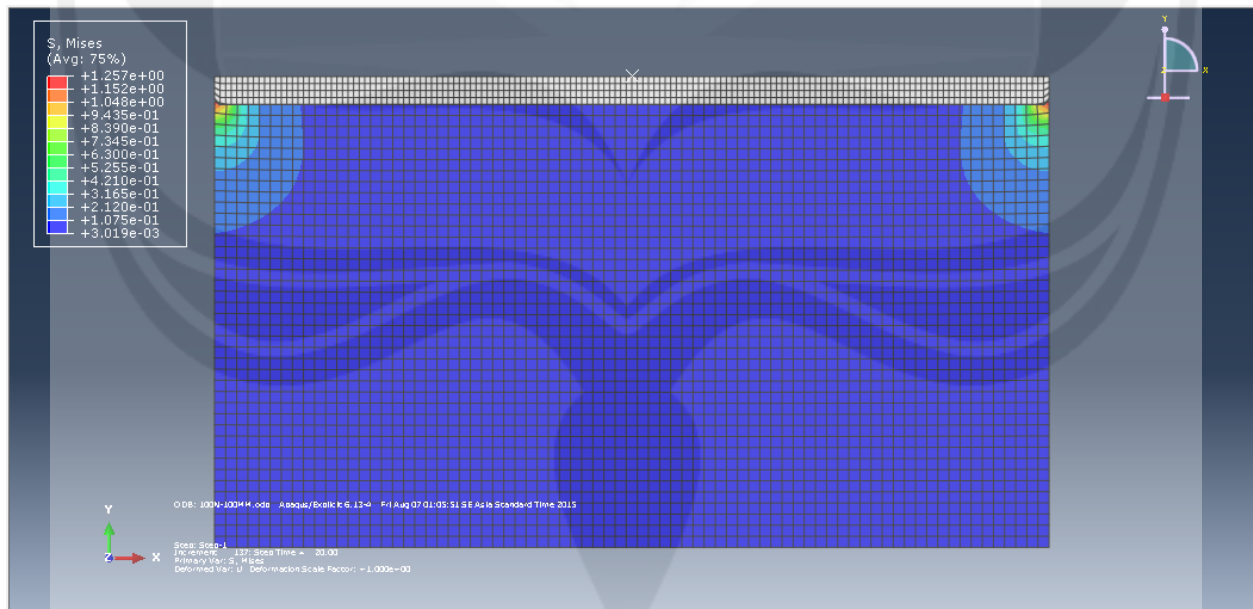
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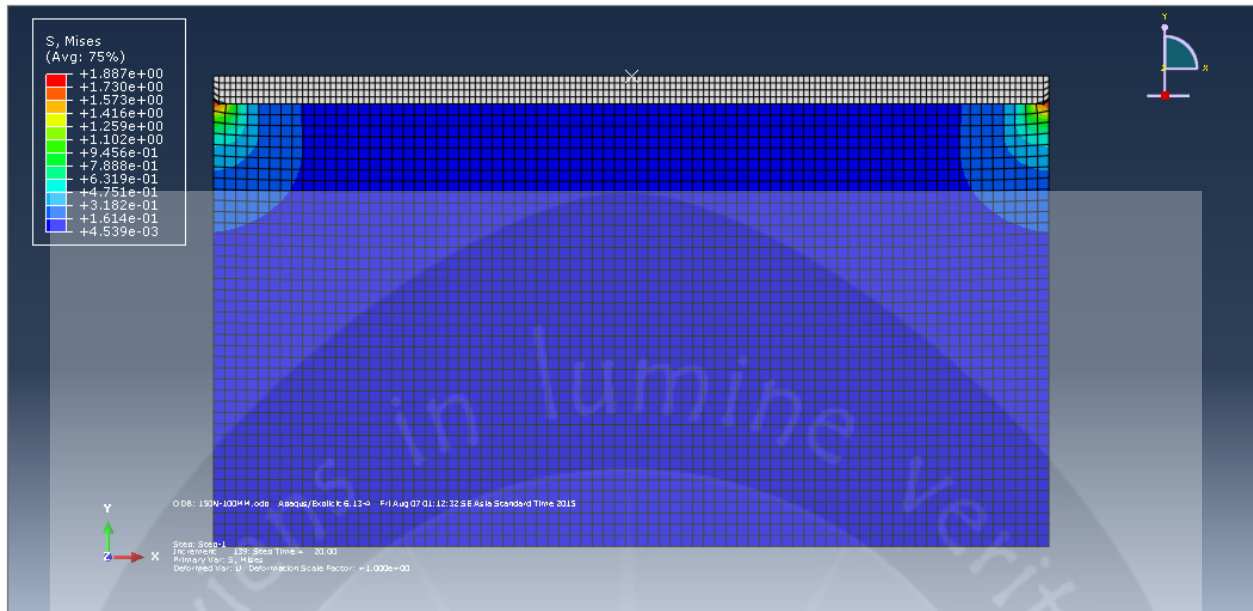
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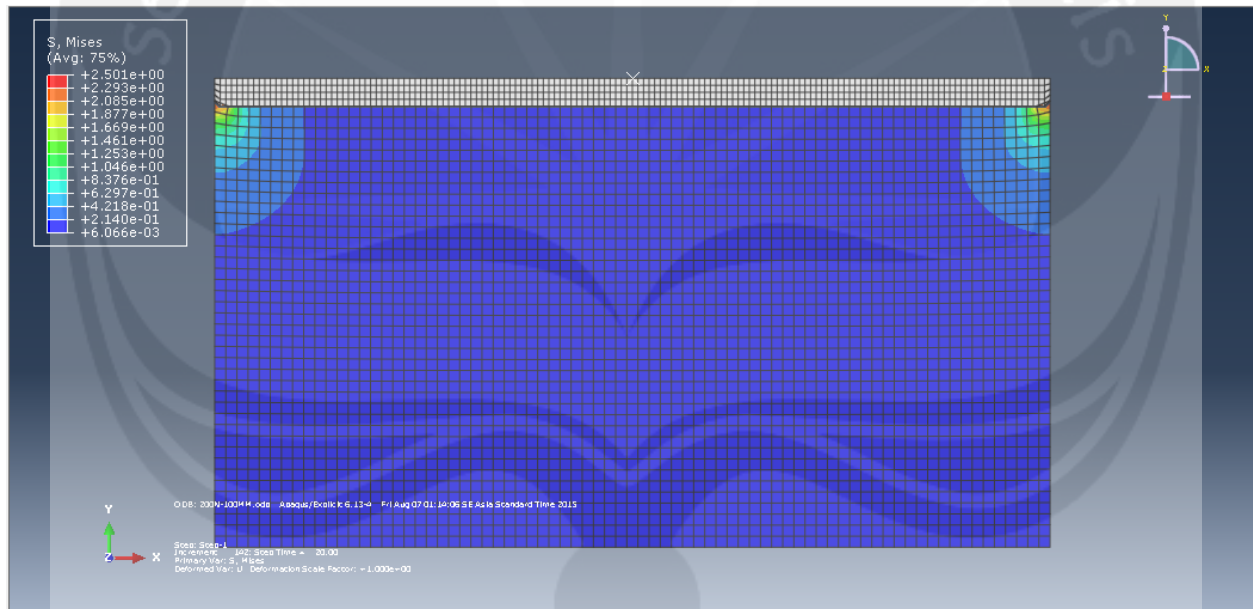
Gambar 35. Tekanan 50 N



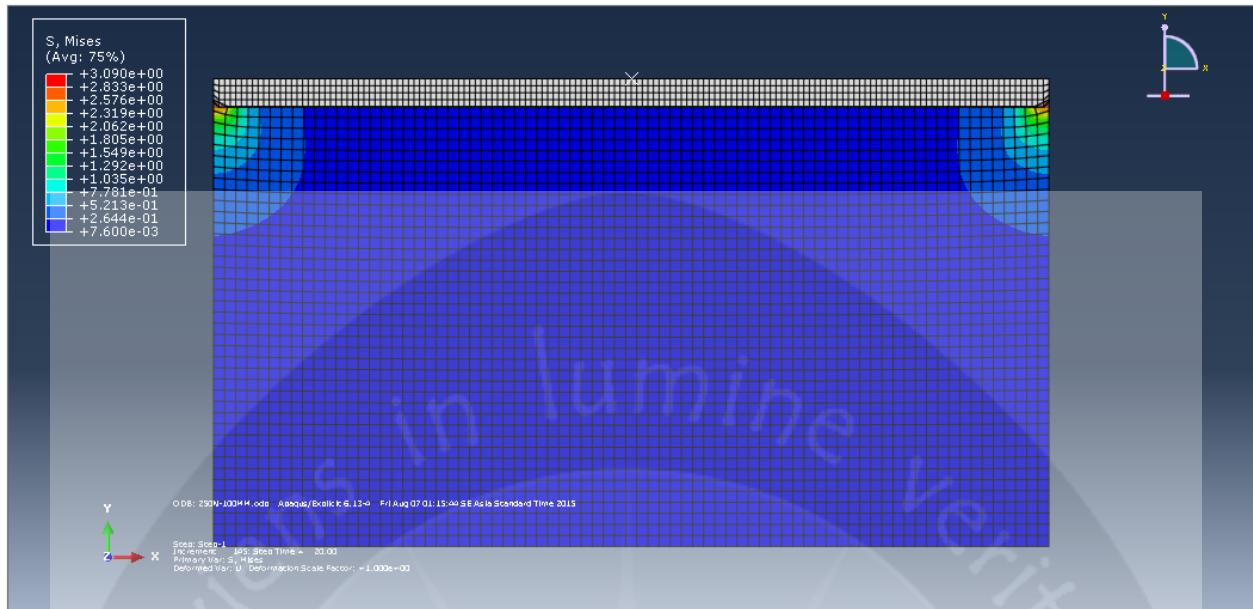
Gambar 36. Tekanan 100 N



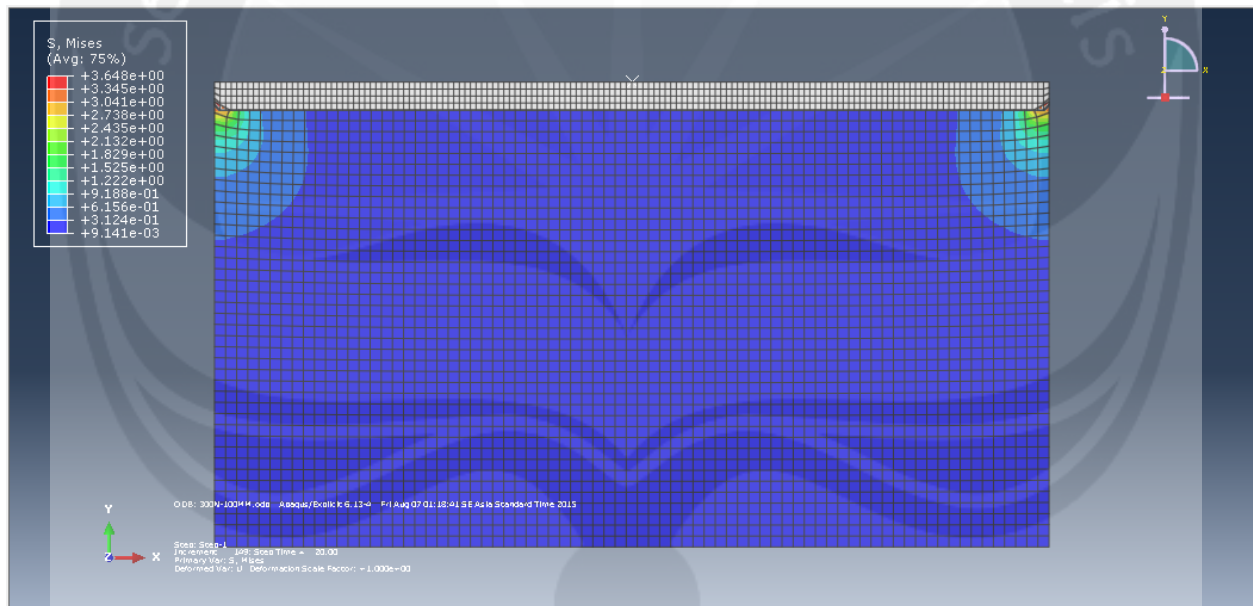
Gambar 37. SRCGF dengan Tekanan 150 N



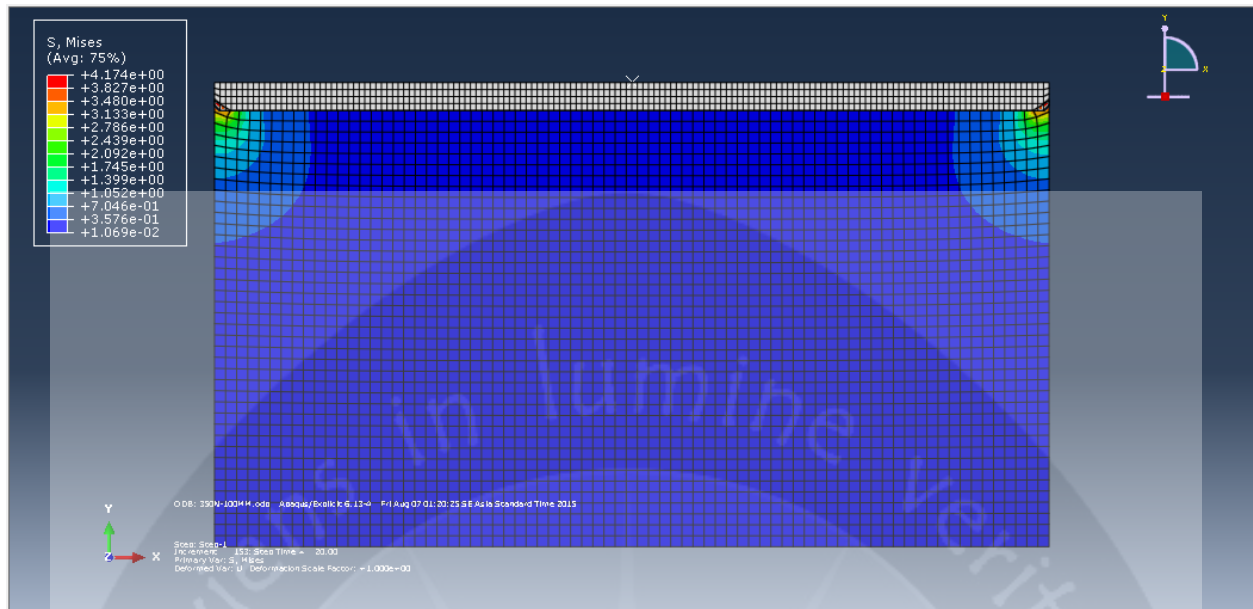
Gambar 38. SRCGF dengan Tekanan 200 N



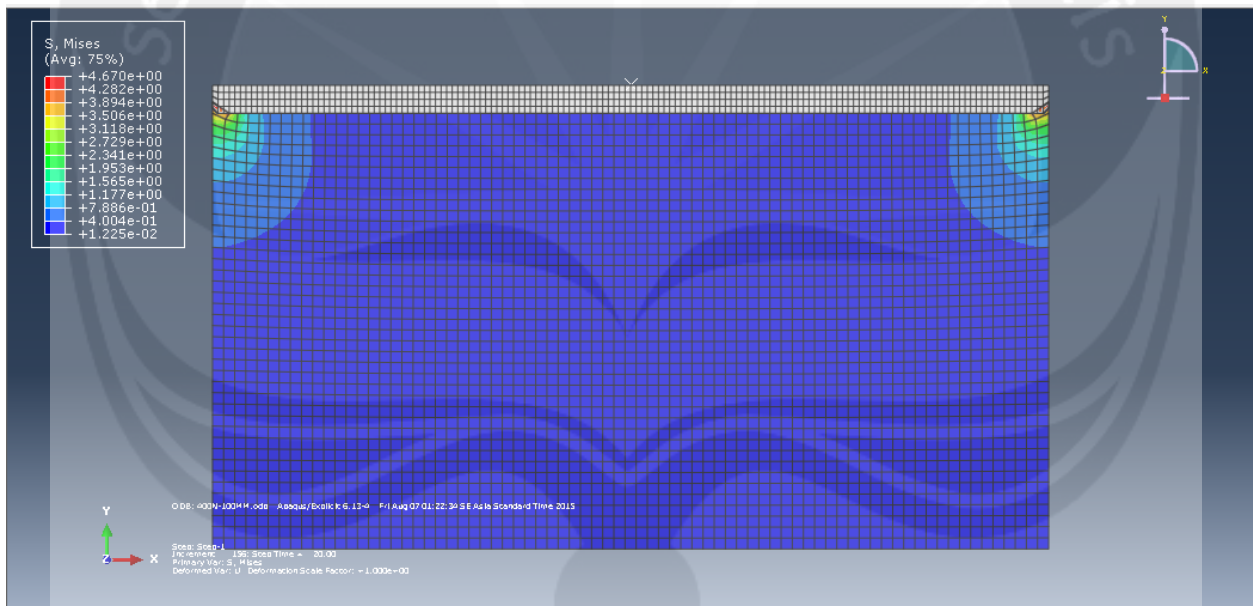
Gambar 39. SRCGF dengan Tekanan 250 N



Gambar 40. SRCGF dengan Tekanan 300 N



Gambar 7. Tekanan 350 N

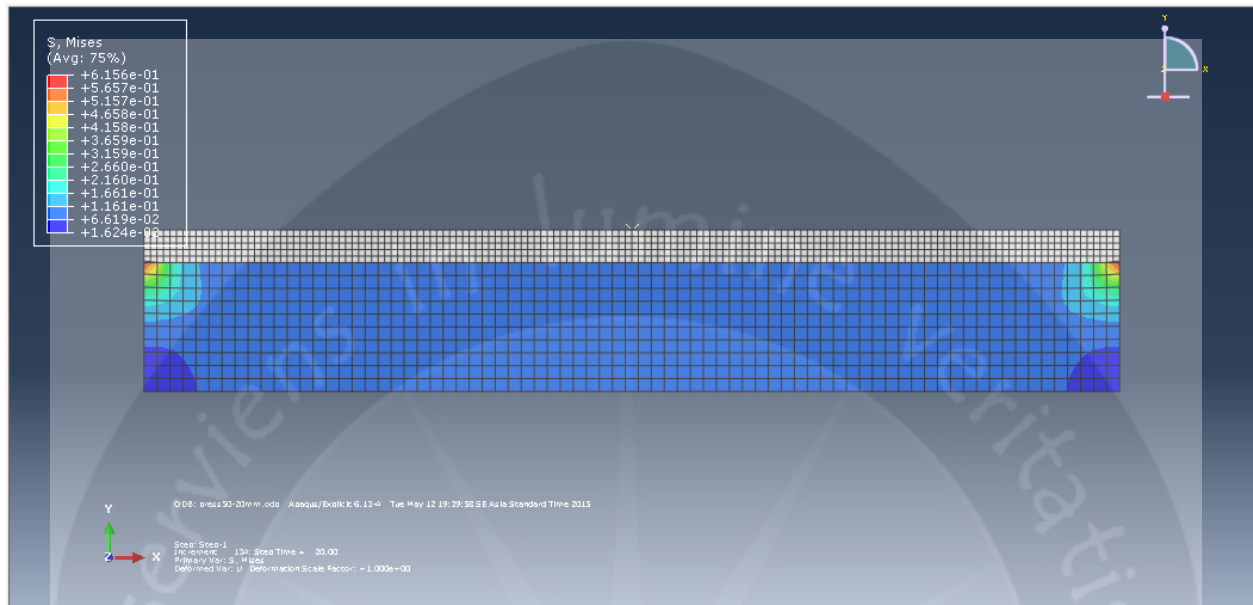


Gambar 8. Tekanan 400 N

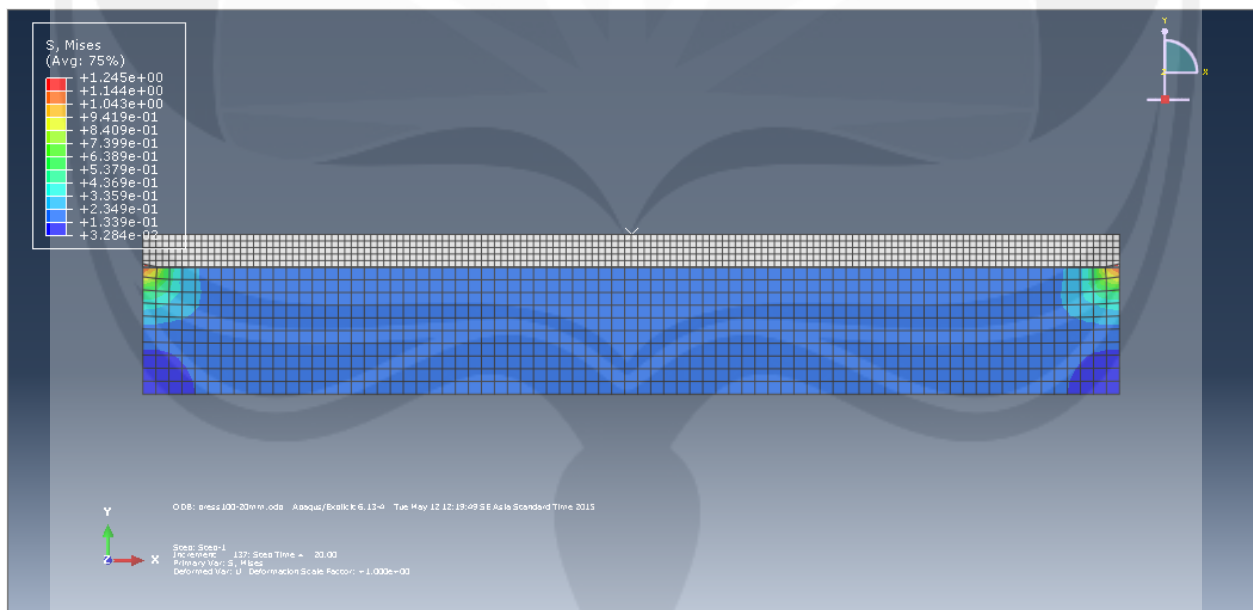
Silicone Rubber Castaldo Gellato Fuschia (SRCGF)

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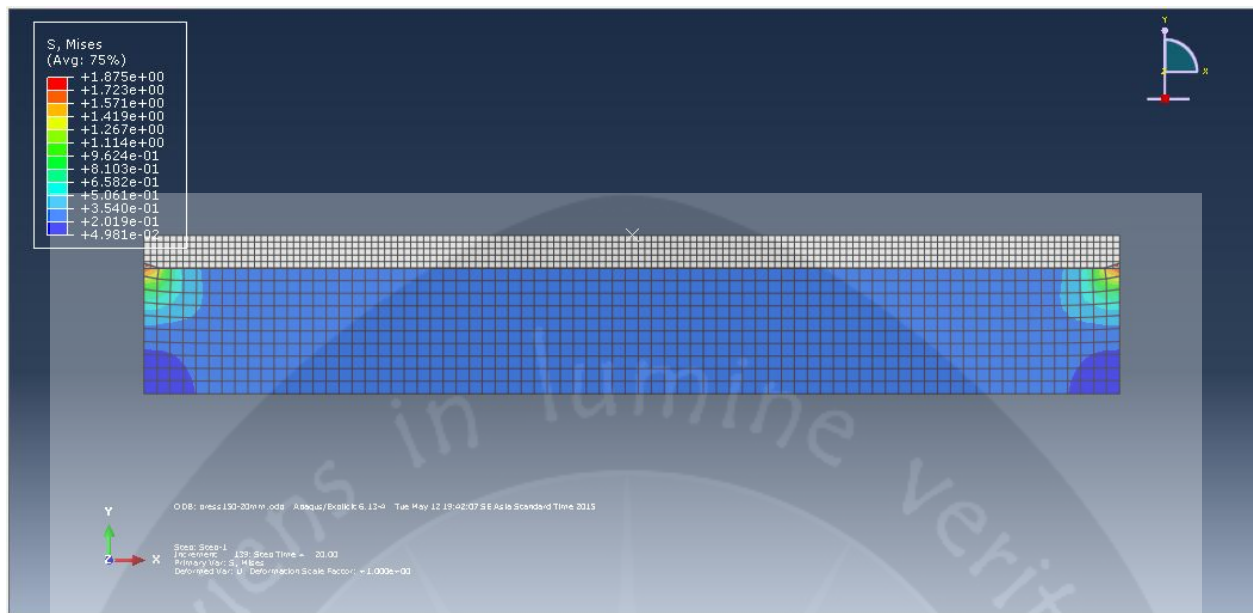
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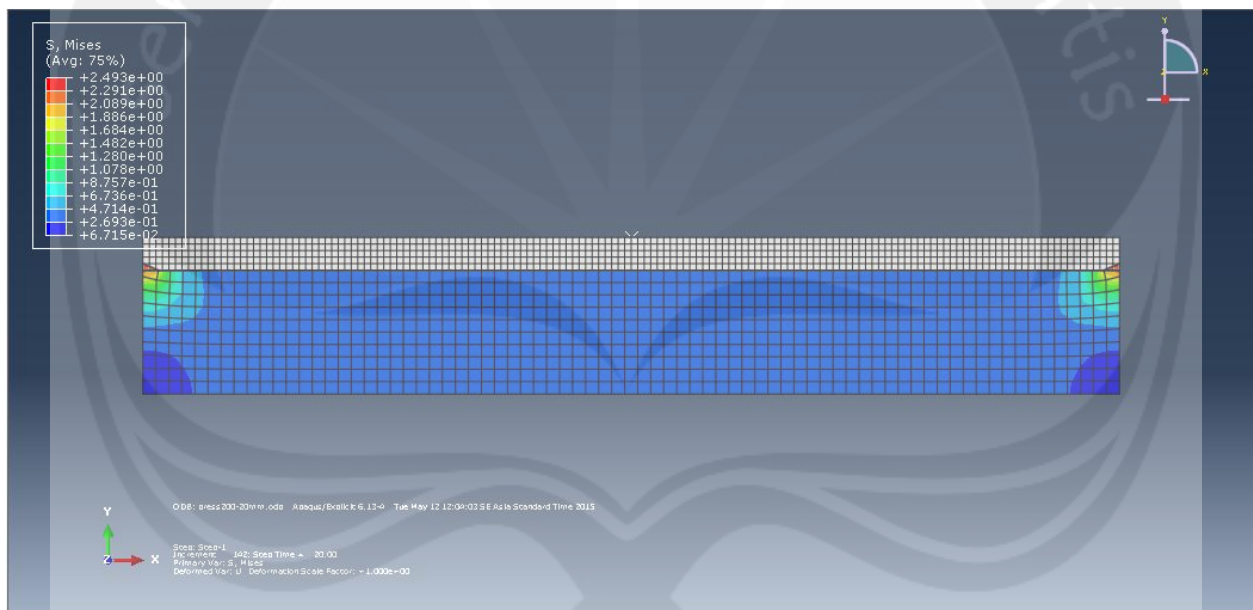
Gambar 41. SRCGF dengan Tekanan 50 N



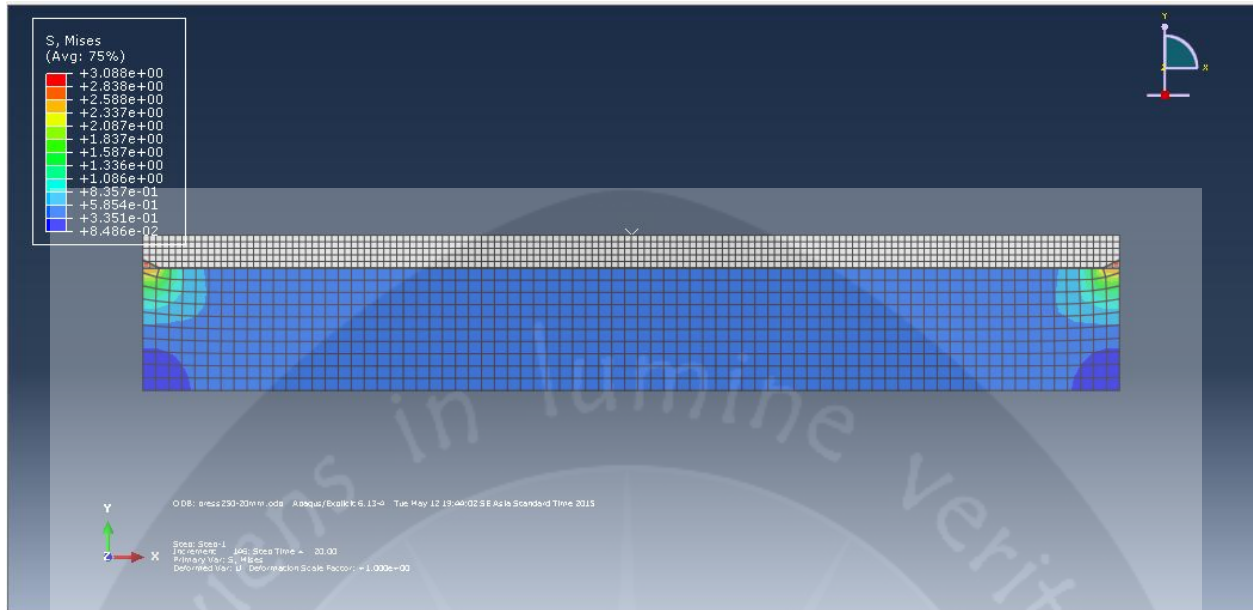
Gambar 42. SRCGF dengan Tekanan 100 N



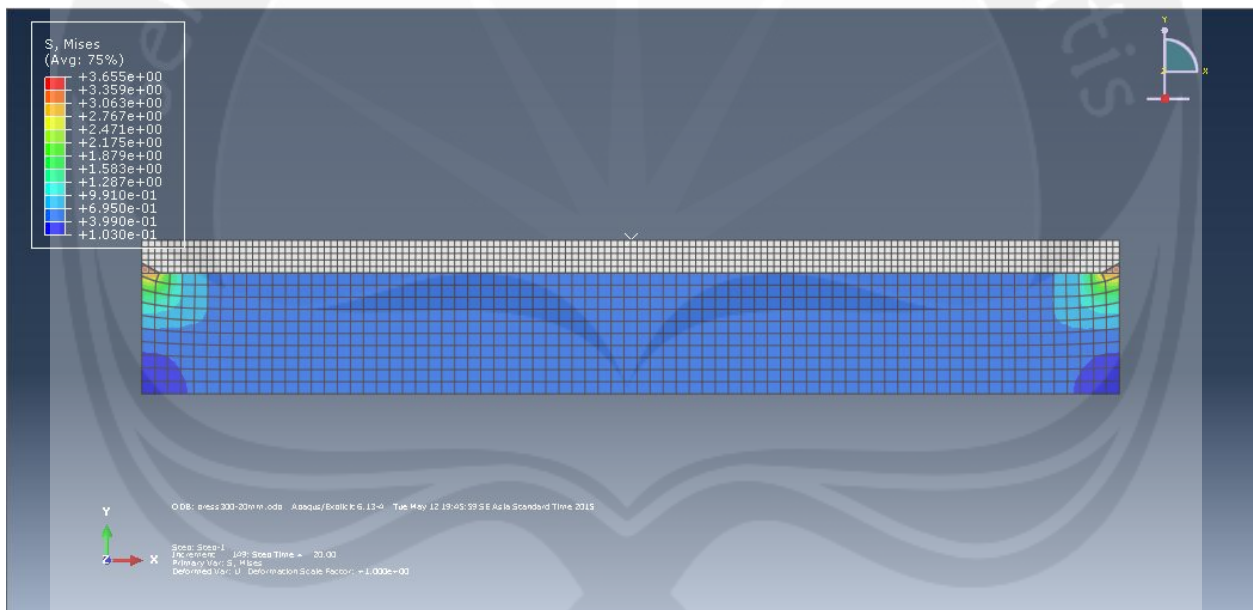
Gambar 43. SRCGF dengan Tekanan 150 N



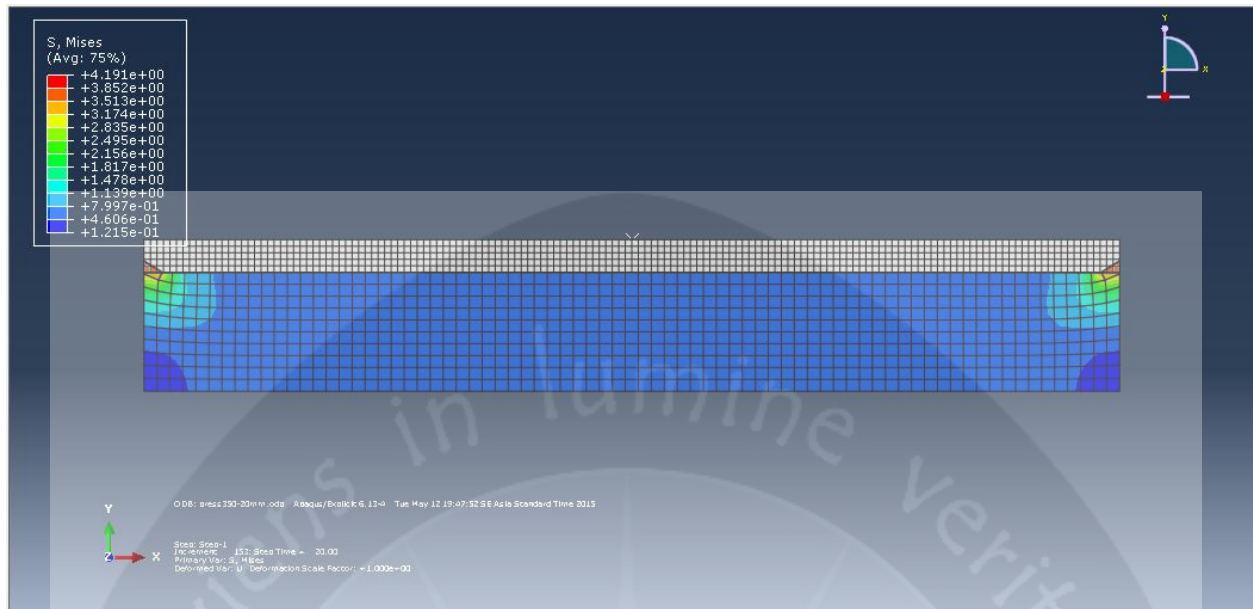
Gambar 44. SRCGF dengan Tekanan 200 N



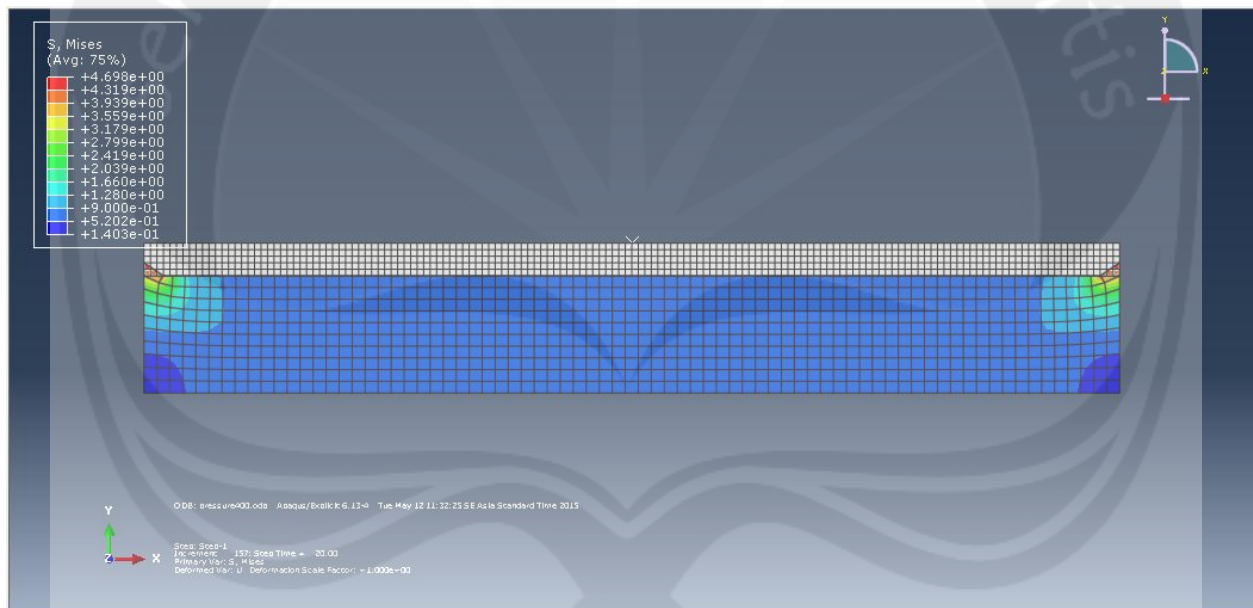
Gambar 45. SRCGF dengan Tekanan 250 N



Gambar 46. SRCGF dengan Tekanan 300 N



Gambar 47. SRCGF dengan Tekanan 350 N

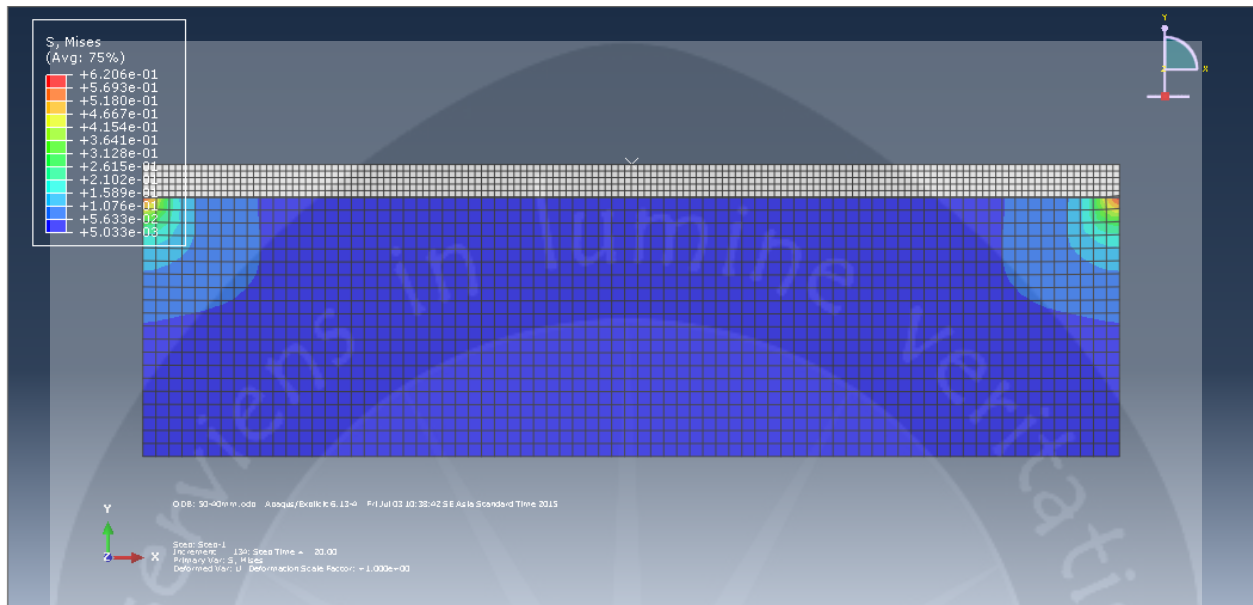


Gambar 48. SRCGF dengan Tekanan 400 N

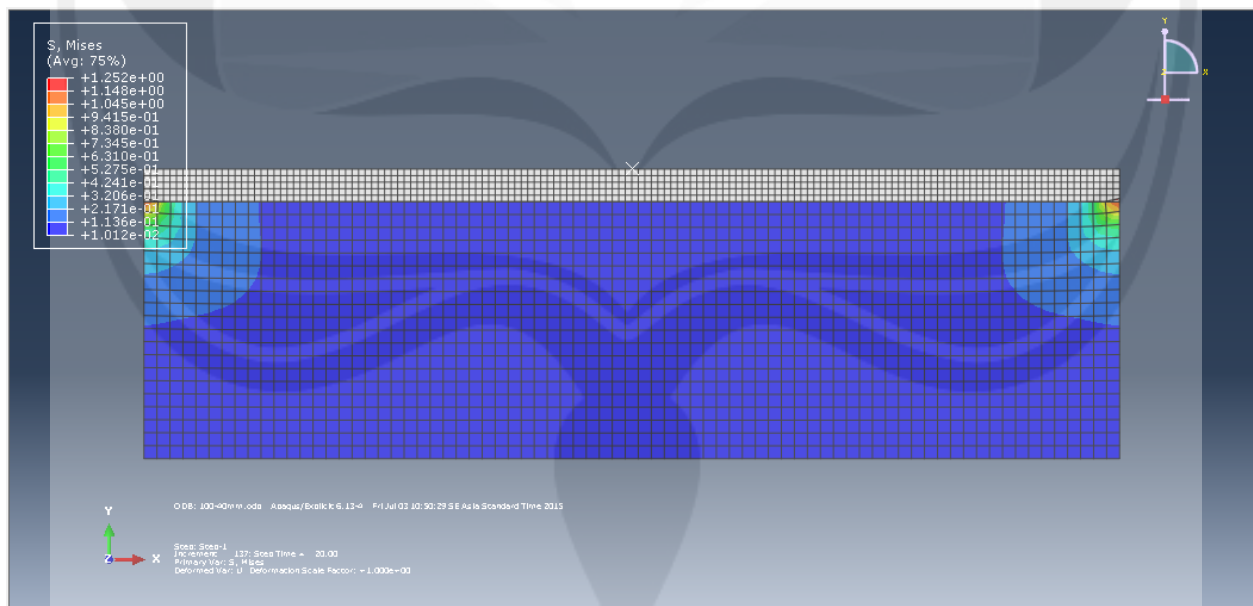
Silicone Rubber Castaldo Gellato Fuschia (SRCGF)

Layer 40 mm

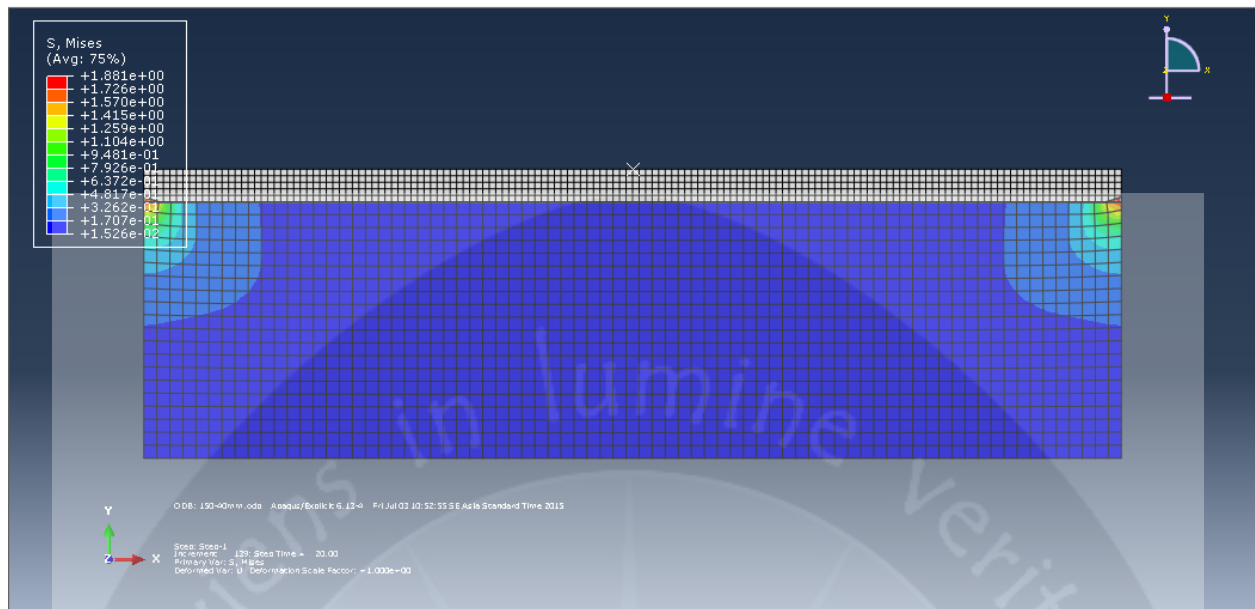
Indenter 180°



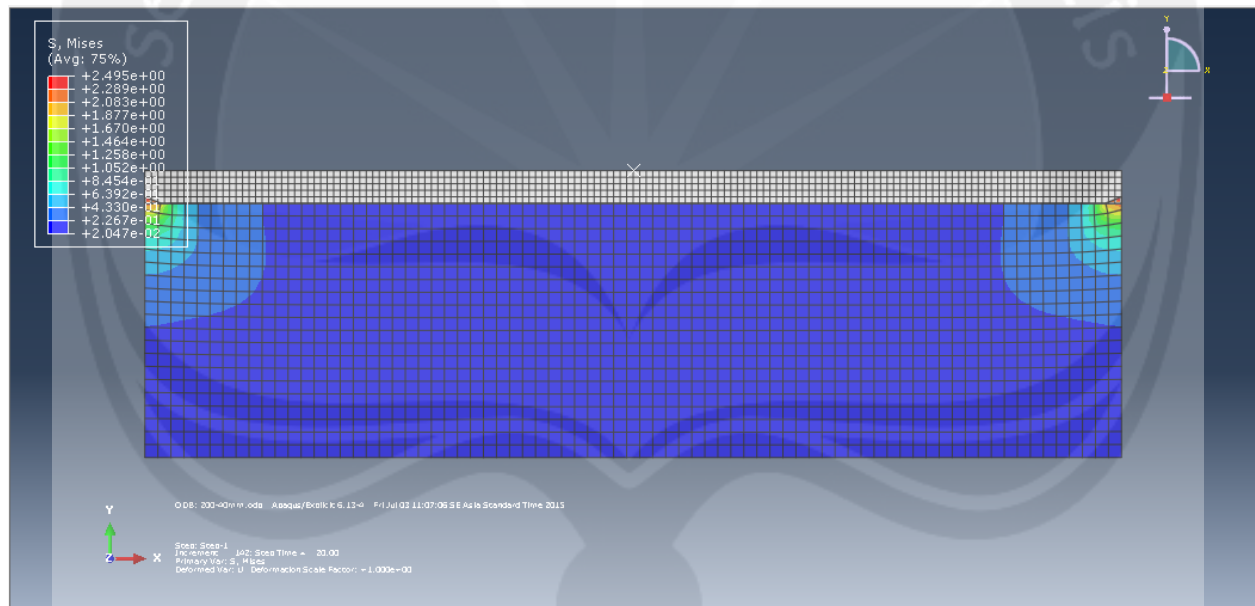
Gambar 49. SRCGF dengan Tekanan 50 N



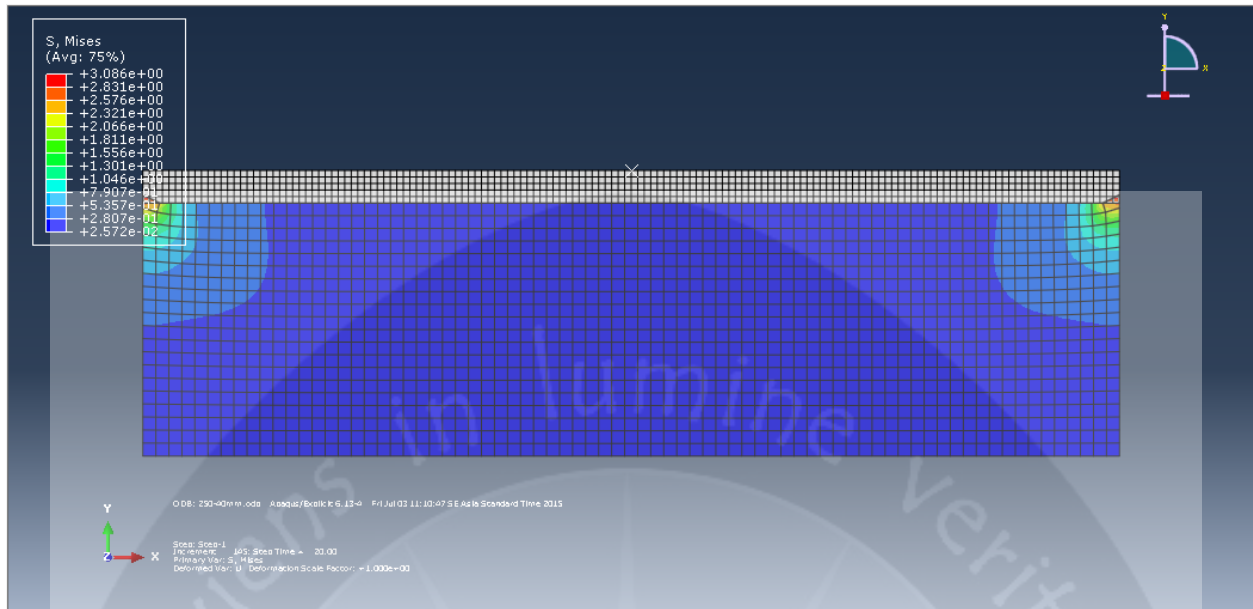
Gambar 50. SRCGF dengan Tekanan 100 N



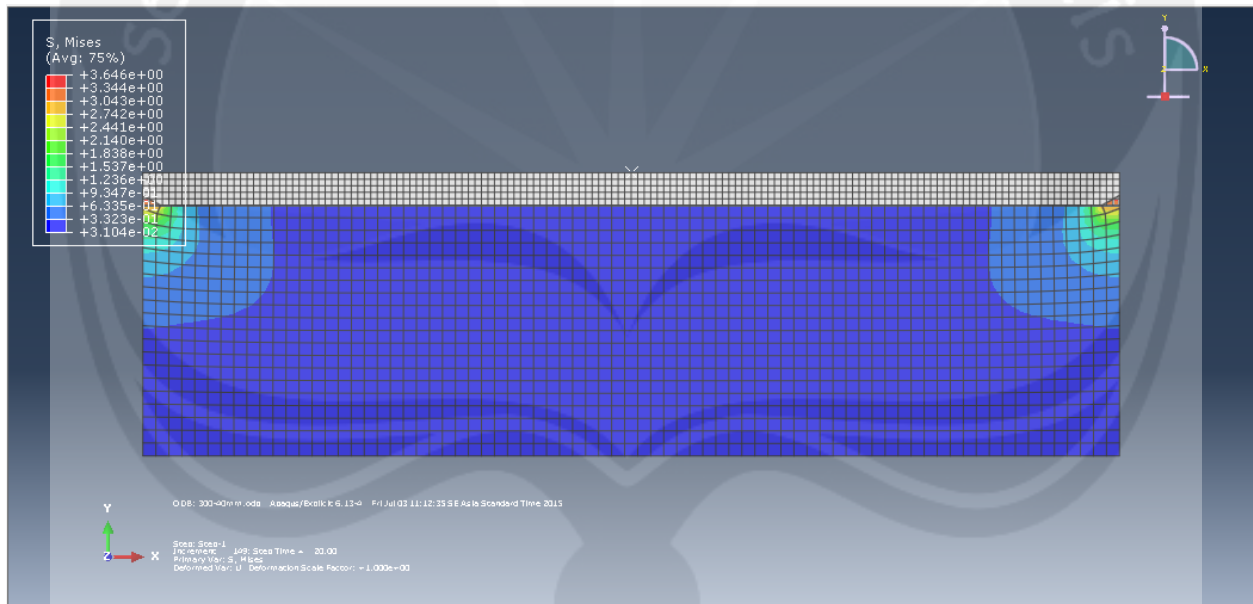
Gambar 51. SRCGF dengan Tekanan 150 N



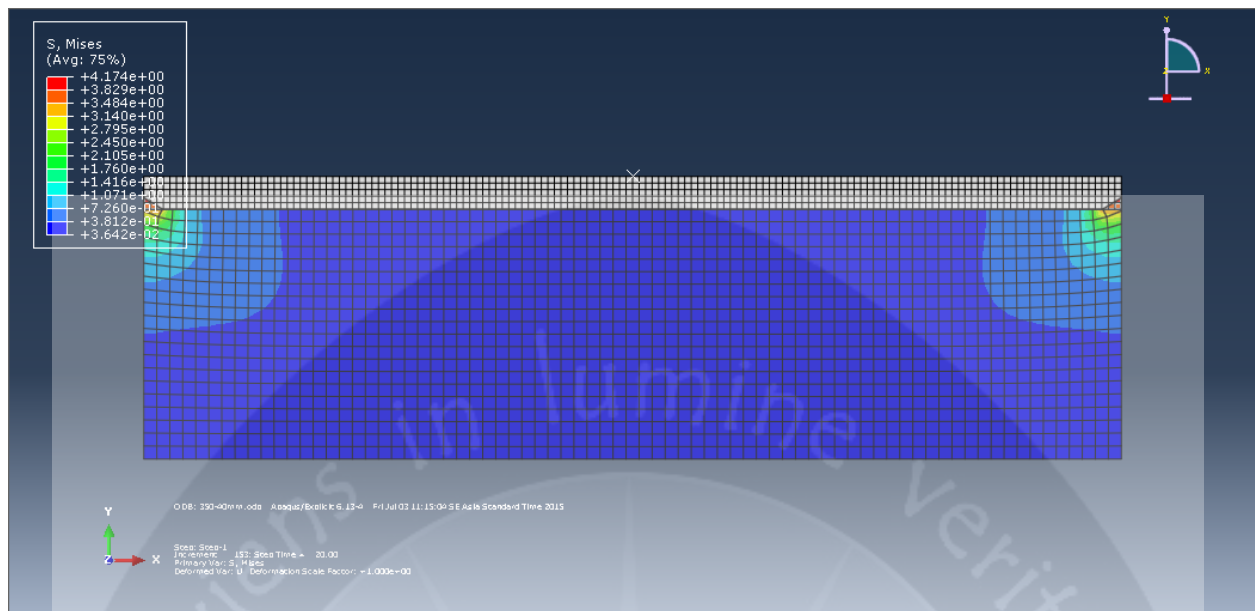
Gambar 52. SRCGF dengan Tekanan 200 N



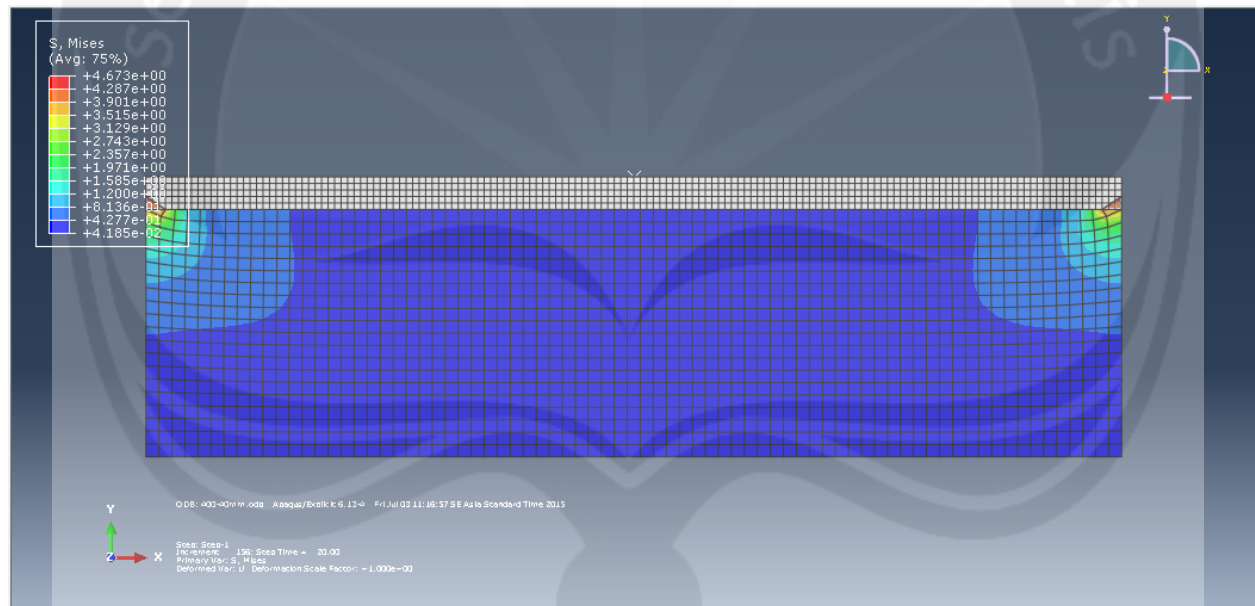
Gambar 53. SRCGF dengan Tekanan 250 N



Gambar 54. SRCGF dengan Tekanan 300 N



Gambar 55. SRCGF dengan Tekanan 350 N

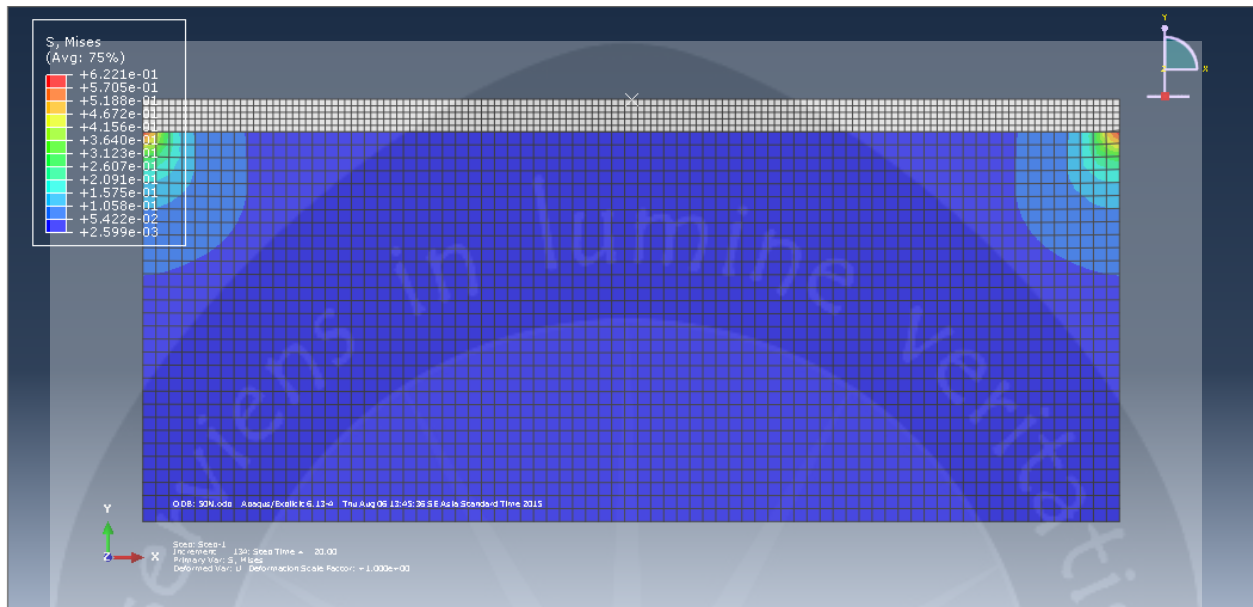


Gambar 56. SRCGF dengan Tekanan 400 N

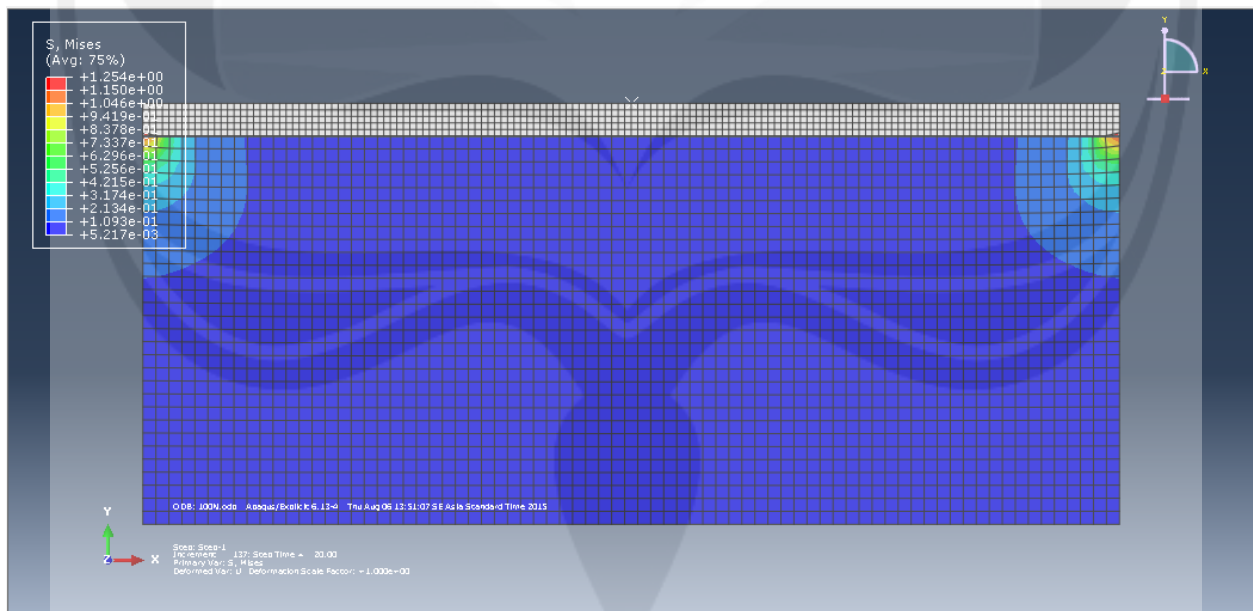
Silicone Rubber Castaldo Gellato Fuschia (SRCGF)

Layer 60 mm

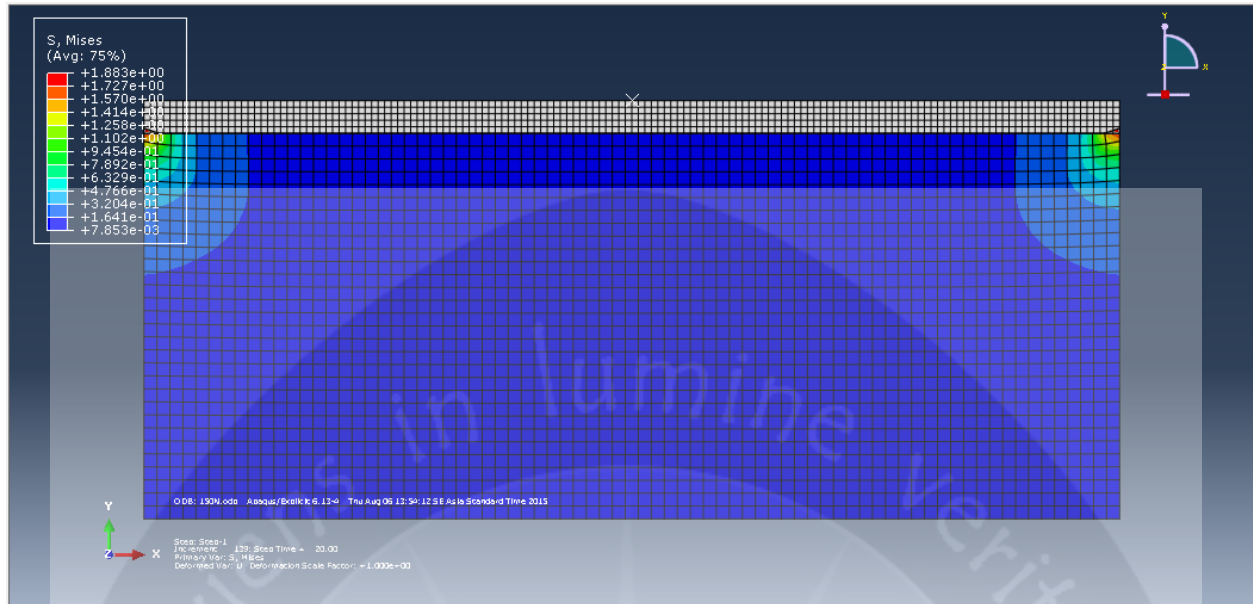
Indenter 180°



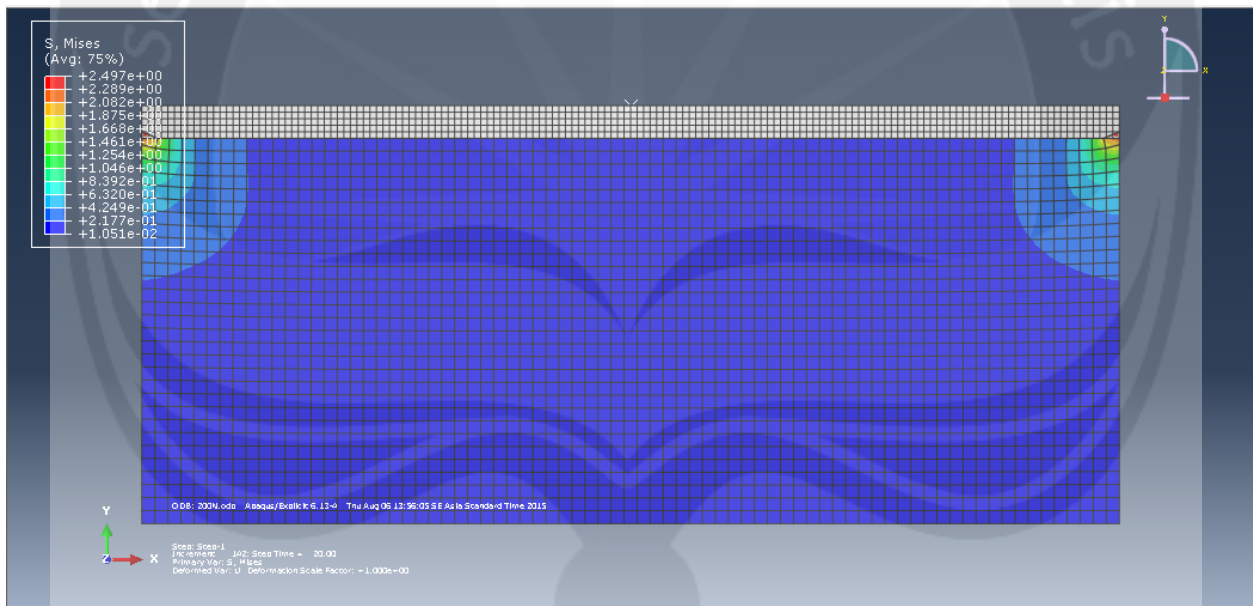
Gambar 57. SRCGF dengan Tekanan 50 N



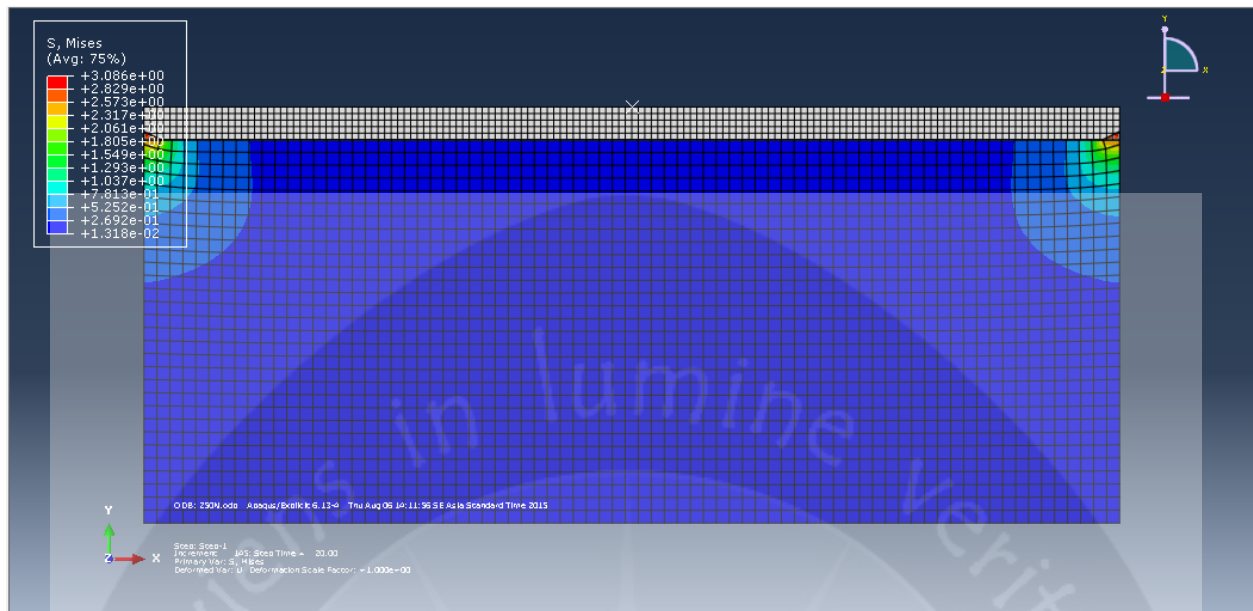
Gambar 58. SRCGF dengan Tekanan 100 N



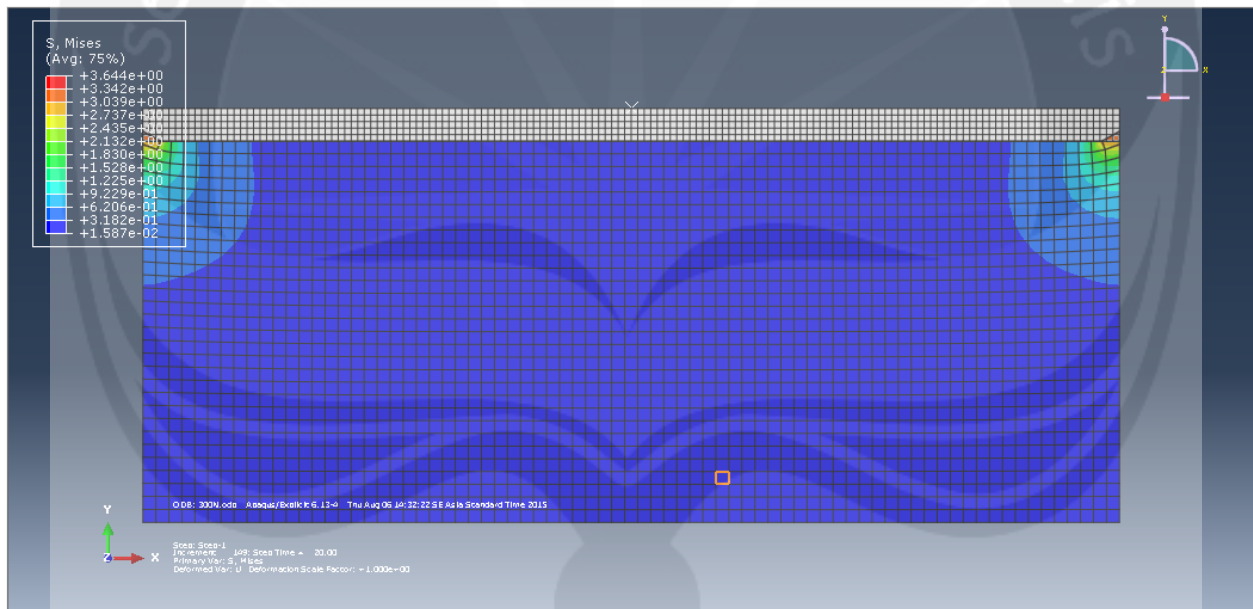
Gambar 59. SRCGF dengan Tekanan 150 N



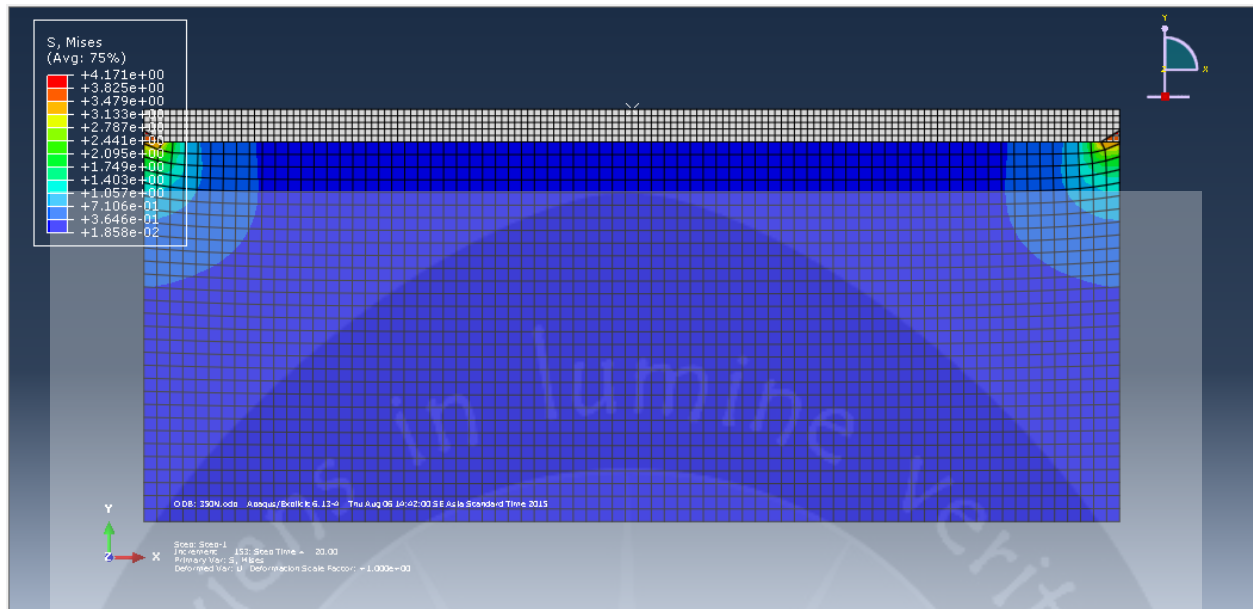
Gambar 60. SRCGF dengan Tekanan 200 N



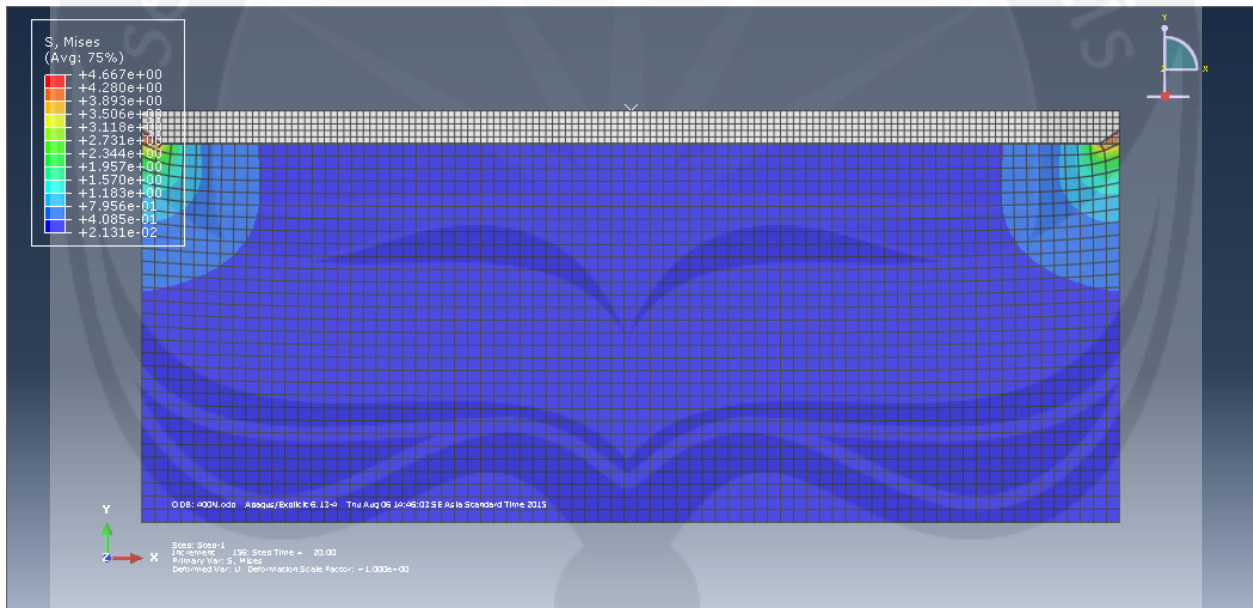
Gambar 61. SRCGF dengan Tekanan 250 N



Gambar 62. SRCGF dengan Tekanan 300 N



Gambar 63. SRCGF dengan Tekanan 350 N

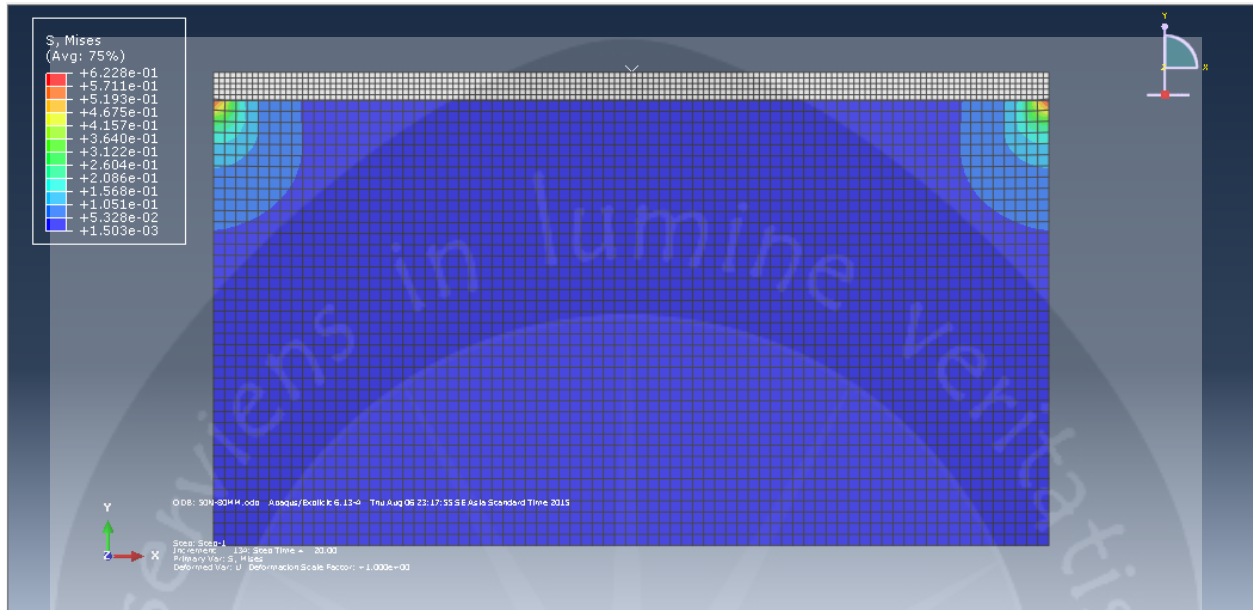


Gambar 64. SRCGF dengan Tekanan 400 N

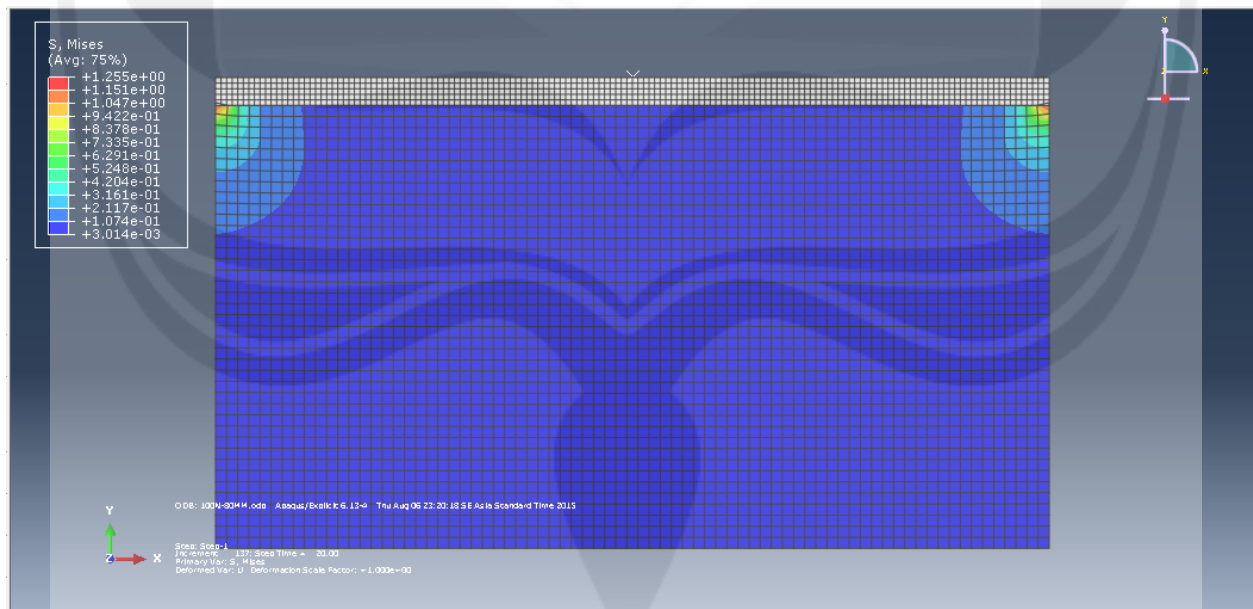
Silicone Rubber Castaldo Gellato Fuschia (SRCGF)

Layer 80 mm

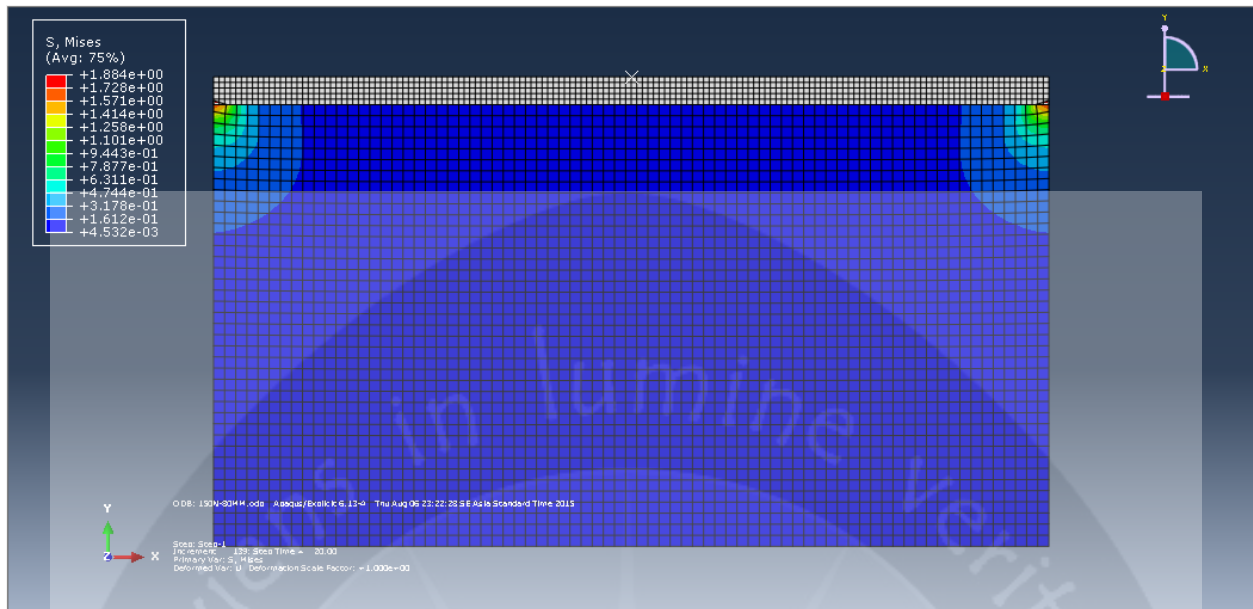
Indenter 180°



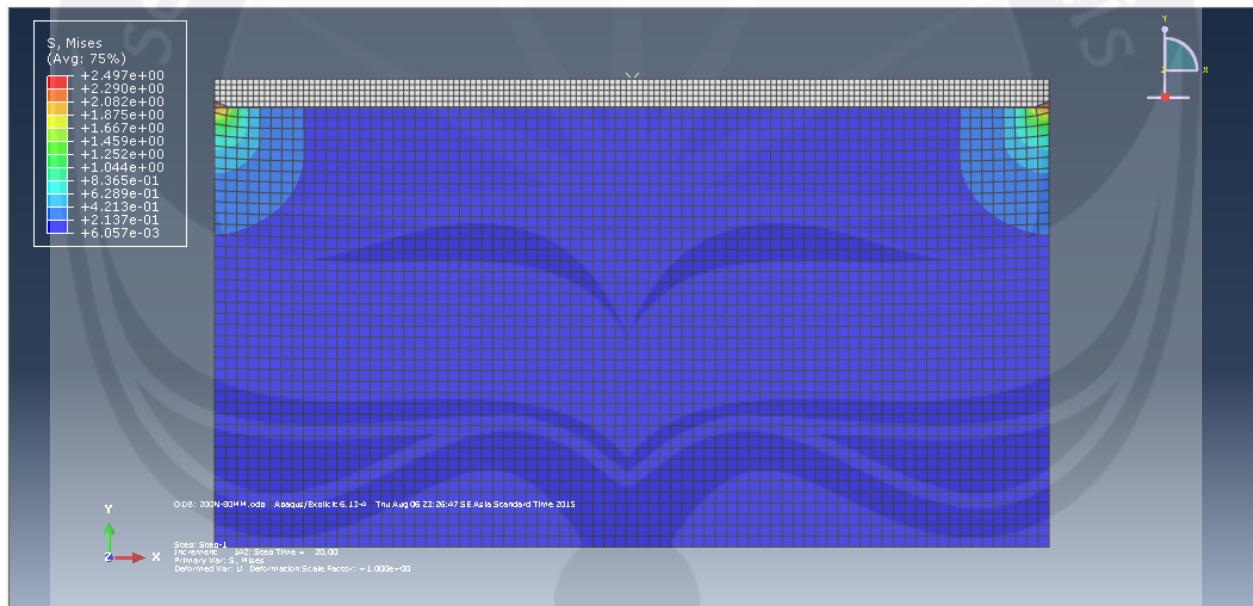
Gambar 65. SRCGF dengan Tekanan 50 N



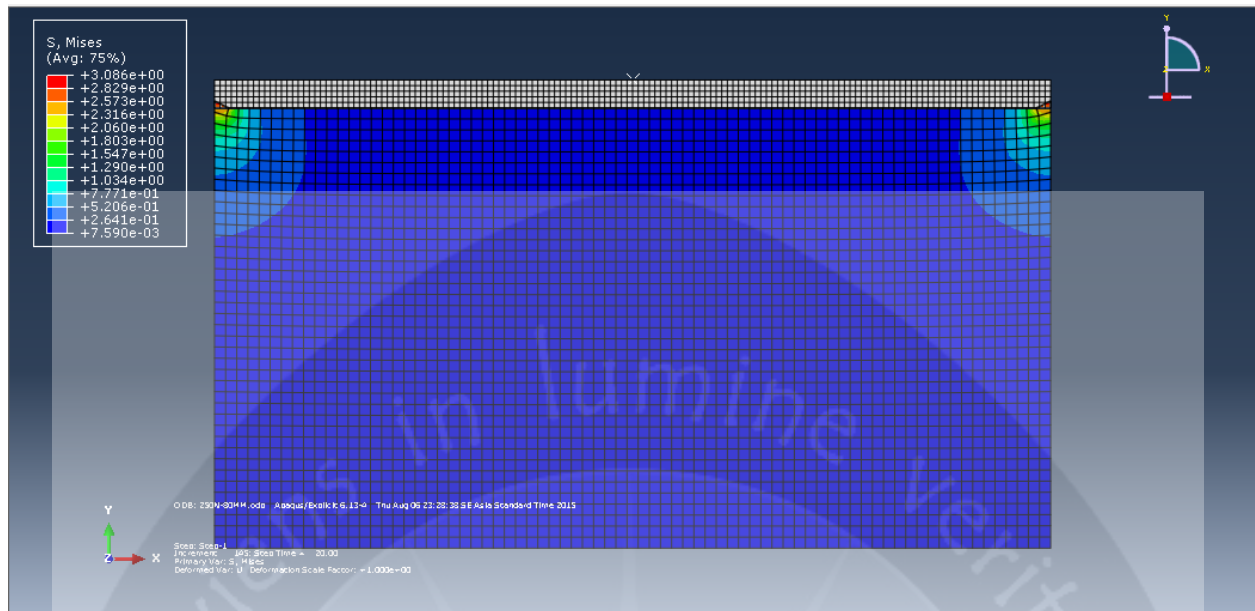
Gambar 66. SRCGF dengan Tekanan 100 N



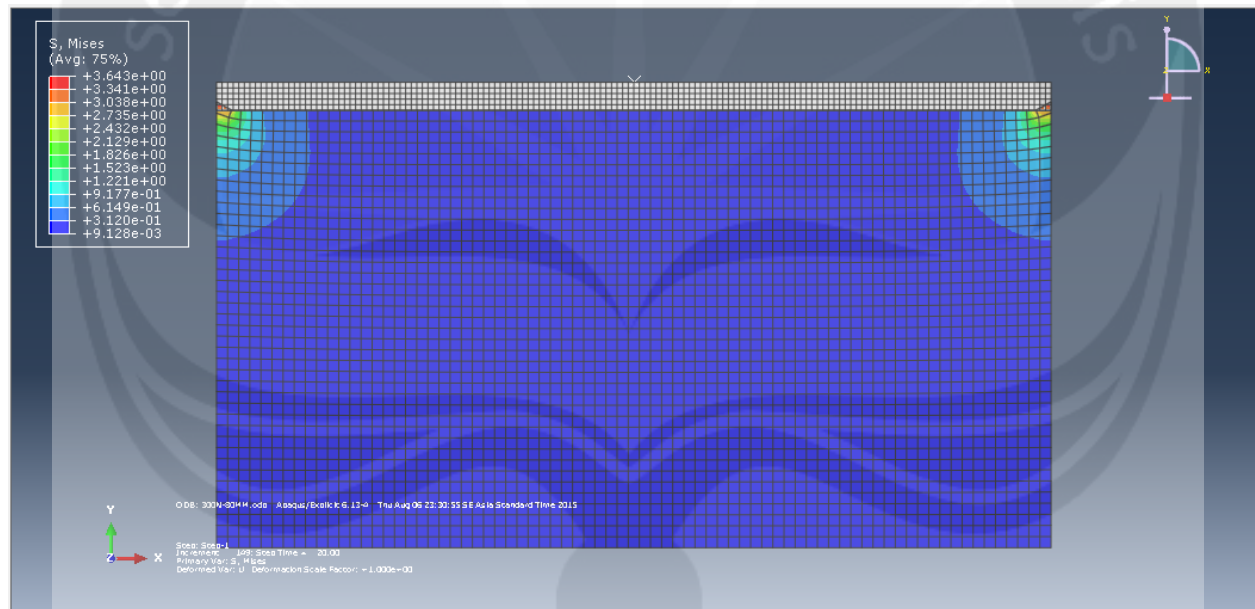
Gambar 67. SRCGF dengan Tekanan 150 N



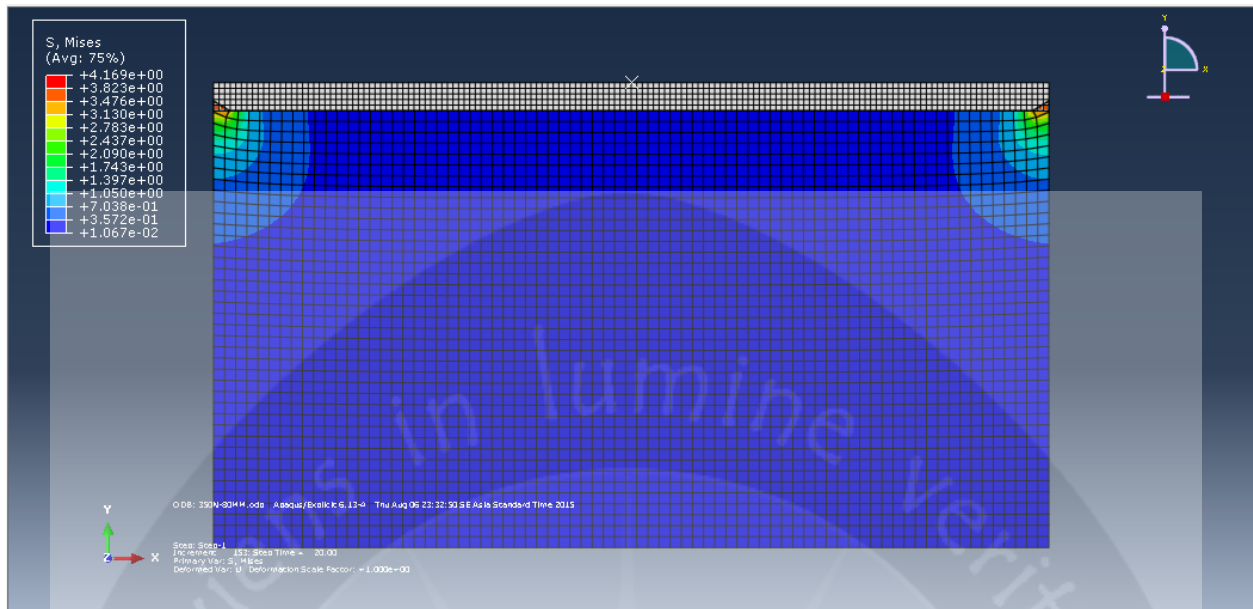
Gambar 68. SRCGF dengan Tekanan 200 N



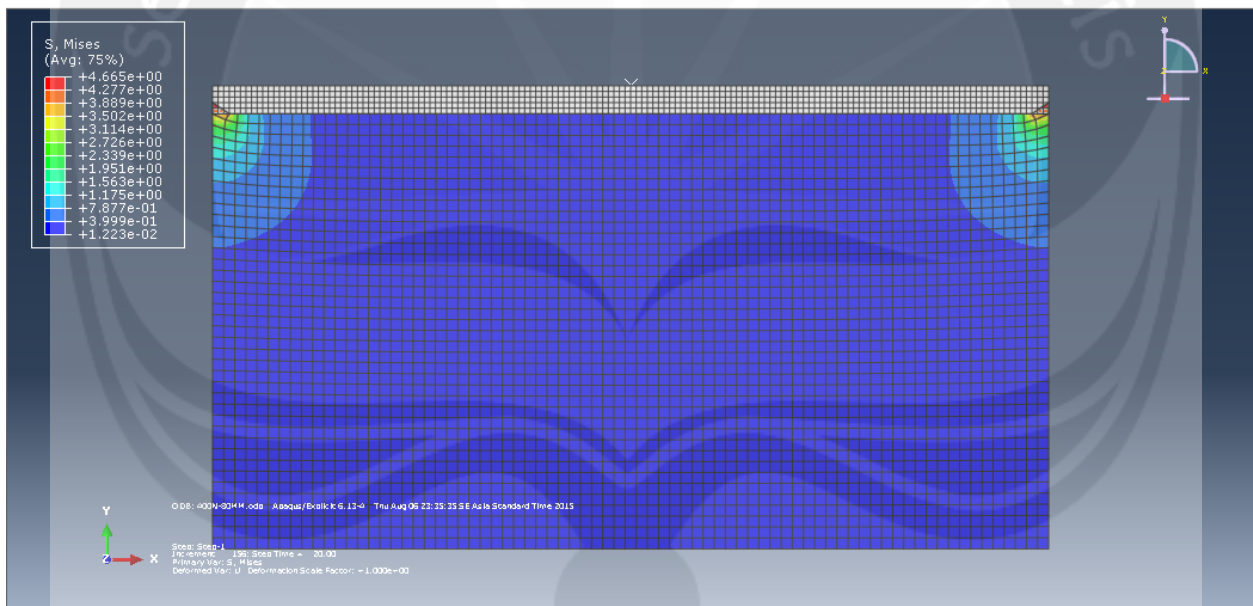
Gambar 69. SRCGF dengan Tekanan 250 N



Gambar 70. SRCGF dengan Tekanan 300 N



Gambar 71. SRCGF dengan Tekanan 350 N

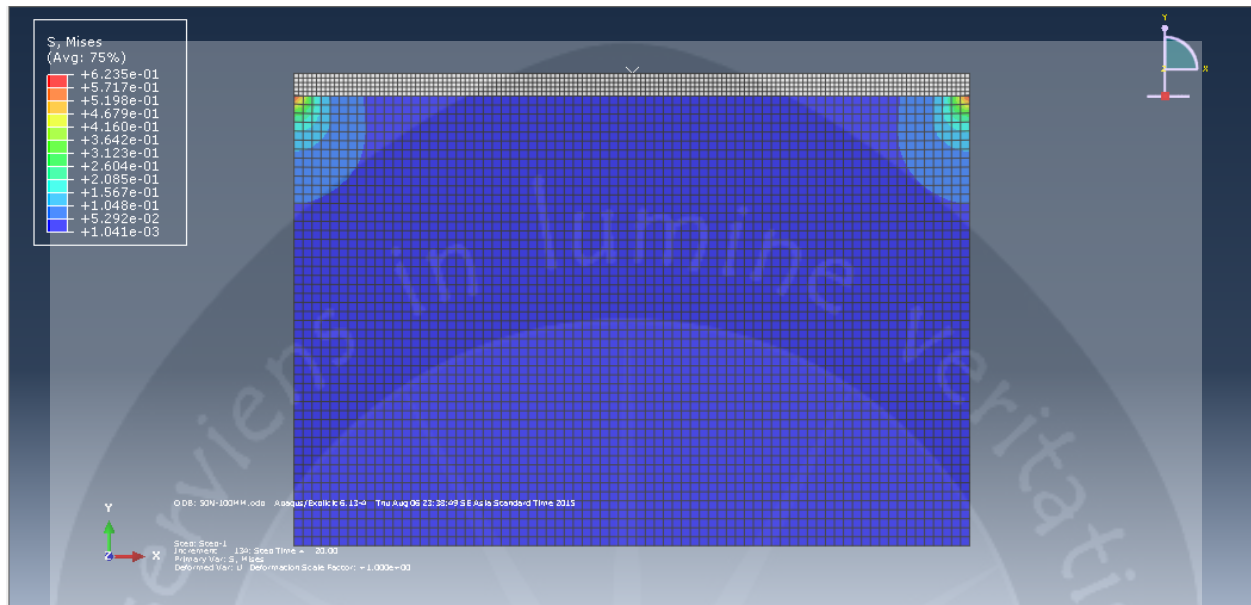


Gambar 72. SRCGF dengan Tekanan 400 N

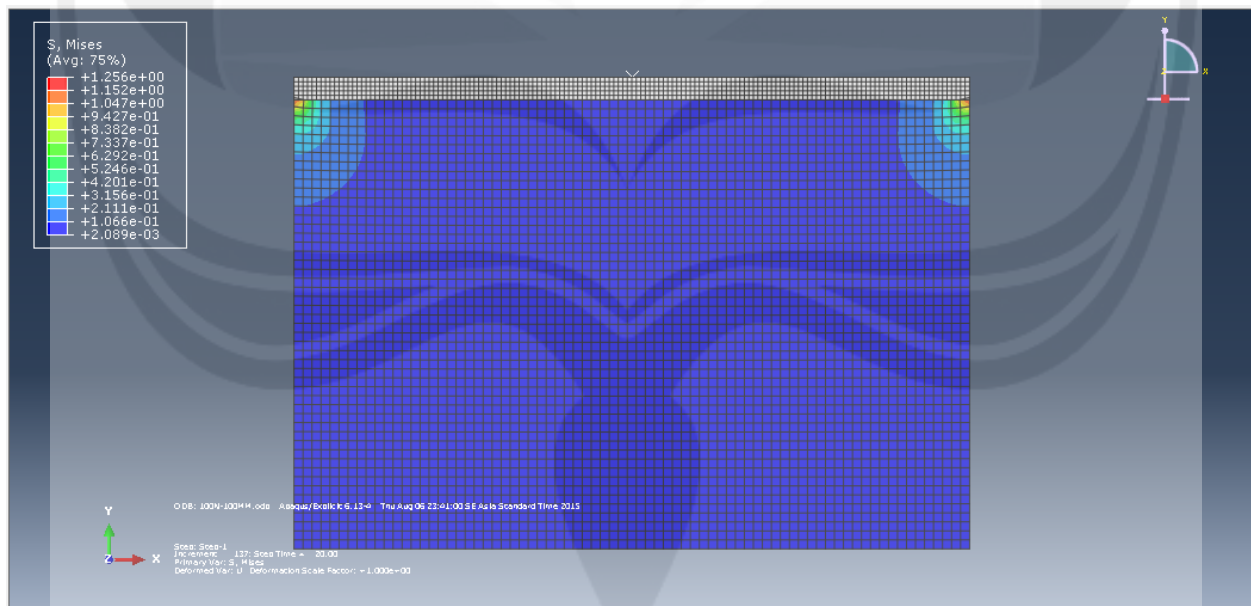
Silicone Rubber Castaldo Gellato Fuschia (SRCGF)

Layer 100 mm

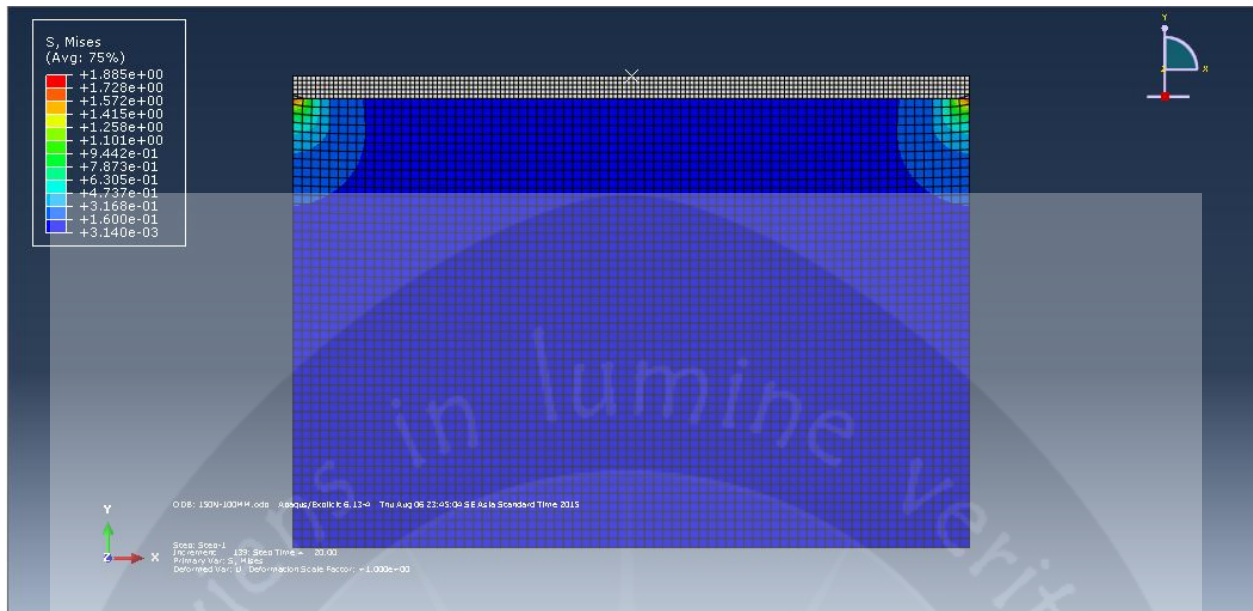
Indenter 180°



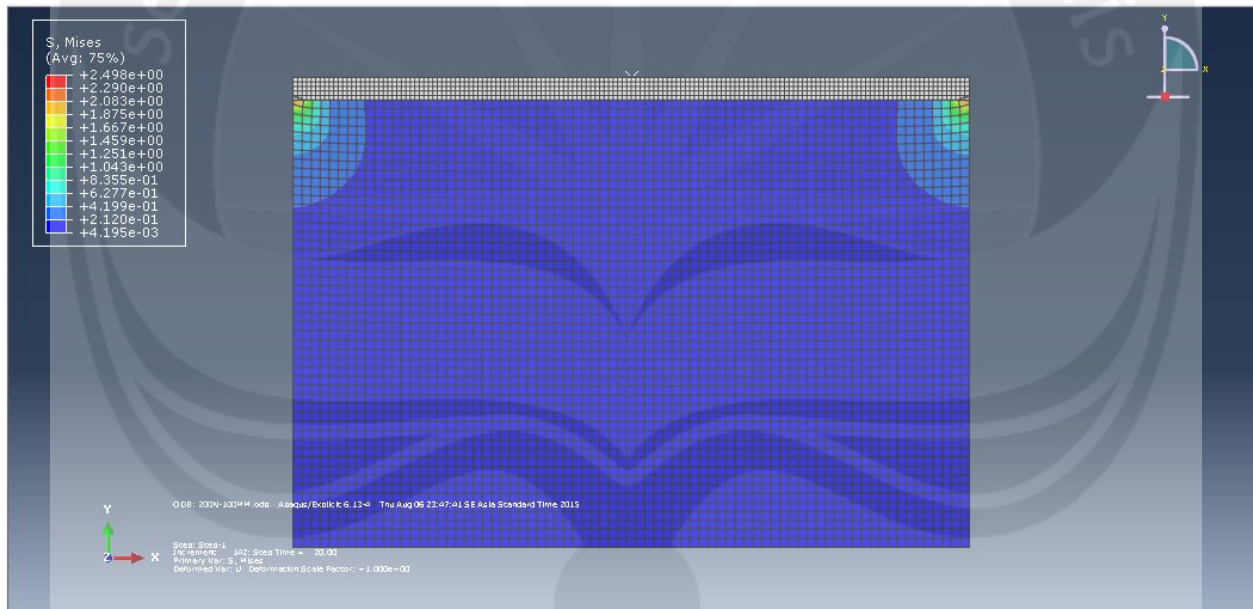
Gambar 73. SRCGF dengan Tekanan 50 N



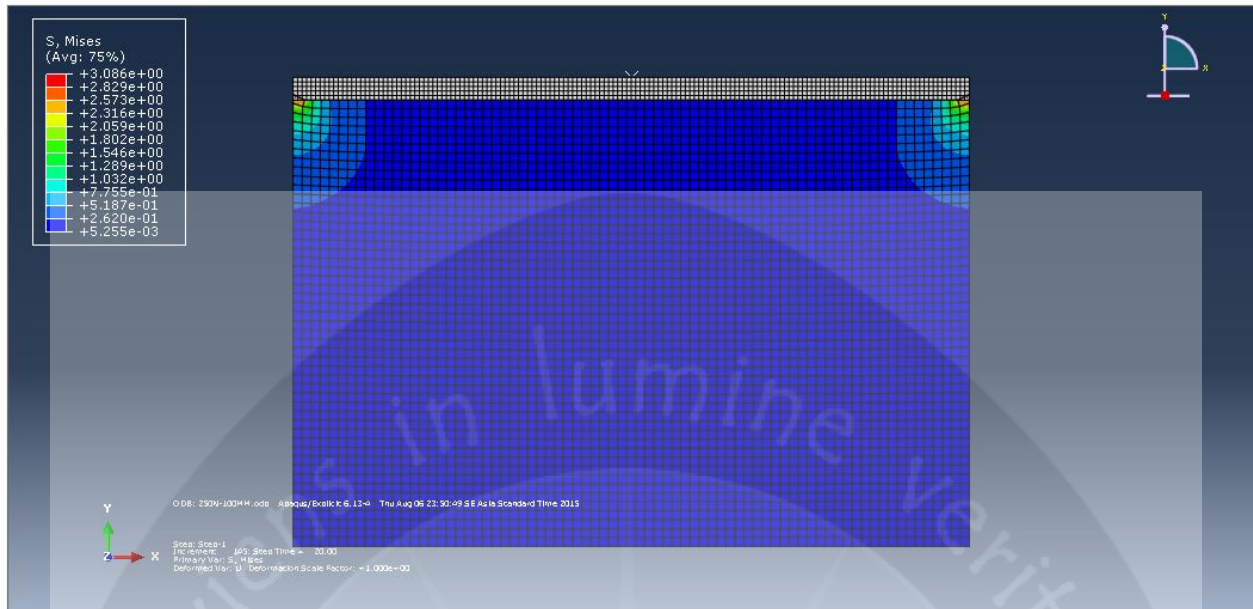
Gambar 74. SRCGF dengan Tekanan 100 N



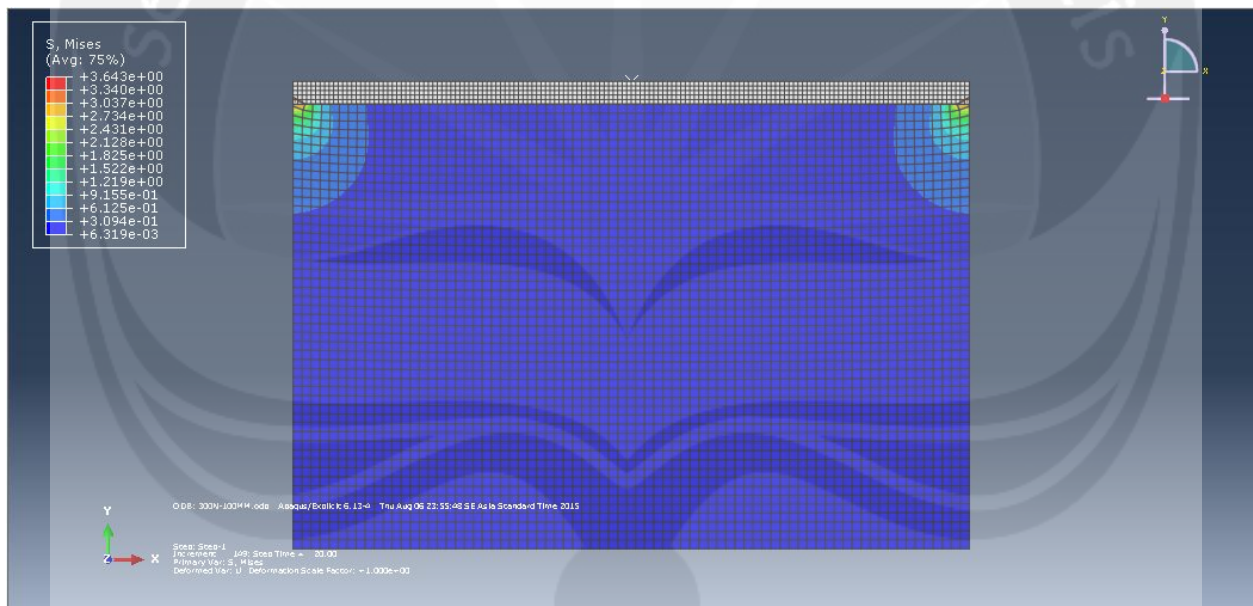
Gambar 75. SRCGF dengan Tekanan 150 N



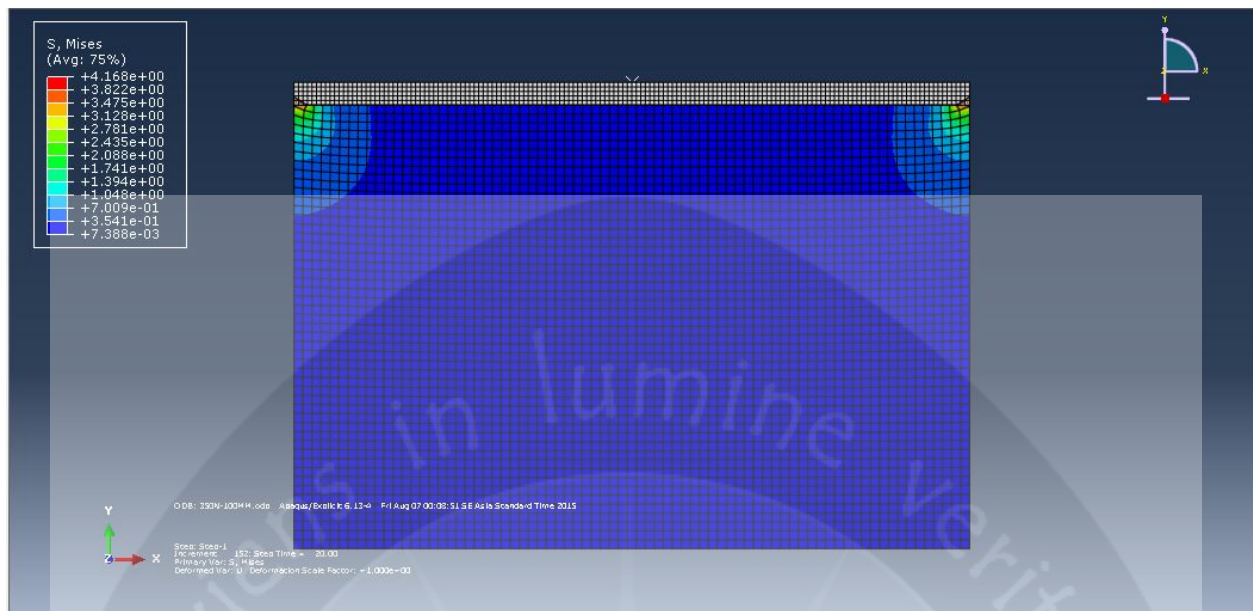
Gambar 76. SRCGF dengan Tekanan 200 N



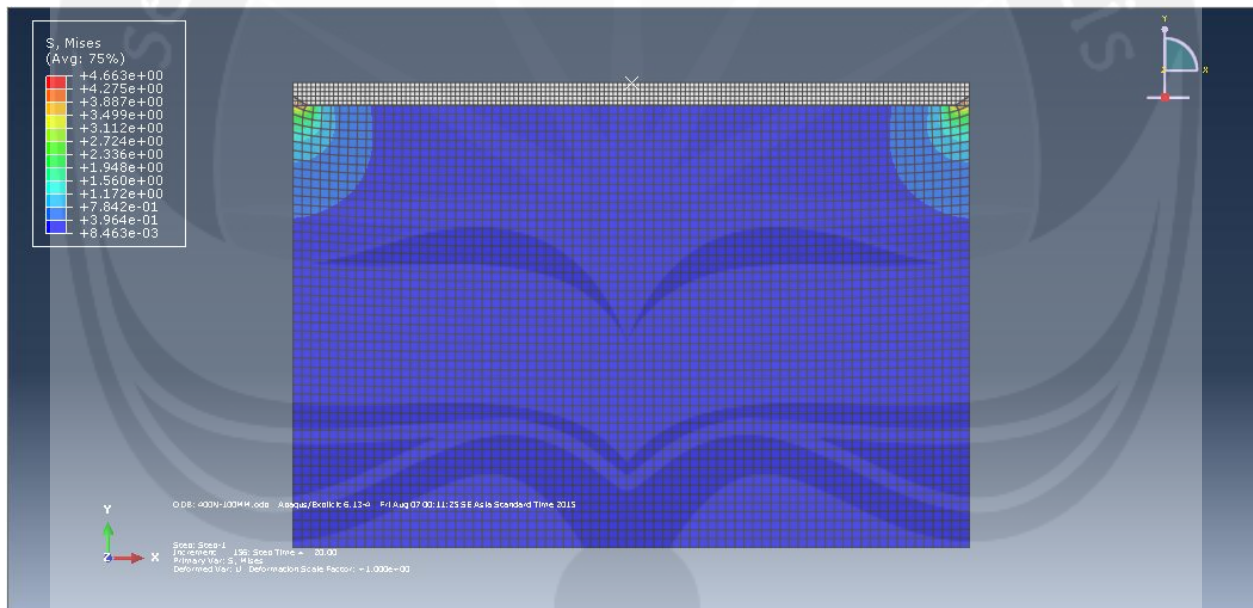
Gambar 77. SRCGF dengan Tekanan 250 N



Gambar 78. SRCGF dengan Tekanan 300 N



Gambar 79. SRCGF dengan Tekanan 350 N

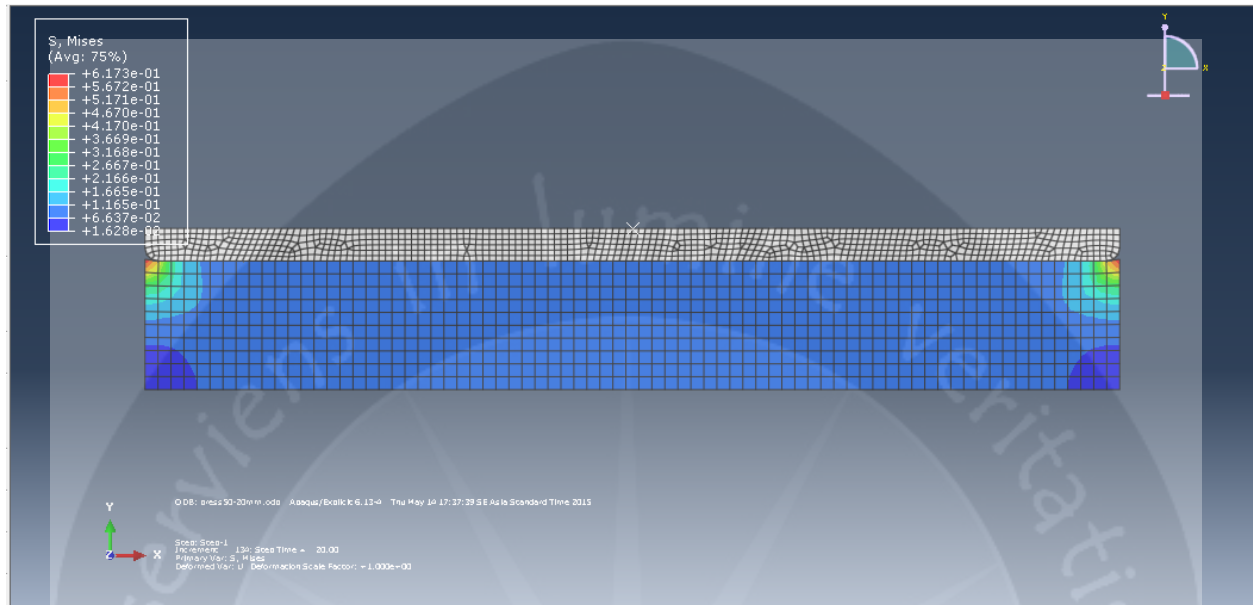


Gambar 80. SRCGF dengan Tekanan 400 N

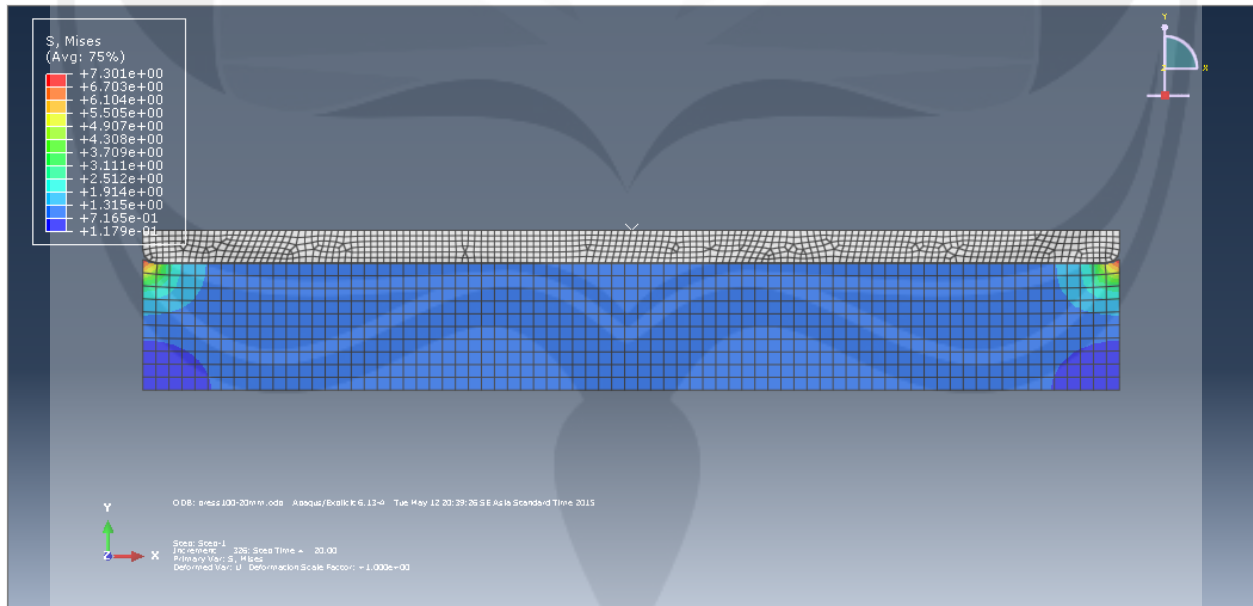
Silicone Rubber Castaldo Gellato Fuschia (SRCGF)

Layer 20 mm

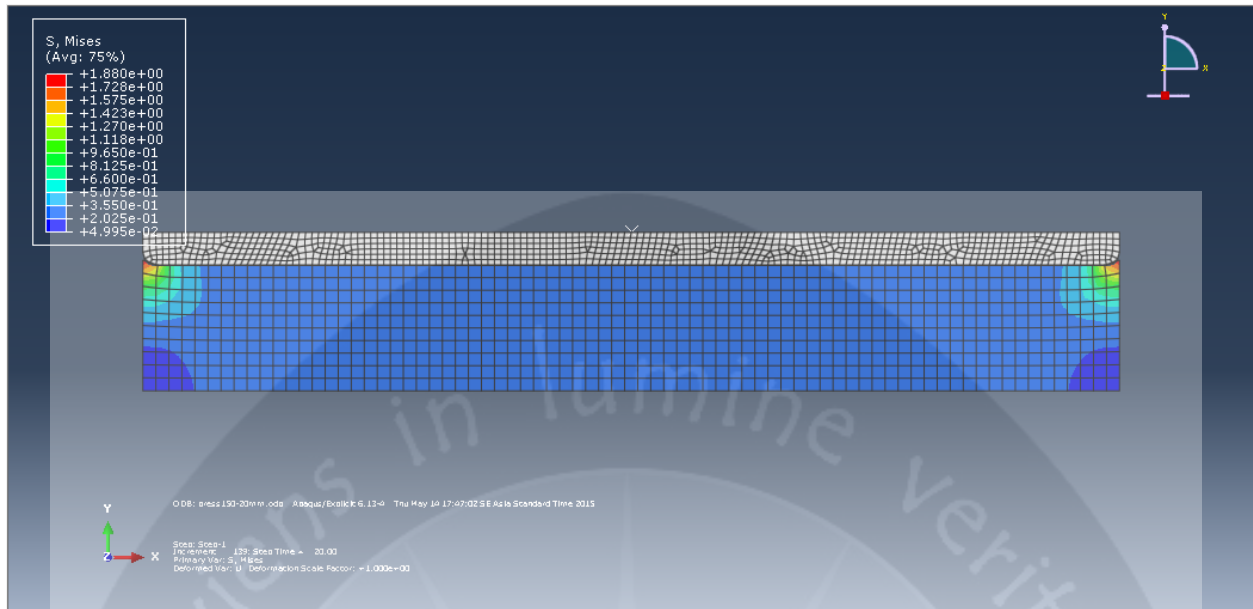
Indenter Radius tip 2 mm



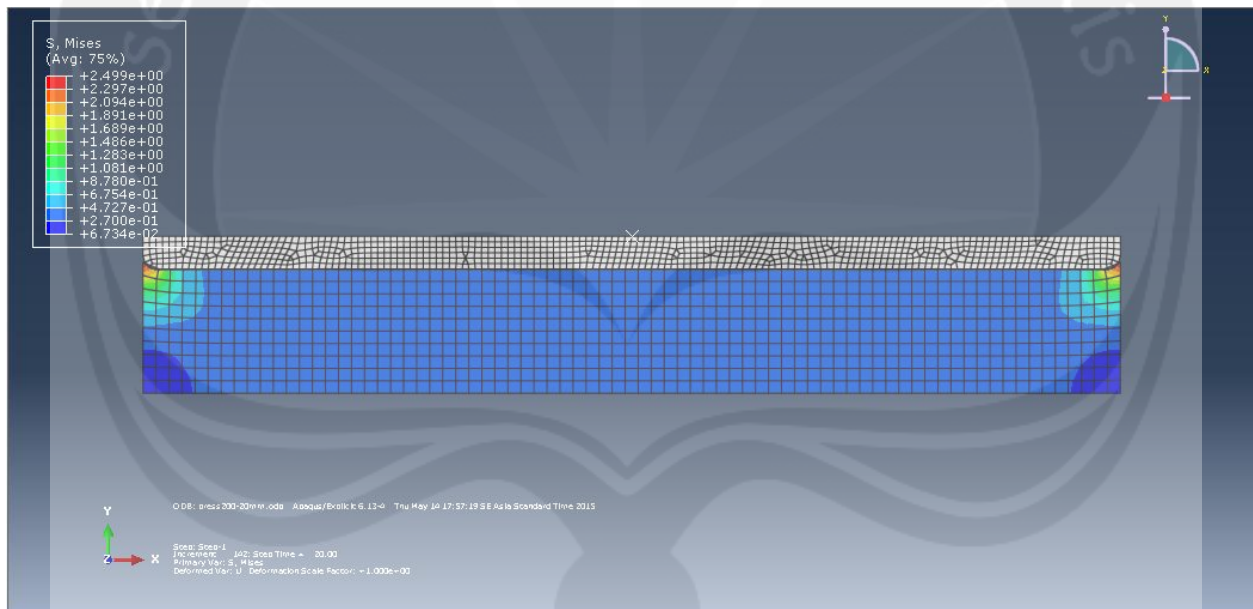
Gambar 81. SRCGF dengan Tekanan 50 N



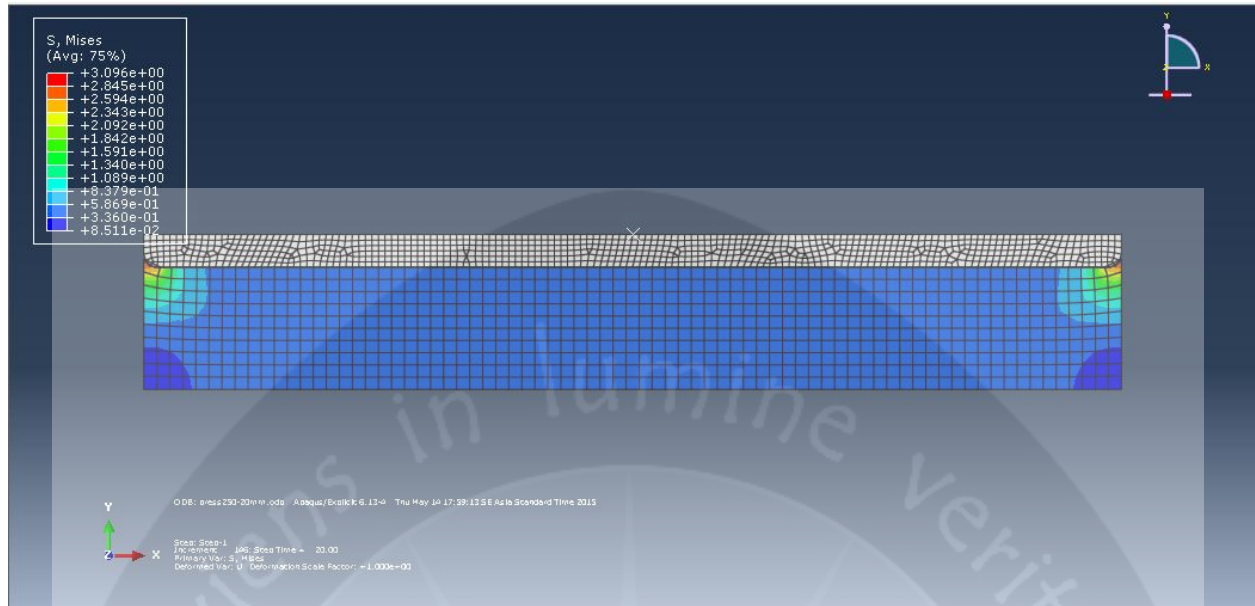
Gambar 82. SRCGF dengan Tekanan 100 N



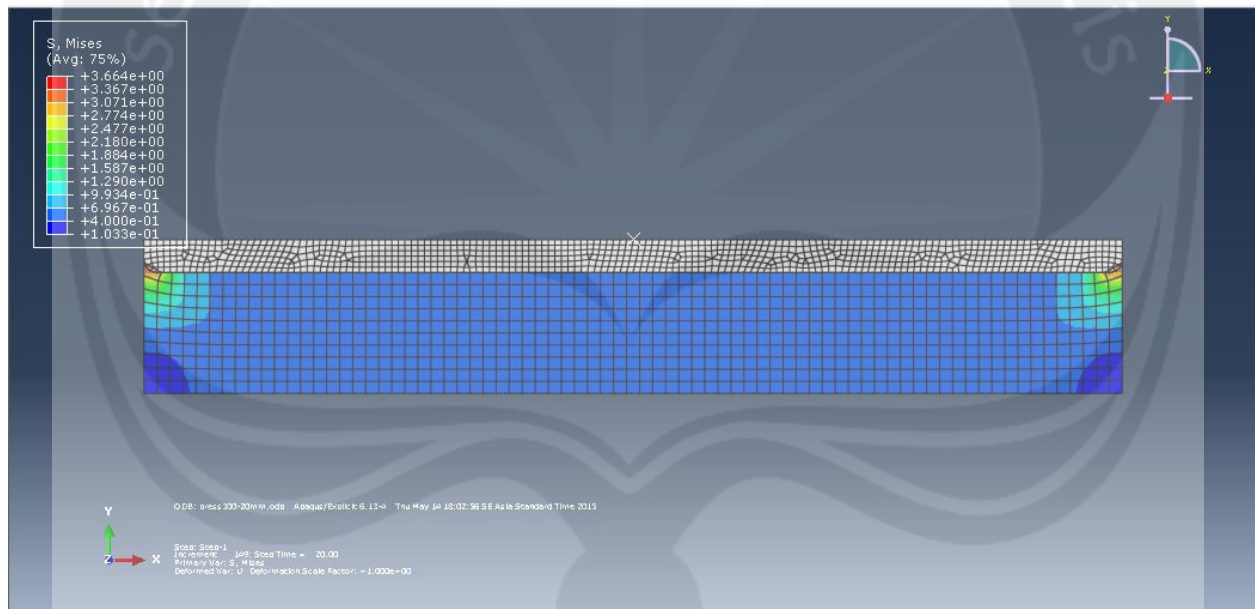
Gambar 83. SRCGF dengan Tekanan 150 N



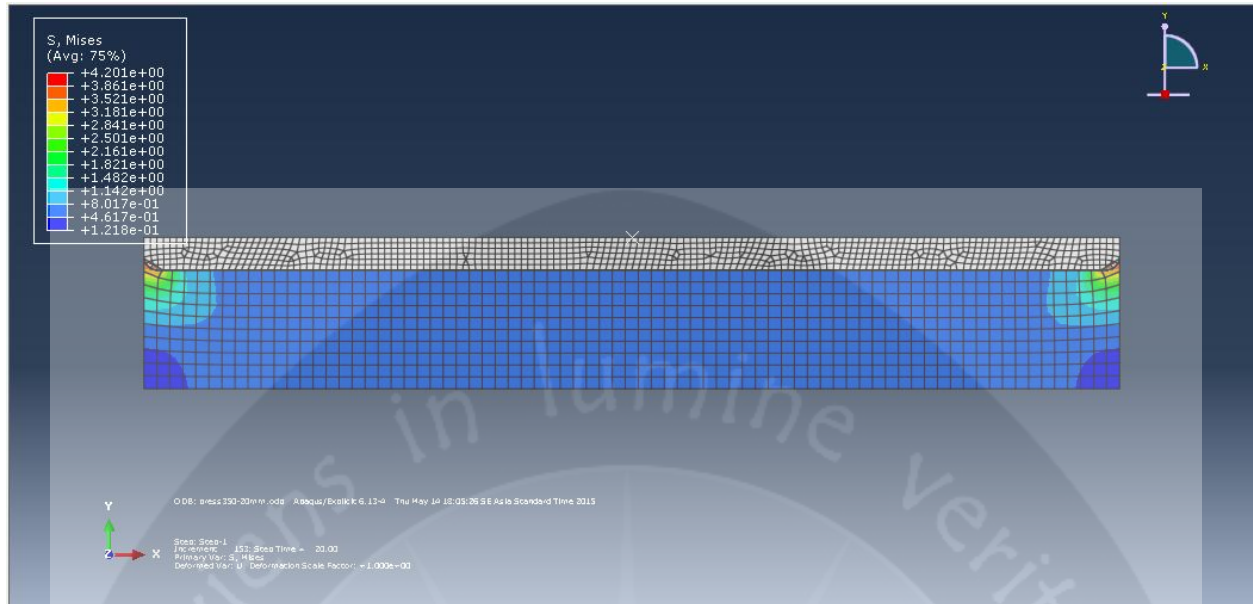
Gambar 84. SRCGF dengan Tekanan 200 N



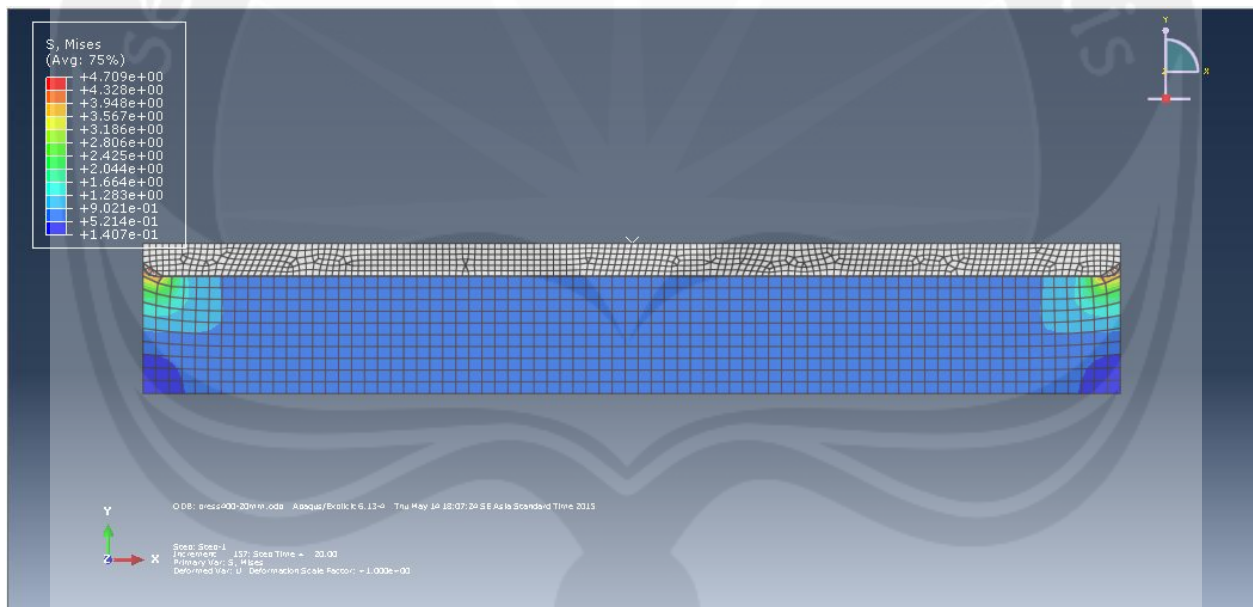
Gambar 85. SRCGF dengan Tekanan 250 N



Gambar 86. SRCGF dengan Tekanan 300 N



Gambar 87. SRCGF dengan Tekanan 350 N

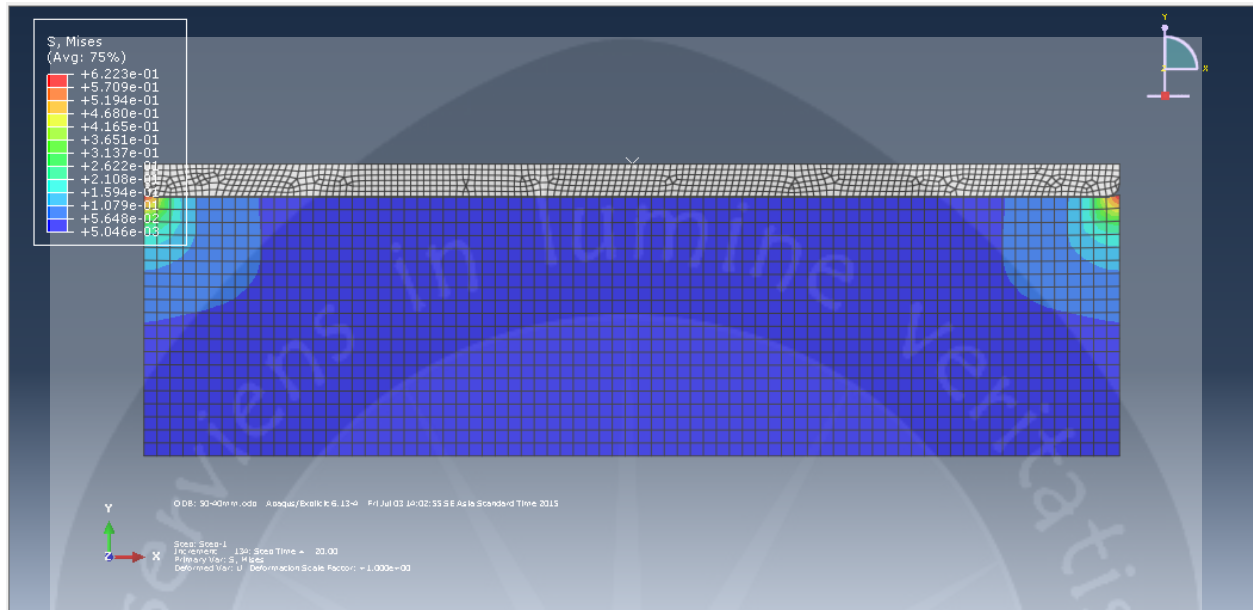


Gambar 88. SRCGF dengan Tekanan 400 N

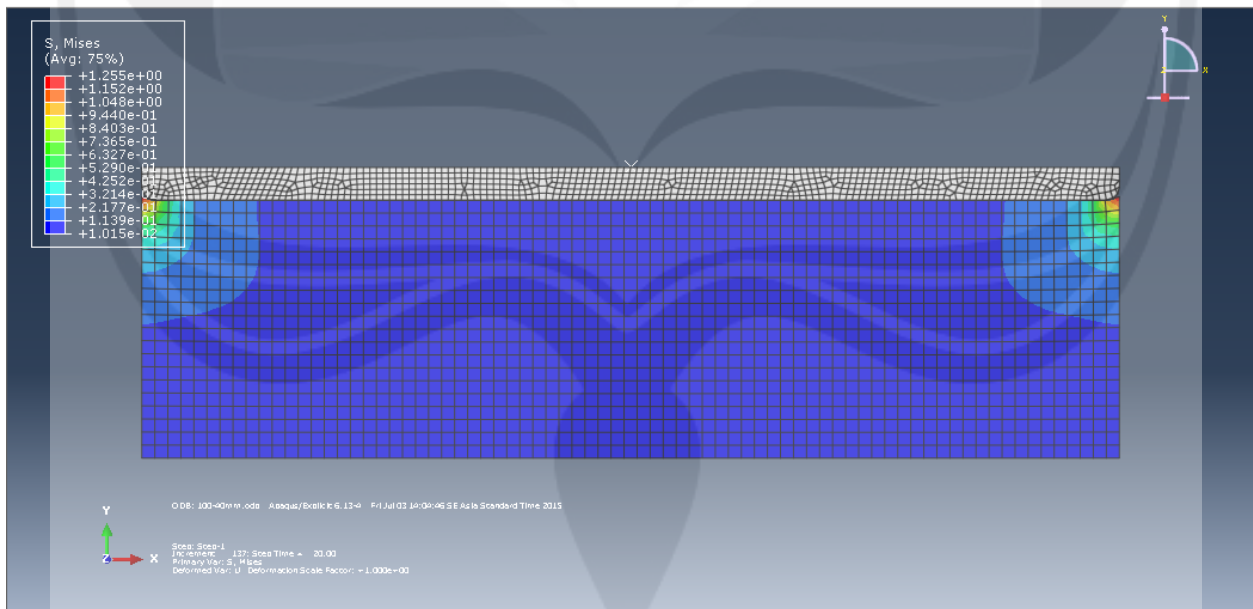
Silicone Rubber Castaldo Gellato Fuschia (SRCGF)

Layer 40 mm

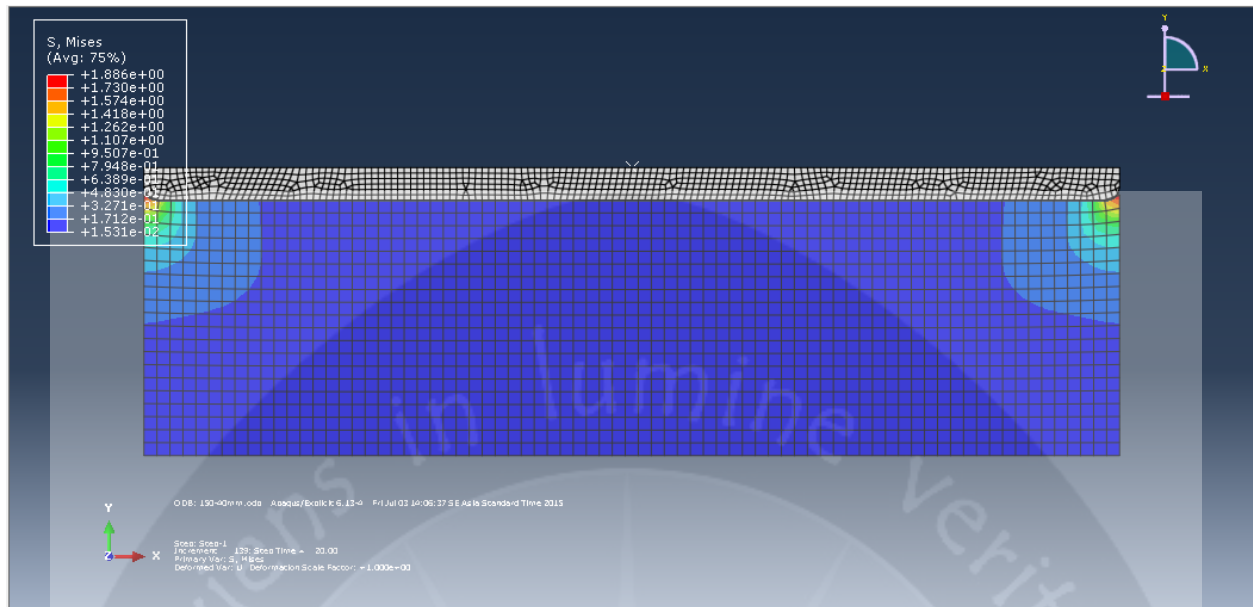
Indenter Radius tip 2 mm



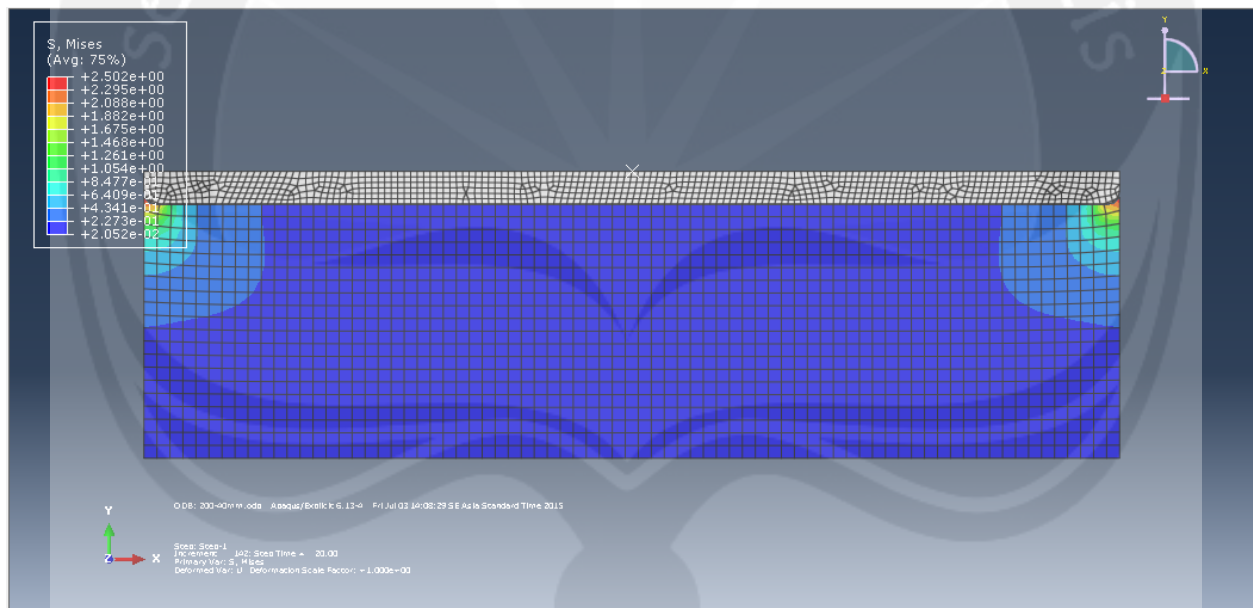
Gambar 89. SRCGF dengan Tekanan 50 N



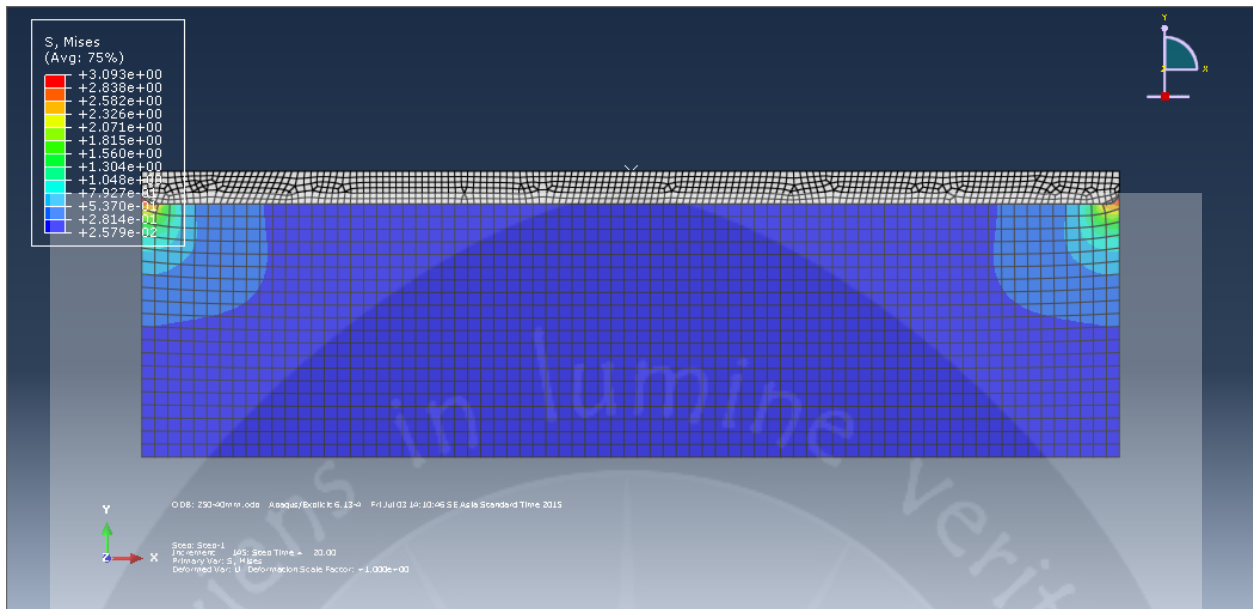
Gambar90. SRCGF dengan Tekanan 100 N



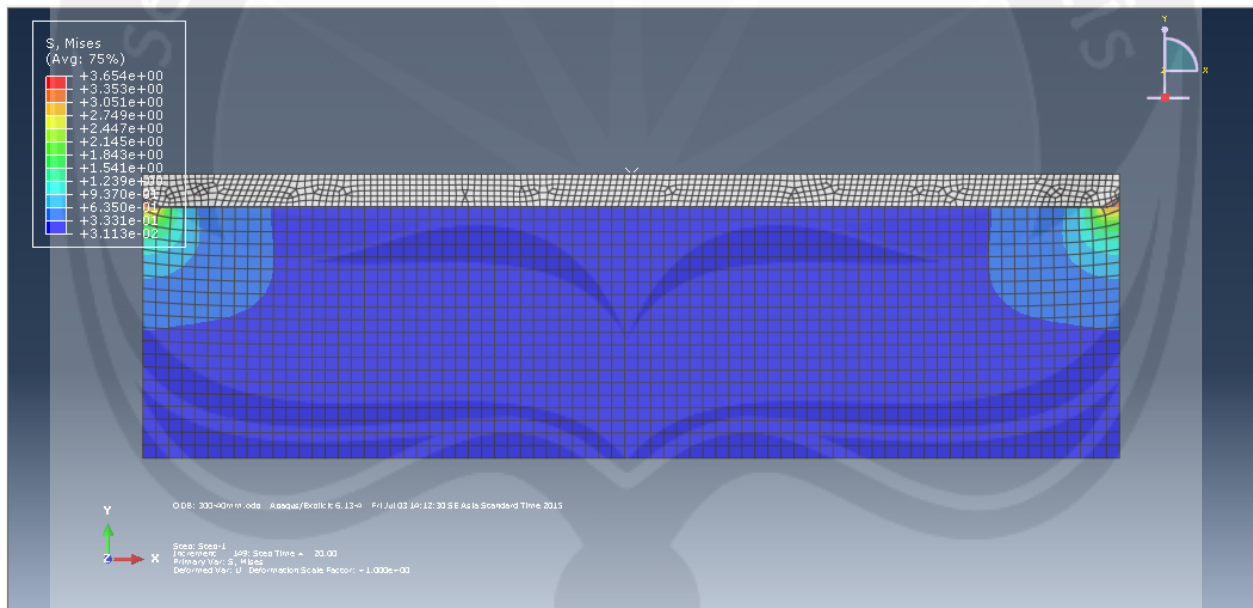
Gambar 91. SRCGF dengan Tekanan 150 N



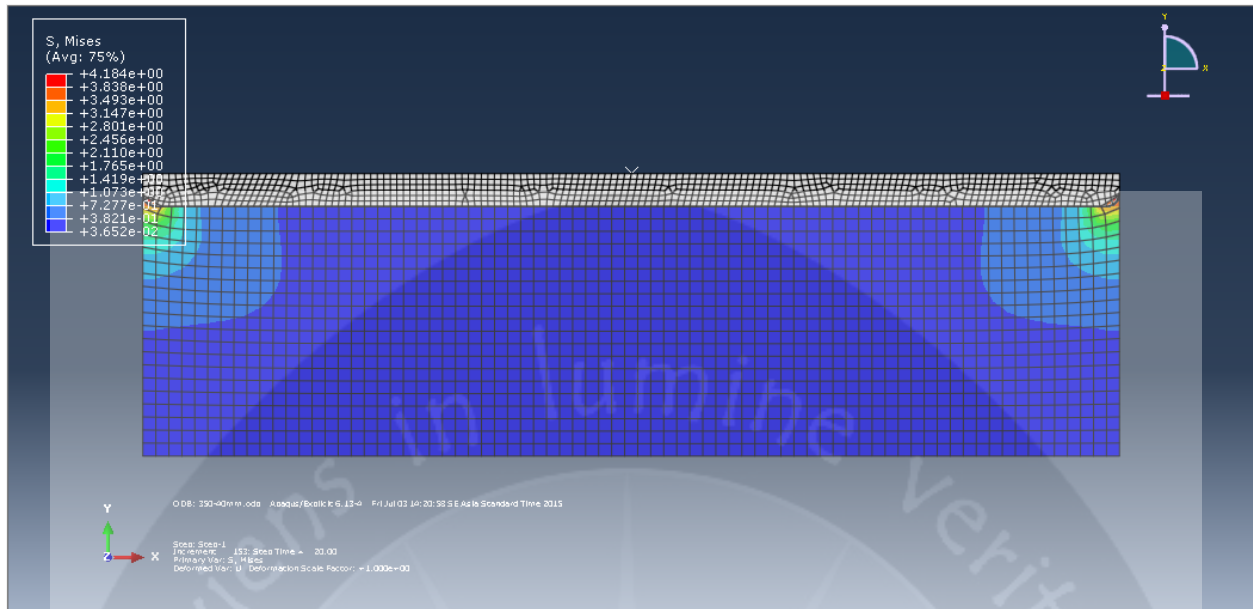
Gambar 92. SRCGF dengan Tekanan 200 N



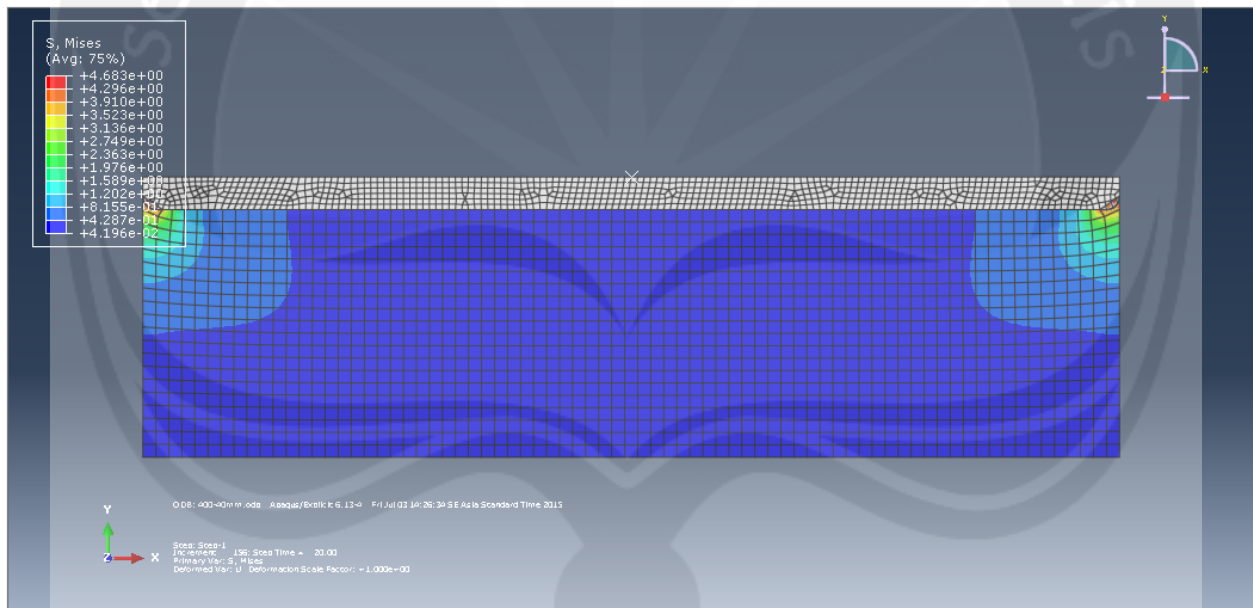
Gambar 93. SRCGF dengan Tekanan 250 N



Gambar 94. SRCGF dengan Tekanan 300 N



Gambar 95. SRCGF dengan Tekanan 350 N

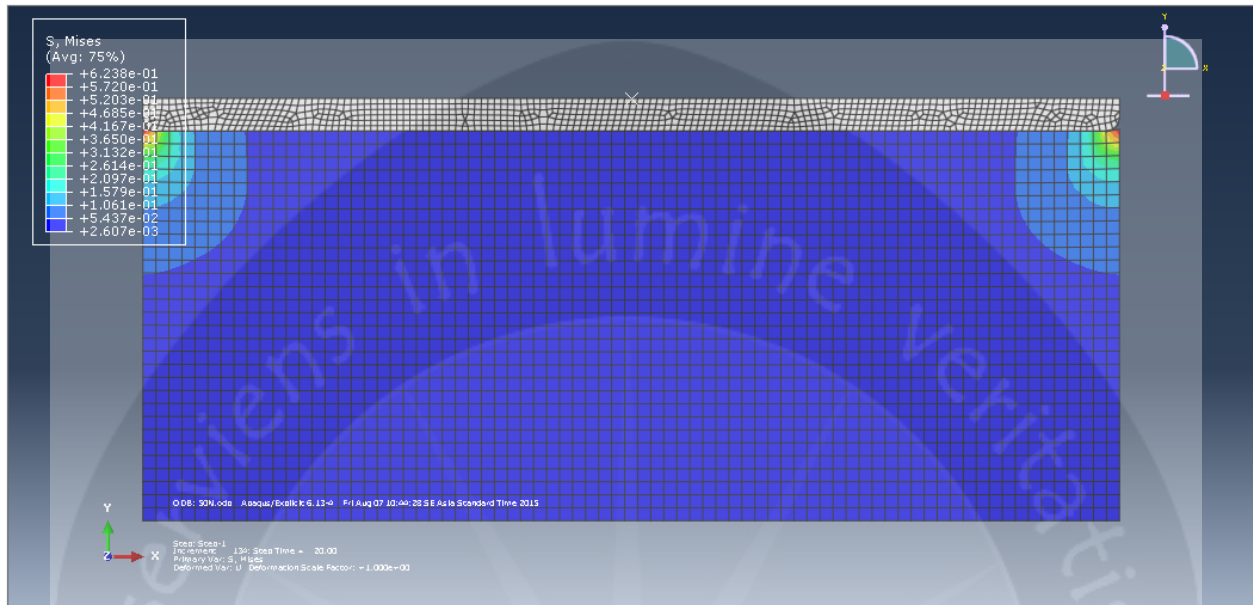


Gambar 96. SRCGF dengan Tekanan 400 N

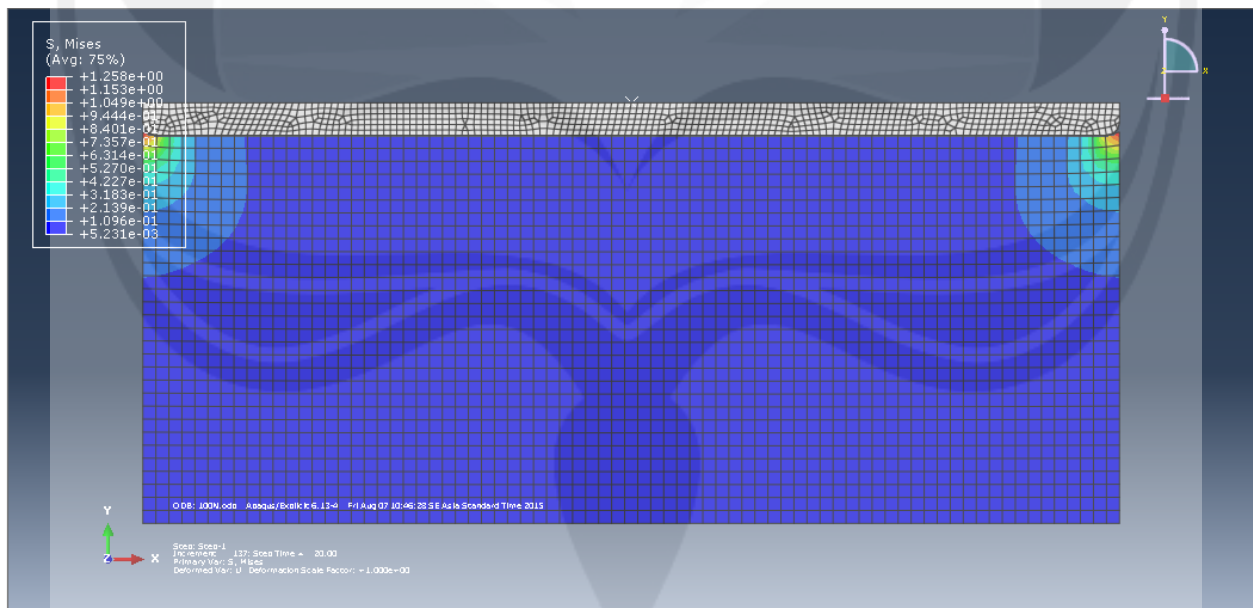
Silicone Rubber Castaldo Gellato Fuschia (SRCGF)

Layer 60 mm

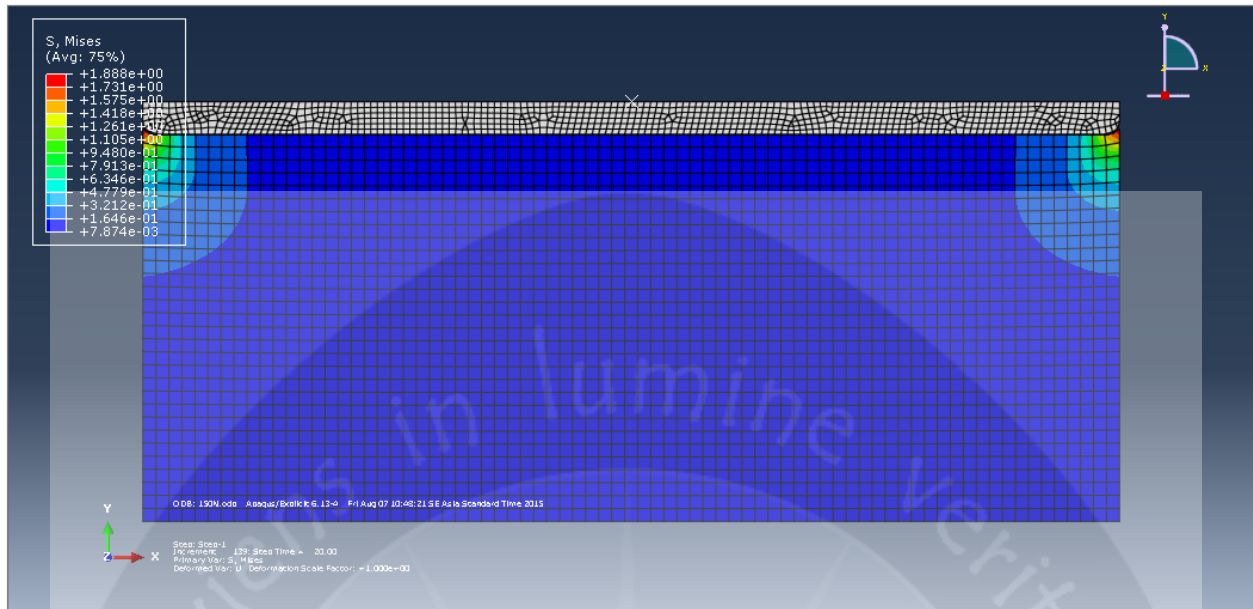
Indenter Radius tip 2 mm



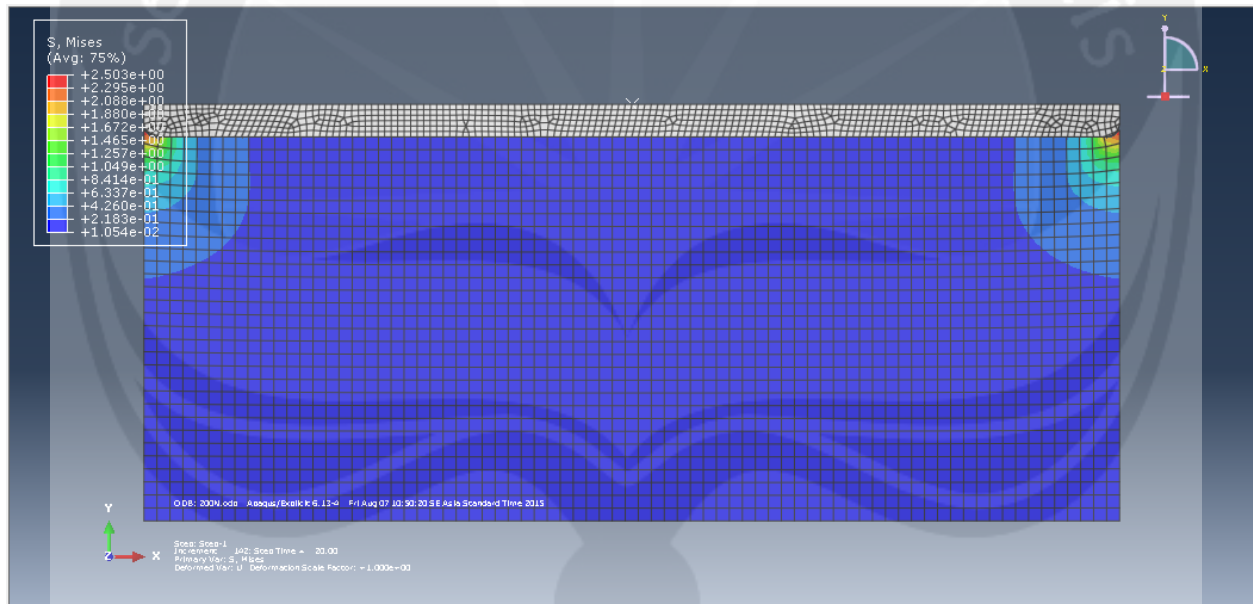
Gambar 97. SRCGF dengan Tekanan 50 N



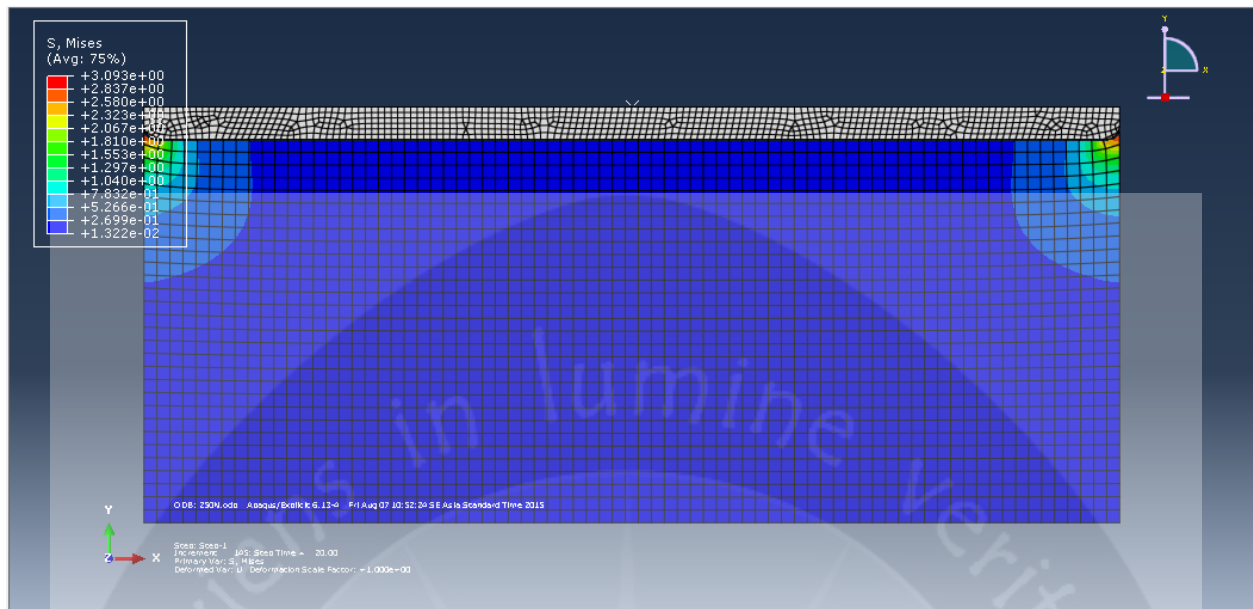
Gambar 98. SRCGF dengan Tekanan 100 N



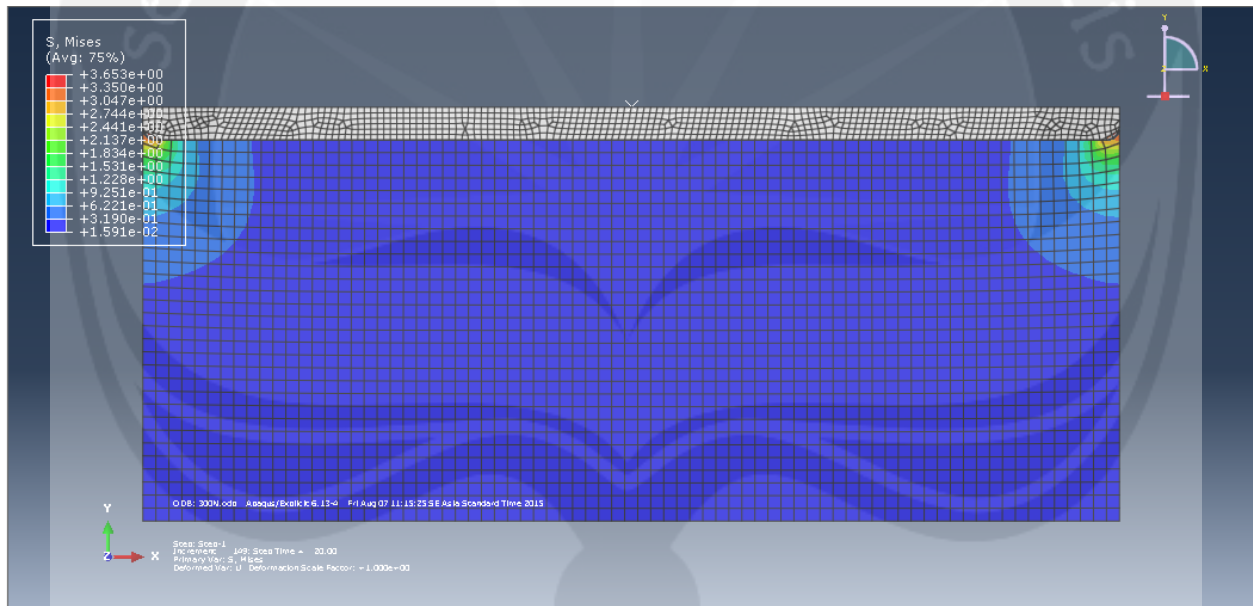
Gambar 99. SRCGF dengan Tekanan 150 N



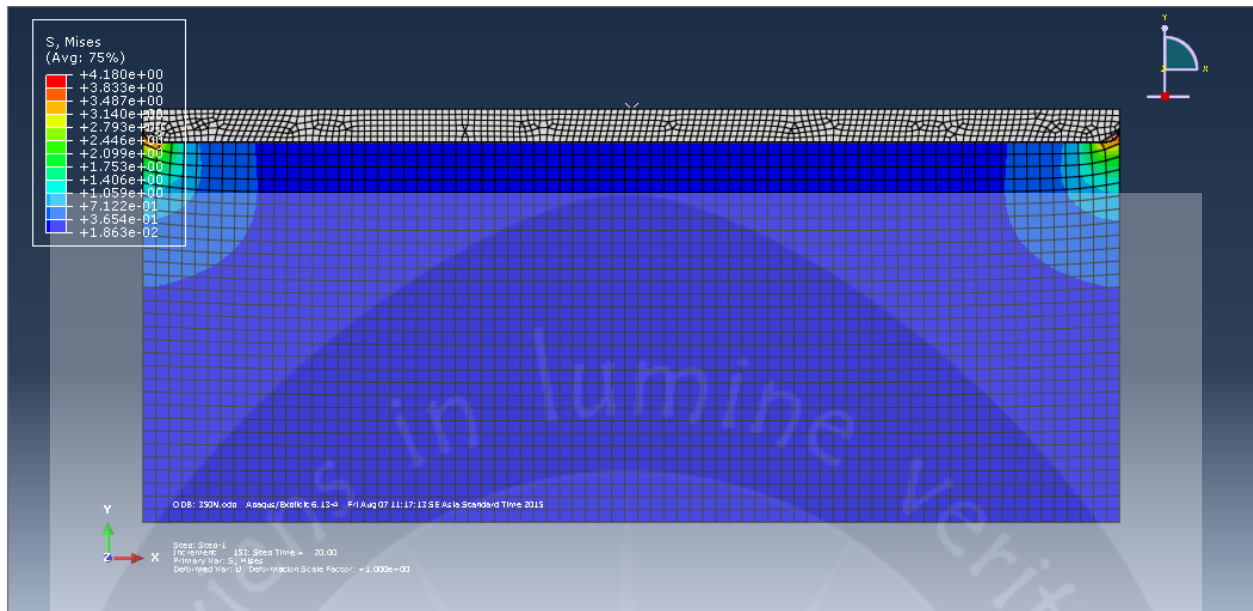
Gambar 100. SRCGF dengan Tekanan 200 N



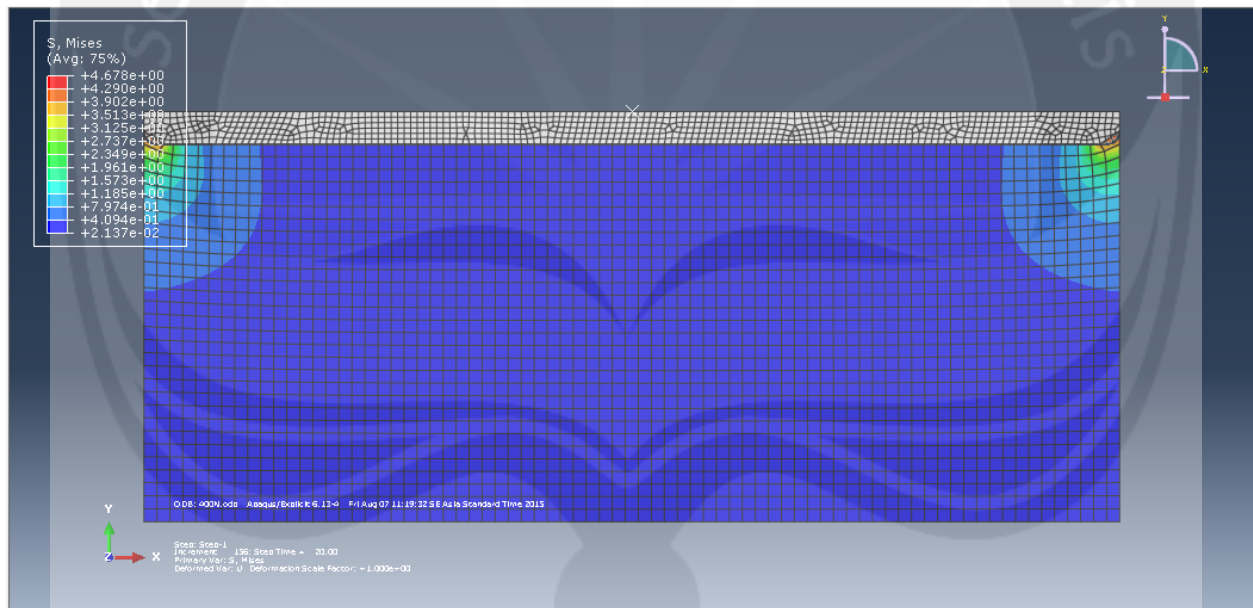
Gambar 101. SRCGF dengan Tekanan 250 N



Gambar 102. SRCGF dengan Tekanan 300 N



Gambar 103. SRCGF dengan Tekanan 350 N

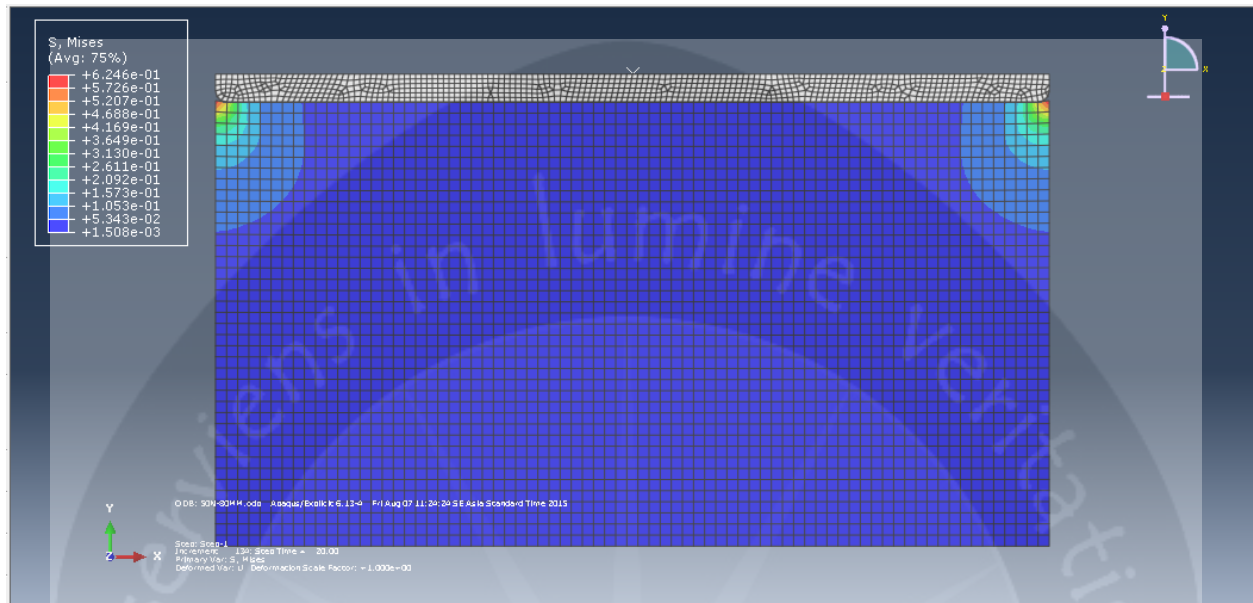


Gambar 104. SRCGF dengan Tekanan 400 N

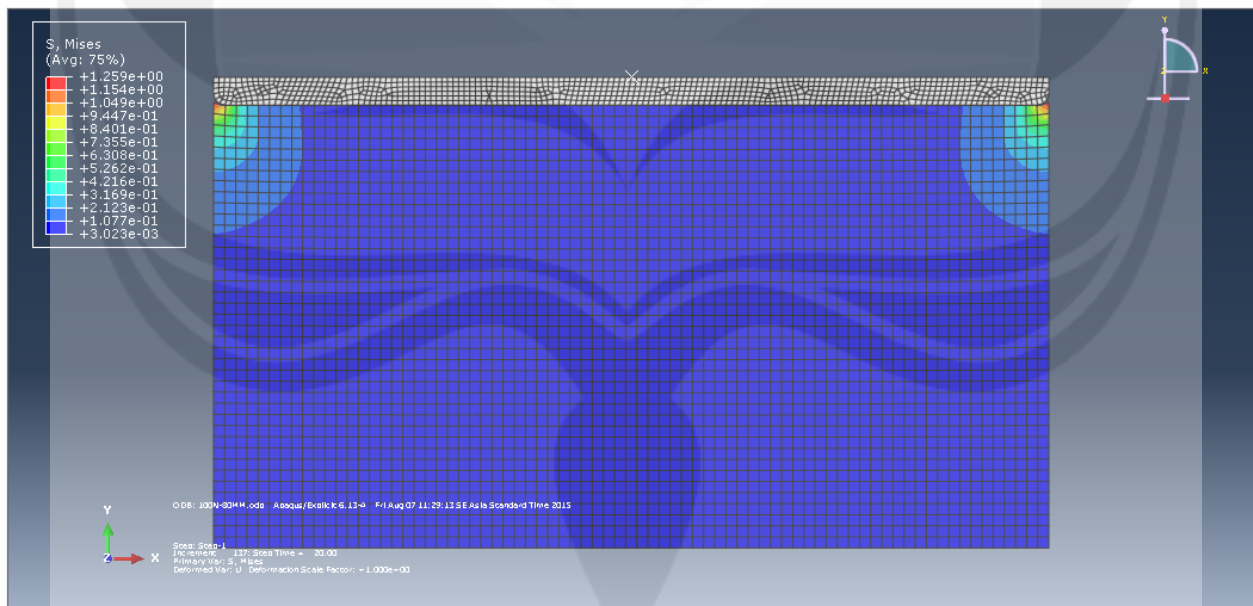
Silicone Rubber Castaldo Gellato Fuschia (SRCGF)

Layer 80 mm

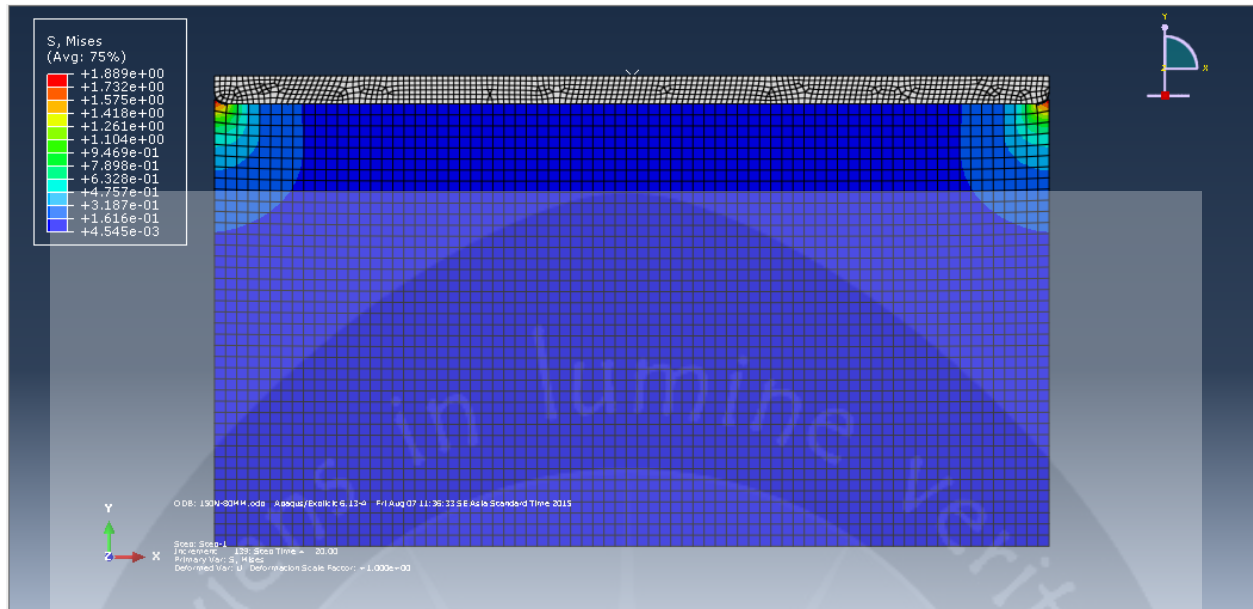
Indenter Radius tip 2 mm



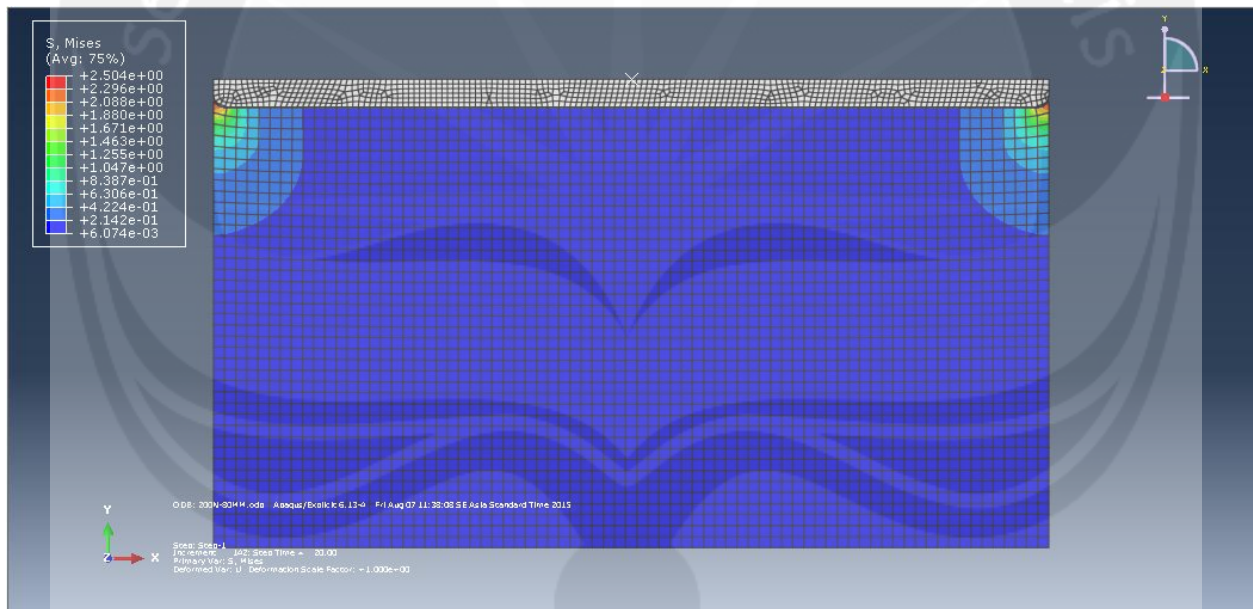
Gambar 105. SRCGF dengan Tekanan 50 N



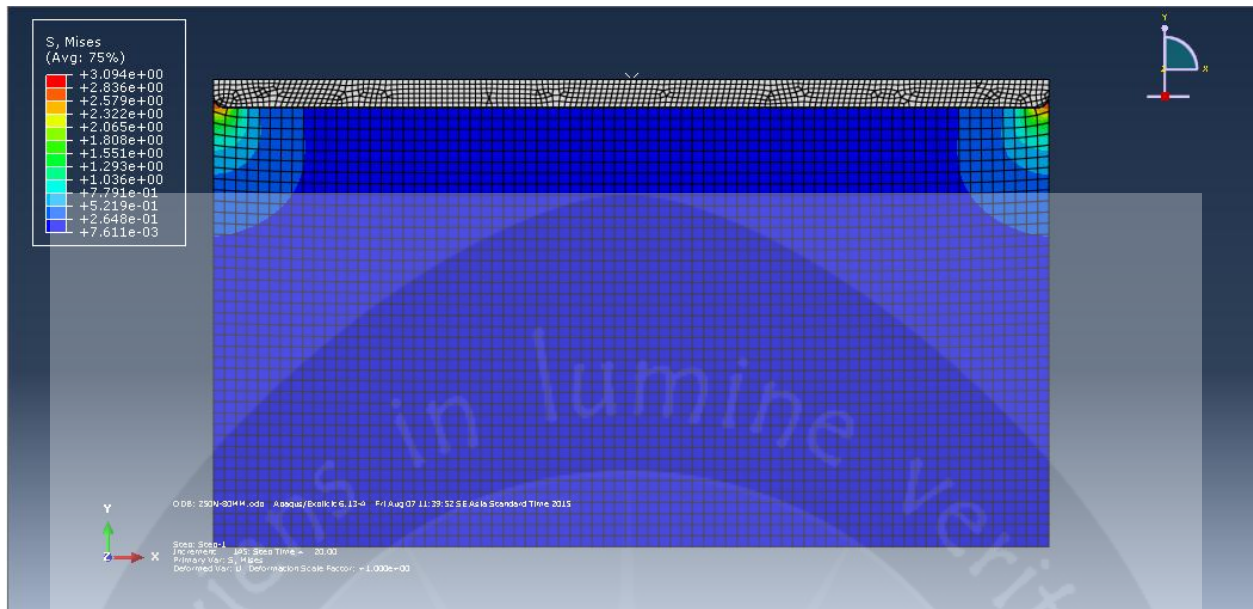
Gambar 106. SRCGF dengan Tekanan 100 N



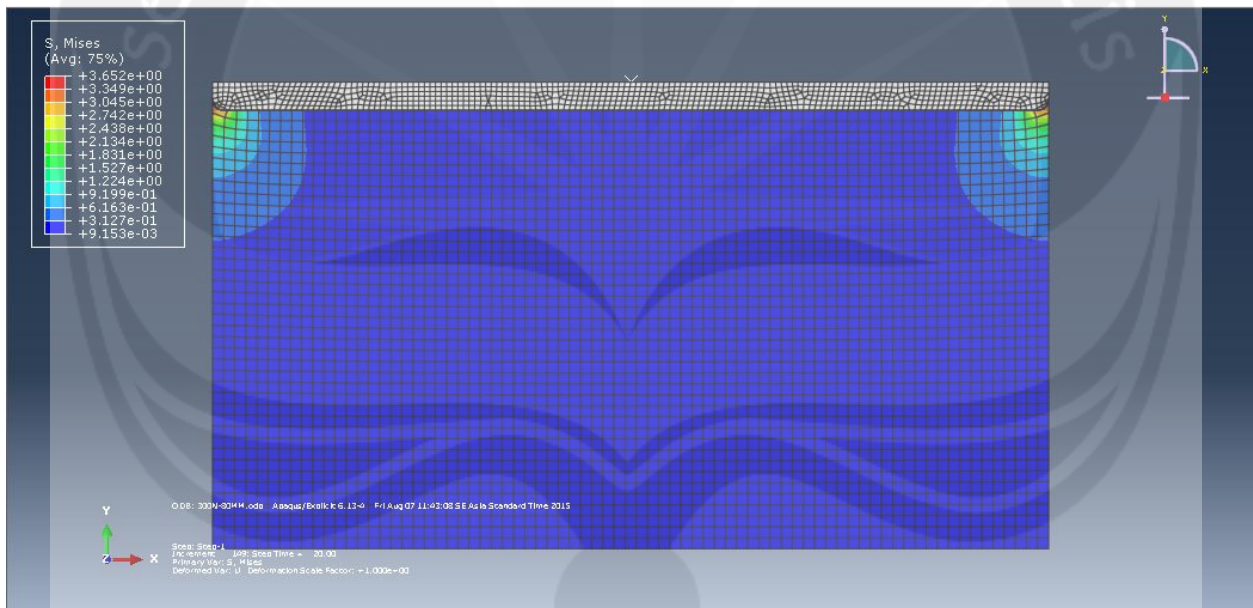
Gambar 107. SRCGF dengan Tekanan 150 N



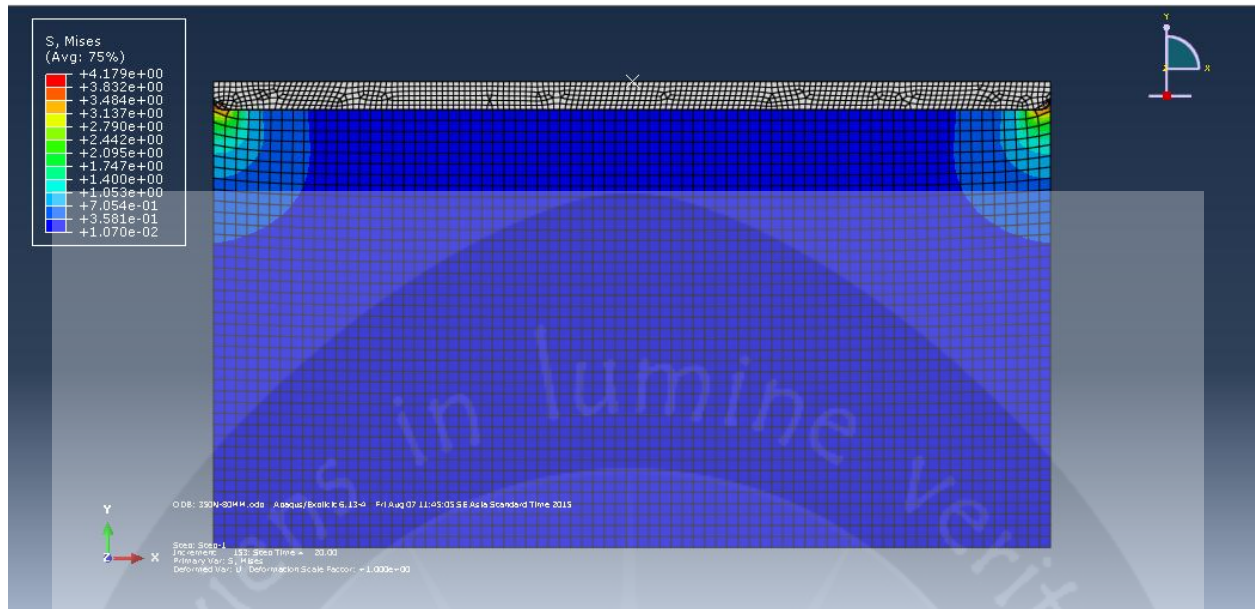
Gambar 108. SRCGF dengan Tekanan 200 N



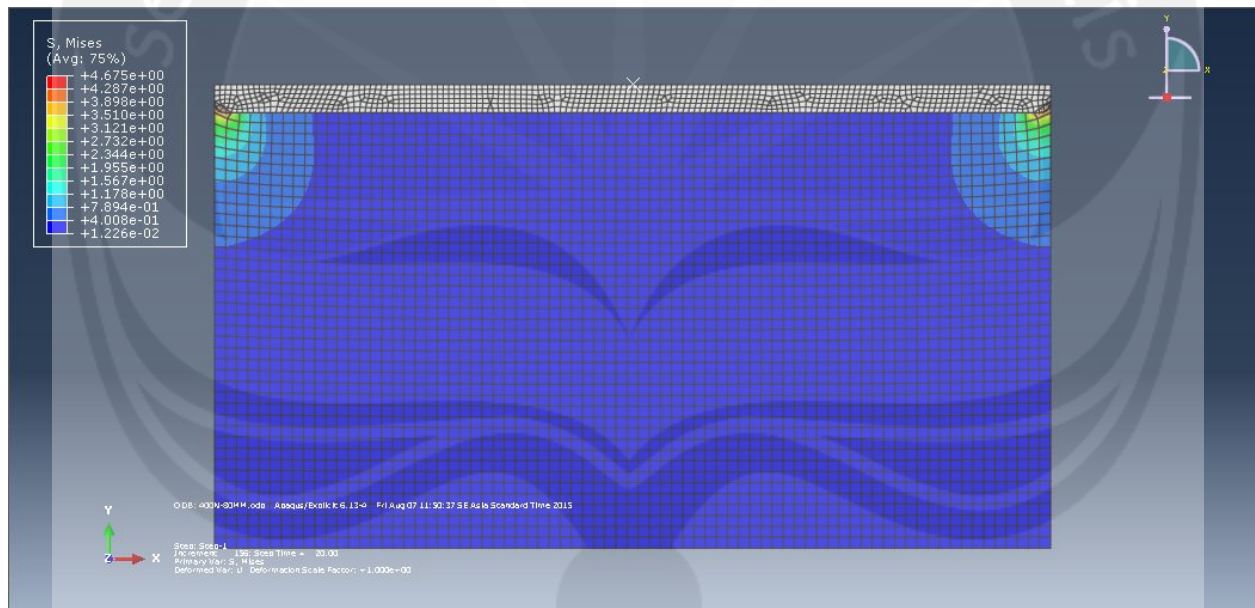
Gambar 109. SRCGF dengan Tekanan 250 N



Gambar 110. SRCGF dengan Tekanan 300 N



Gambar 111. SRCGF dengan Tekanan 350 N

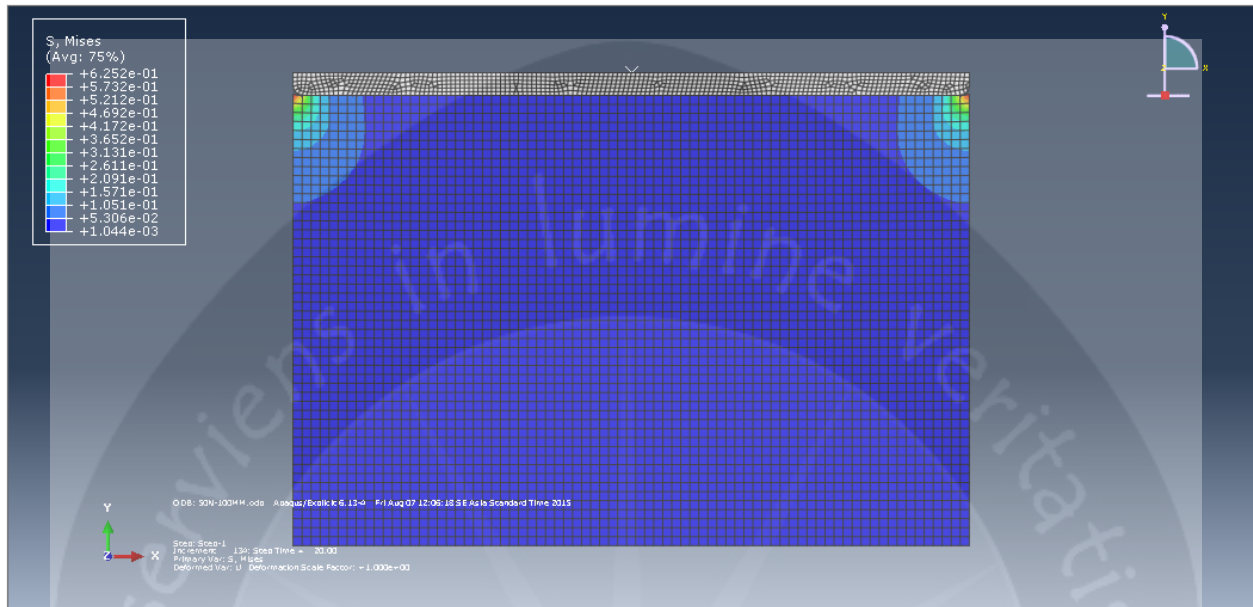


Gambar 112. SRCGF dengan Tekanan 400 N

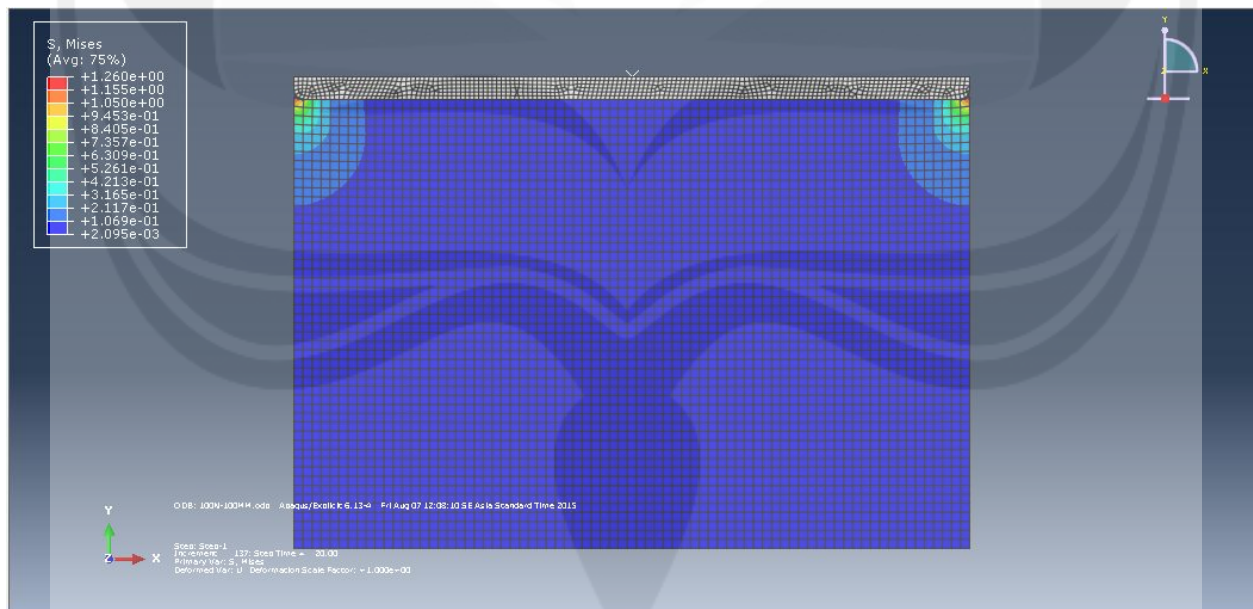
Silicone Rubber Castaldo Gellato Fuschia (SRCGF)

Layer 100 mm

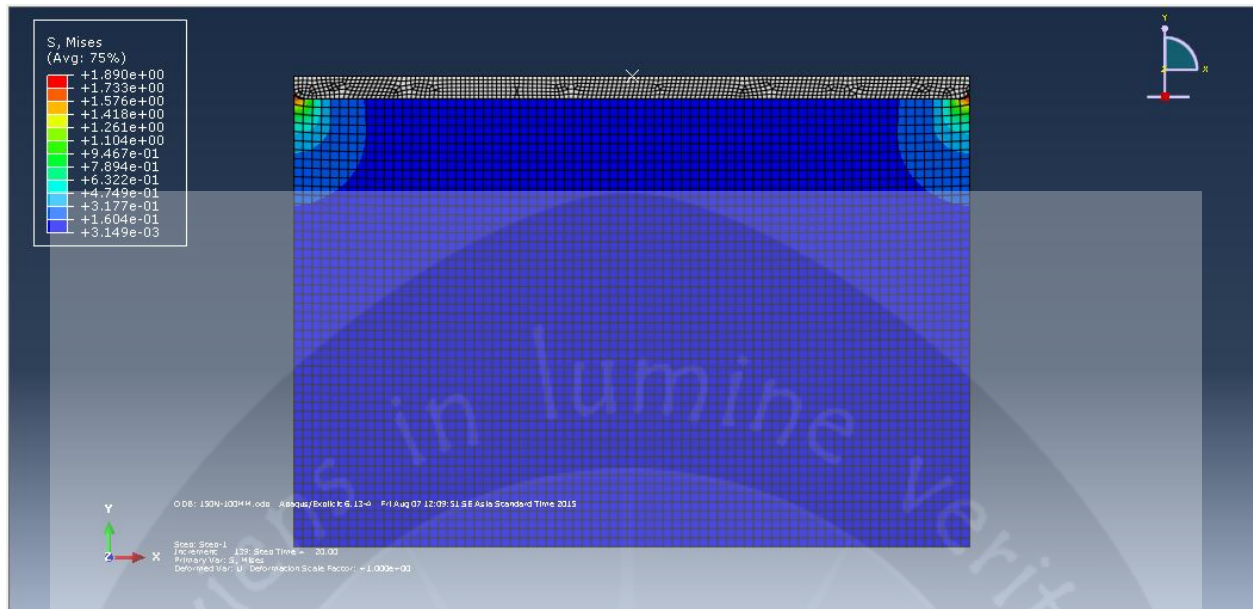
Indenter Radius tip 2 mm



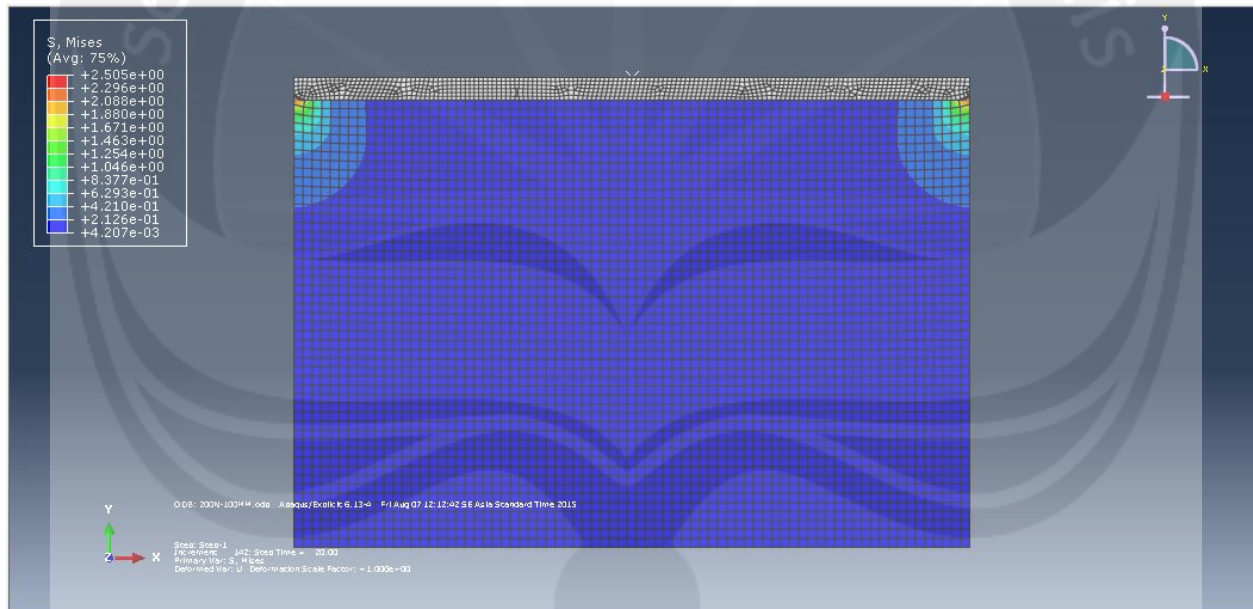
Gambar 113. SRCGF dengan Tekanan 50 N



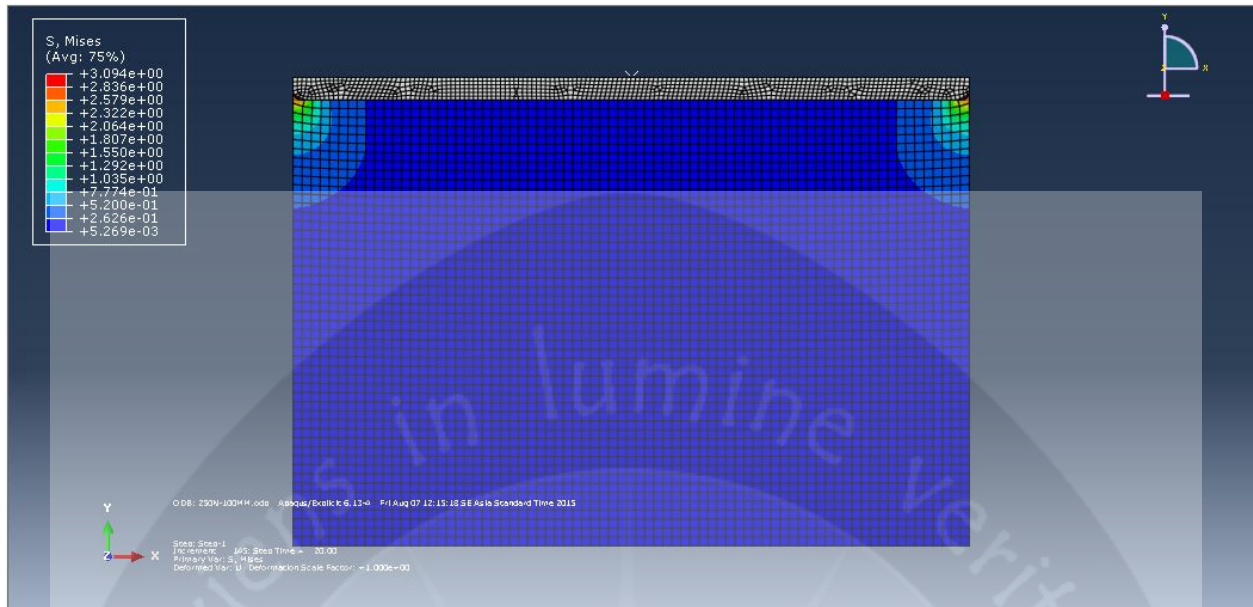
Gambar 114. SRCGF dengan Tekanan 100 N



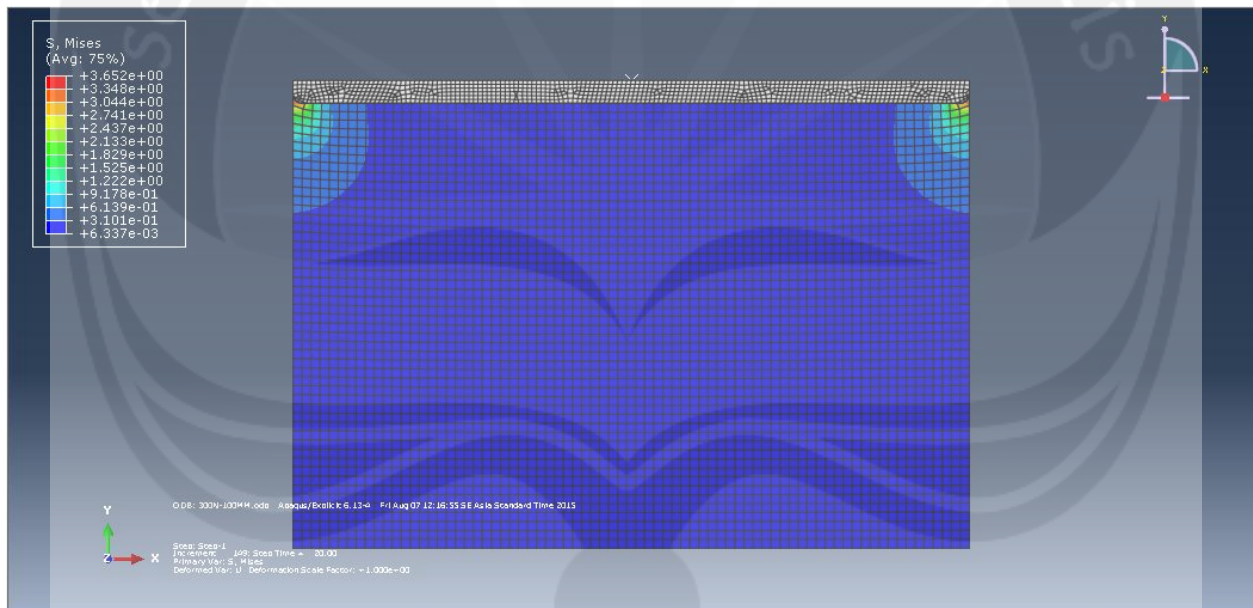
Gambar 115. SRCGF dengan Tekanan 150 N



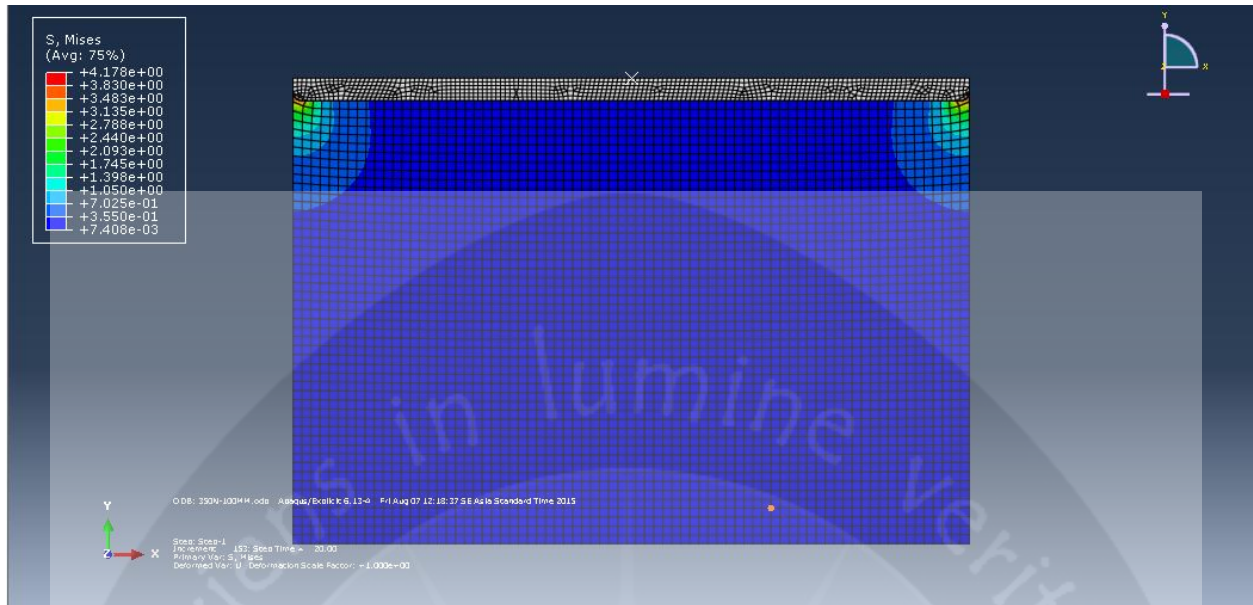
Gambar 116. SRCGF dengan Tekanan 200 N



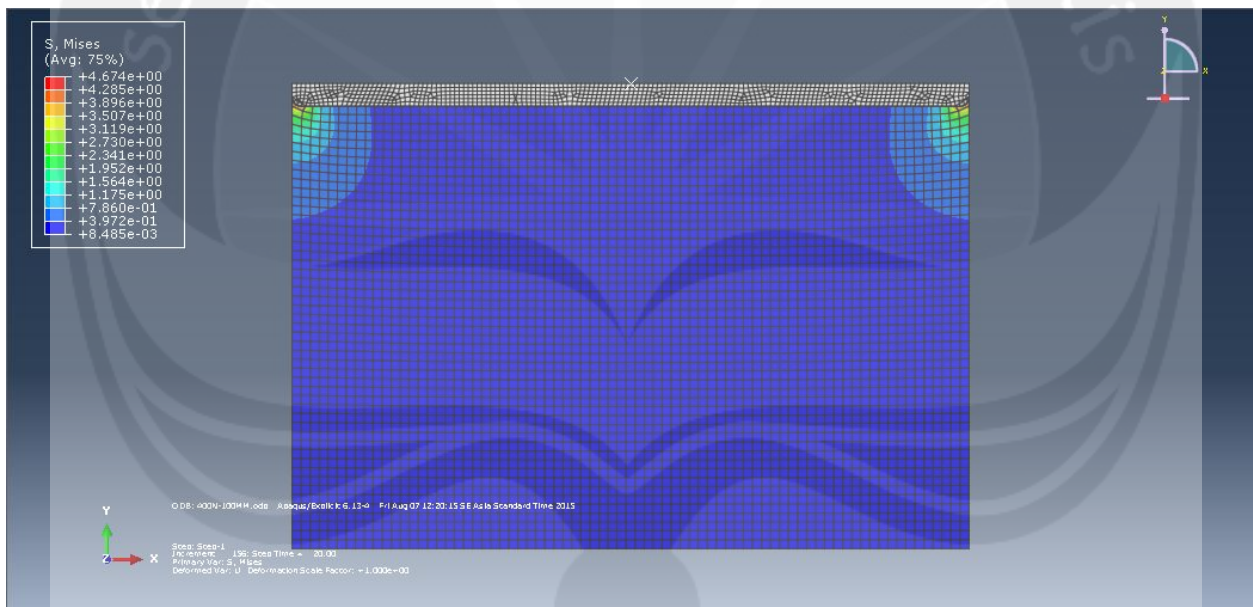
Gambar 117. SRCGF dengan Tekanan 250 N



Gambar 118. SRCGF dengan Tekanan 300 N



Gambar 119. SRCGF dengan Tekanan 350 N



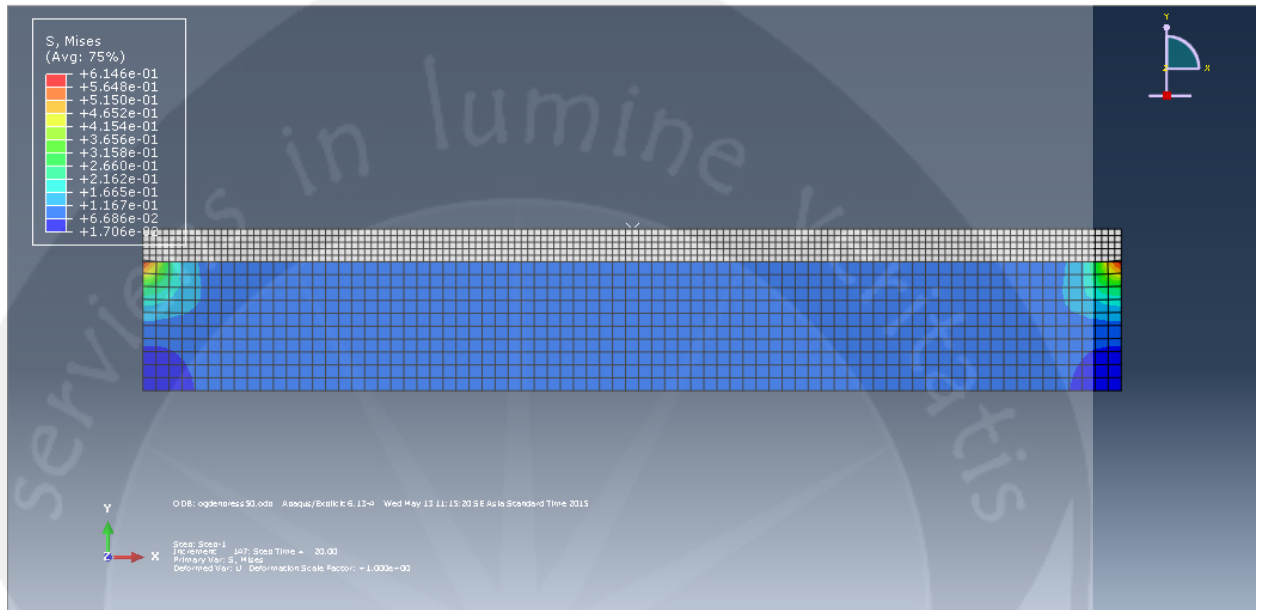
Gambar 120. SRCGF dengan Tekanan 400 N

Lampiran 2

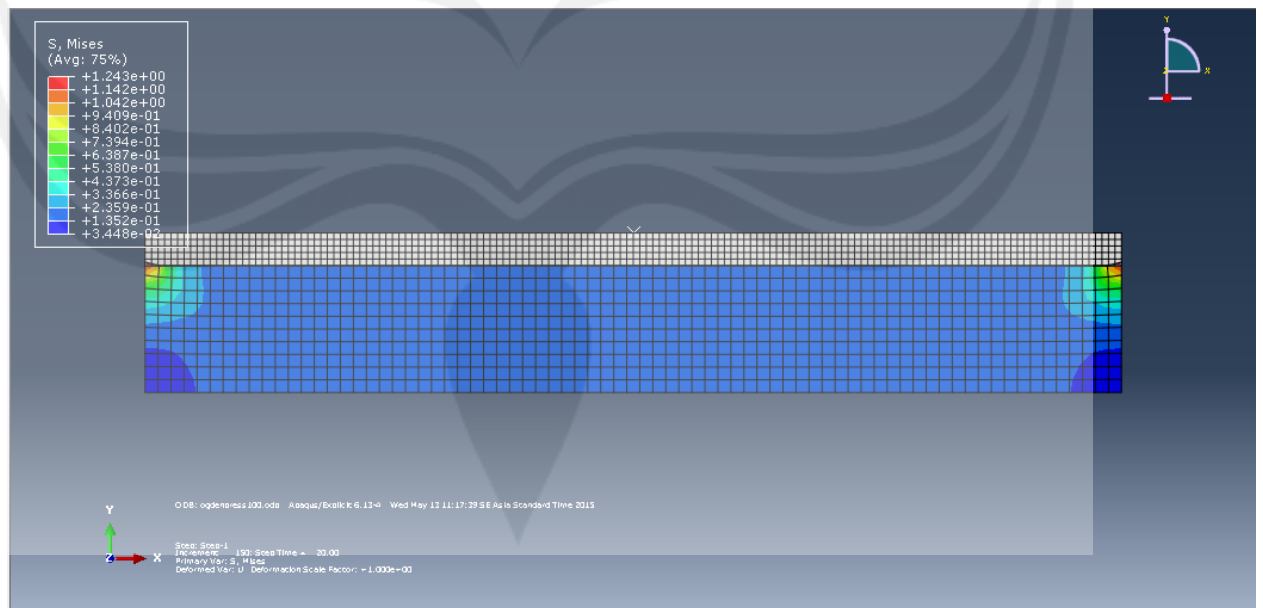
Sill8800

Layer 20 mm

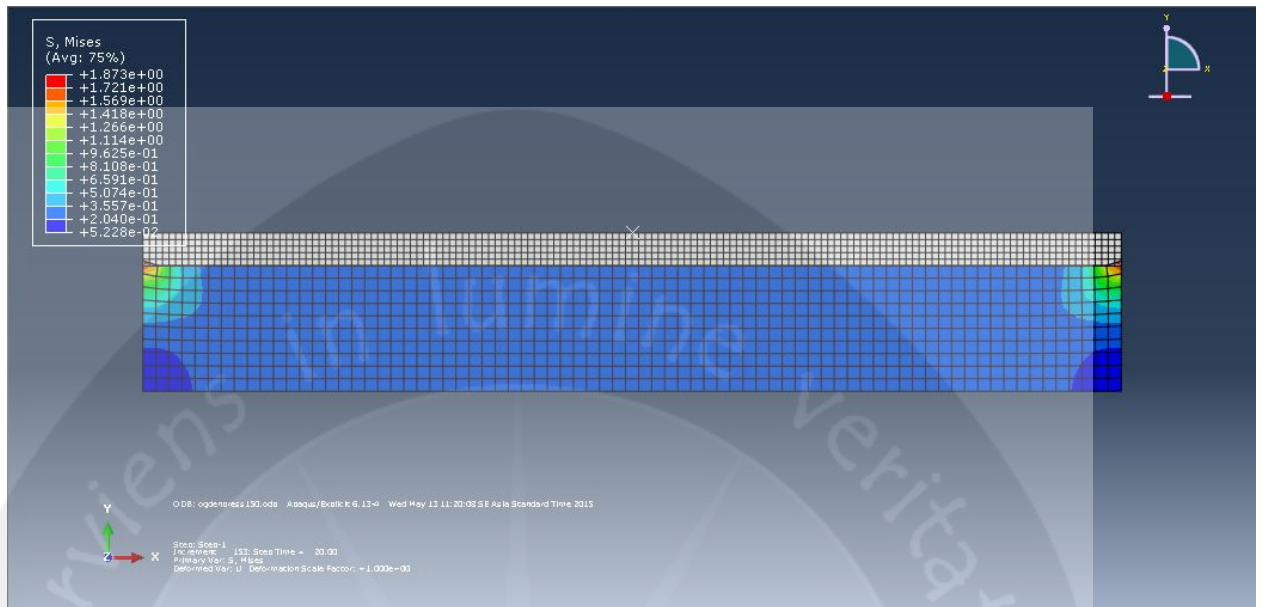
Indenter 180°



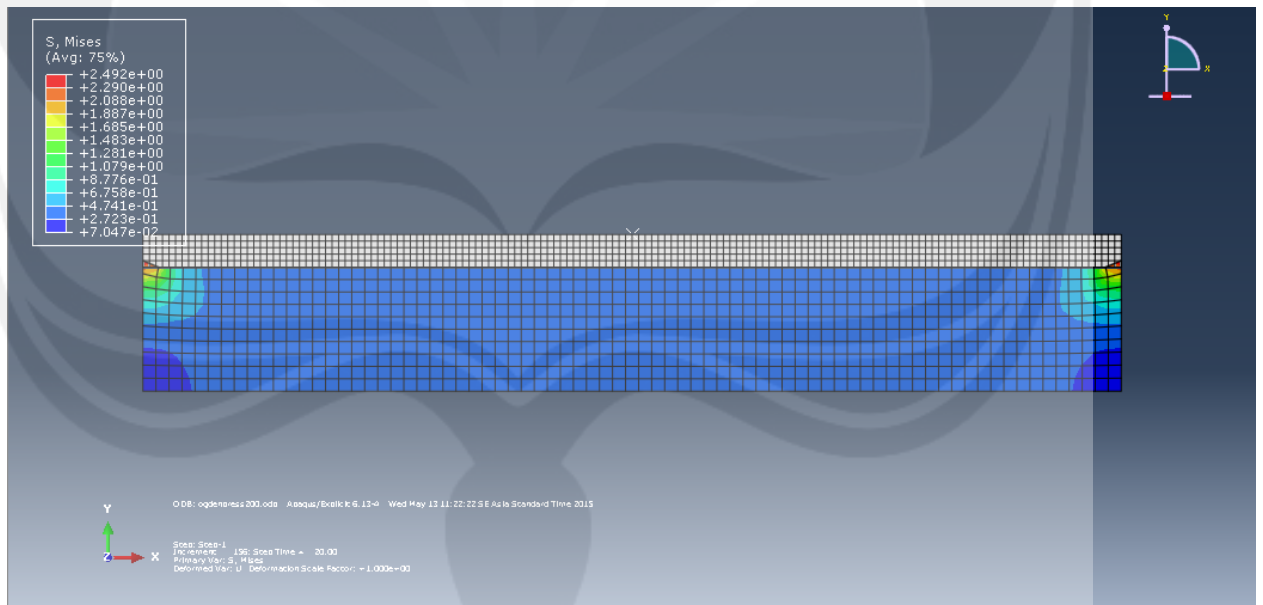
Gambar 121. Sill8800 dengan Tekanan 50 N



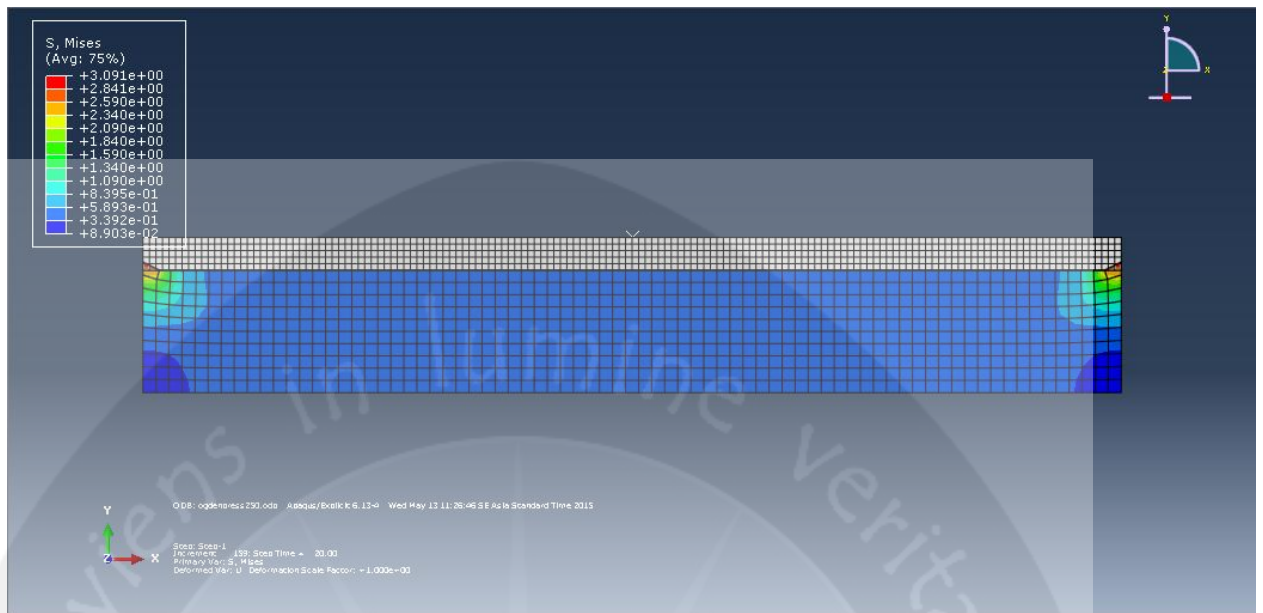
Gambar 122. Sill8800 dengan Tekanan 100 N



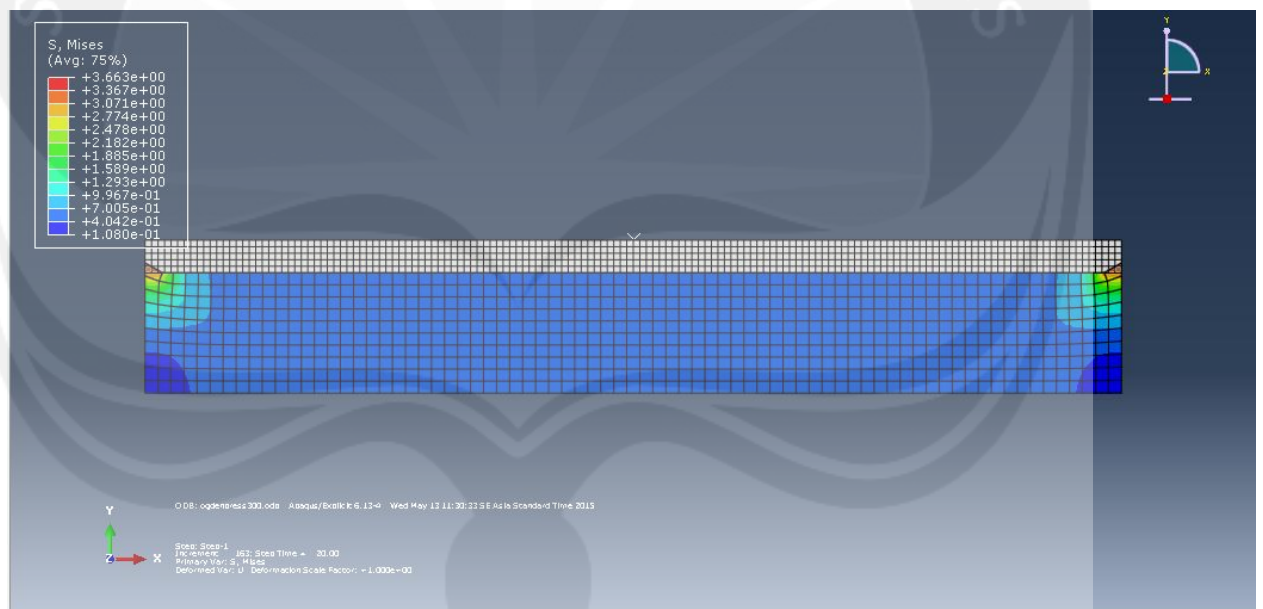
Gambar 123. Sill8800 dengan Tekanan 150 N



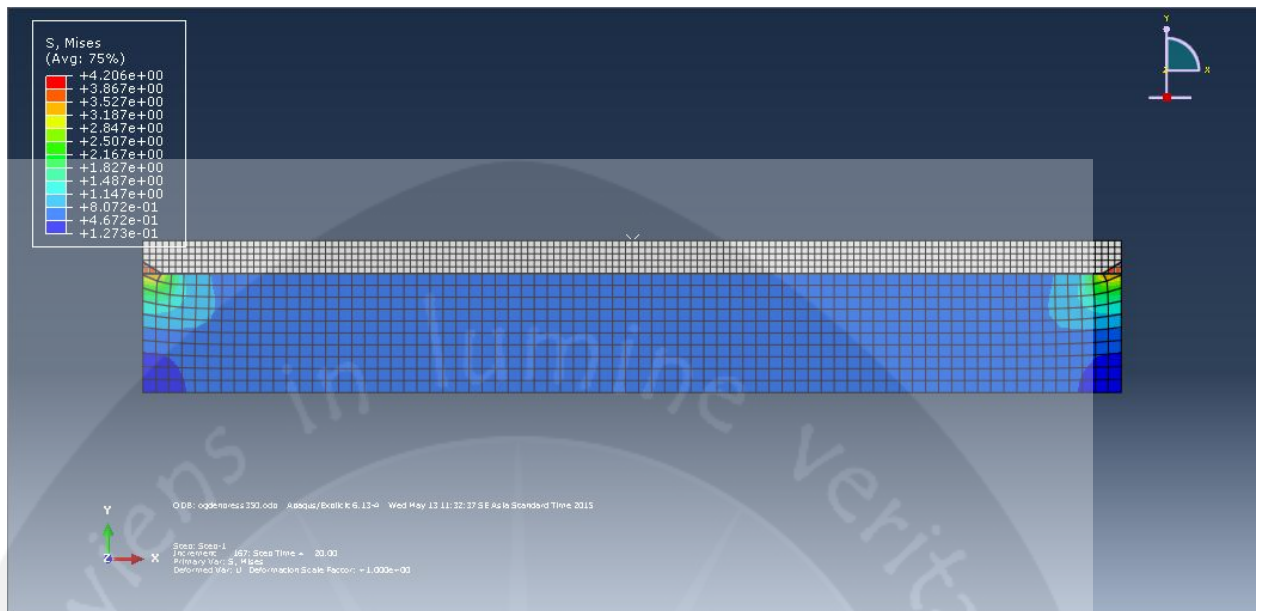
Gambar 124. Sill8800 dengan Tekanan 200 N



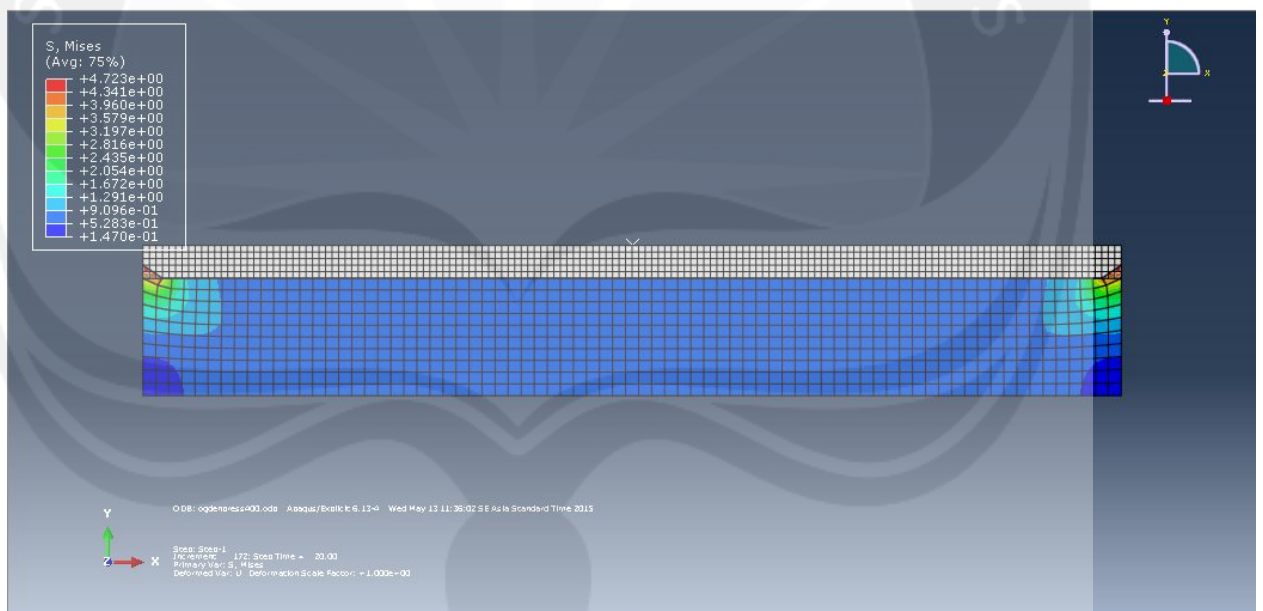
Gambar 125. Sill8800 dengan Tekanan 250 N



Gambar 126. Sill8800 dengan Tekanan 300 N



Gambar 127. Sill8800 dengan Tekanan 350 N

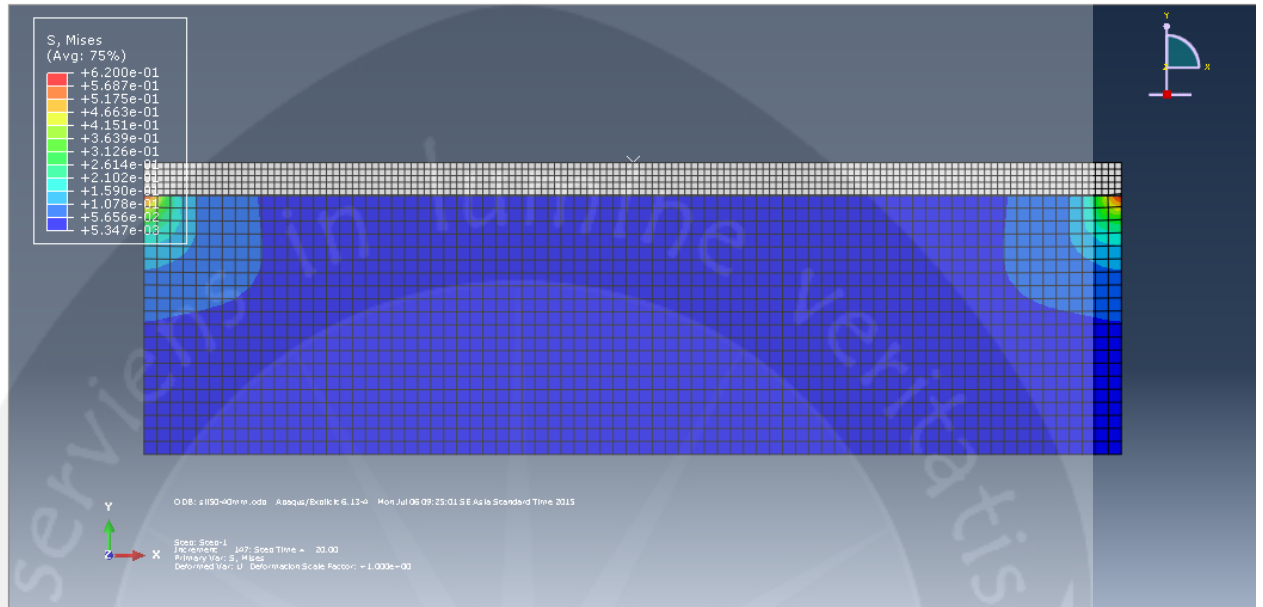


Gambar 128. Sill8800 dengan Tekanan 400 N

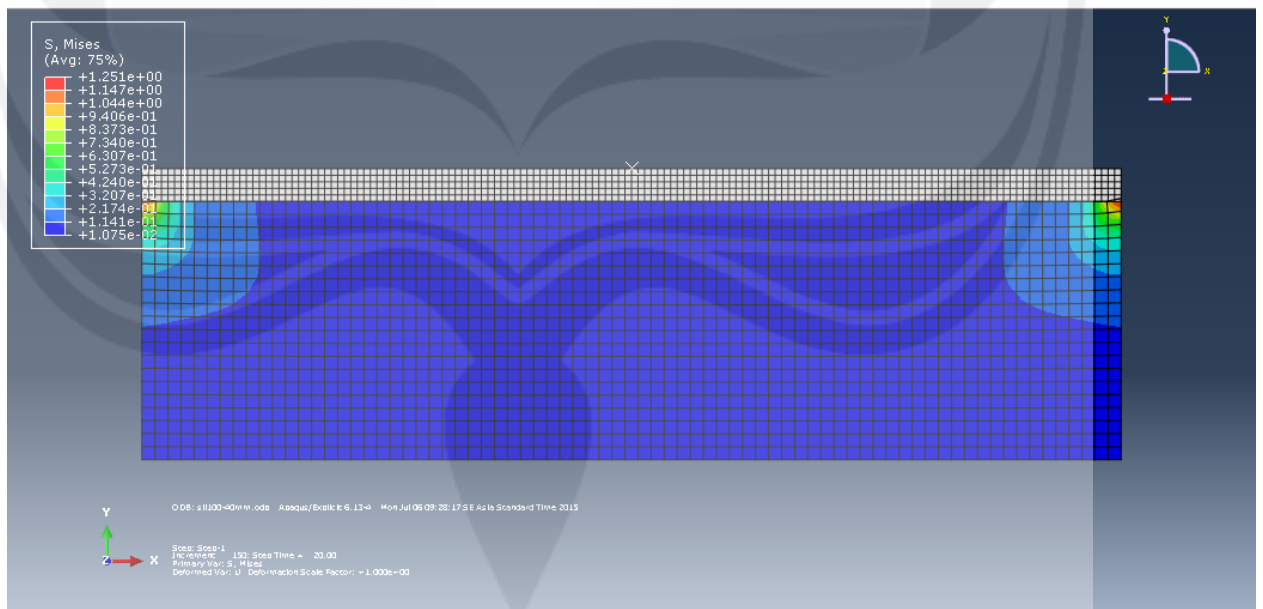
Sill8800

Layer 40 mm

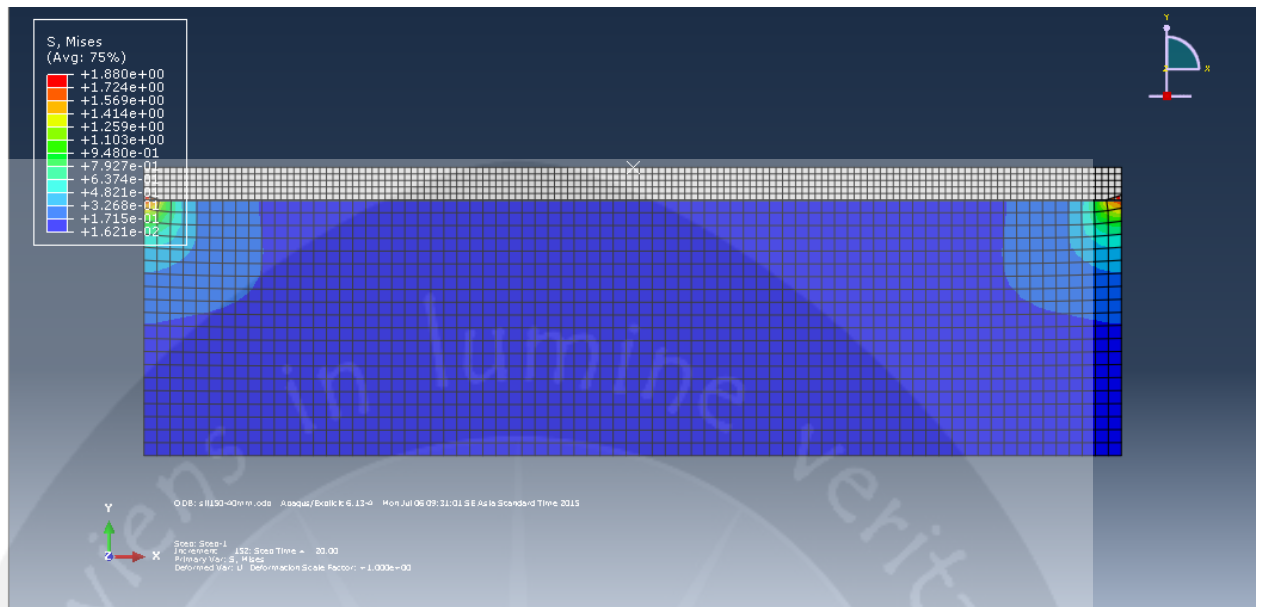
Indenter 180°



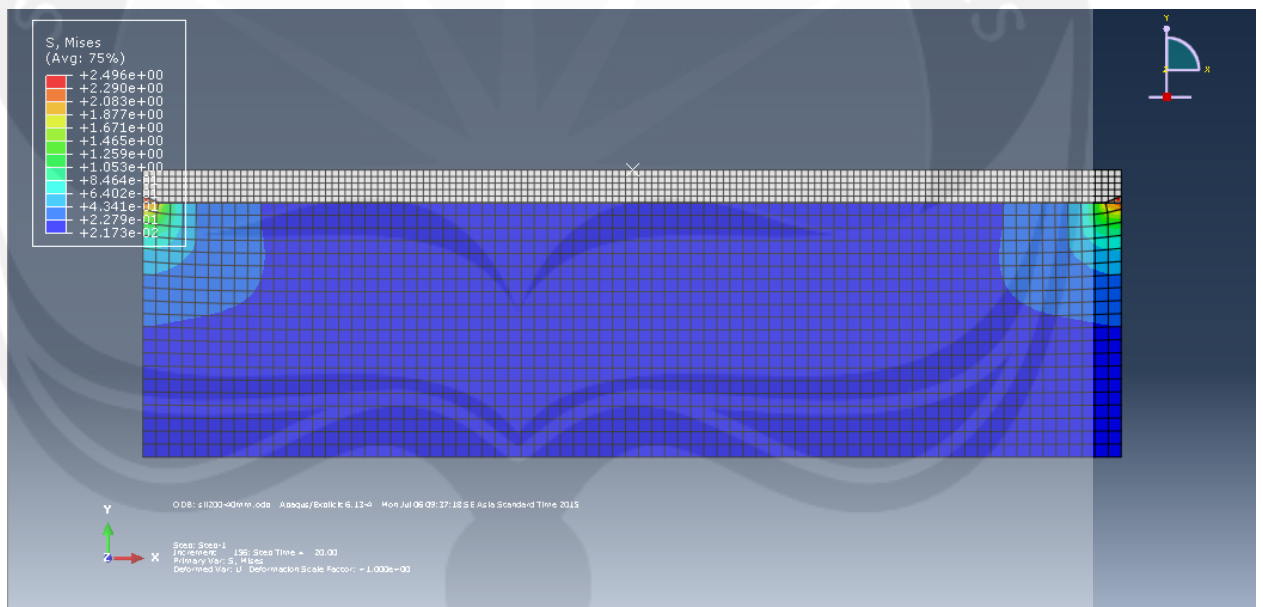
Gambar 129. Sill8800 dengan Tekanan 50 N



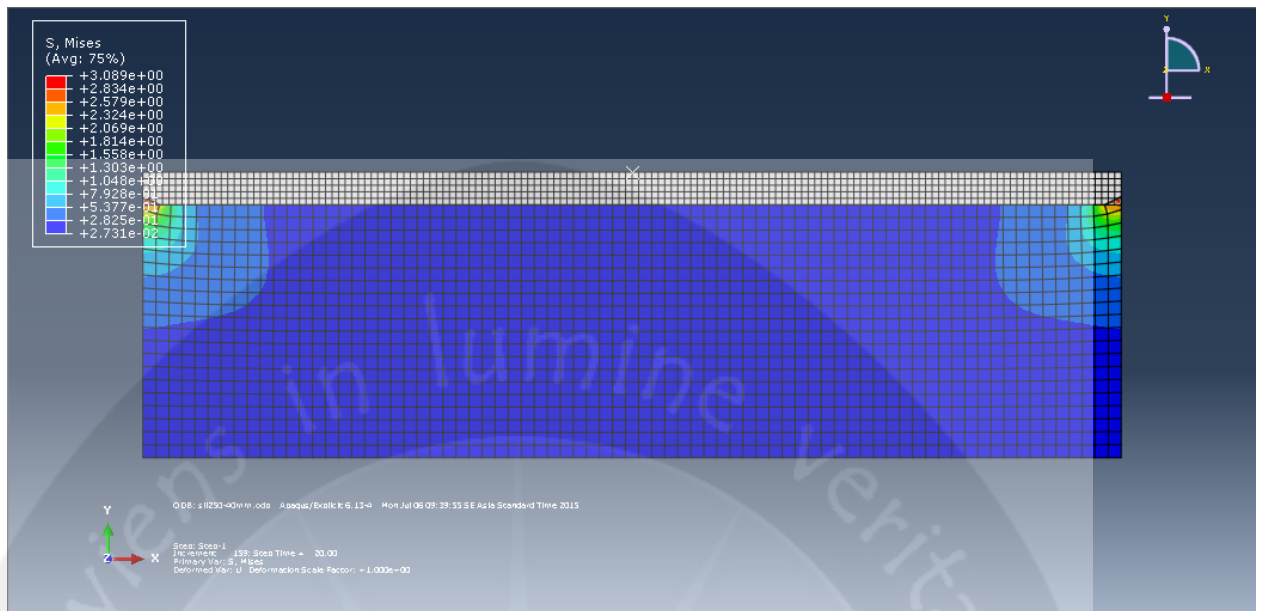
Gambar130. Sill8800 dengan Tekanan 100 N



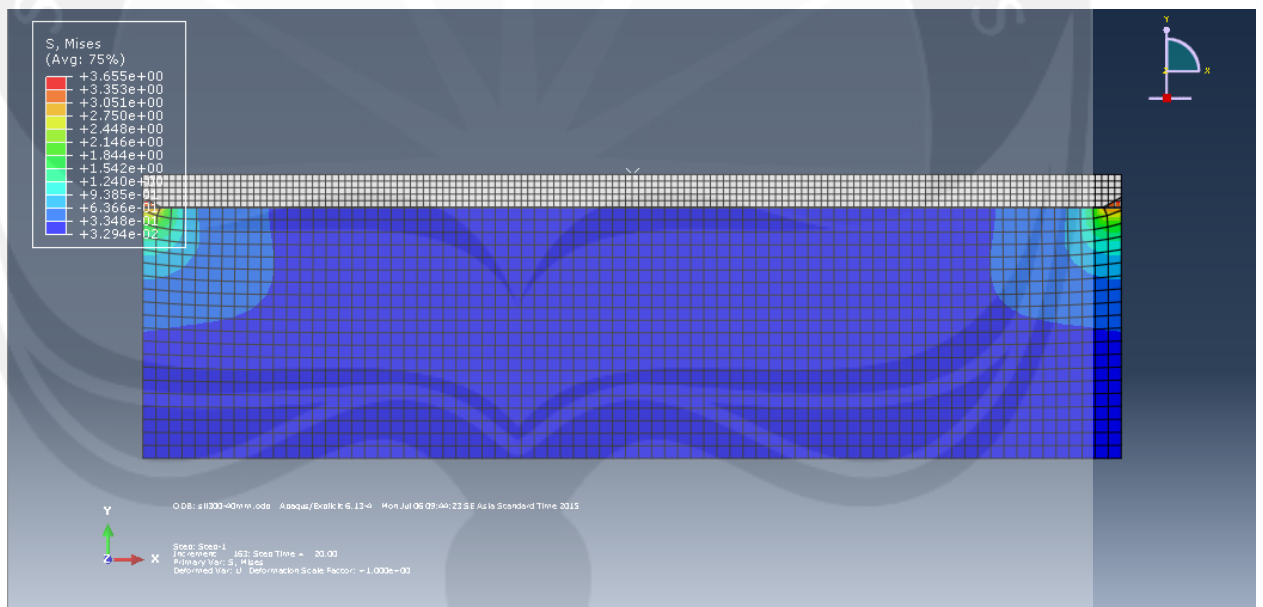
Gambar 131. Sill8800 dengan Tekanan 150 N



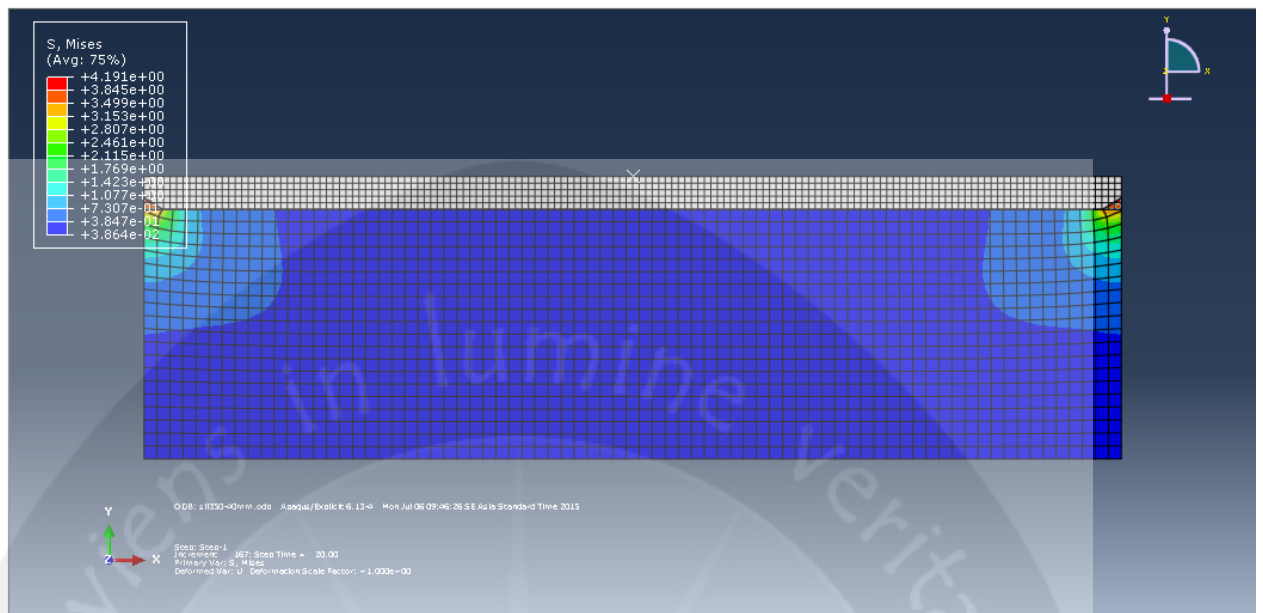
Gambar 132. Sill8800 dengan Tekanan 200 N



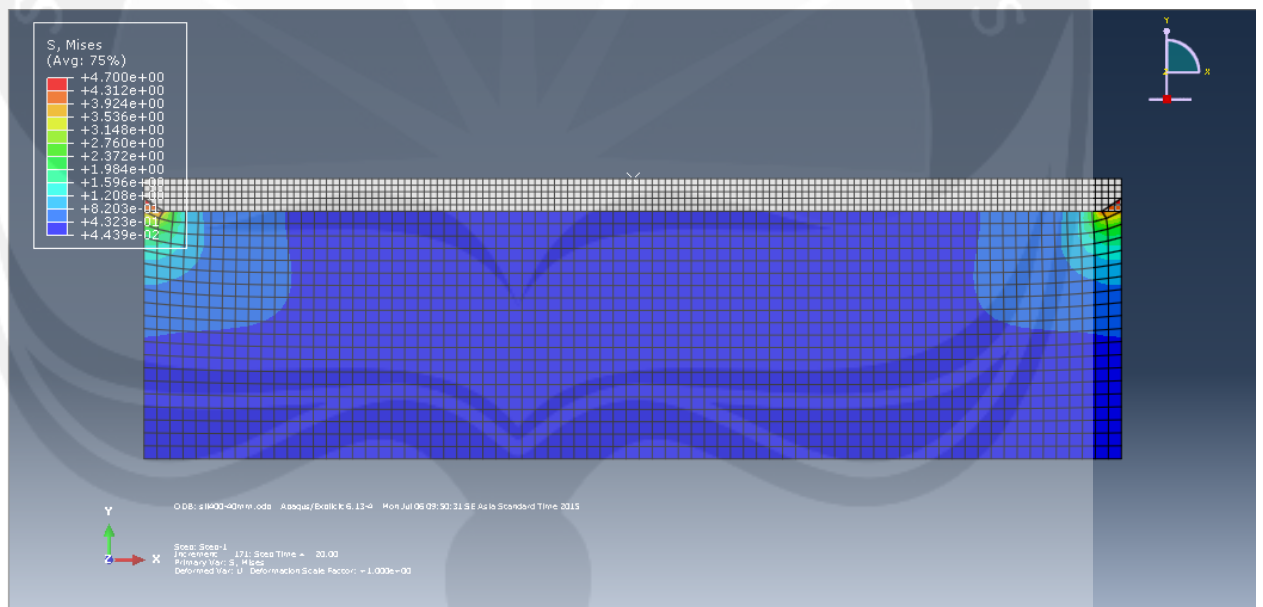
Gambar 133. Sill8800 dengan Tekanan 250 N



Gambar 134. Sill8800 dengan Tekanan 300 N



Gambar 135. Sill8800 dengan Tekanan 350 N

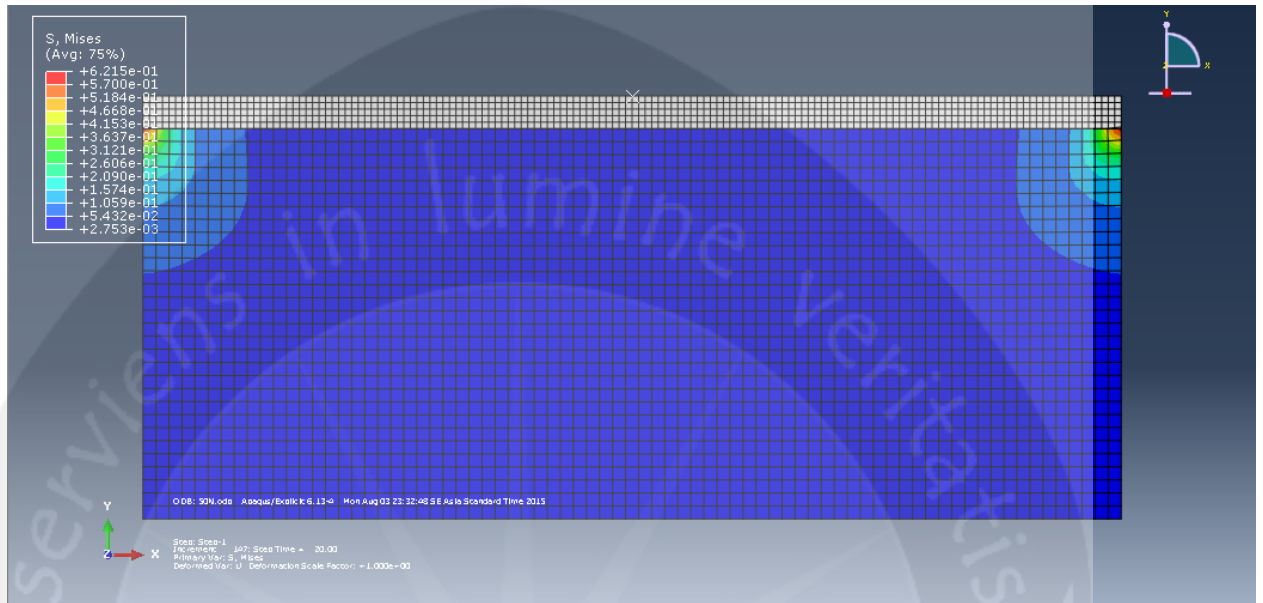


Gambar 136. Sill8800 dengan Tekanan 400 N

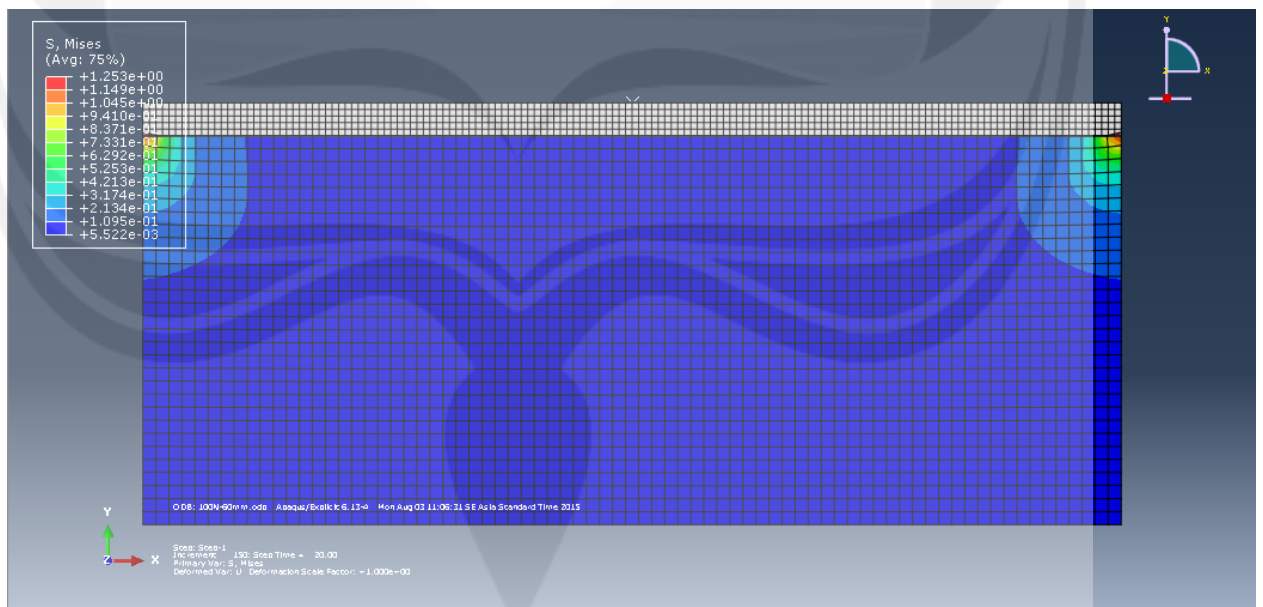
Sill8800

Layer 60 mm

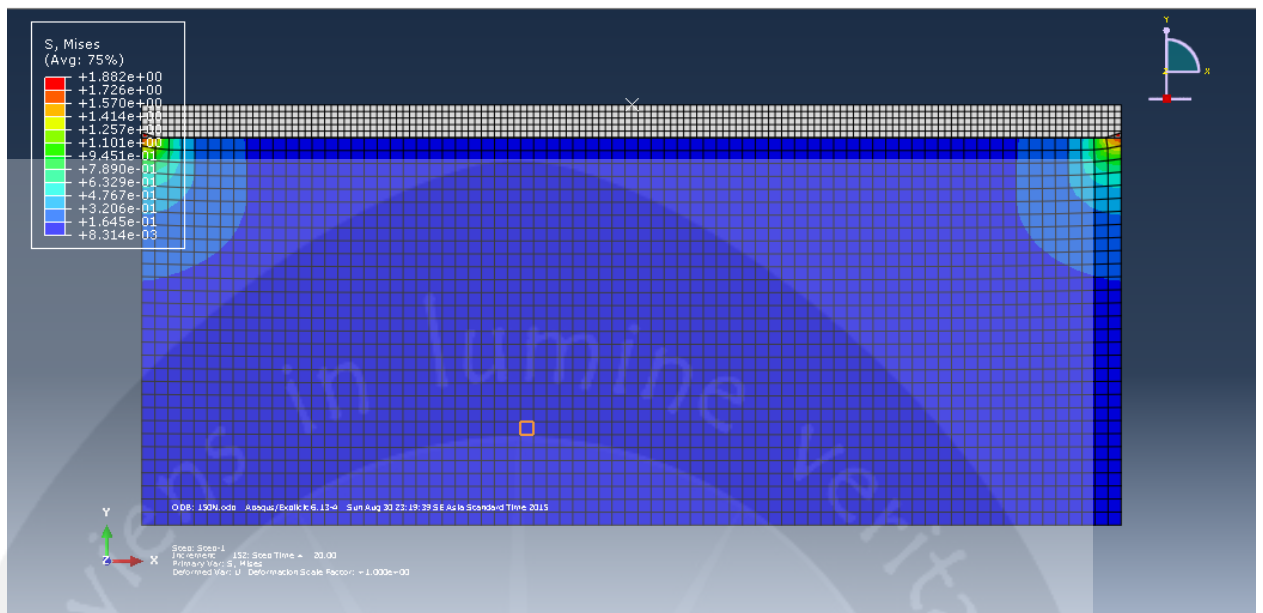
Indenter 180°



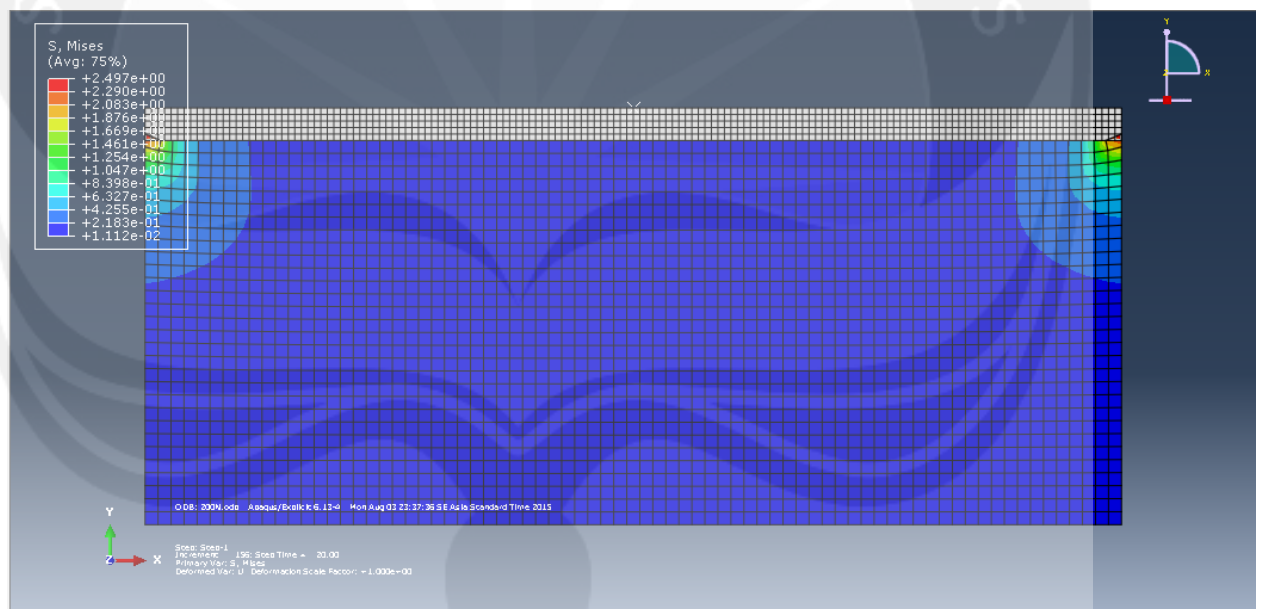
Gambar 137. Sill8800 dengan Tekanan 50 N



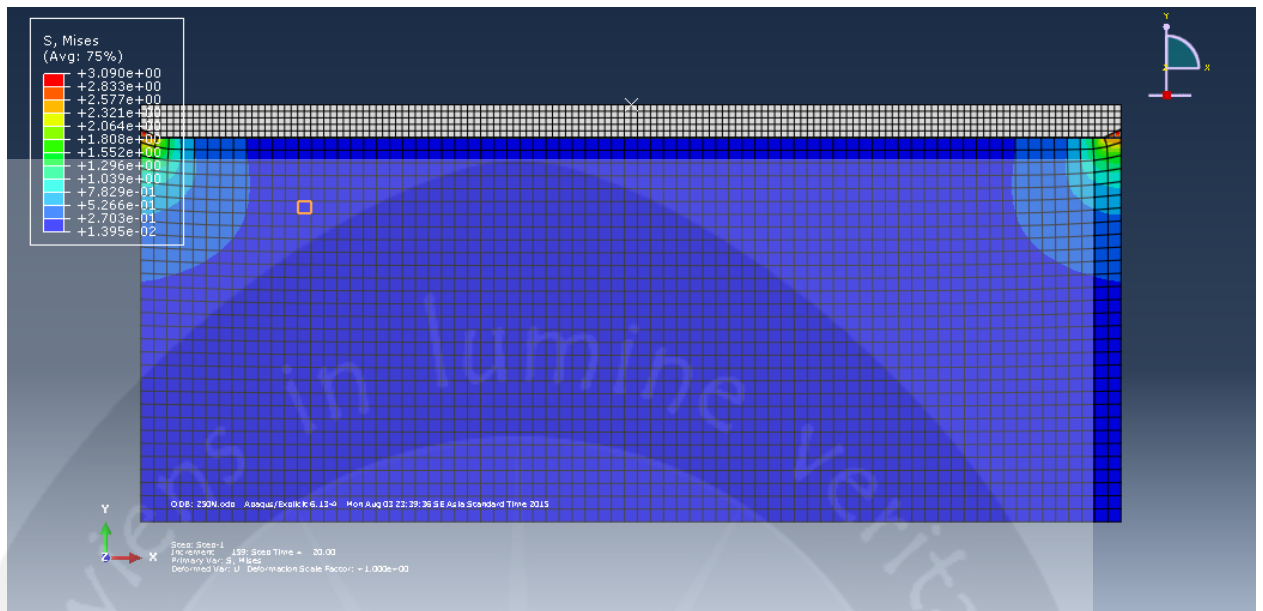
Gambar 138. Sill8800 dengan Tekanan 100 N



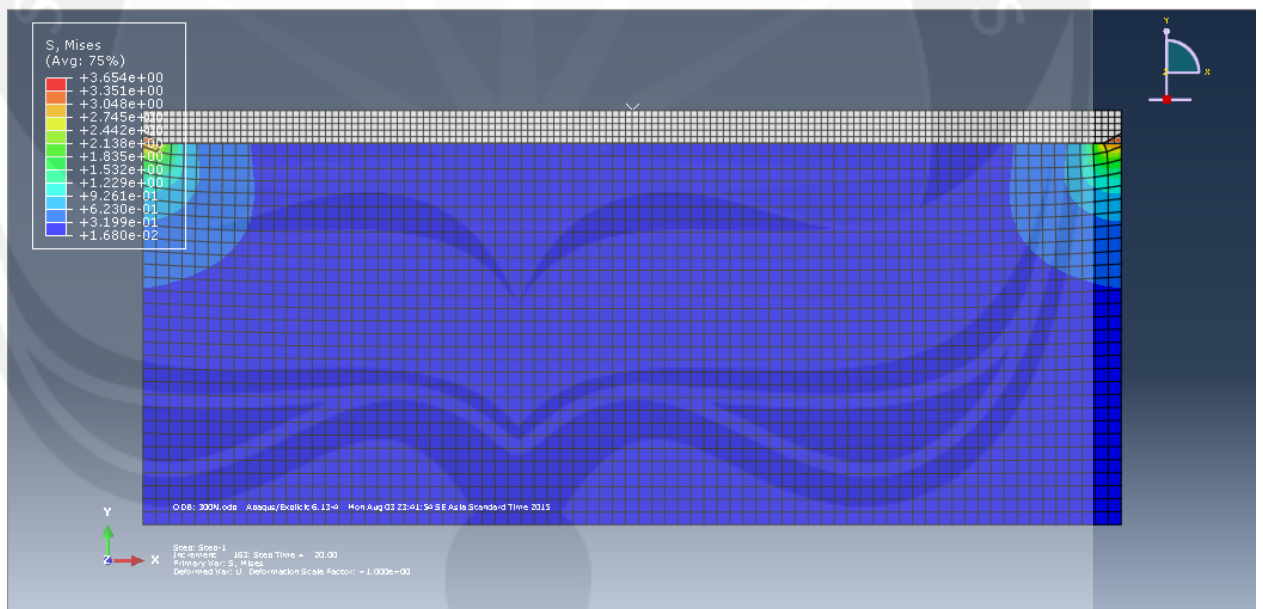
Gambar 139. Sill8800 dengan Tekanan 150 N



Gambar 140. Sill8800 dengan Tekanan 200 N



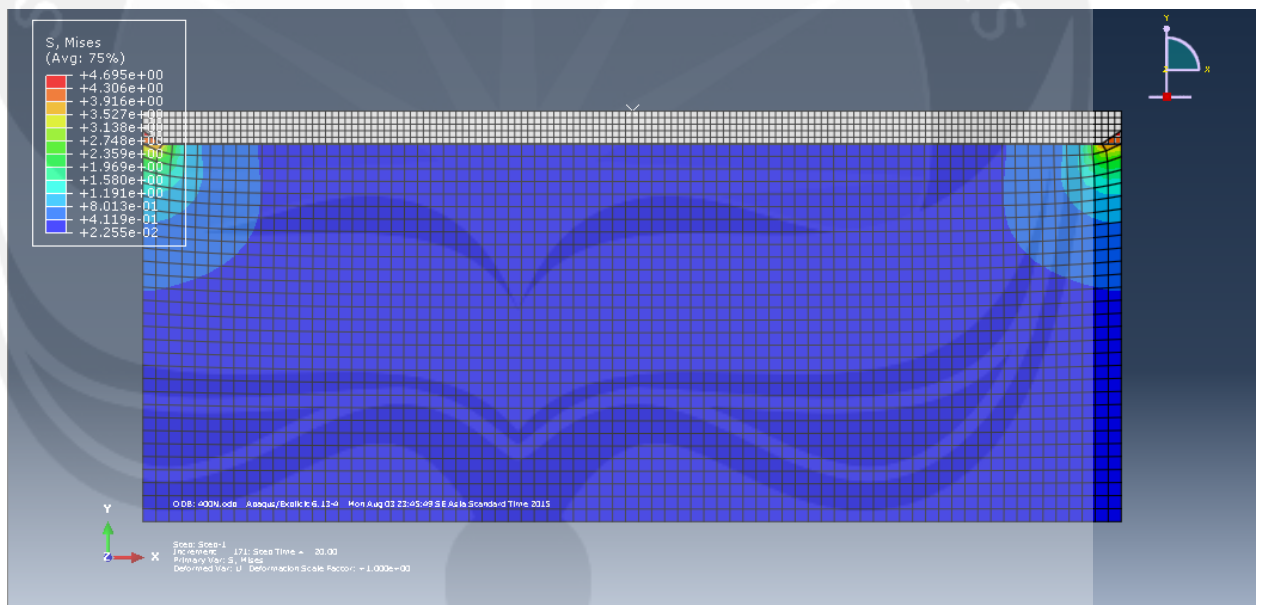
Gambar 141. Sill8800 dengan Tekanan 250 N



Gambar 142. Sill8800 dengan Tekanan 300 N



Gambar 143. Sill8800 dengan Tekanan 350 N

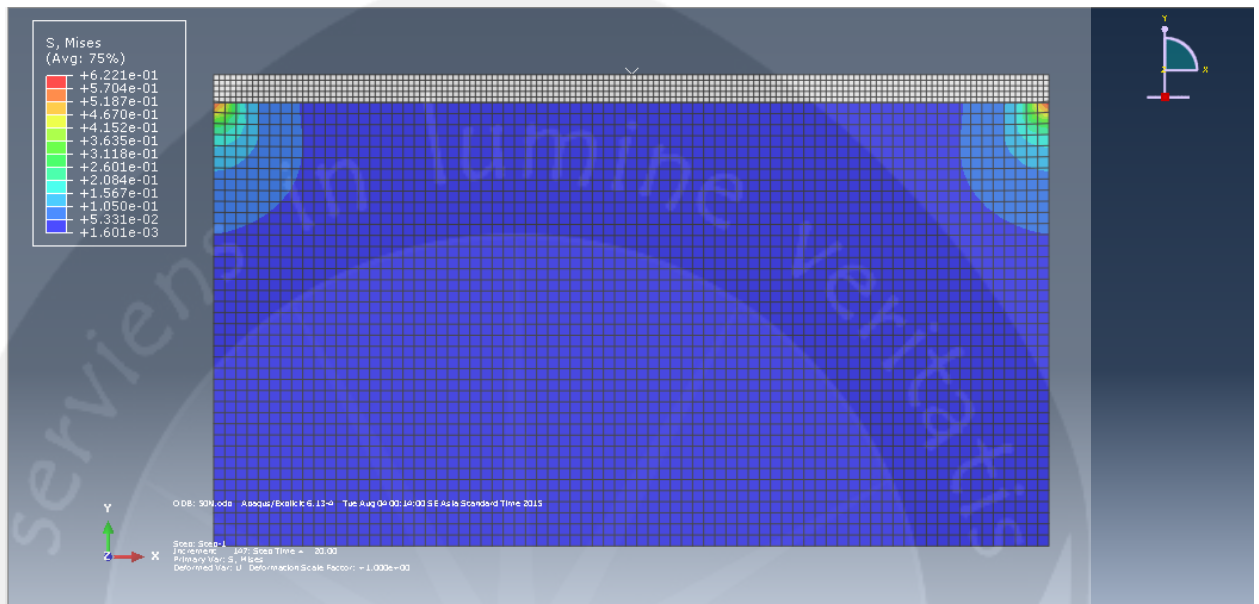


Gambar 144. Sill8800 dengan Tekanan 400 N

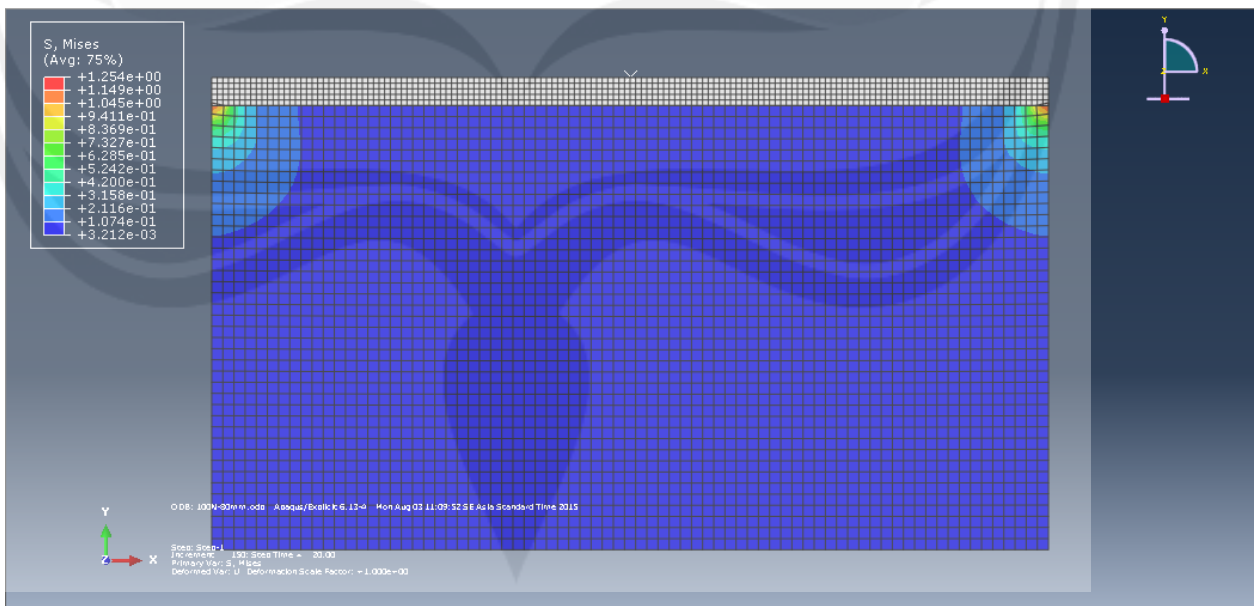
Sill8800

Layer 80 mm

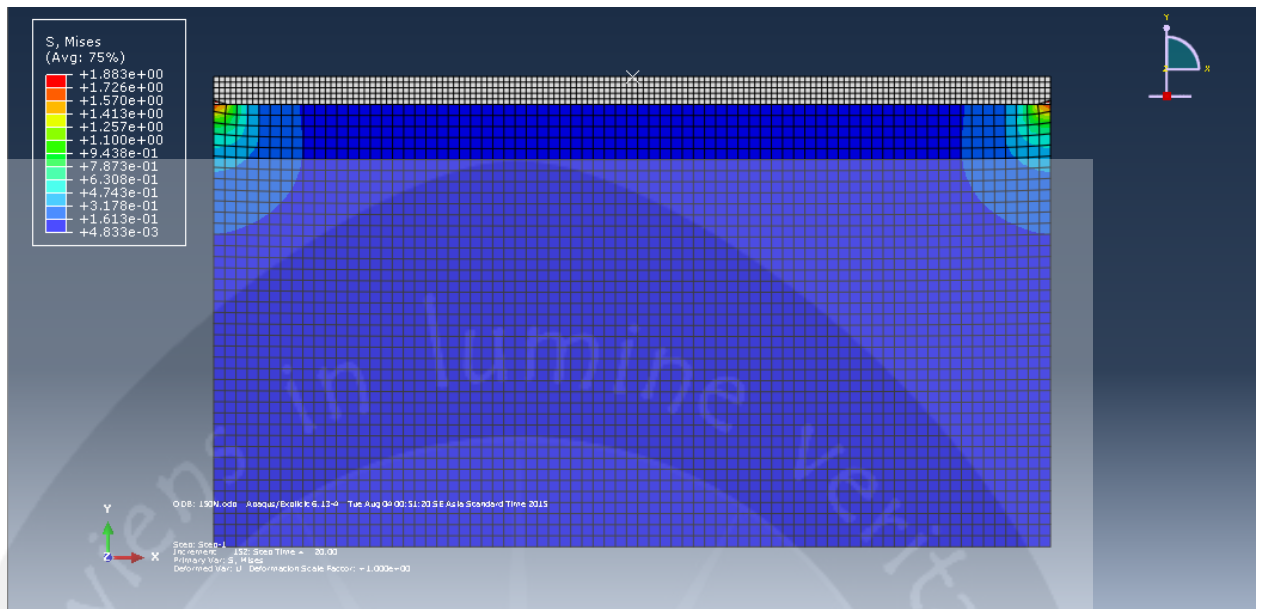
Indenter 180°



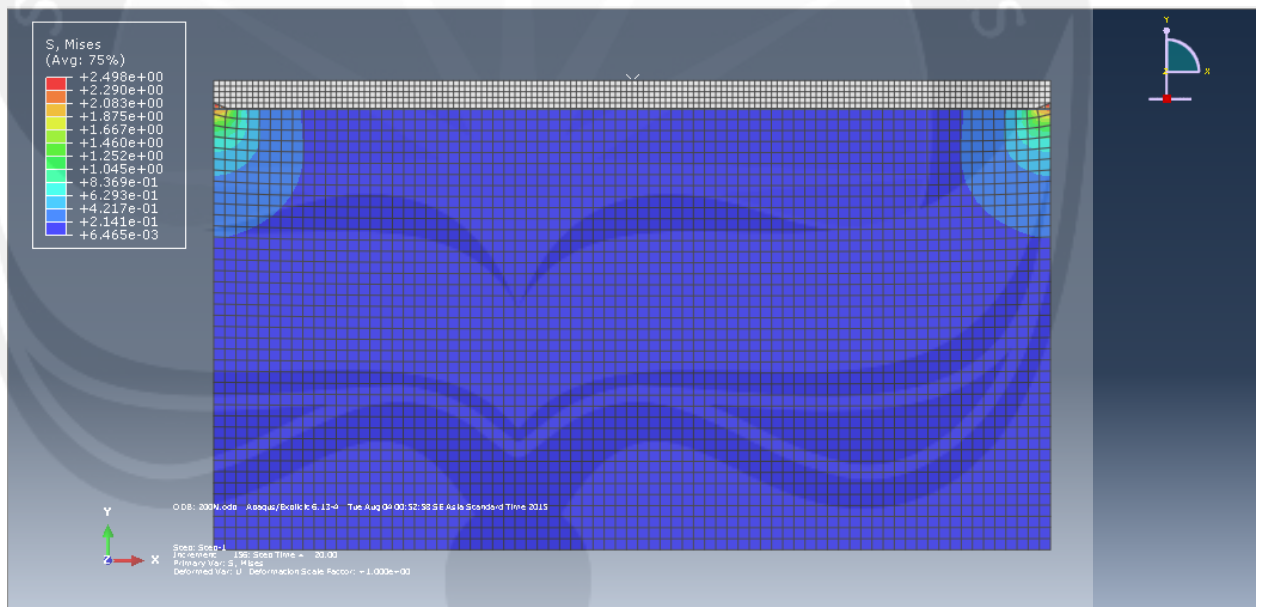
Gambar 145. Sill8800 dengan Tekanan 50 N



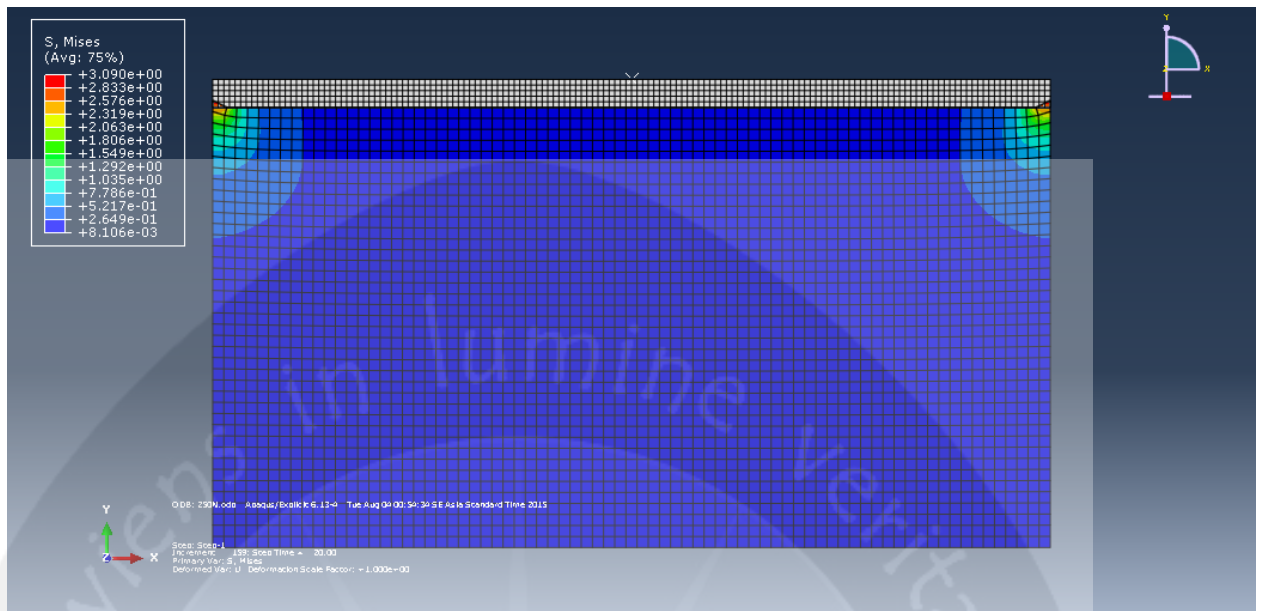
Gambar 146. Sill8800 dengan Tekanan 100 N



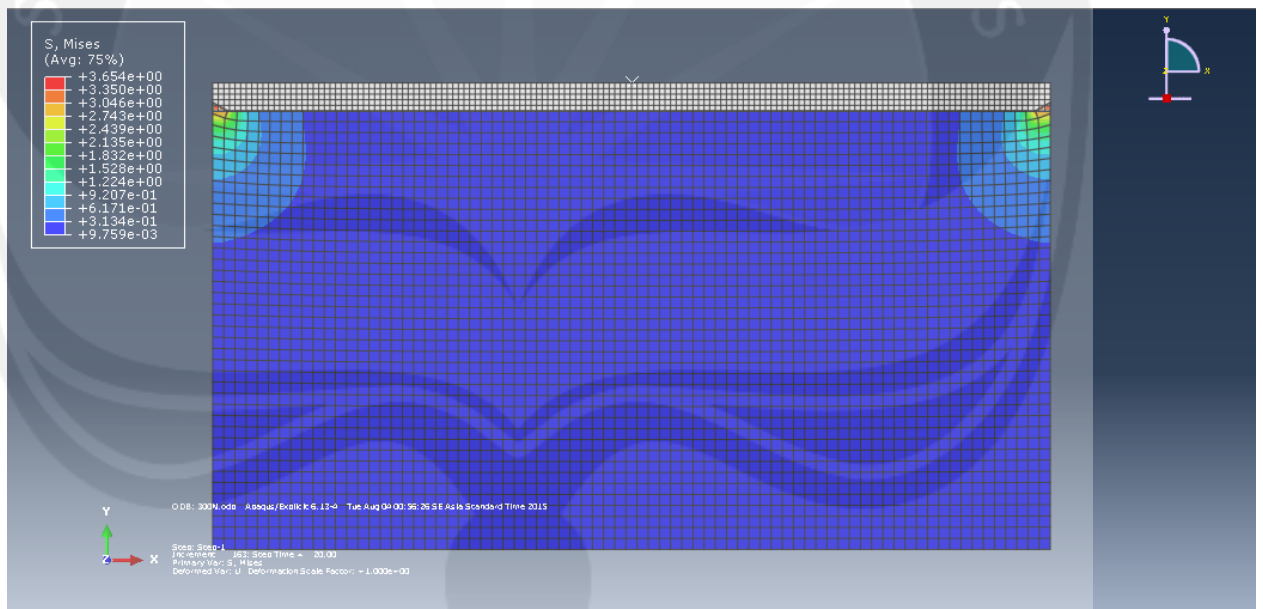
Gambar 147. Sill8800 dengan Tekanan 150 N



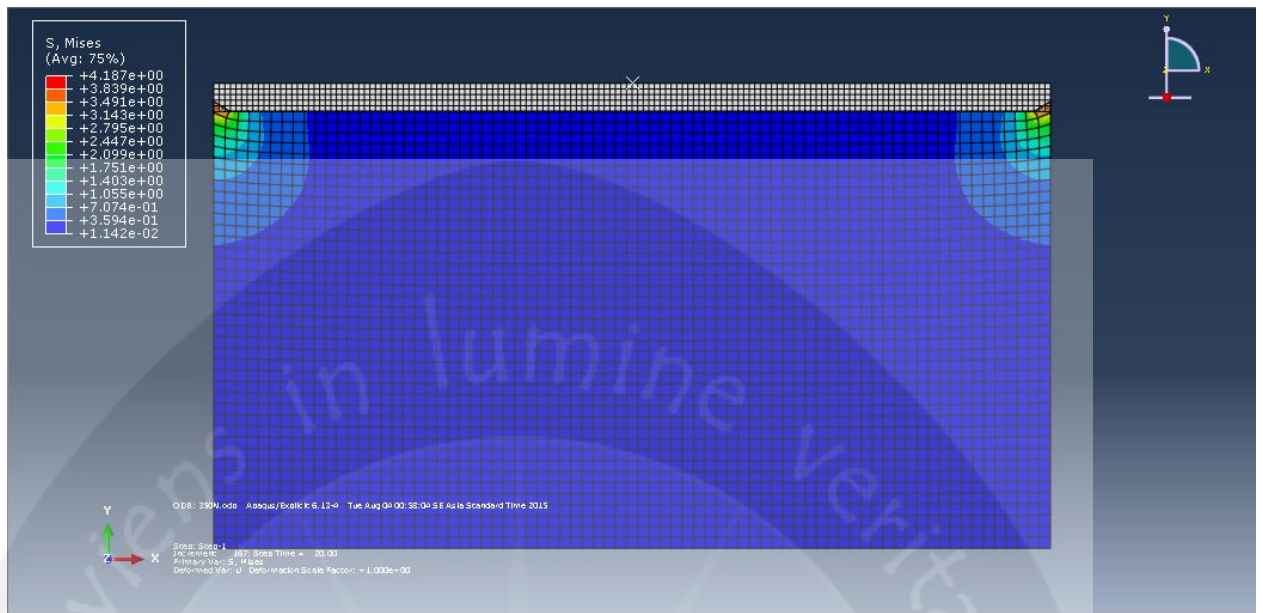
Gambar 148. Sill8800 dengan Tekanan 200 N



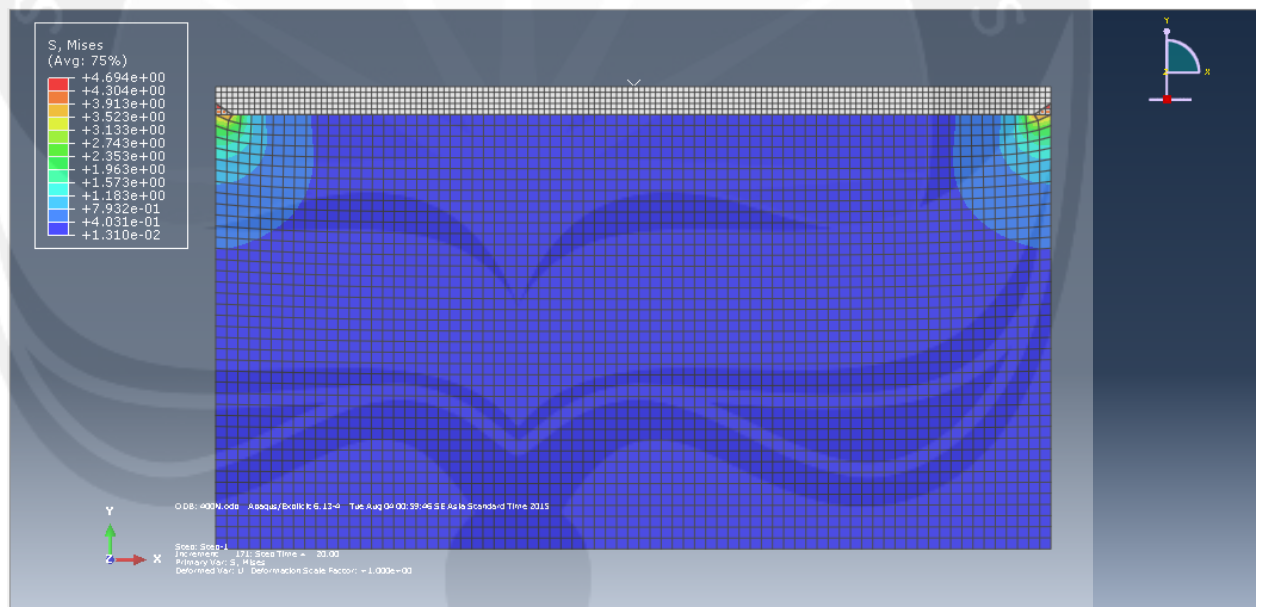
Gambar 149. Sill8800 dengan Tekanan 250 N



Gambar 150. Sill8800 dengan Tekanan 300 N



Gambar 151. Sill8800 dengan Tekanan 350 N

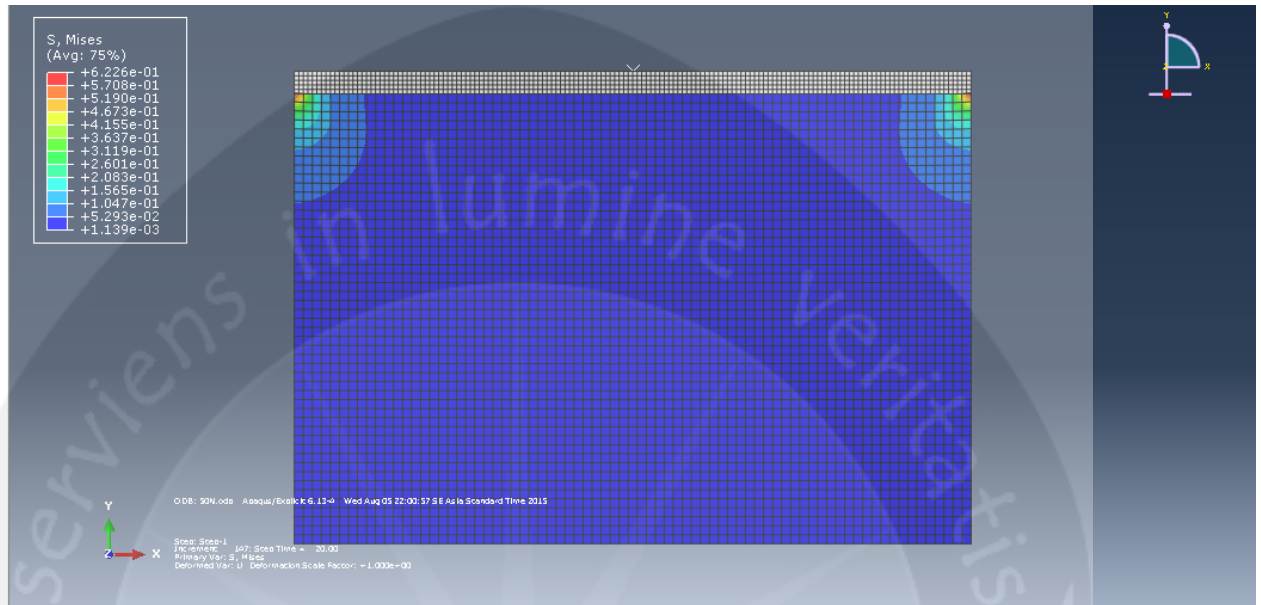


Gambar 152. Sill8800 dengan Tekanan 400 N

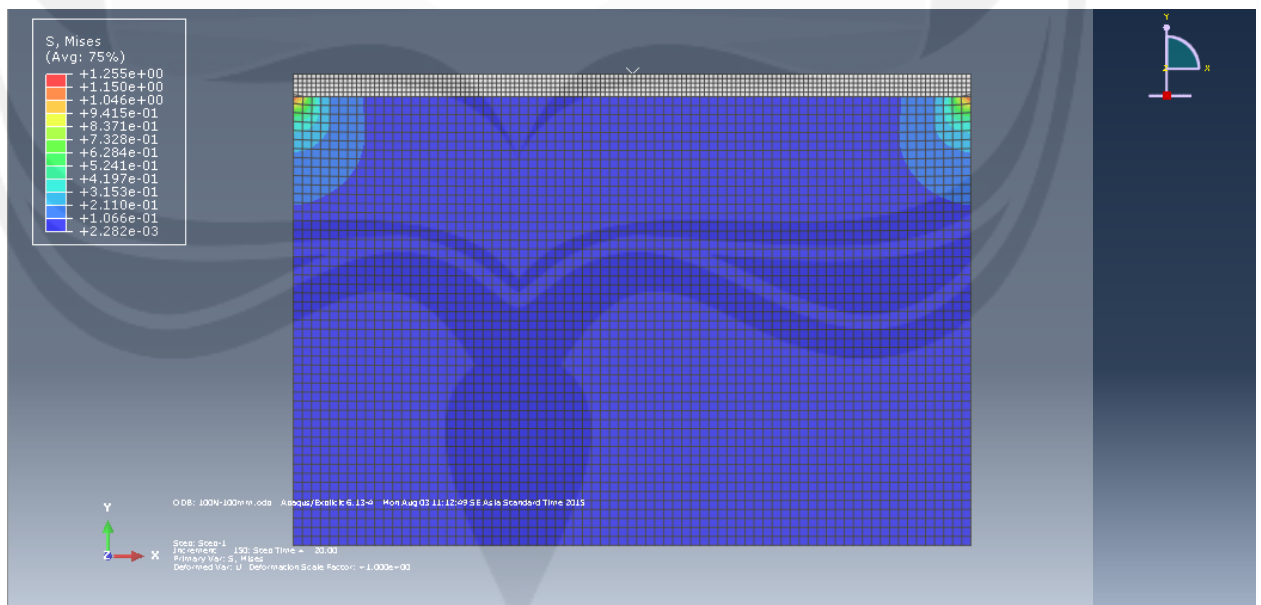
Sill8800

Layer 100 mm

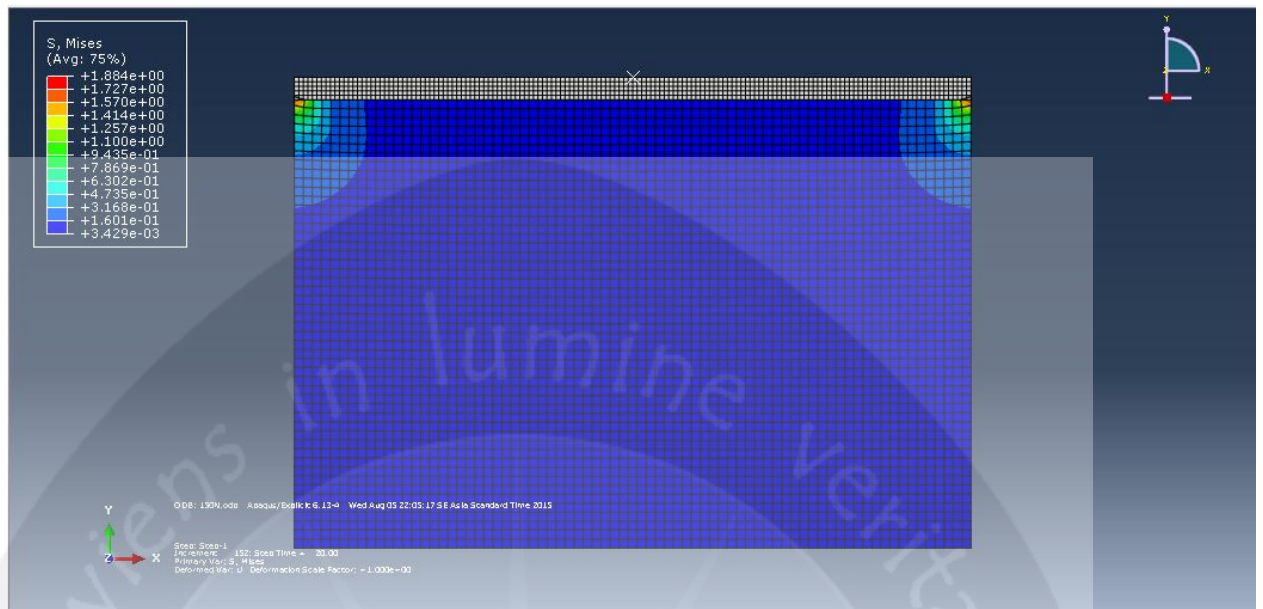
Indenter 180°



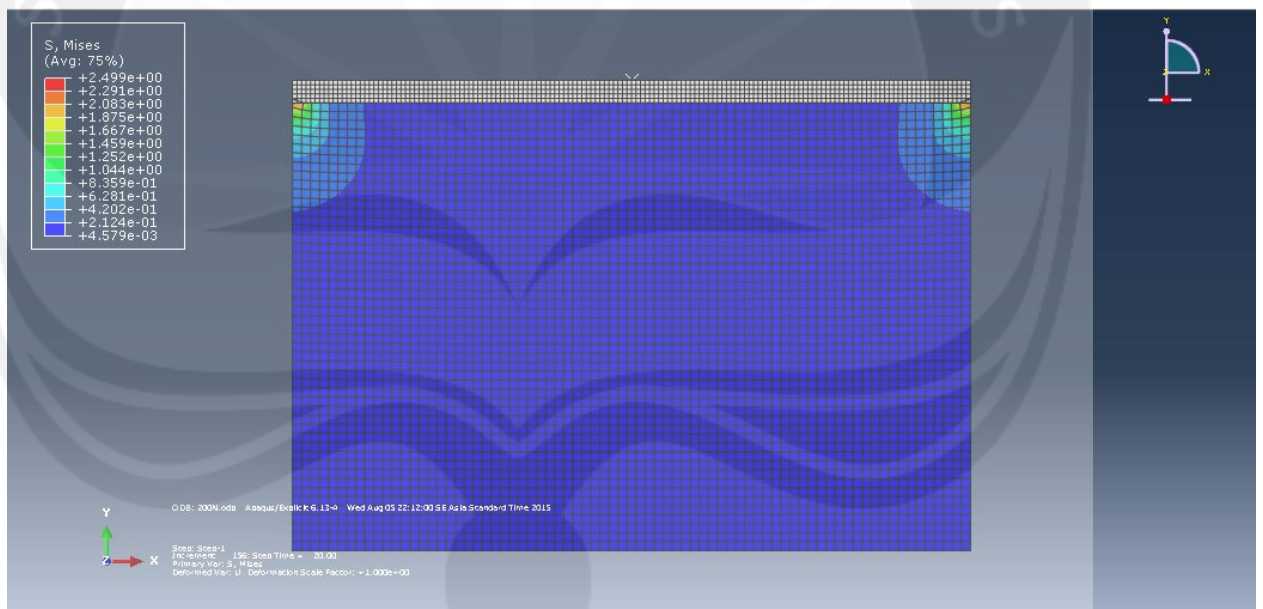
Gambar 153. Sill8800 dengan Tekanan 50 N



Gambar 154. Sill8800 dengan Tekanan 100 N



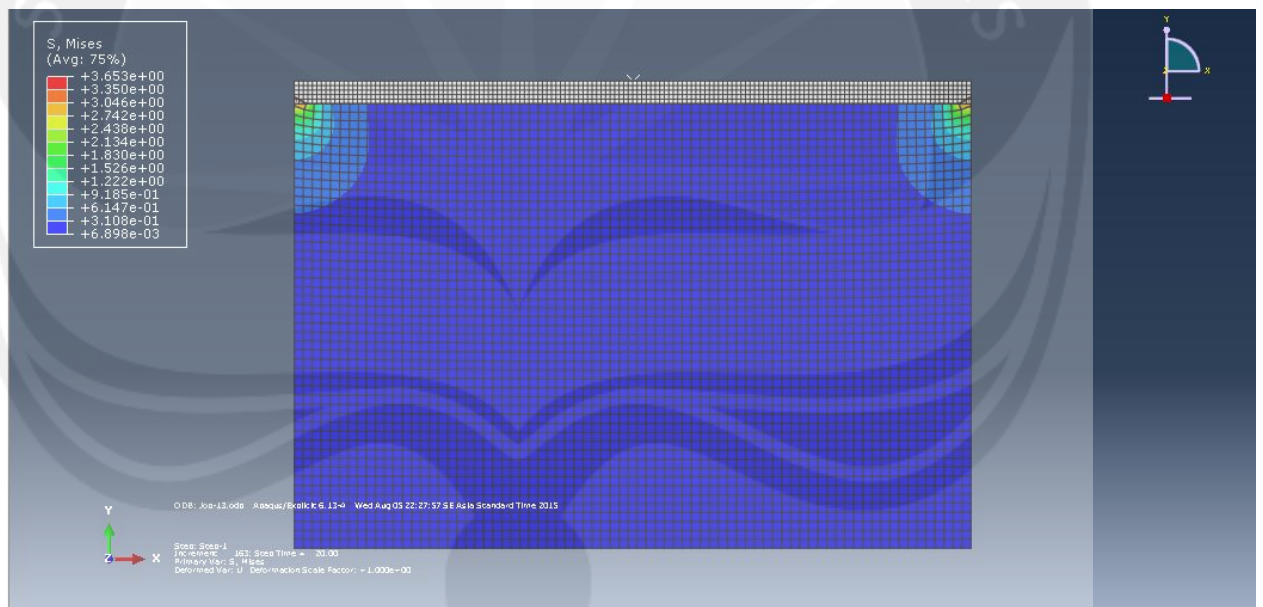
Gambar 155. Sill8800 dengan Tekanan 150 N



Gambar 156. Sill8800 dengan Tekanan 200 N



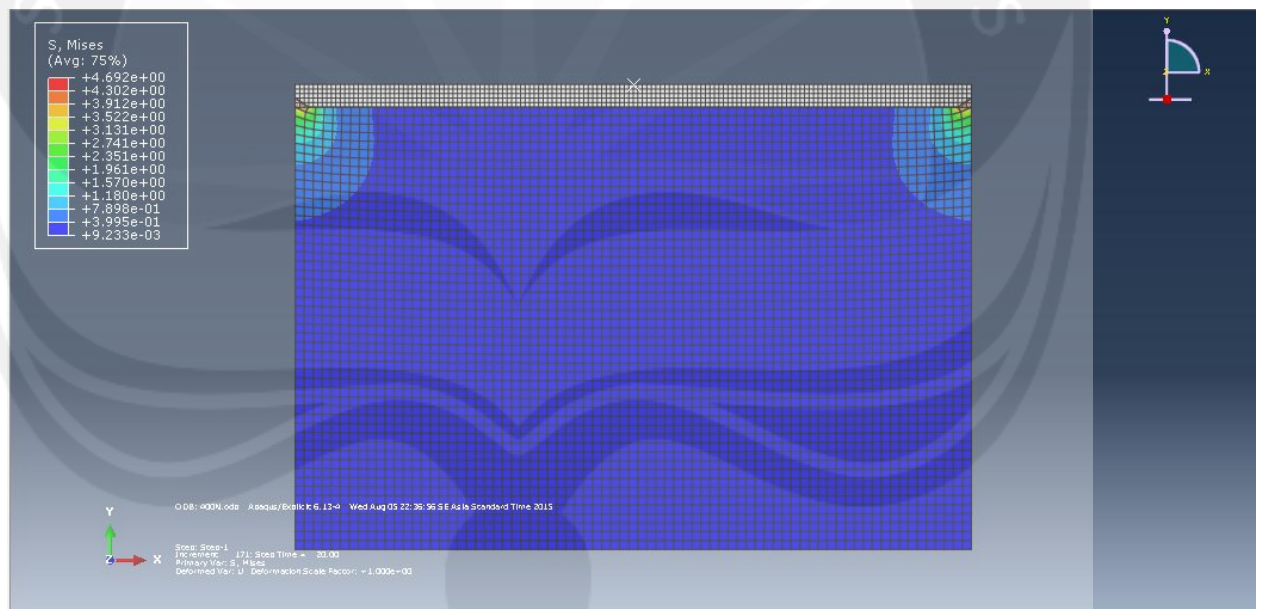
Gambar 157. Sill8800 dengan Tekanan 250 N



Gambar158. Sill8800 dengan Tekanan 300 N



Gambar 159. Sill8800 dengan Tekanan 350 N

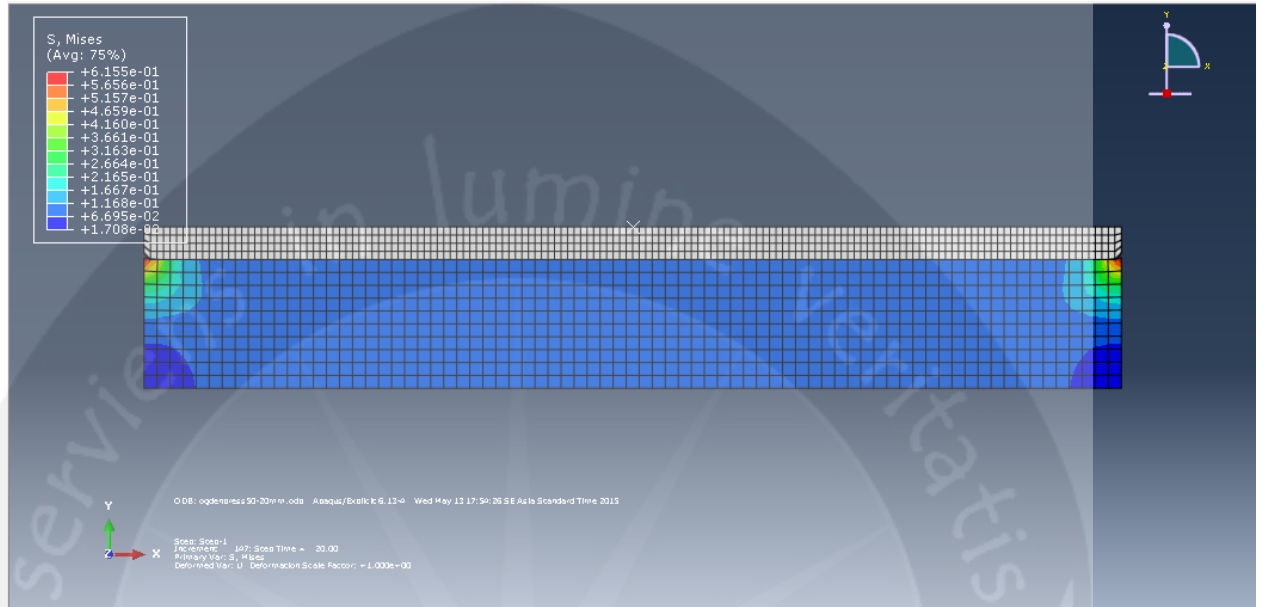


Gambar 160. Sill8800 dengan Tekanan 400 N

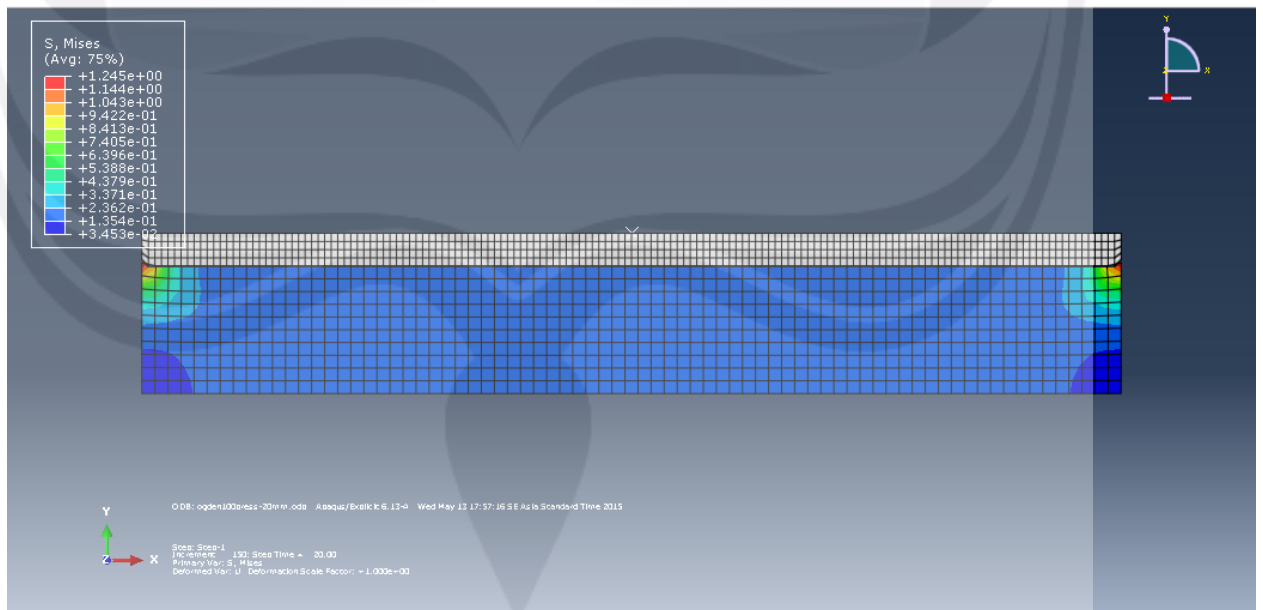
Sill8800

Layer 20 mm

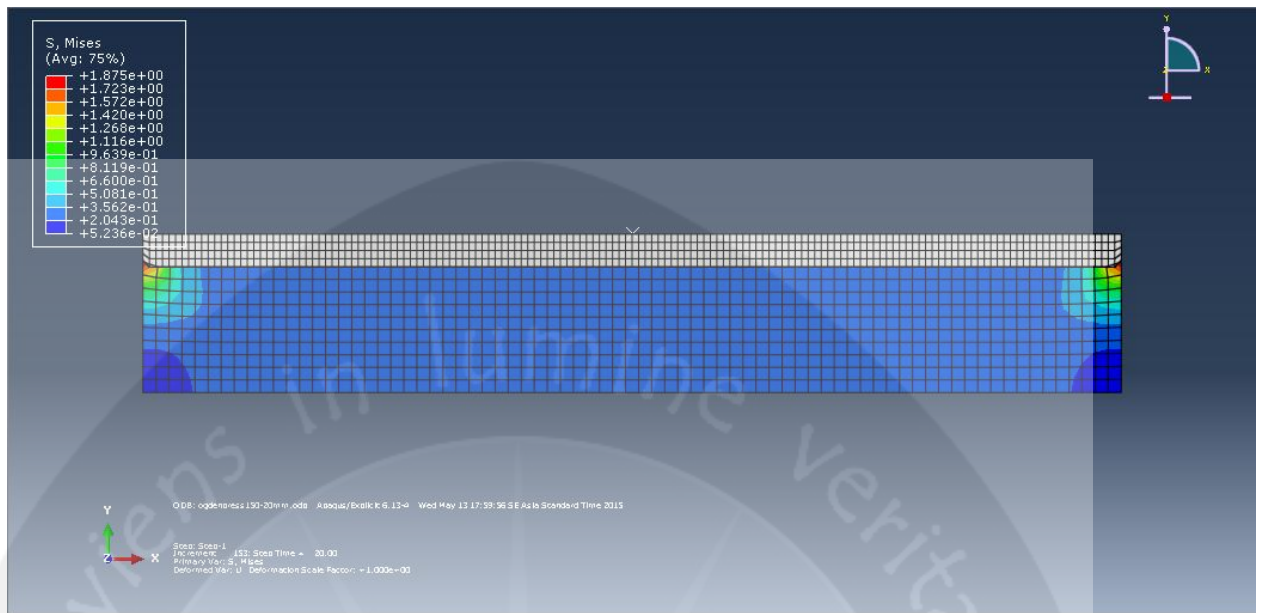
Indenter Chamfer 45°



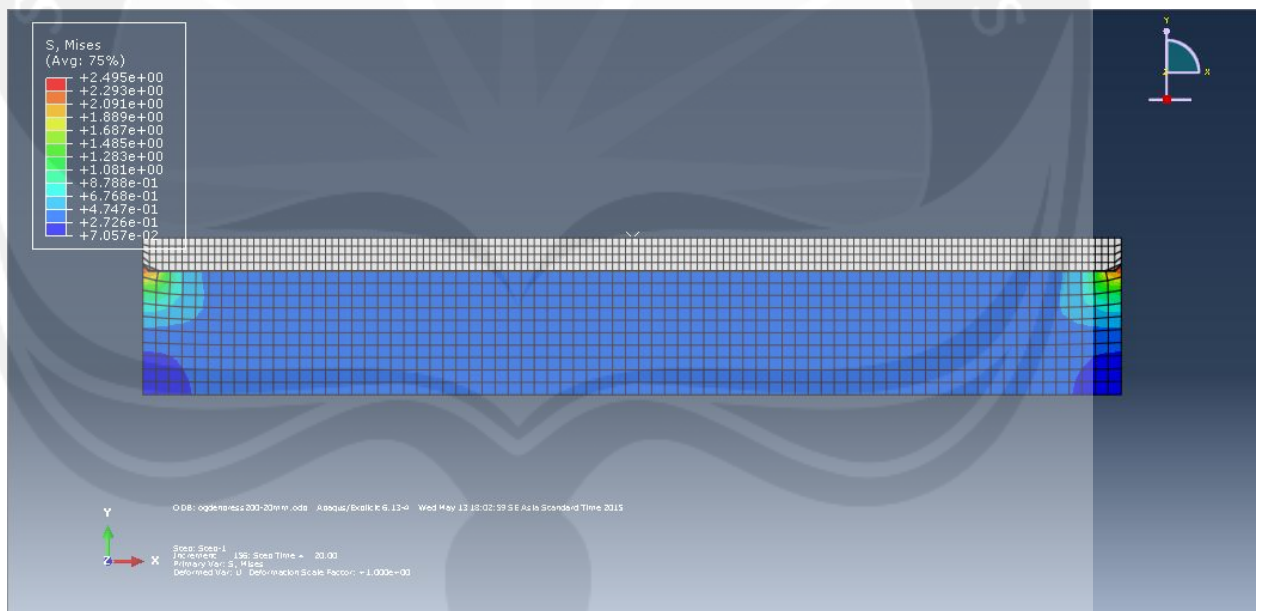
Gambar 161. Sill8800 dengan Tekanan 50 N



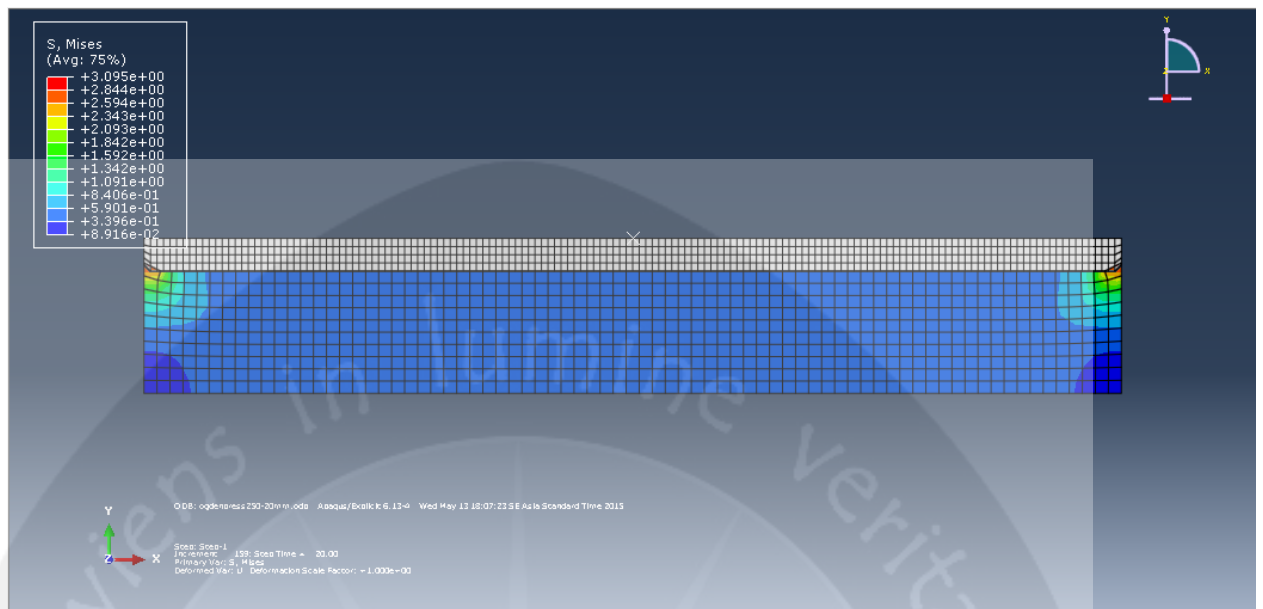
Gambar 162. Sill8800 dengan Tekanan 100 N



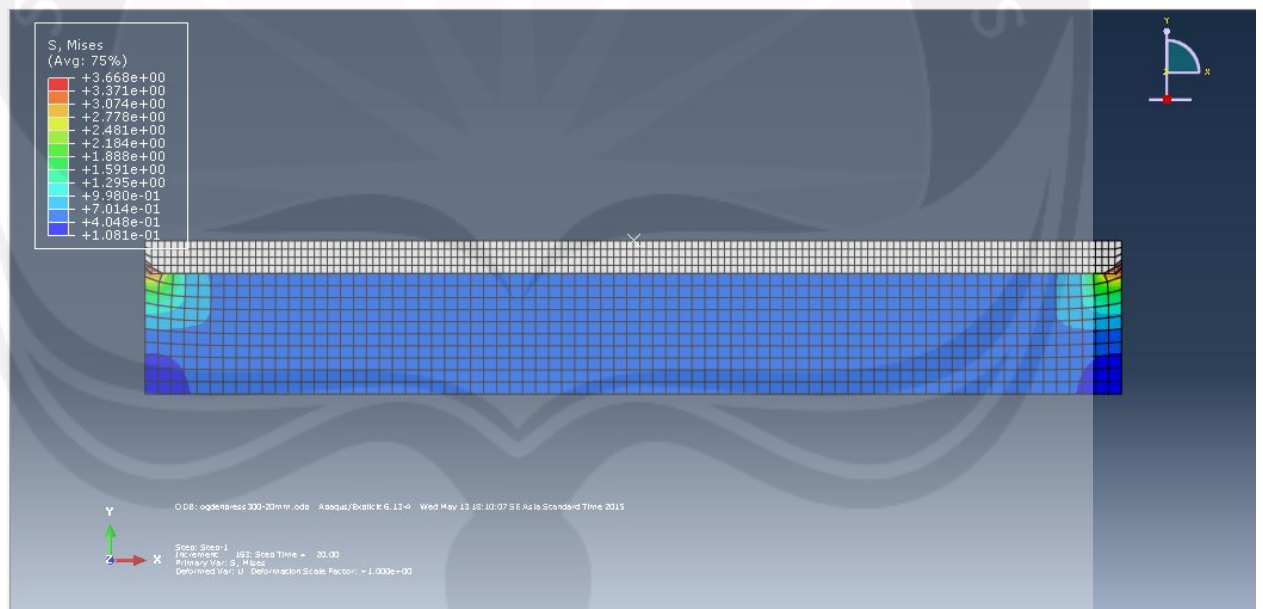
Gambar 163. Sill8800 dengan Tekanan 150 N



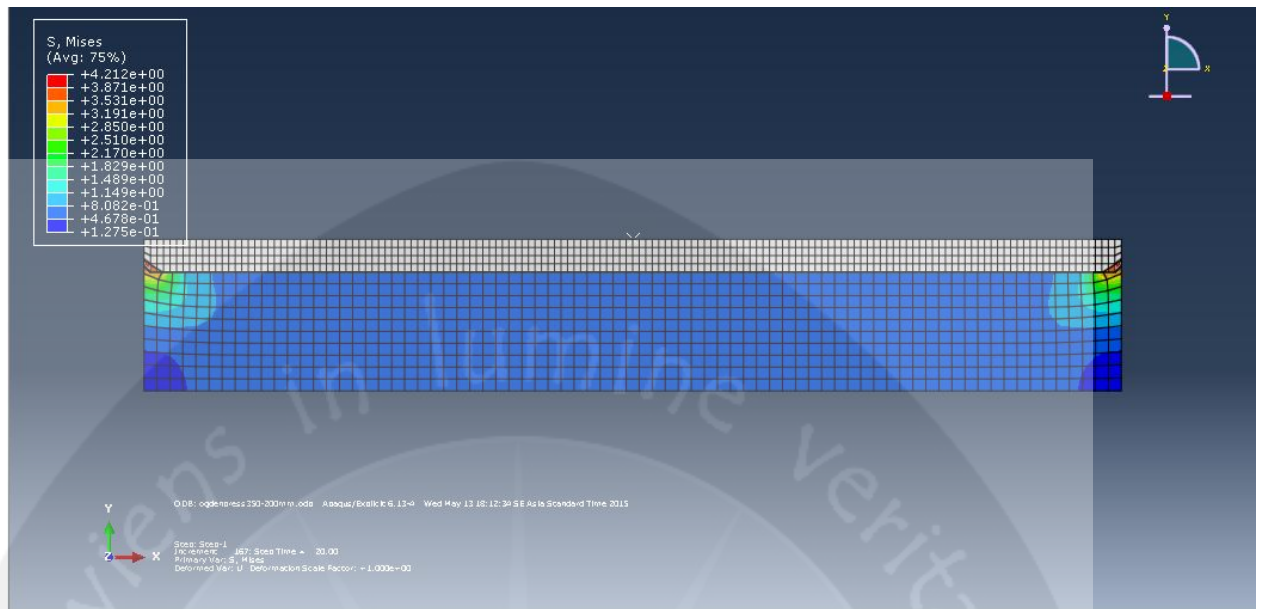
Gambar 164. Sill8800 dengan Tekanan 200 N



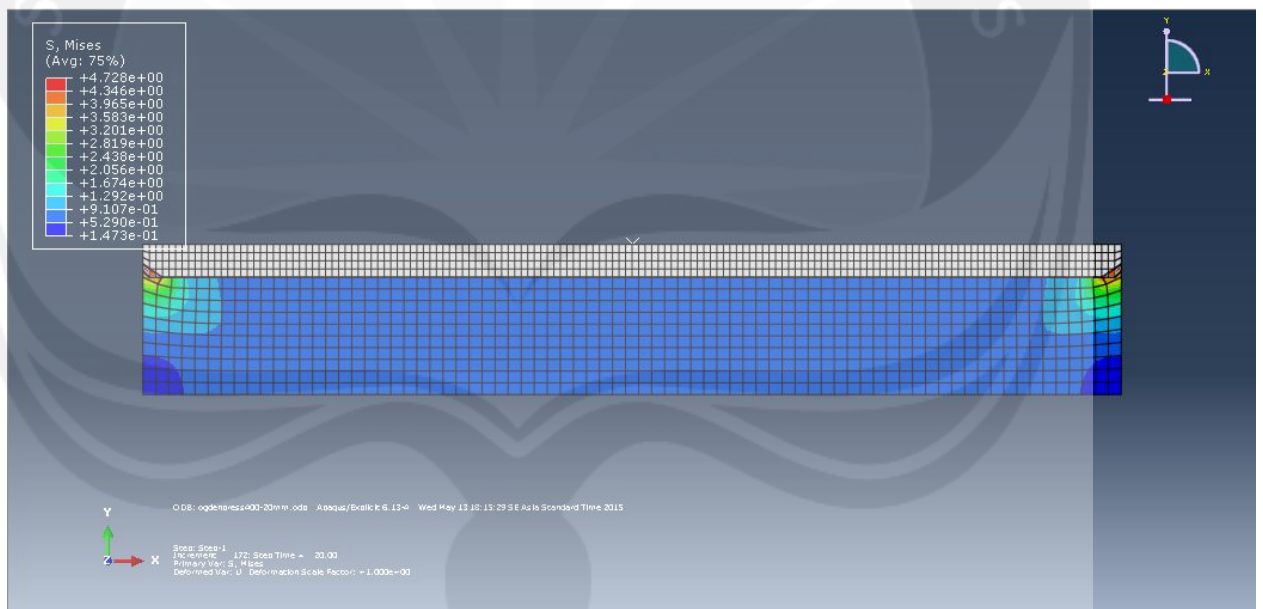
Gambar 165. Sill8800 dengan Tekanan 250 N



Gambar 166. Sill8800 dengan Tekanan 300 N



Gambar 167. Sill8800 dengan Tekanan 350 N

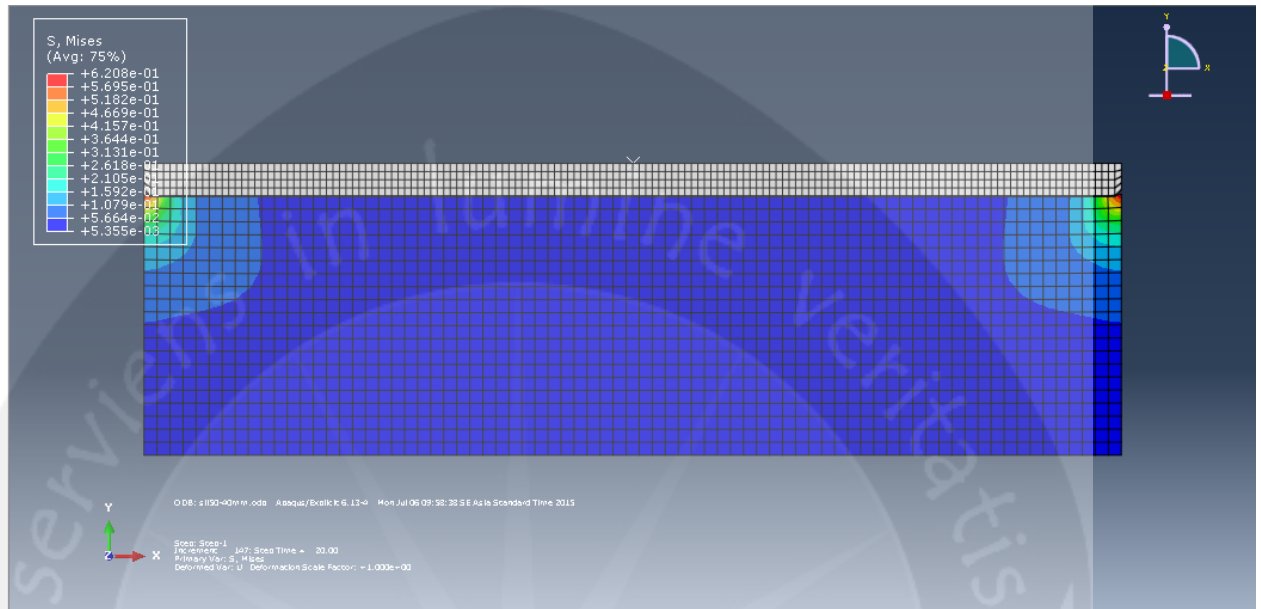


Gambar 168. Sill8800 dengan Tekanan 400 N

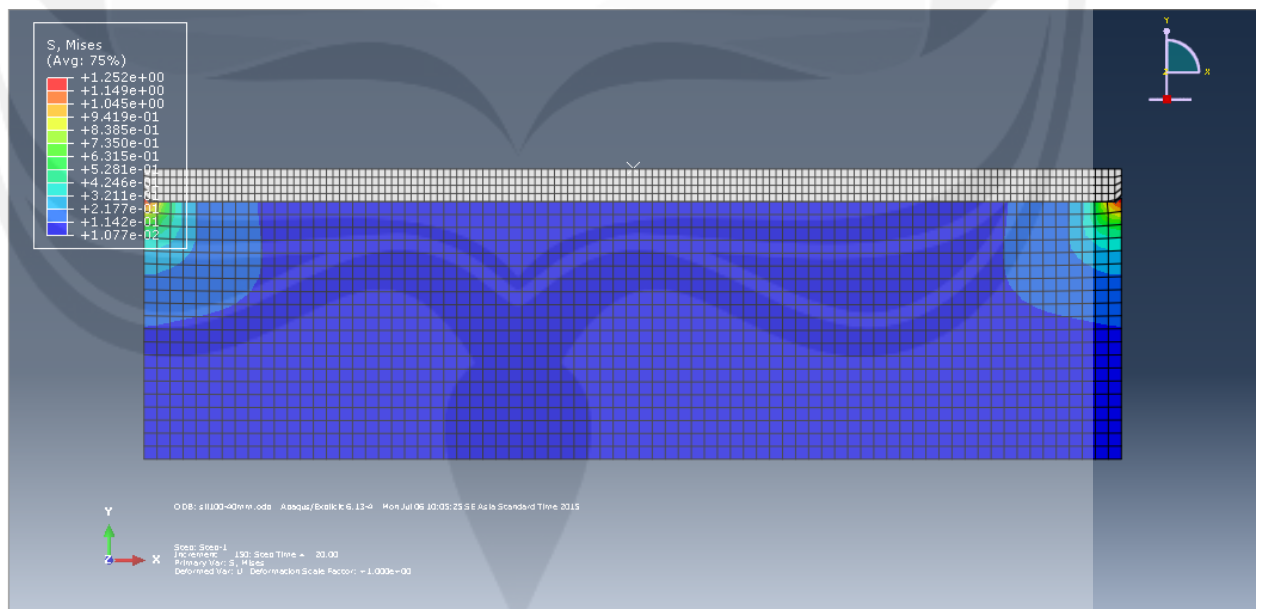
Sill8800

Layer 40 mm

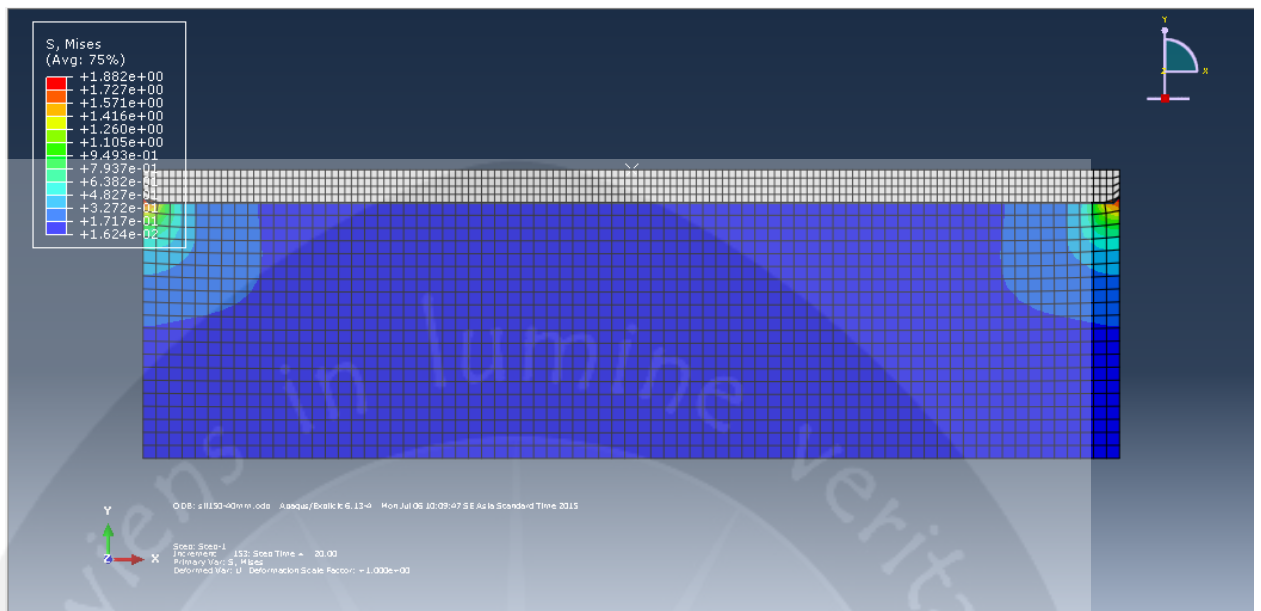
Indenter Chamfer 45°



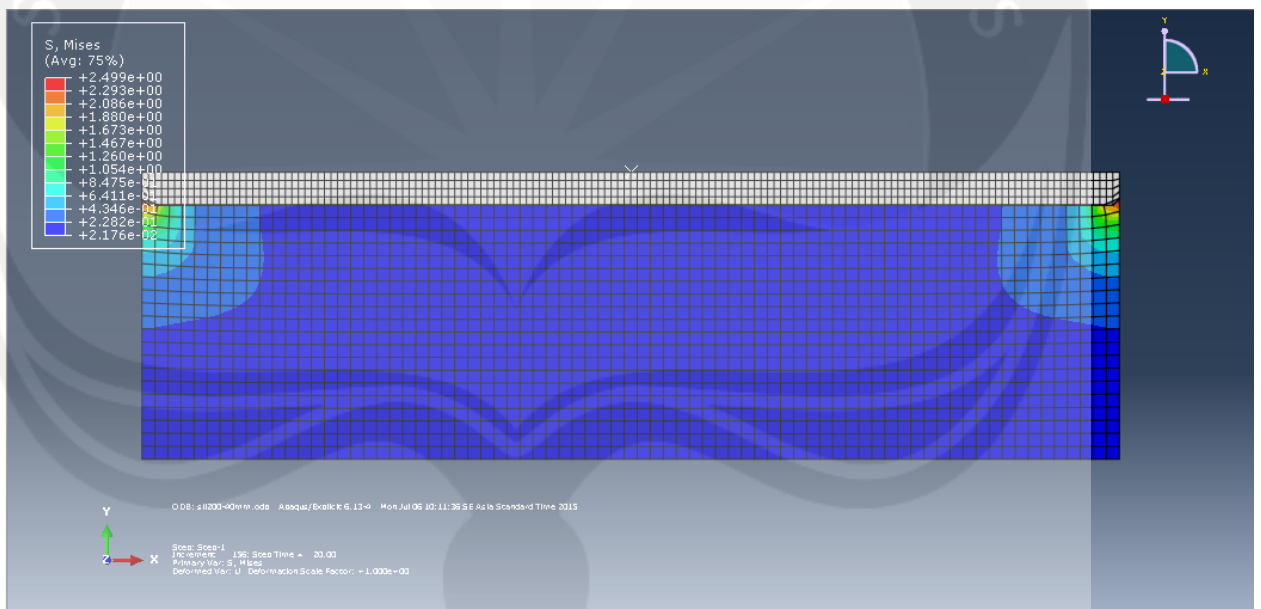
Gambar 169. Sill8800 dengan Tekanan 50 N



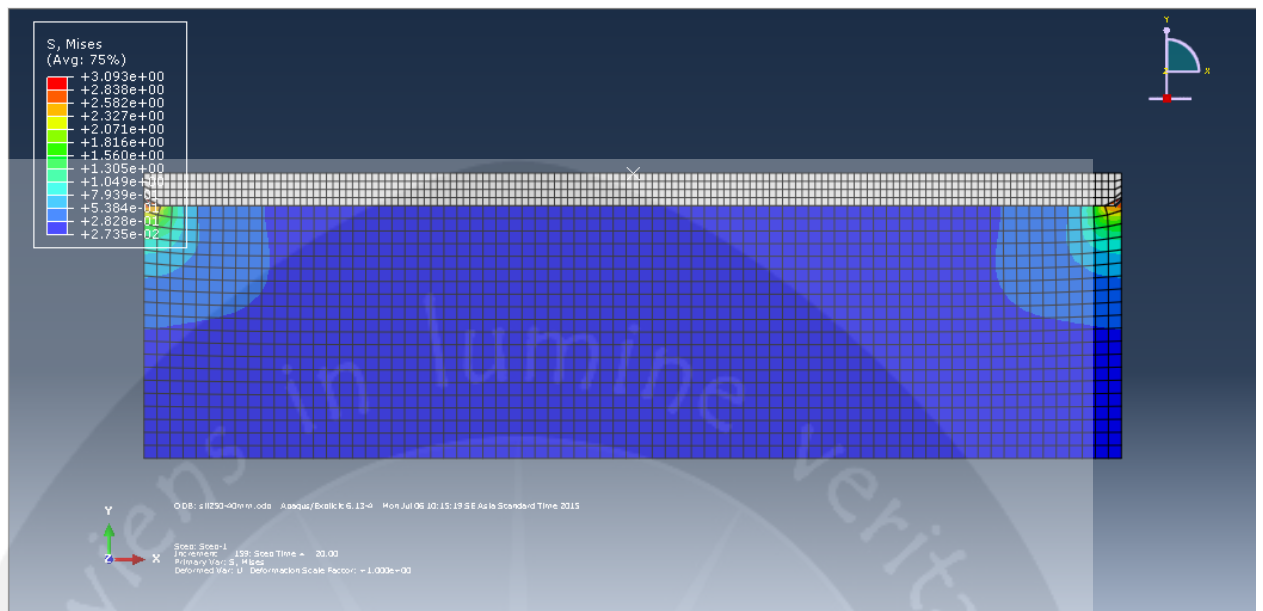
Gambar 170. Sill8800 dengan Tekanan 100 N



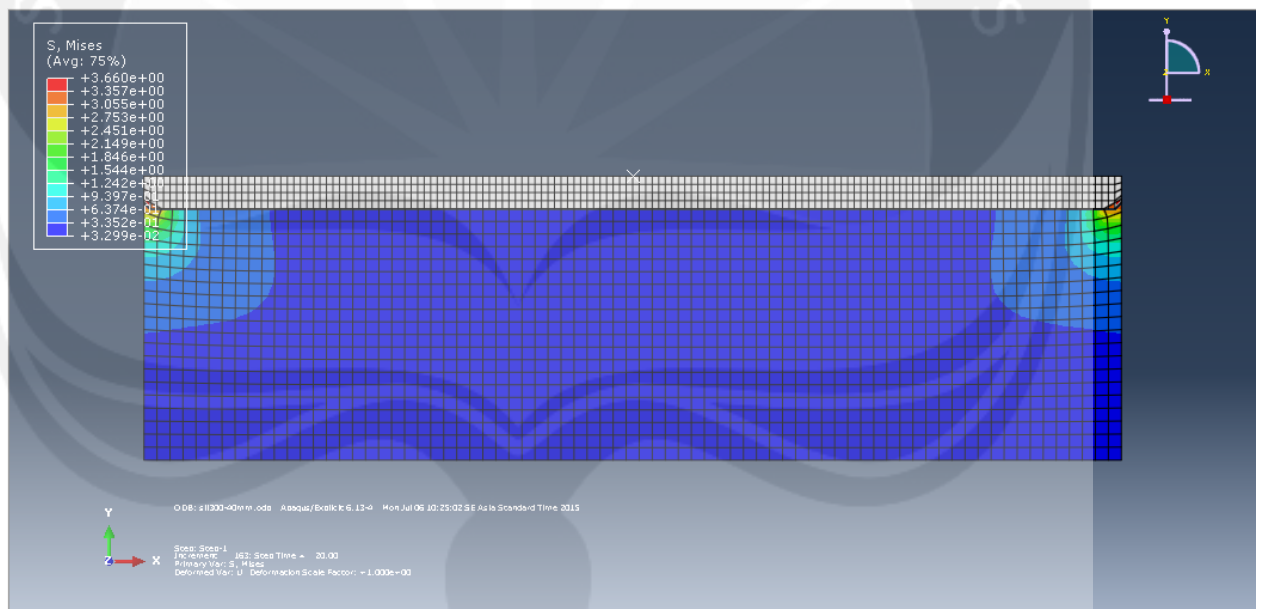
Gambar 171. Sill8800 dengan Tekanan 150 N



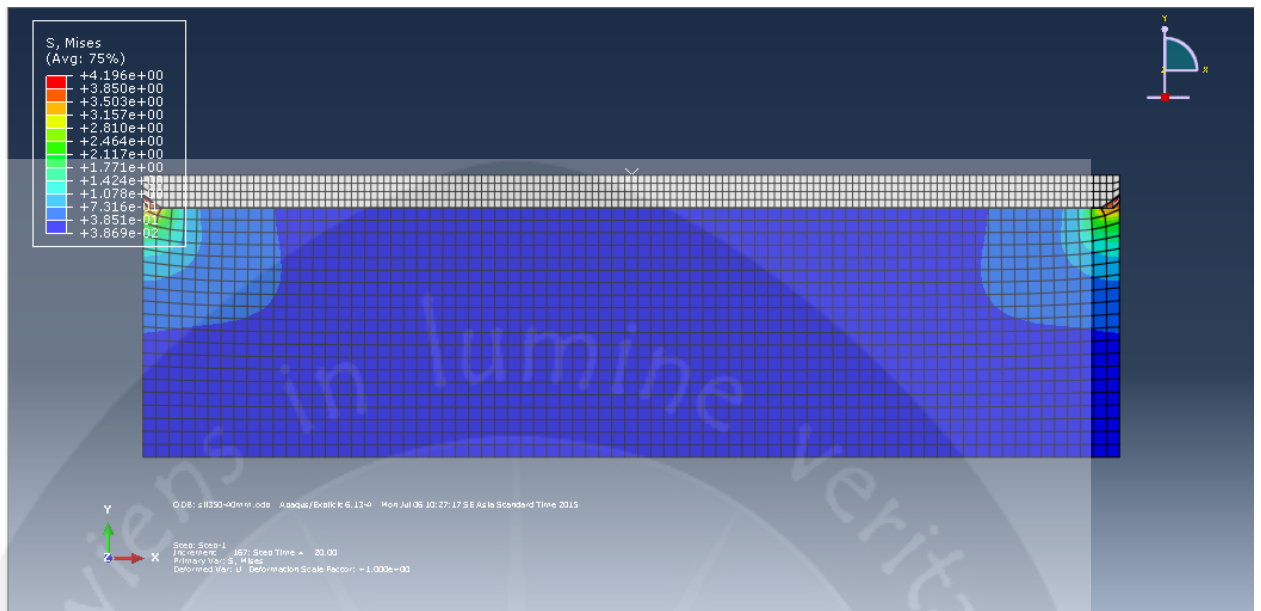
Gambar 172. Sill8800 dengan Tekanan 200 N



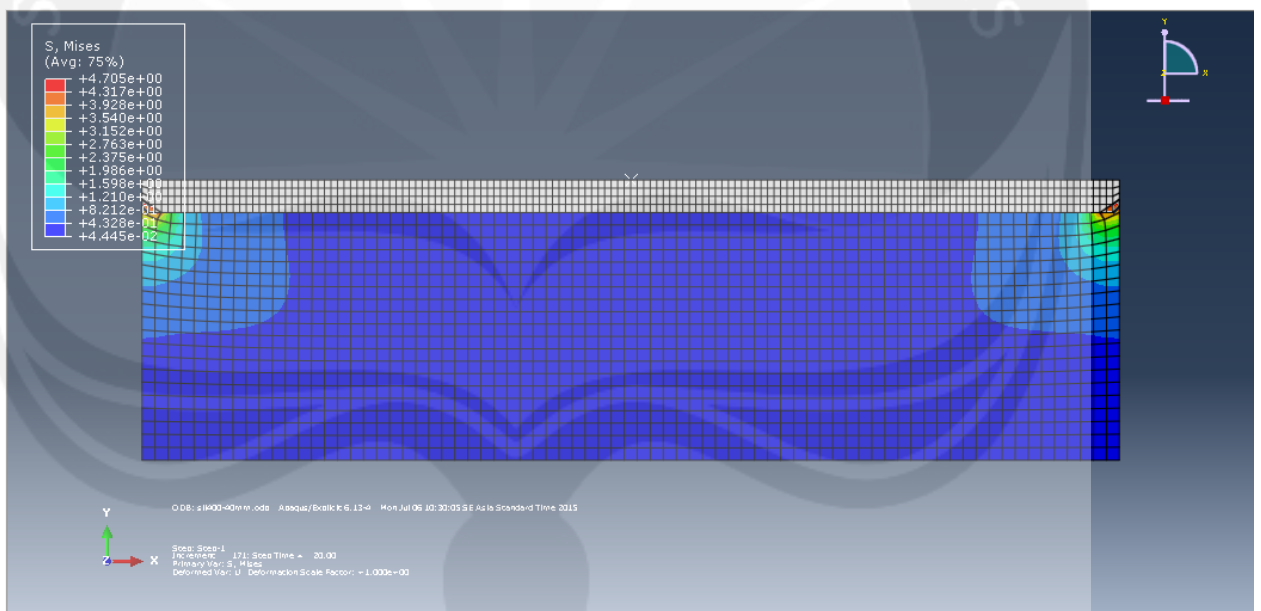
Gambar 173. Sill8800 dengan Tekanan 250 N



Gambar 174. Sill8800 dengan Tekanan 300 N



Gambar 175. Sill8800 dengan Tekanan 350 N

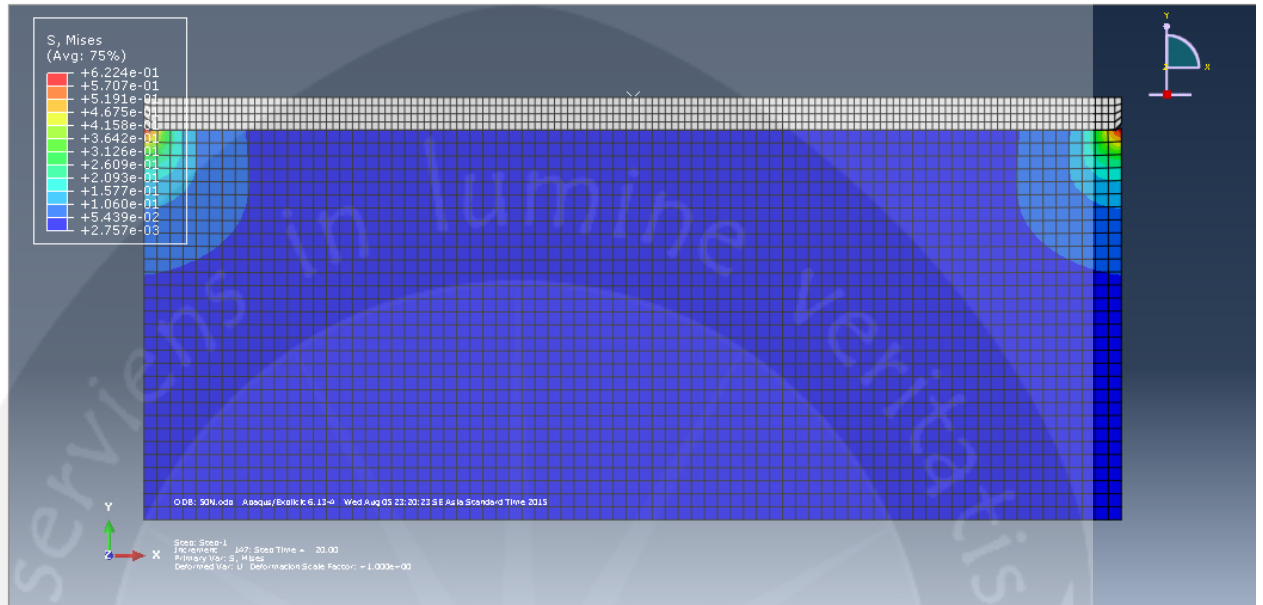


Gambar 176. Sill8800 dengan Tekanan 400 N

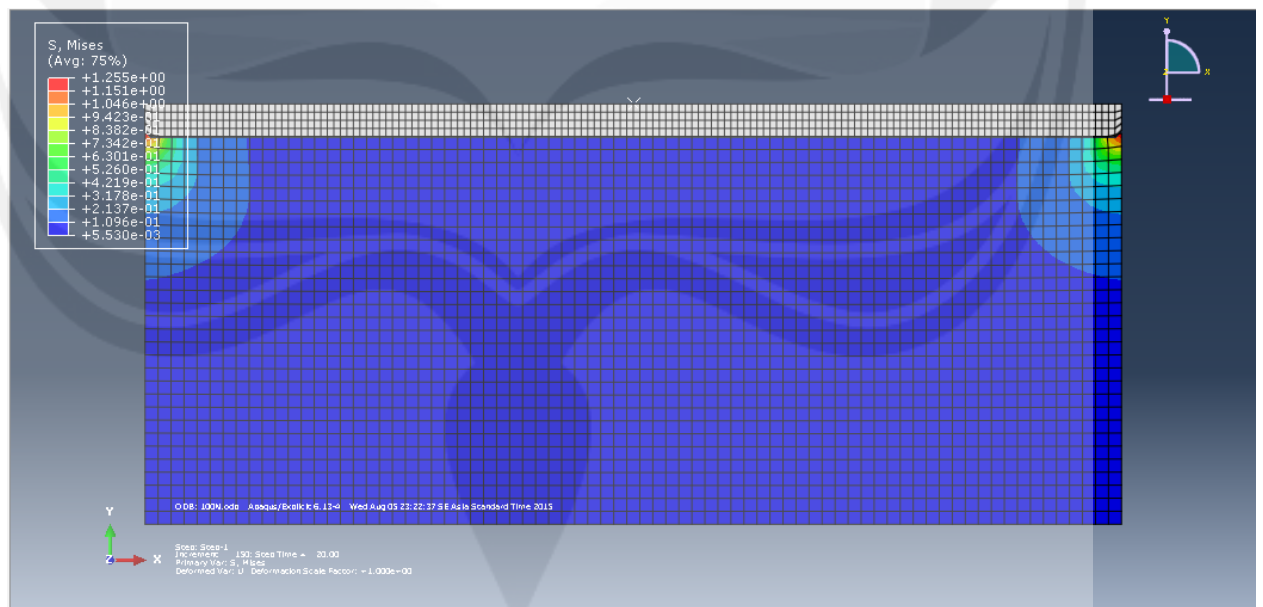
Sill8800

Layer 60 mm

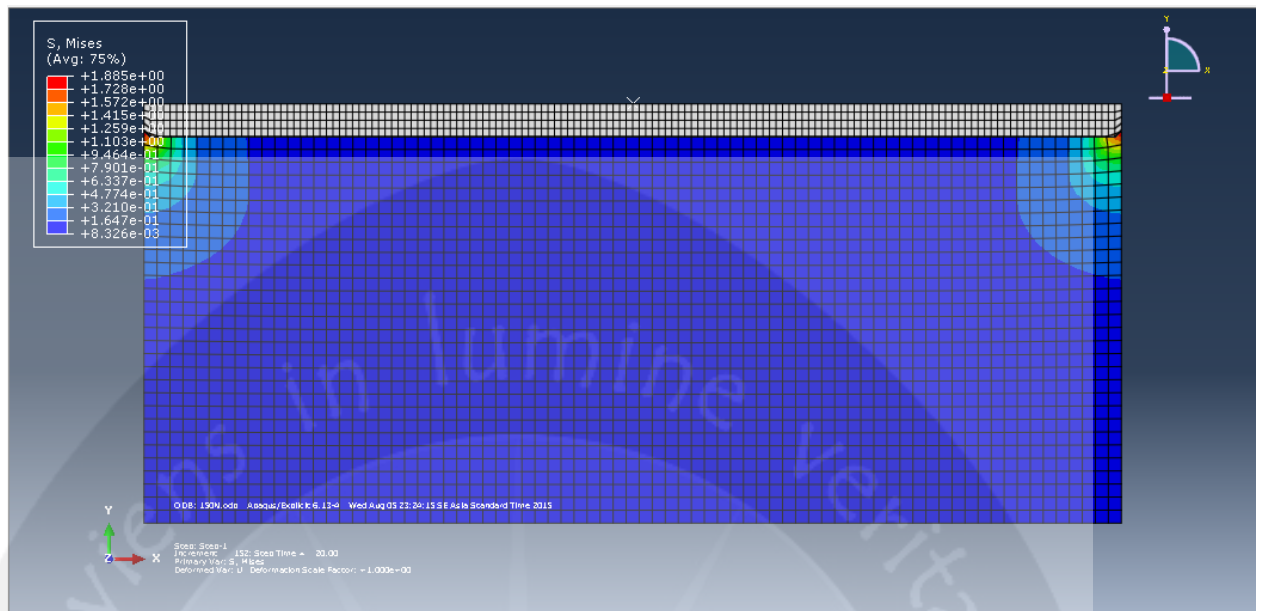
Indenter Chamfer 45°



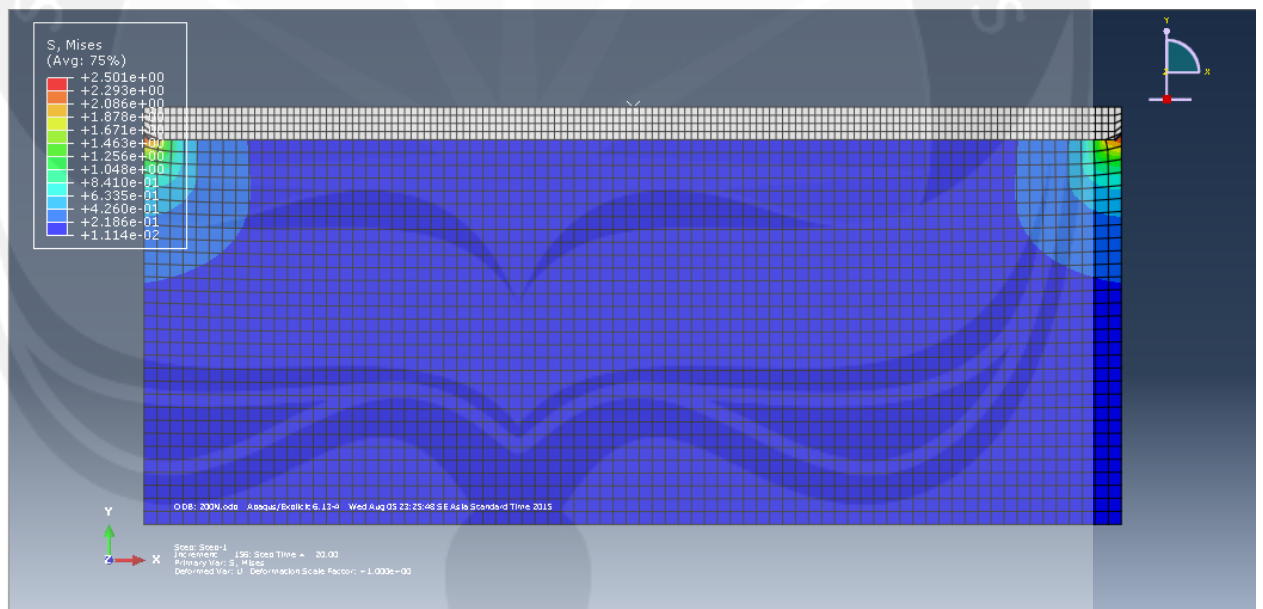
Gambar 177. Sill8800 dengan Tekanan 50 N



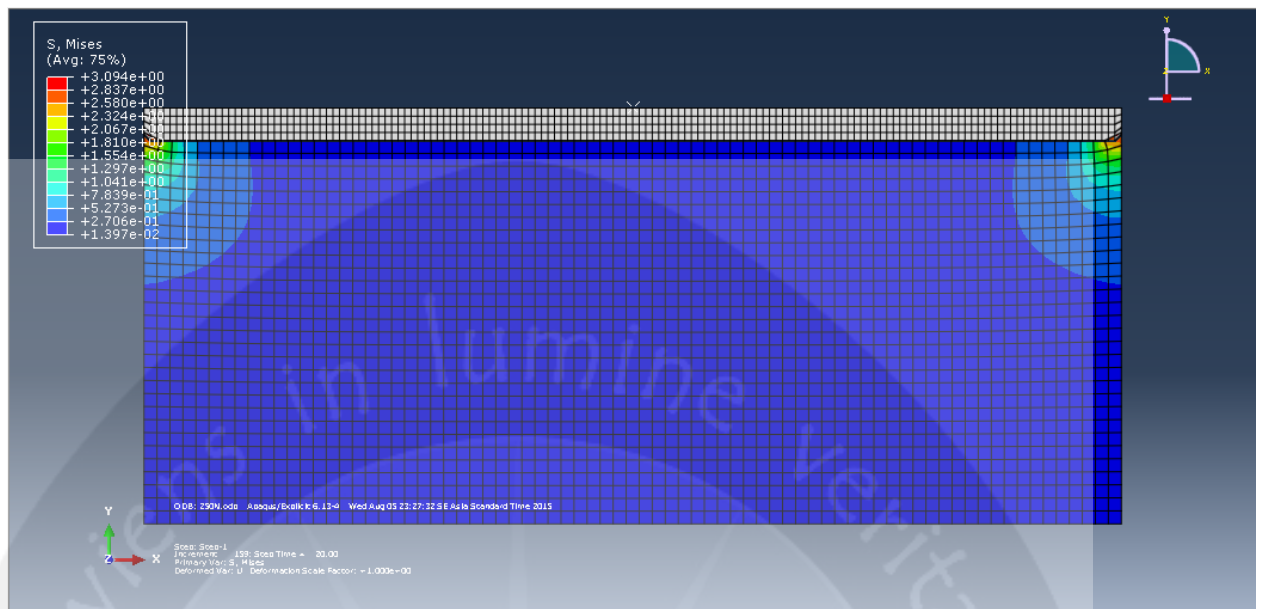
Gambar 178. Sill8800 dengan Tekanan 100 N



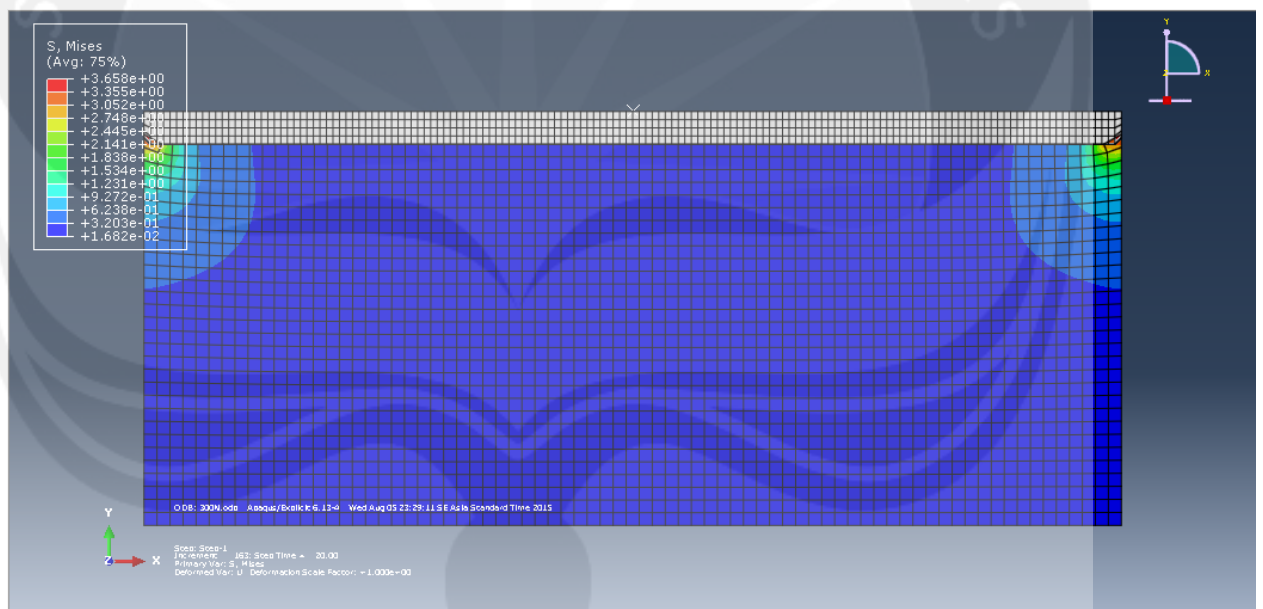
Gambar 179. Sill8800 dengan Tekanan 150 N



Gambar 180. Sill8800 dengan Tekanan 200 N



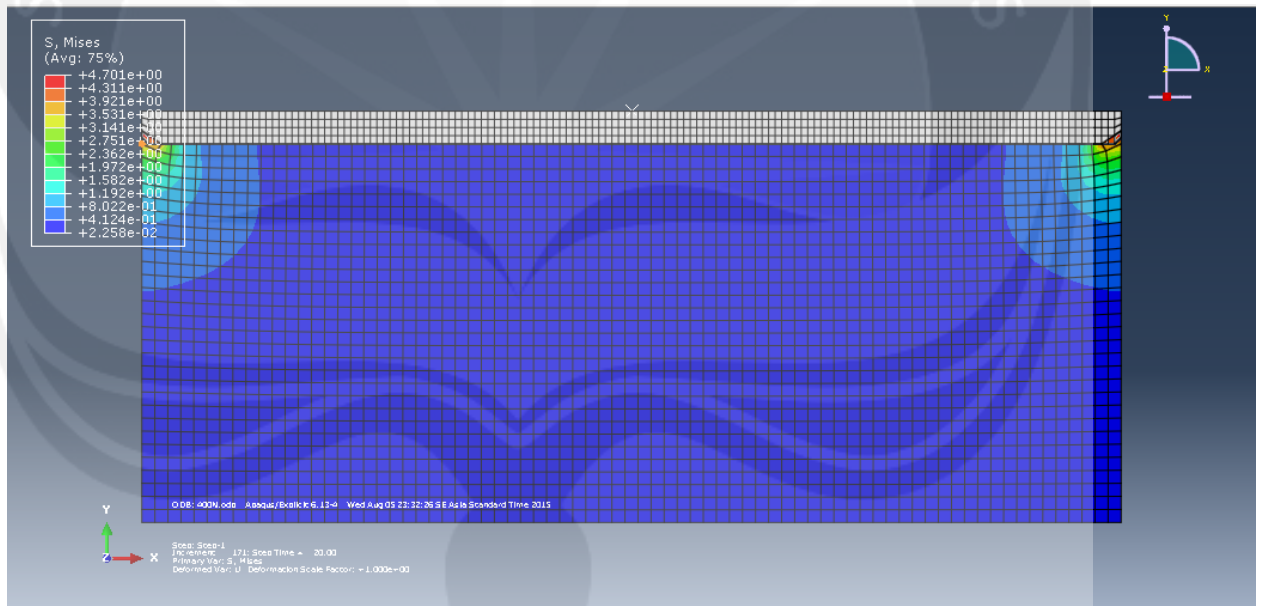
Gambar 181. Sill8800 dengan Tekanan 250 N



Gambar 182. Sill8800 dengan Tekanan 300 N



Gambar 183. Sill8800 dengan Tekanan 350 N

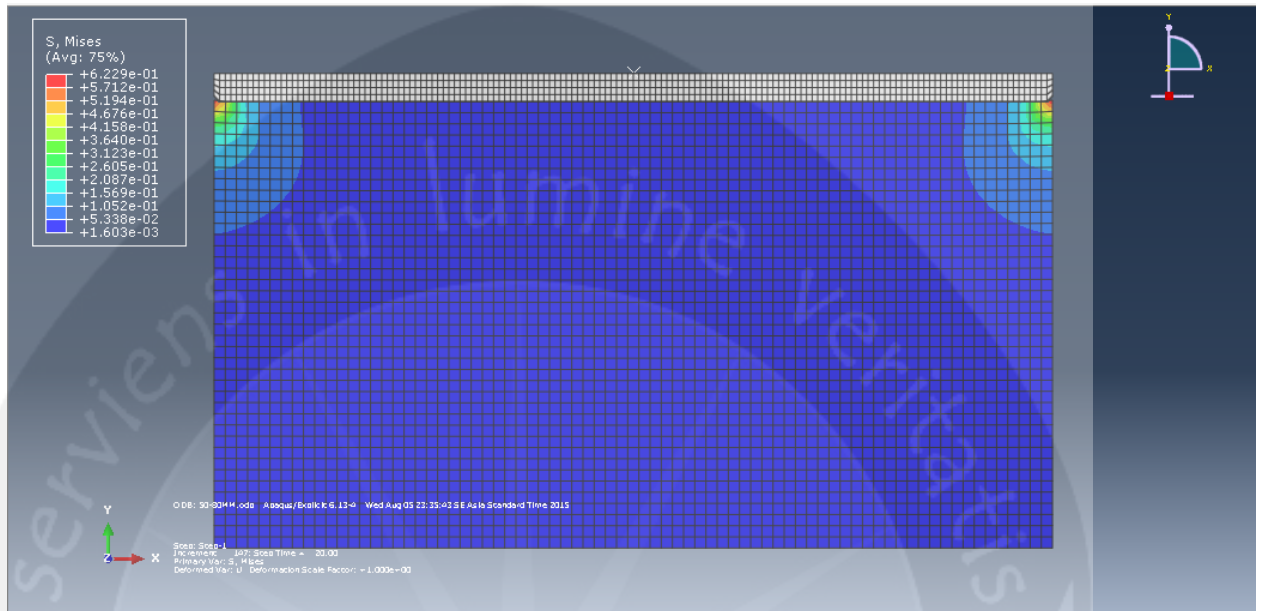


Gambar 184. Sill8800 dengan Tekanan 400 N

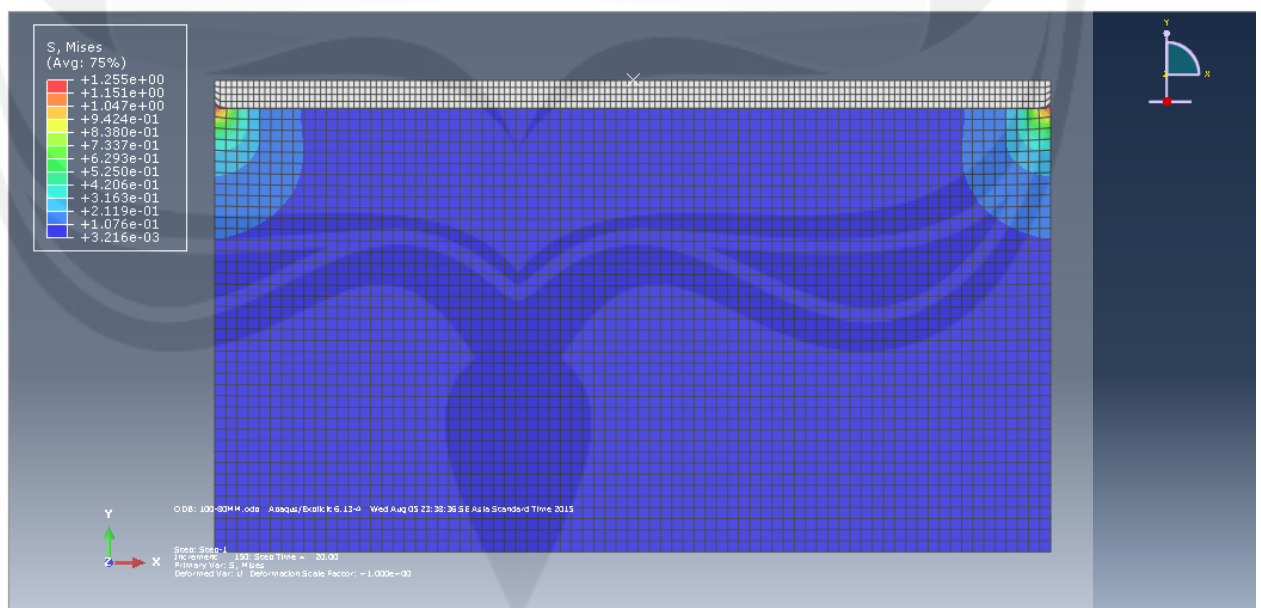
Sill8800

Layer 80 mm

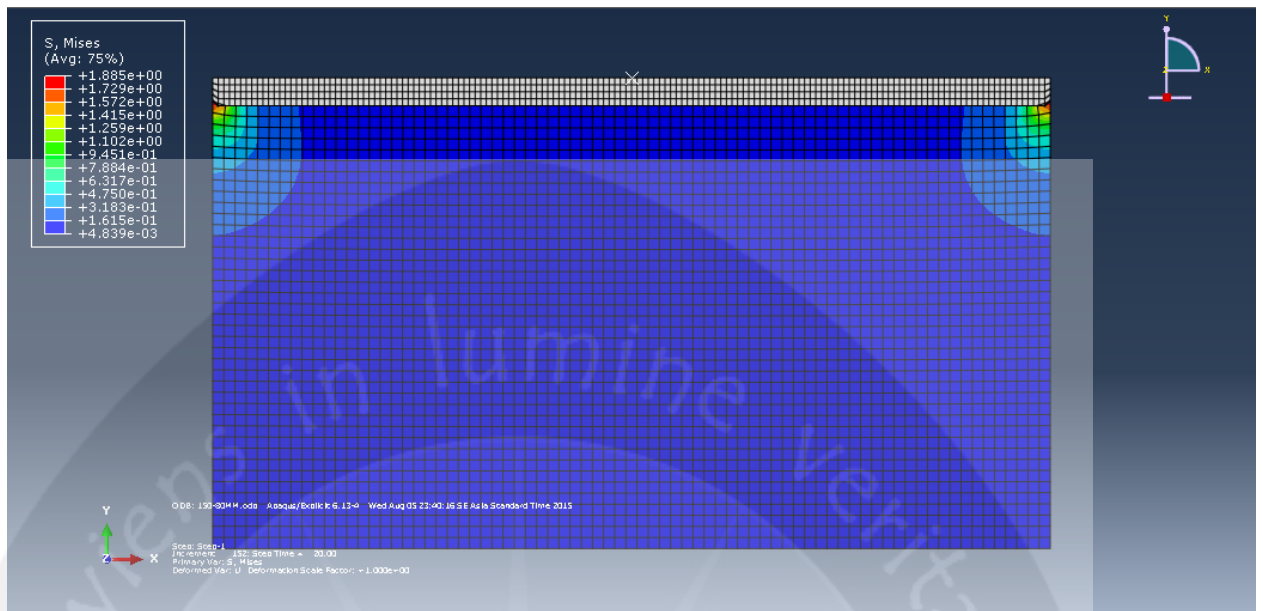
Indenter Chamfer 45°



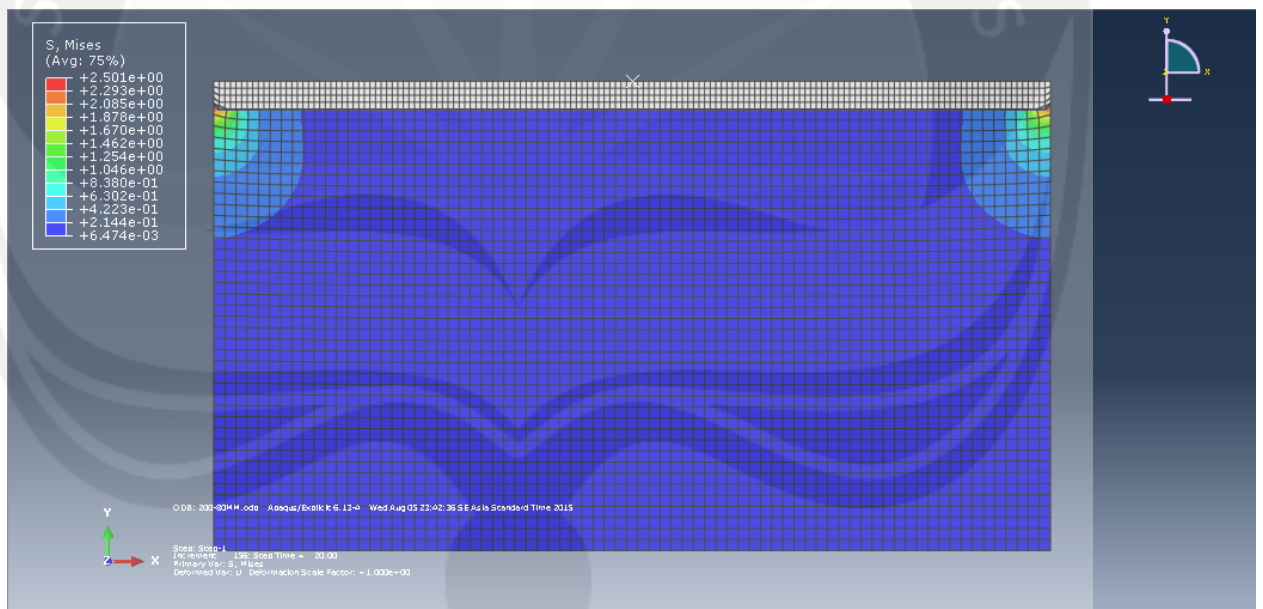
Gambar 185. Sill8800 dengan Tekanan 50 N



Gambar 186. Sill8800 dengan Tekanan 100 N



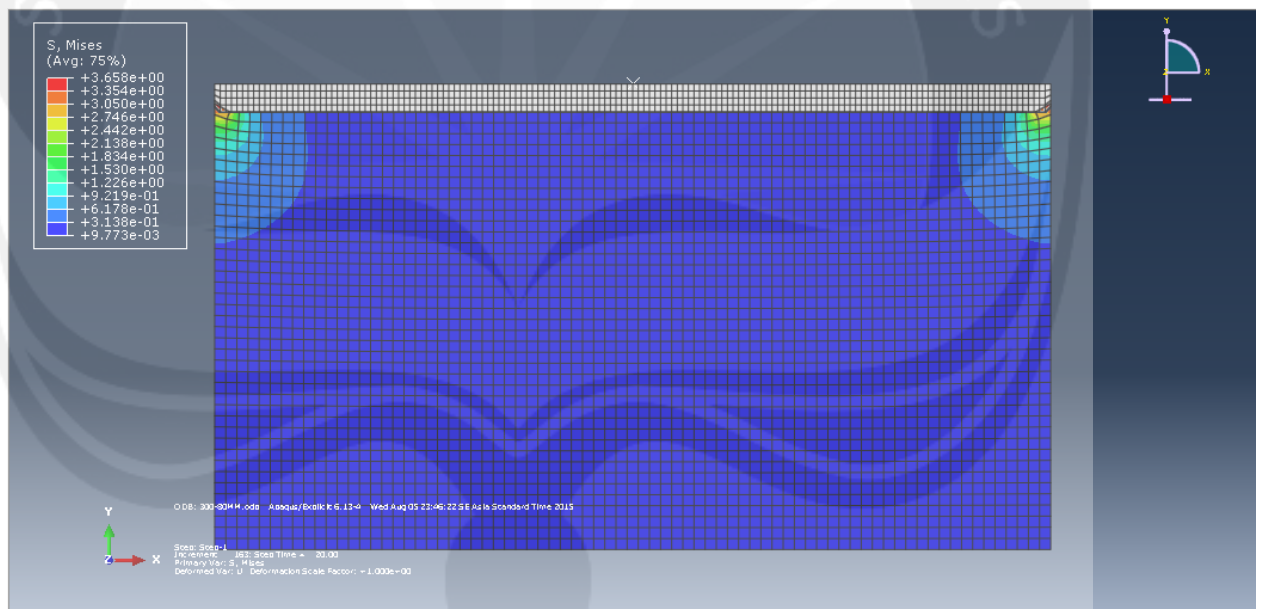
Gambar 187. Sill8800 dengan Tekanan 150 N



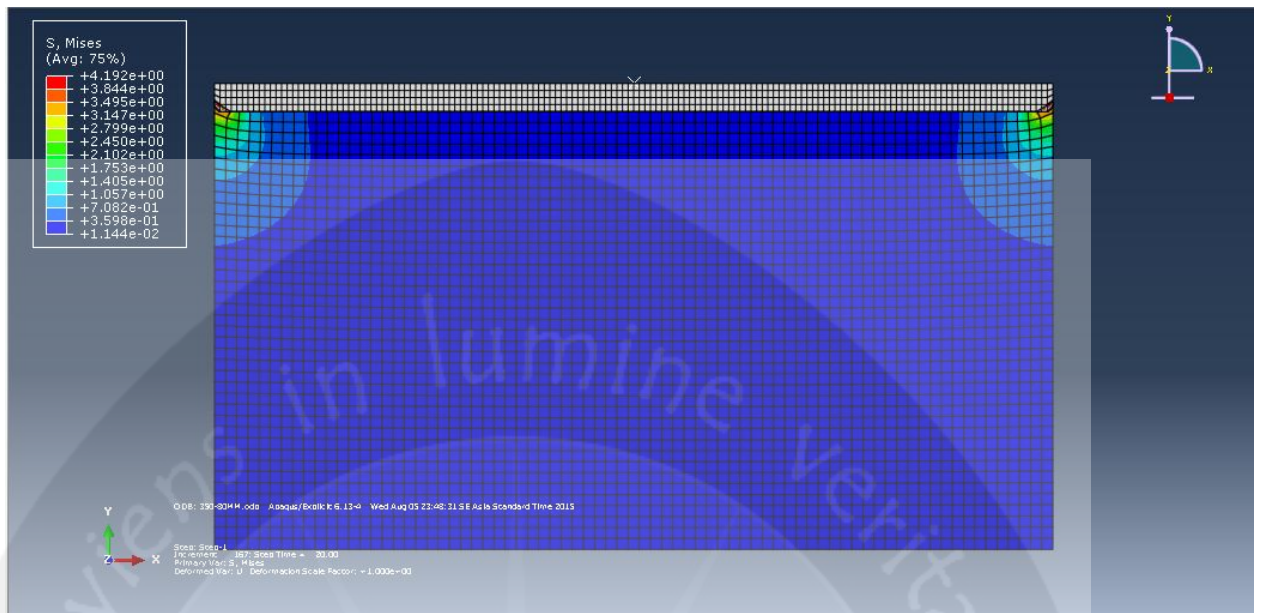
Gambar 188. Sill8800 dengan Tekanan 200 N



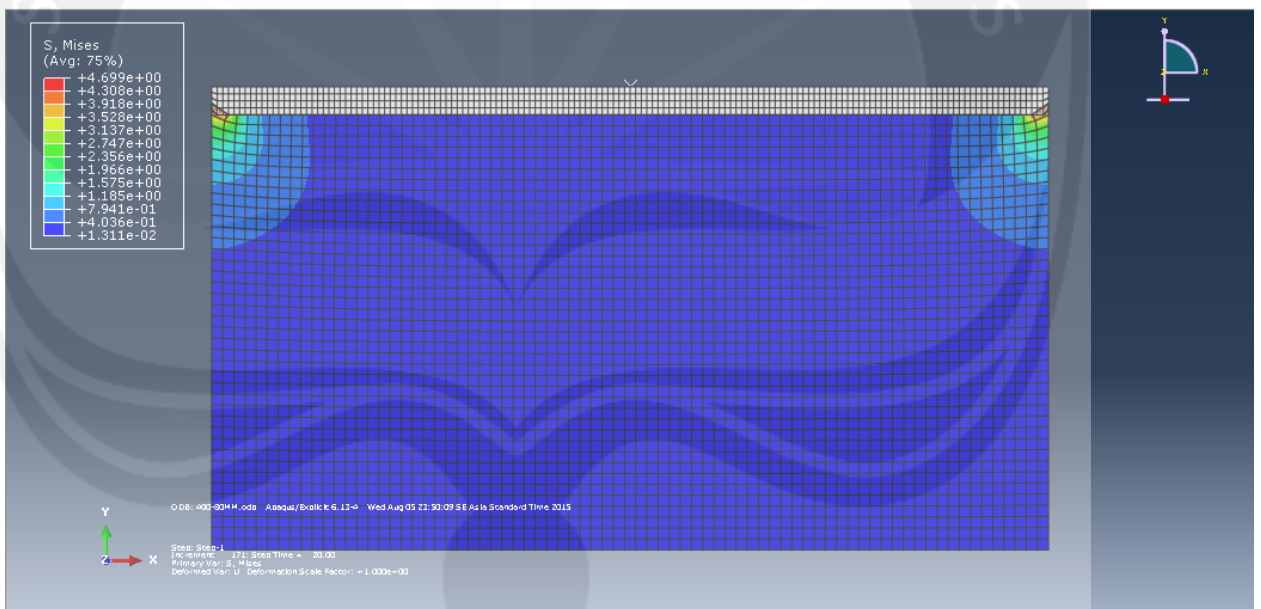
Gambar 189. Sill8800 dengan Tekanan 250 N



Gambar 190. Sill8800 dengan Tekanan 300 N



Gambar 191. Sill8800 dengan Tekanan 350 N

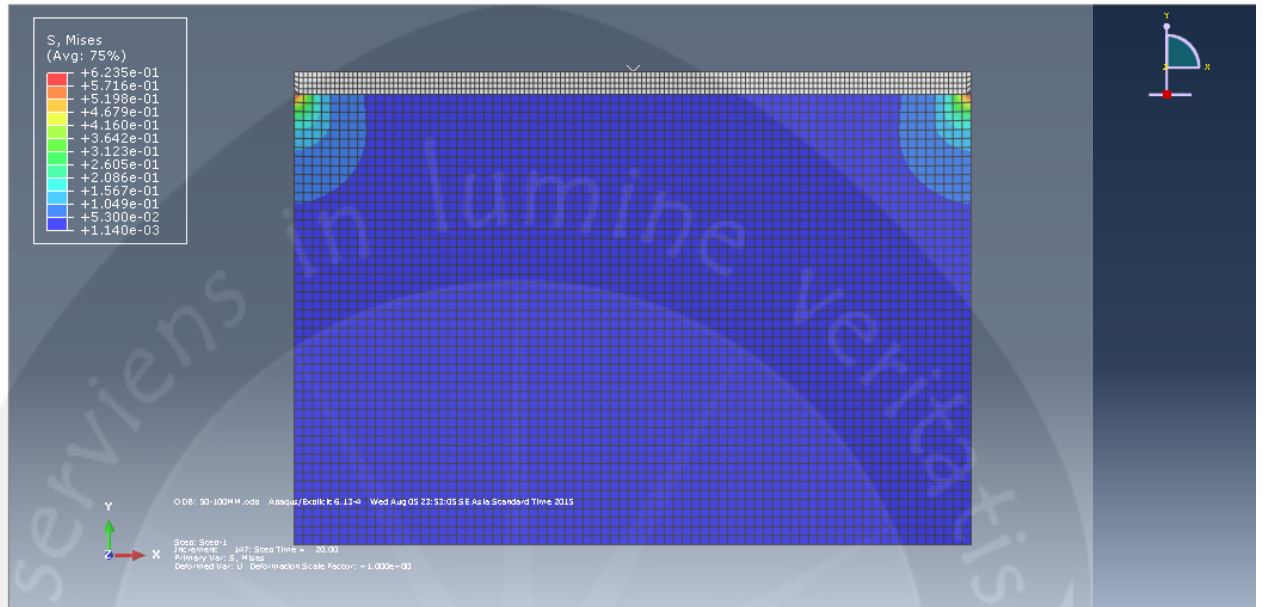


Gambar 192. Sill8800 dengan Tekanan 400 N

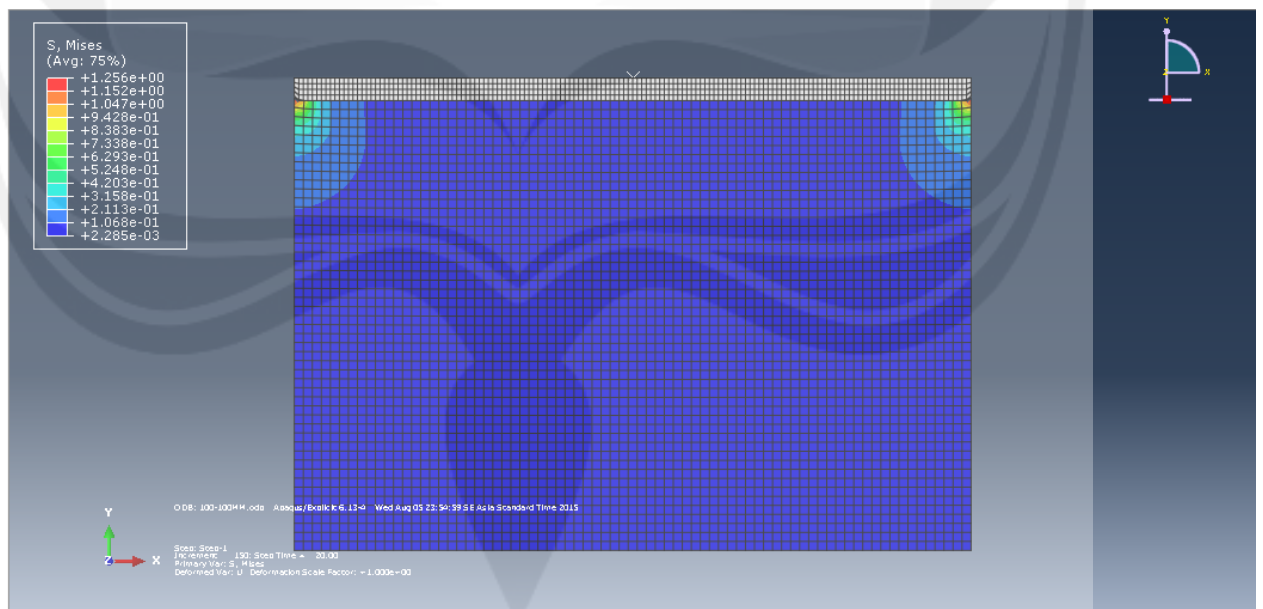
Sill8800

Layer 100 mm

Indenter Chamfer 45°



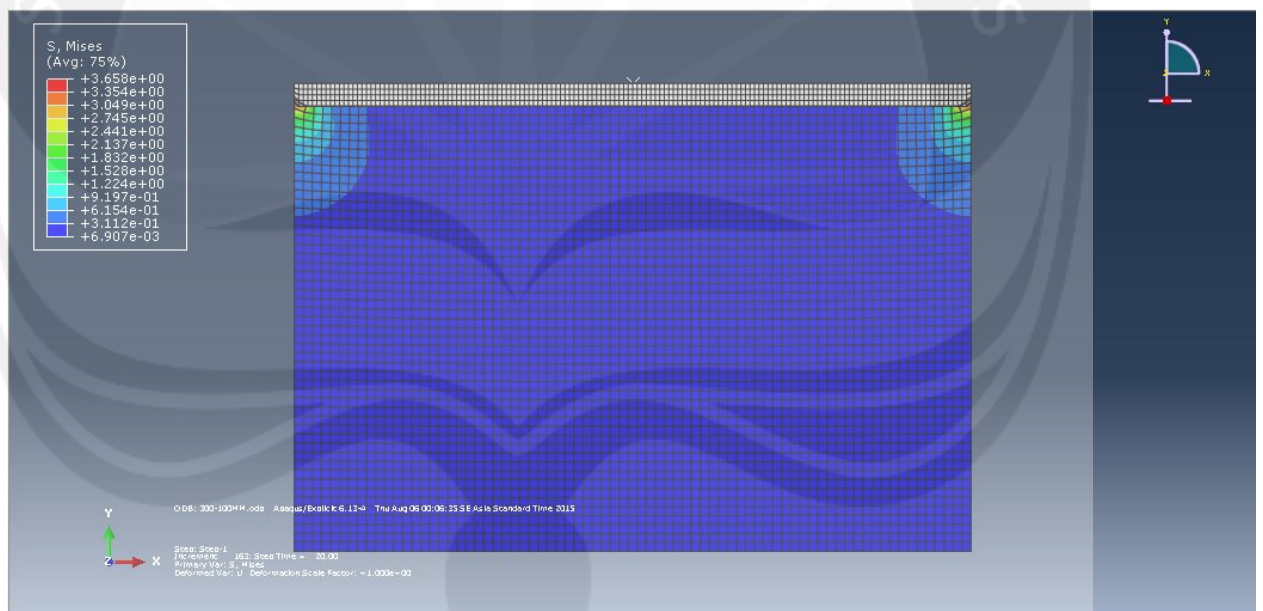
Gambar 193. Sill8800 dengan Tekanan 50 N



Gambar 194. Sill8800 dengan Tekanan 100 N



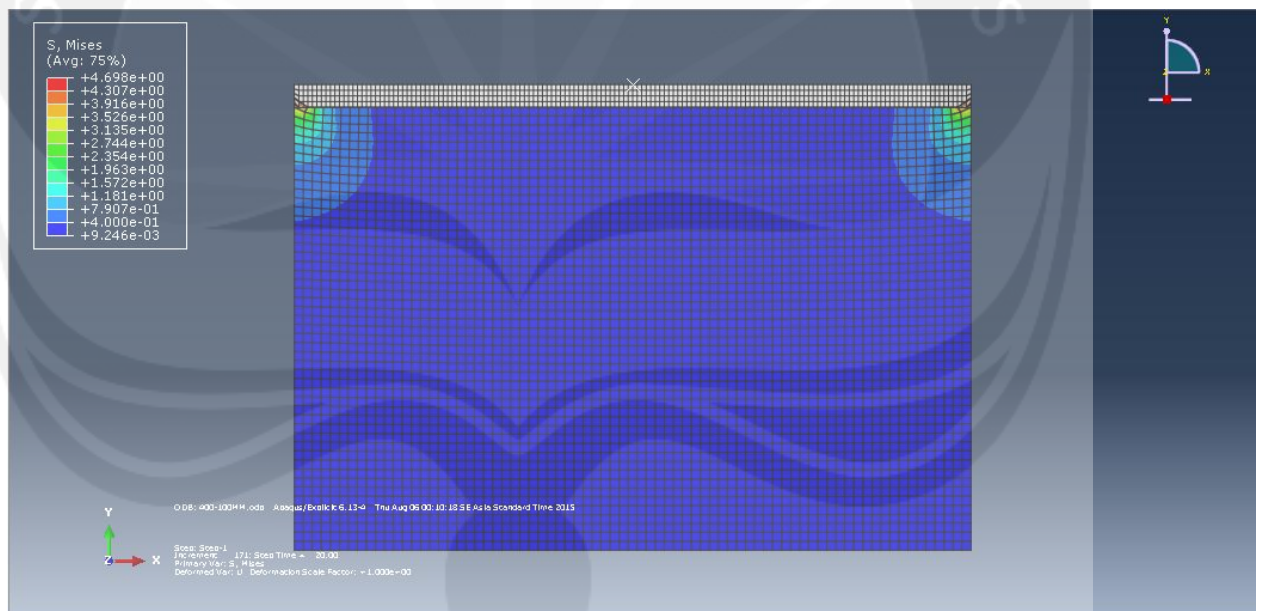
Gambar 197. Sill8800 dengan Tekanan 250 N



Gambar 198. Sill8800 dengan Tekanan 300 N



Gambar 199. Sill8800 dengan Tekanan 350 N

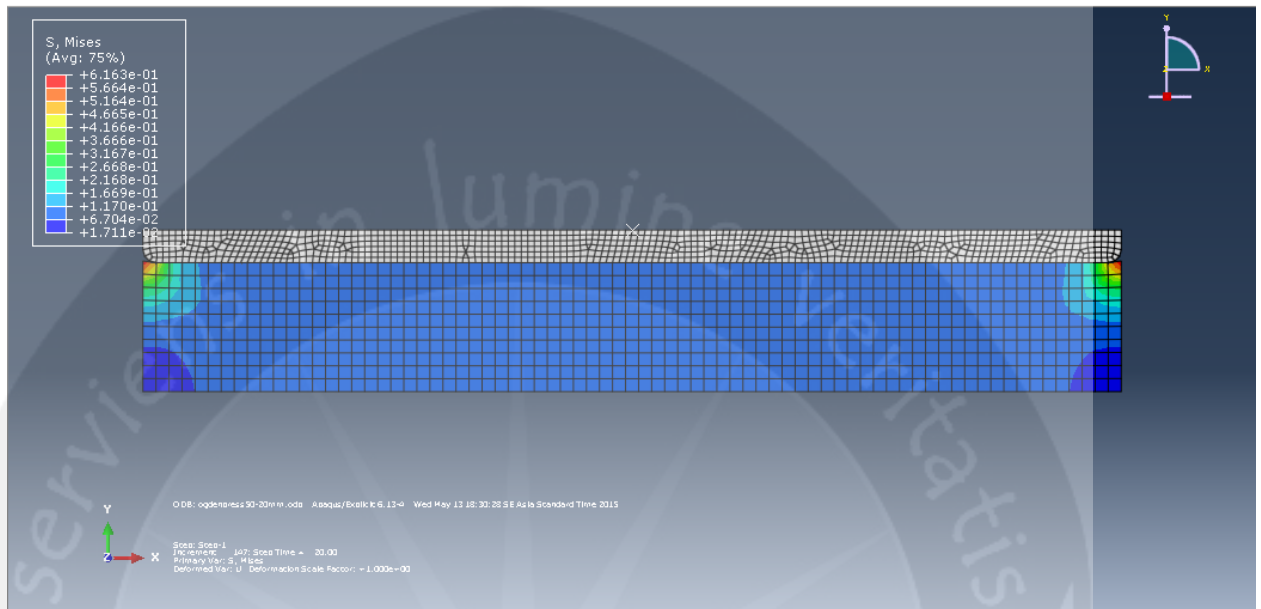


Gambar 200. Sill8800 dengan Tekanan 400 N

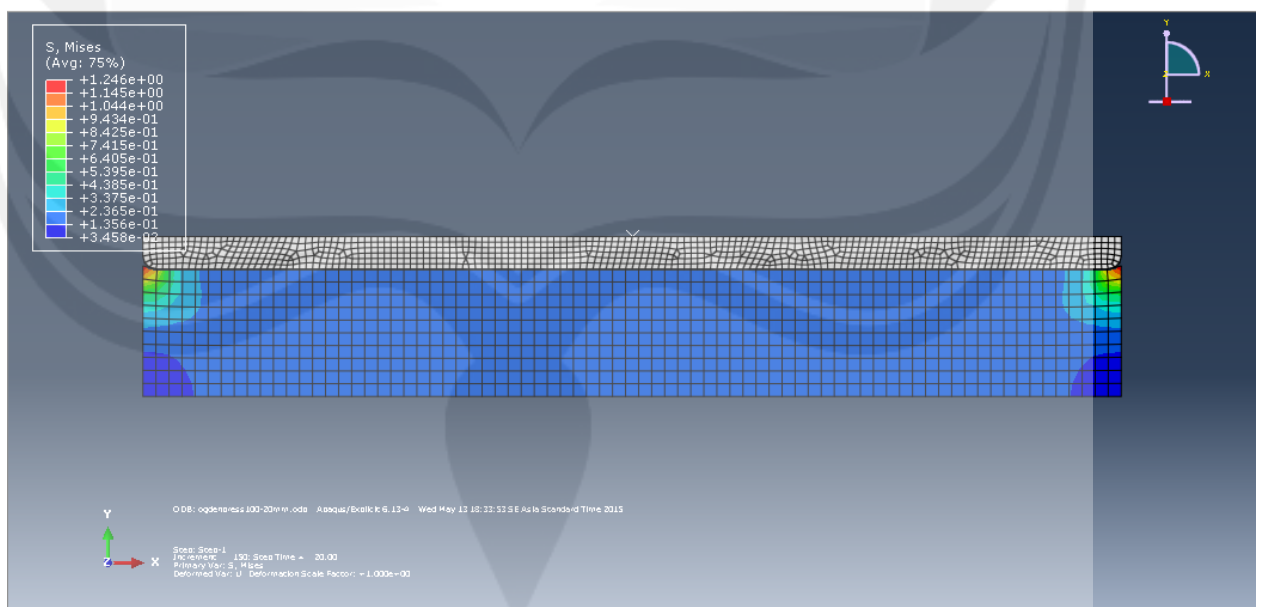
Sill8800

Layer 20 mm

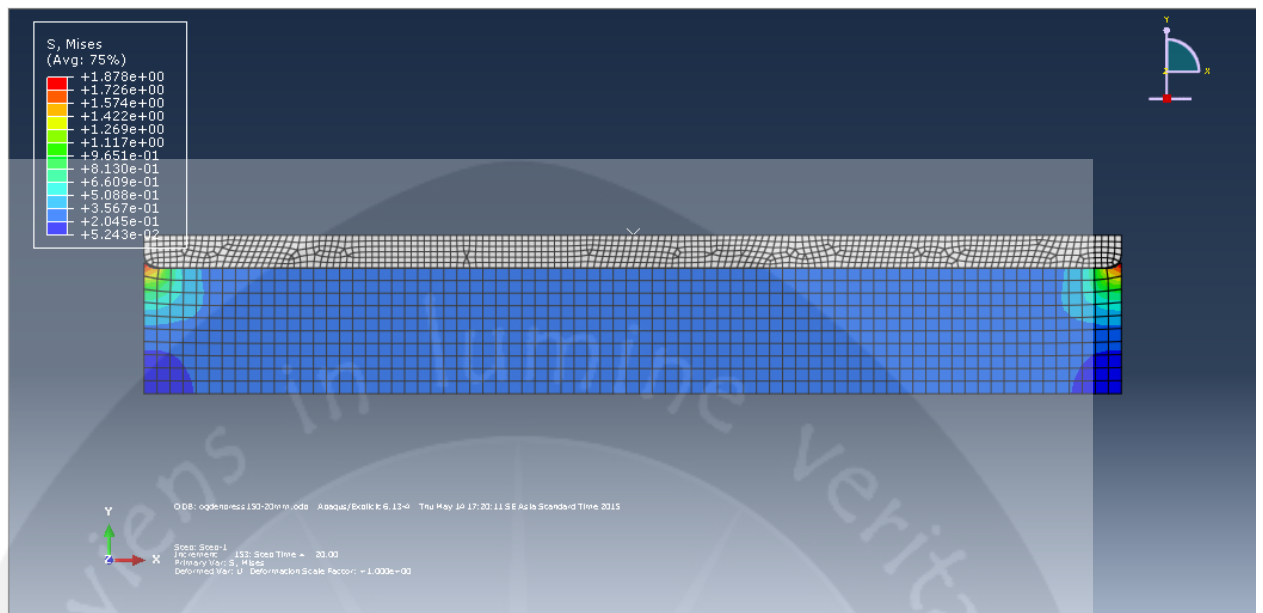
Indenter Radius tip 2 mm



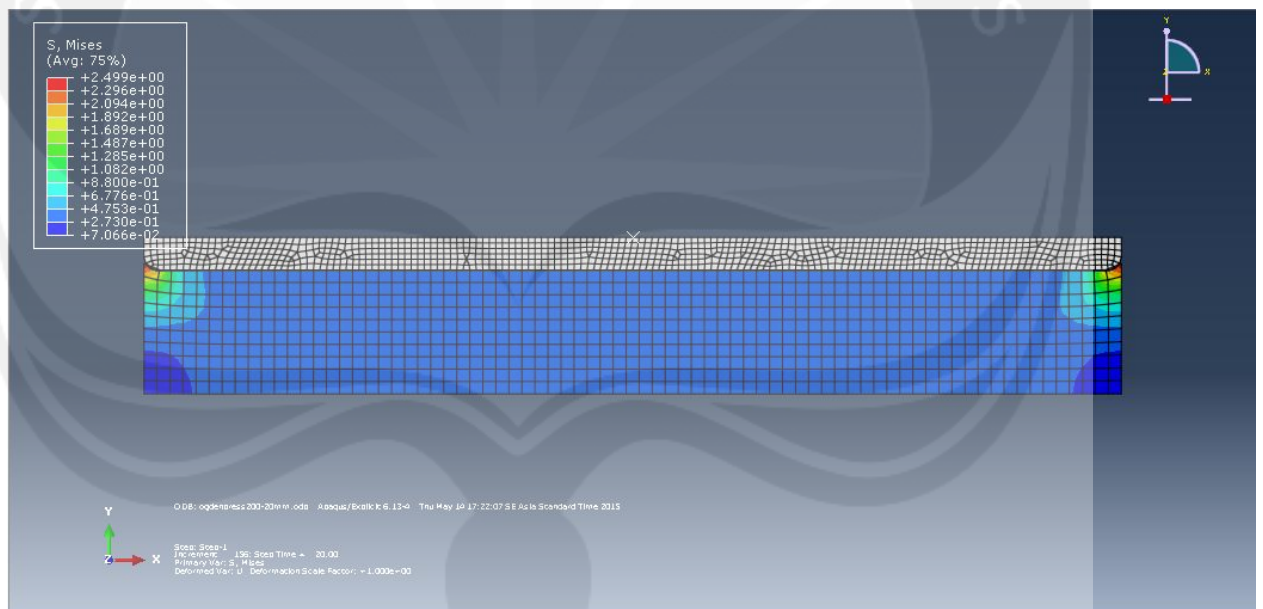
Gambar 201. Sill8800 dengan Tekanan 50 N



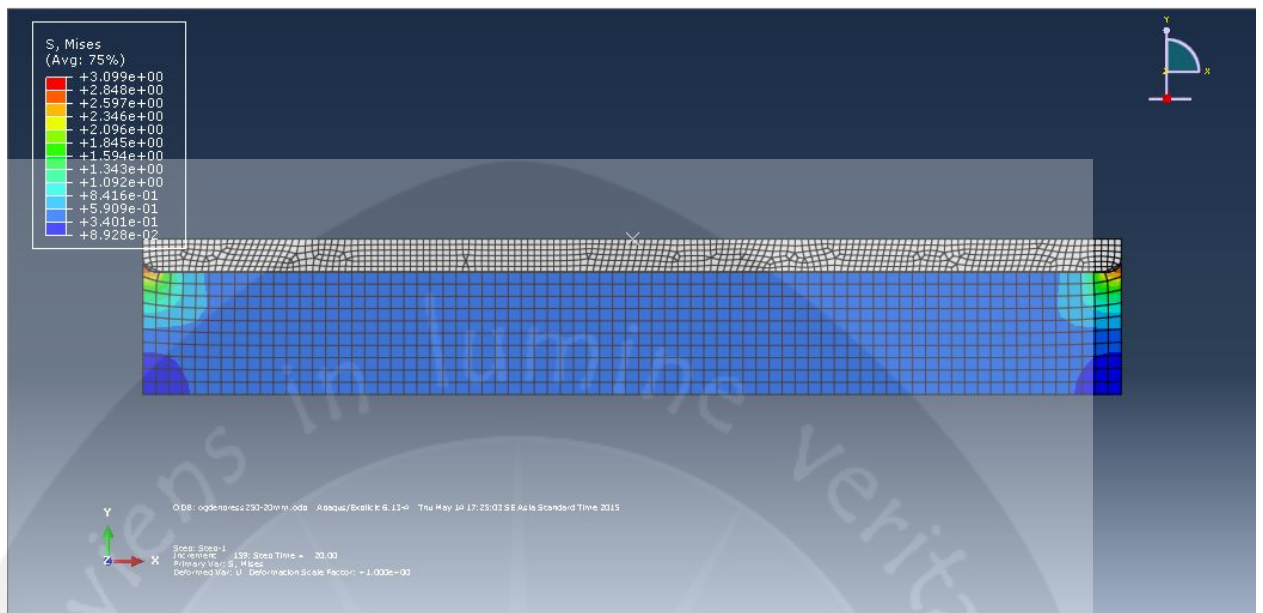
Gambar 202. Sill8800 dengan Tekanan 100 N



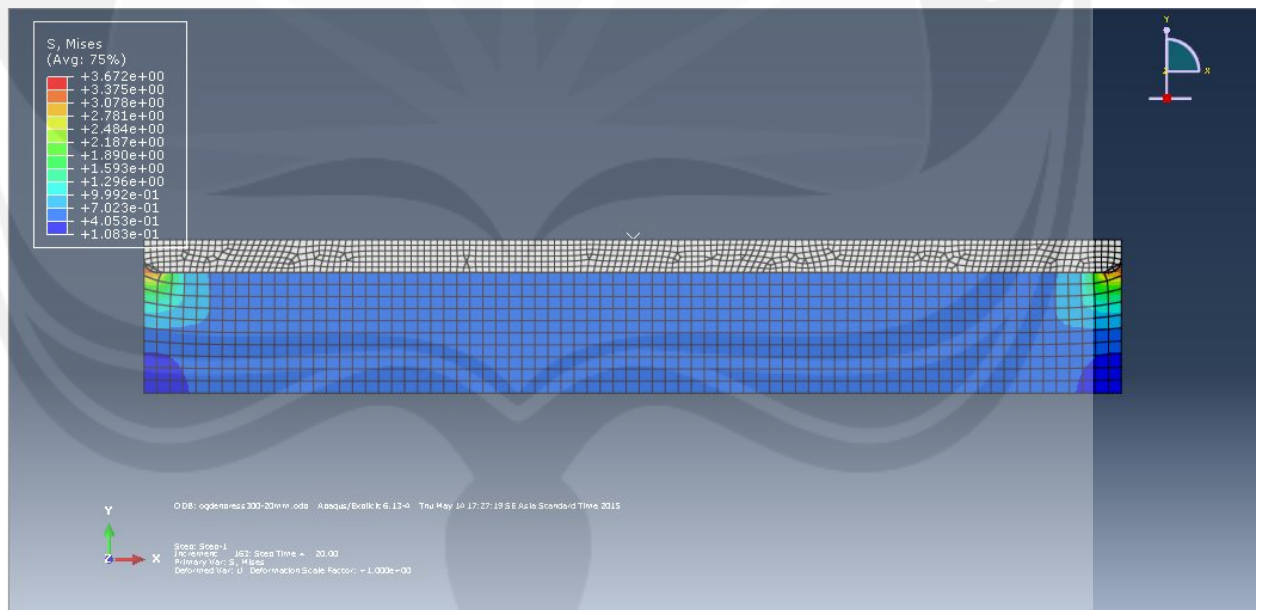
Gambar 203. Sill8800 dengan Tekanan 150 N



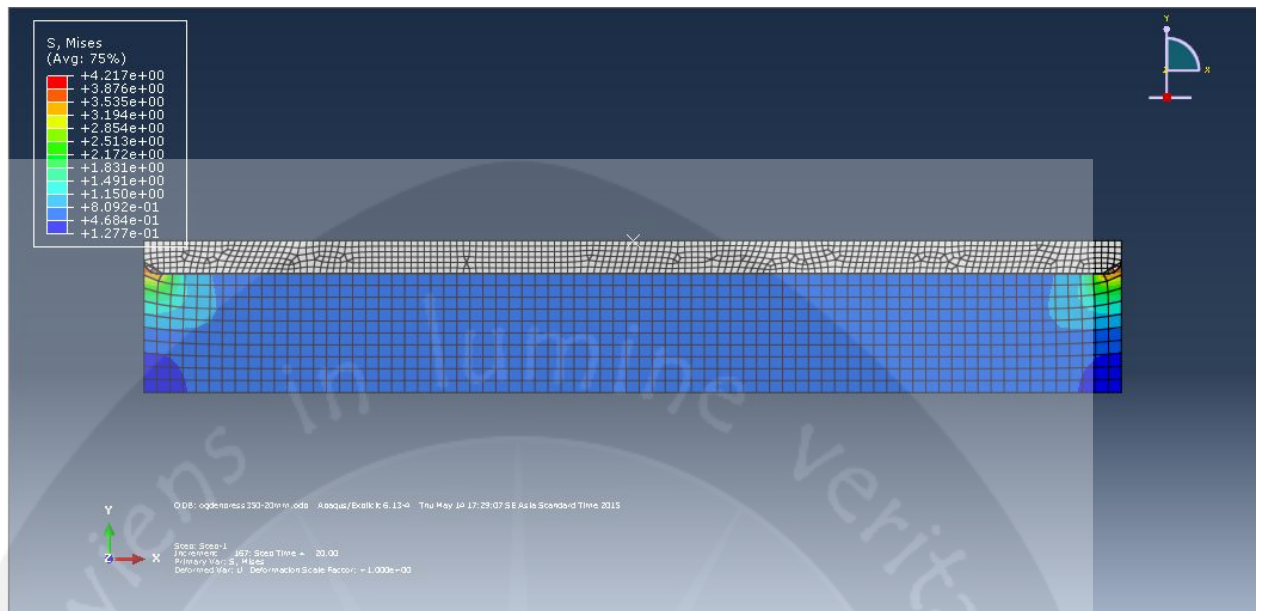
Gambar 204. Sill8800 dengan Tekanan 200 N



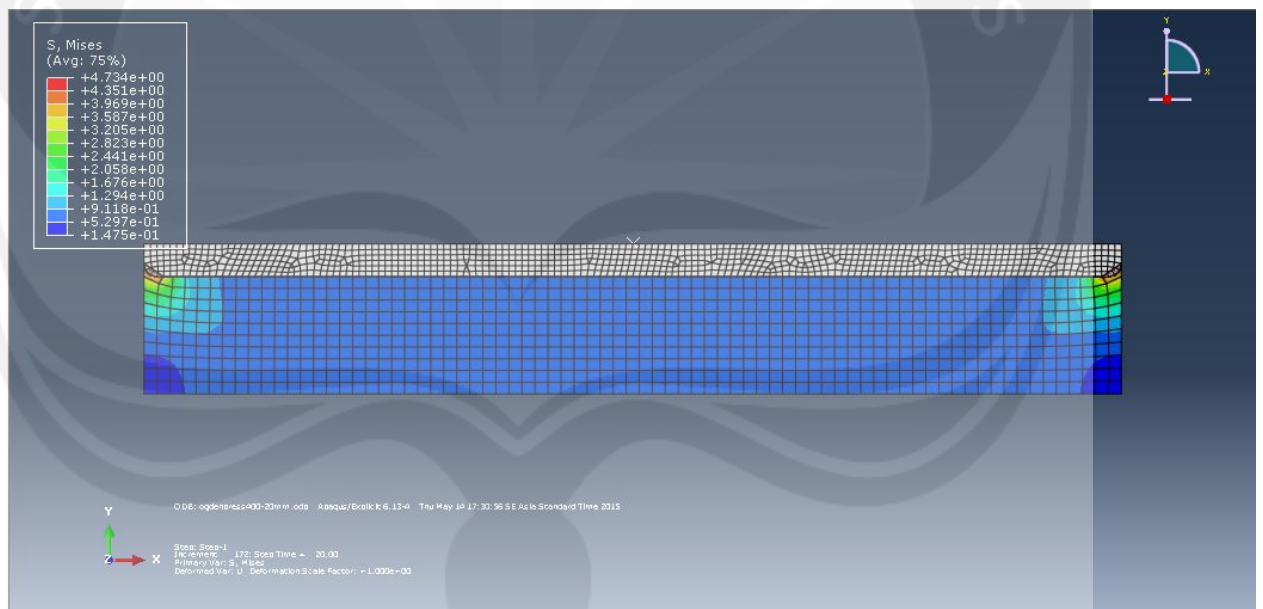
Gambar 205. Sill8800 dengan Tekanan 250 N



Gambar 206. Sill8800 dengan Tekanan 300 N



Gambar 207. Sill8800 dengan Tekanan 350 N

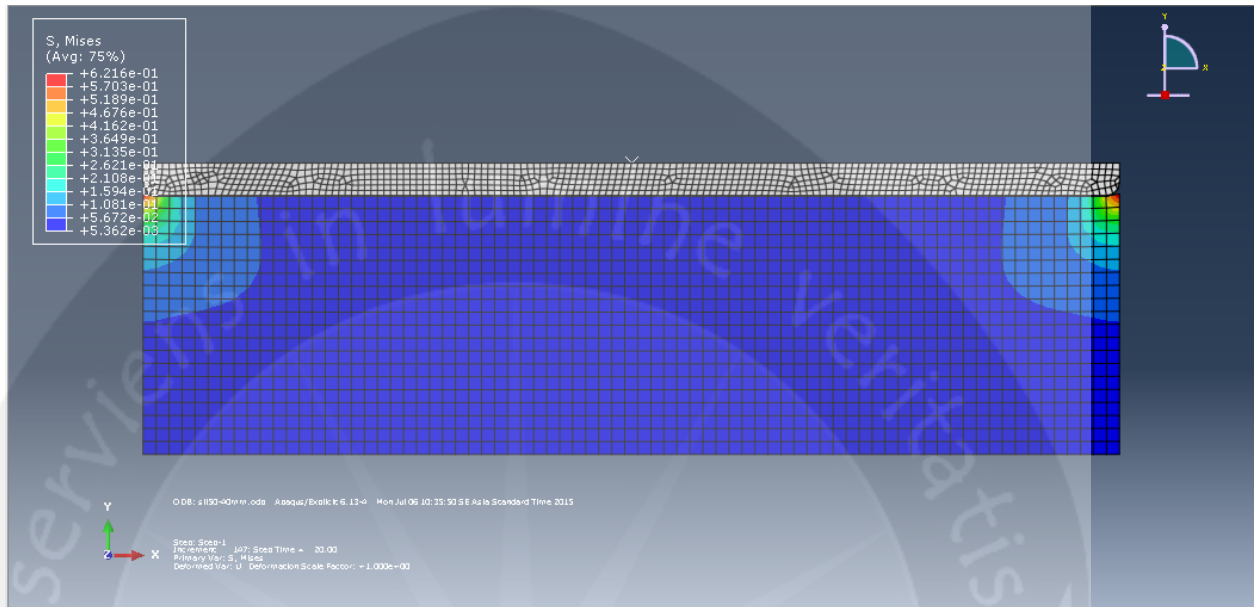


Gambar 208. Sill8800 dengan Tekanan 400 N

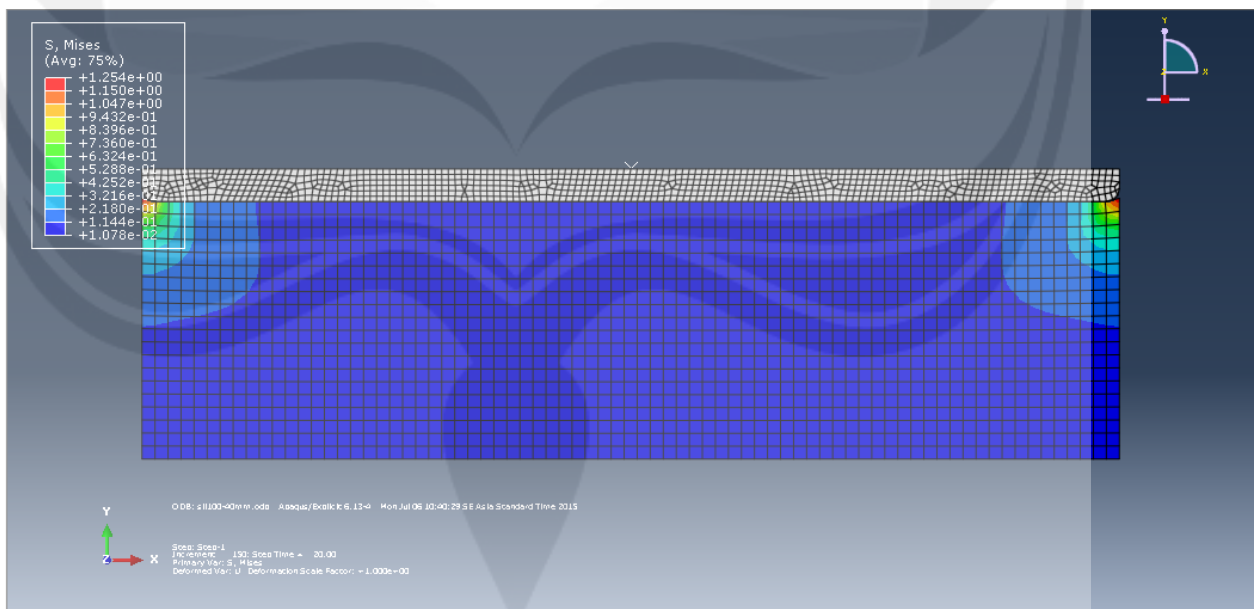
Sill8800

Layer 40 mm

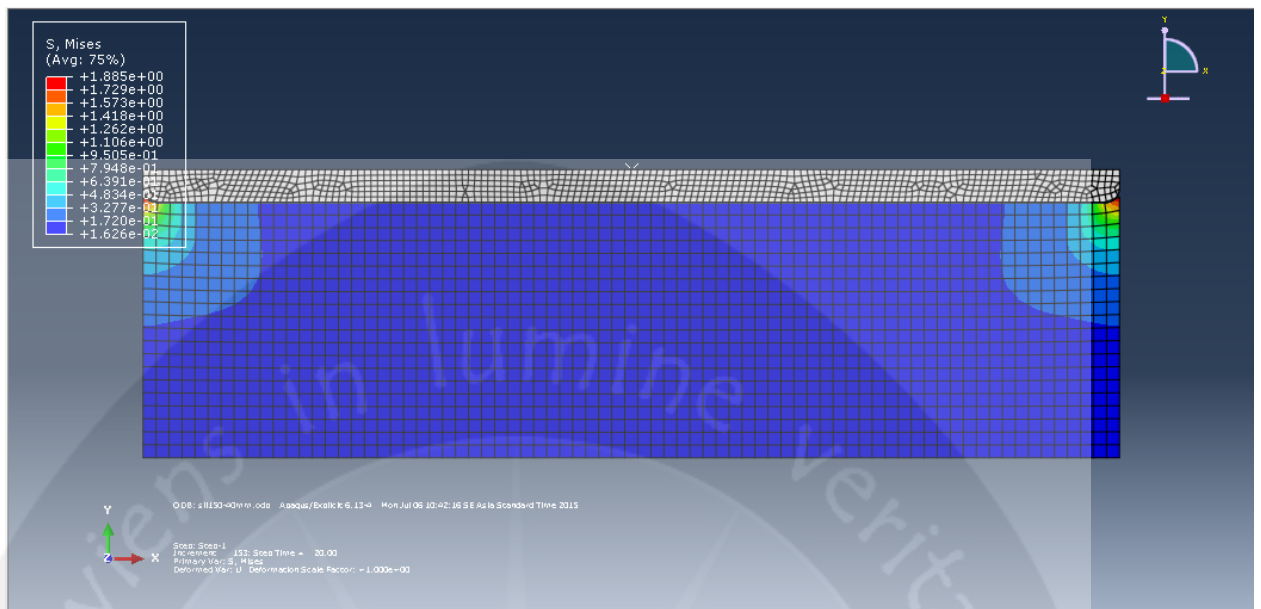
Indenter Radius tip 2 mm



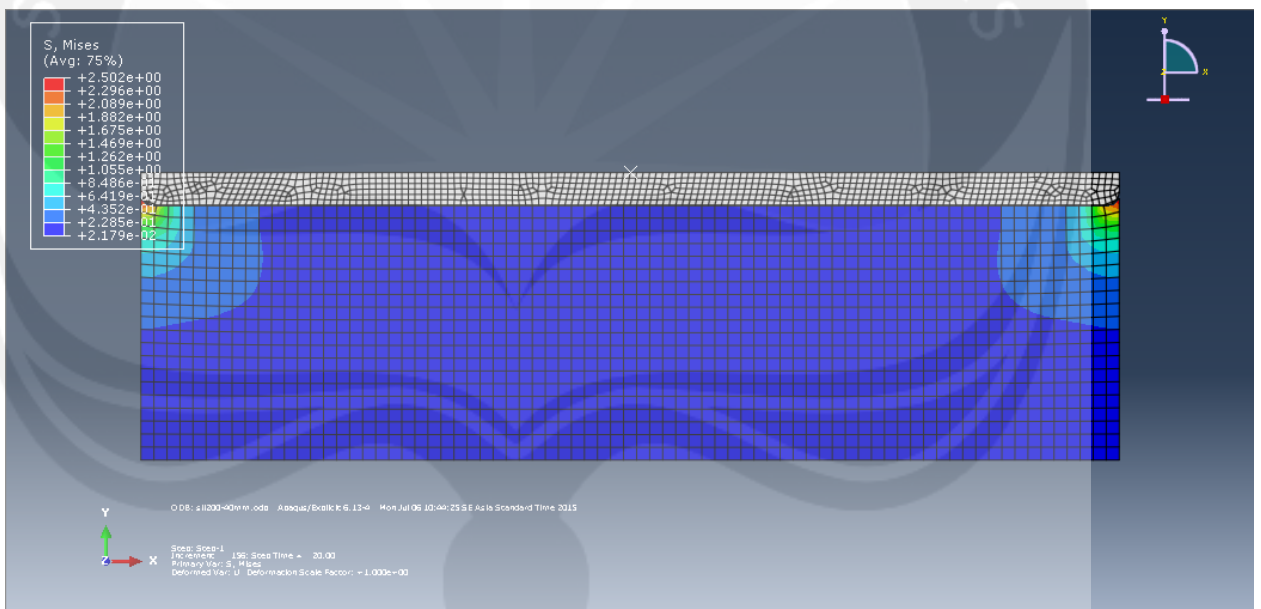
Gambar 209. Sill8800 dengan Tekanan 50 N



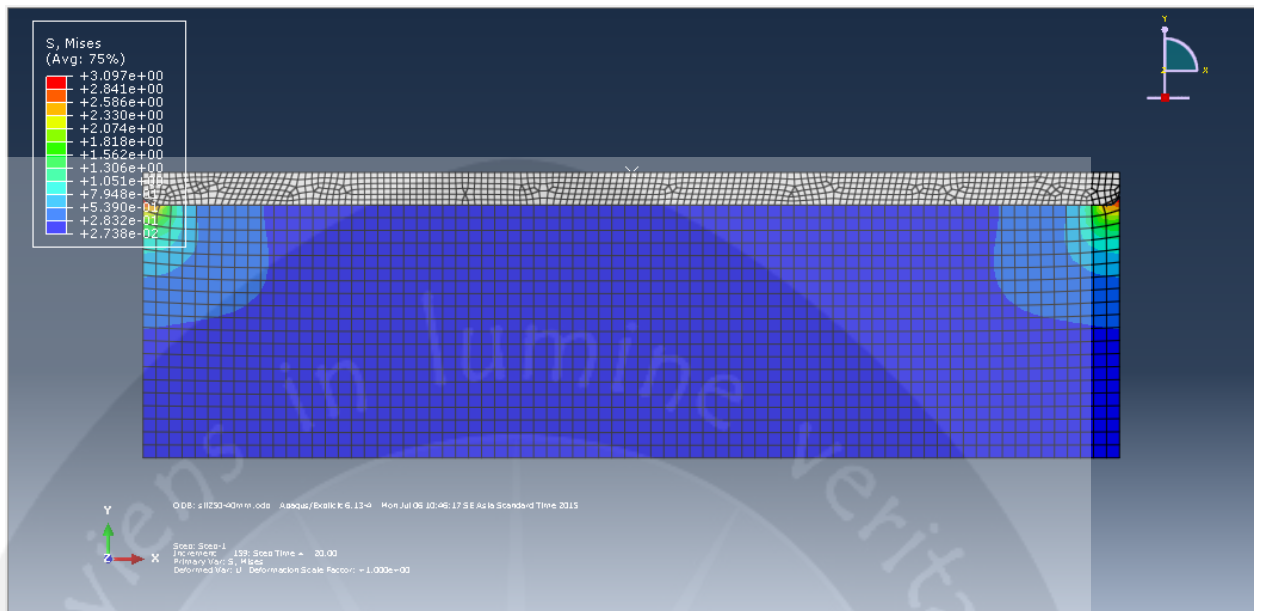
Gambar 210. Sill8800 dengan Tekanan 100 N



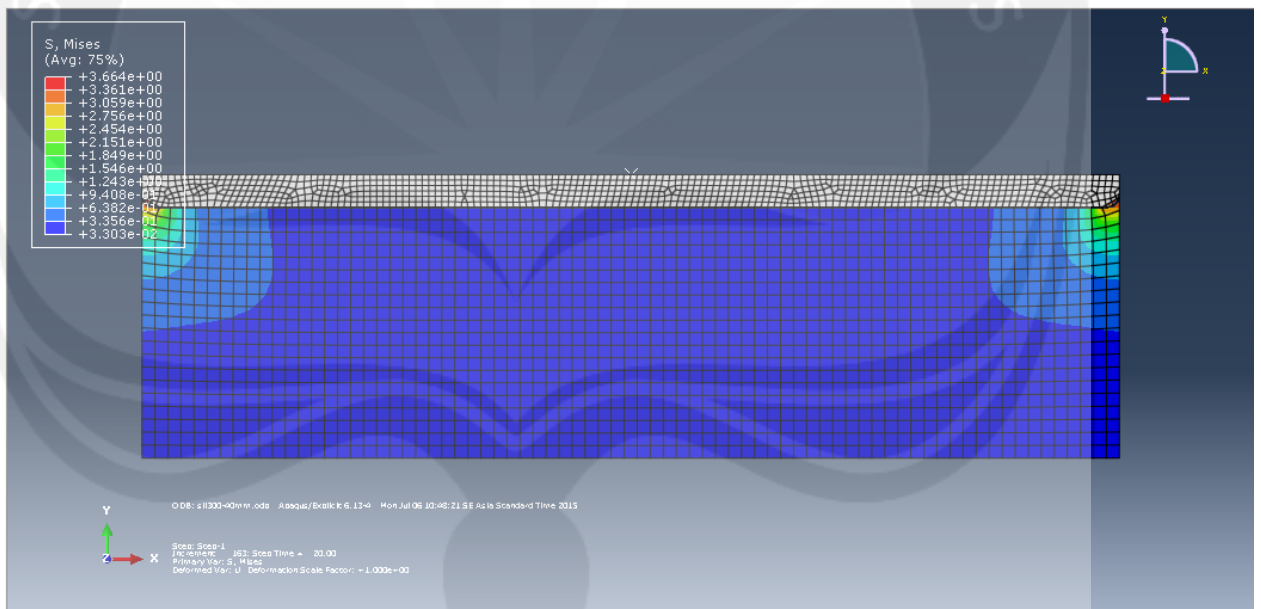
Gambar 211. Sill8800 dengan Tekanan 150 N



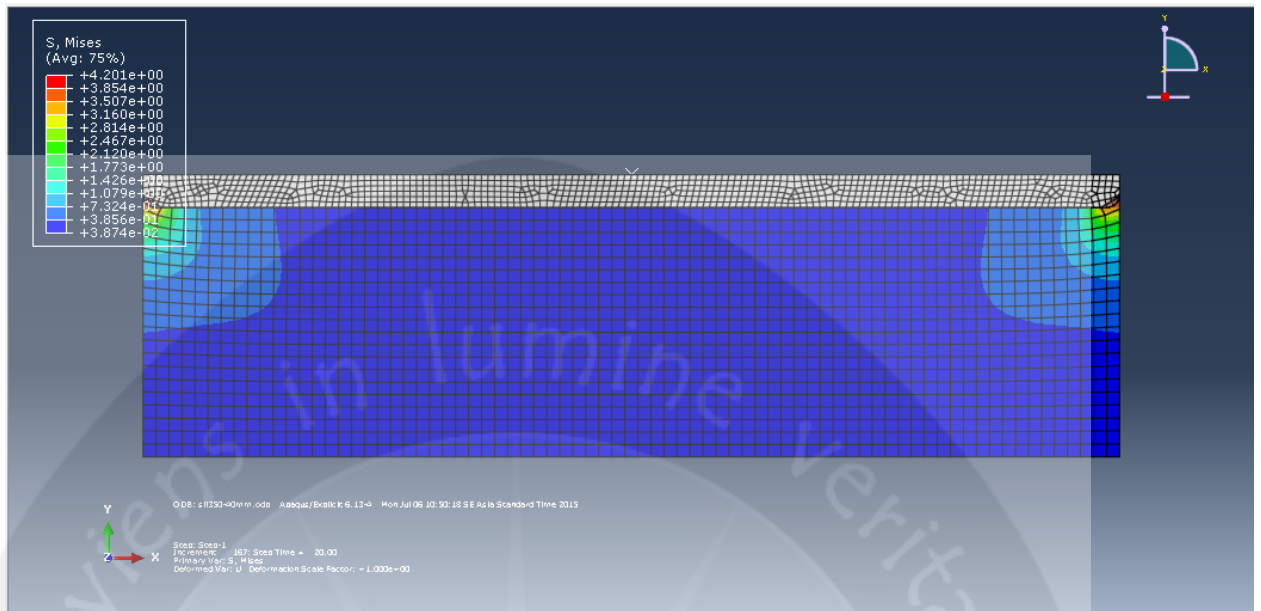
Gambar 212. Sill8800 dengan Tekanan 200 N



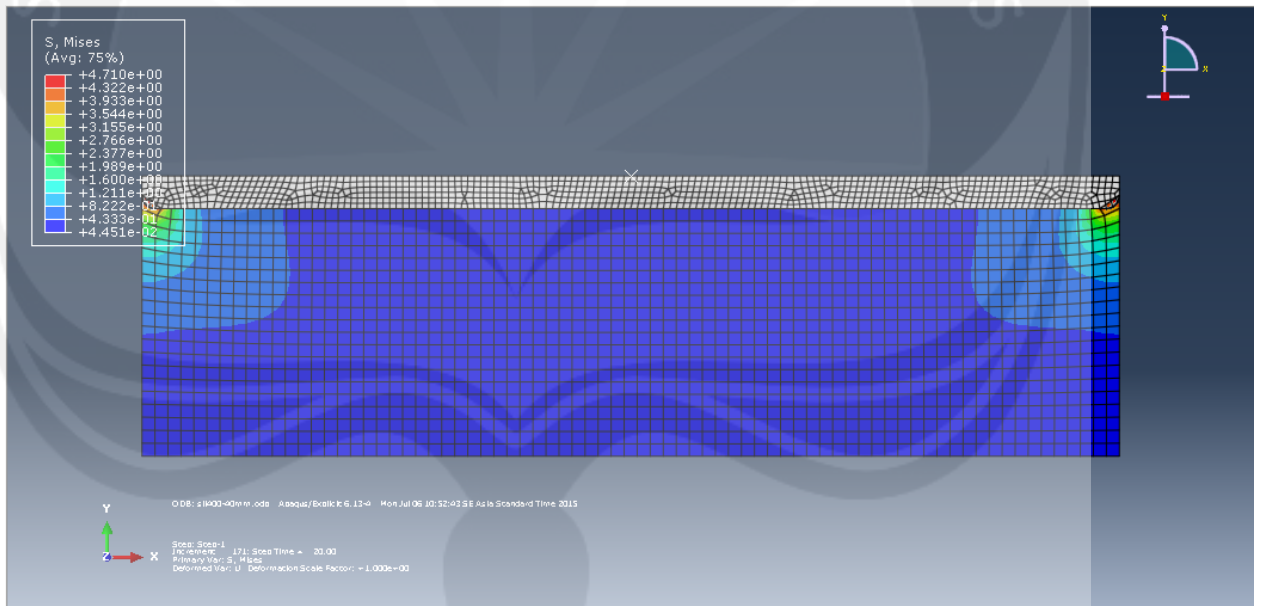
Gambar 213. Sill8800 dengan Tekanan 250 N



Gambar 214. Sill8800 dengan Tekanan 300 N



Gambar 215. Sill8800 dengan Tekanan 350 N

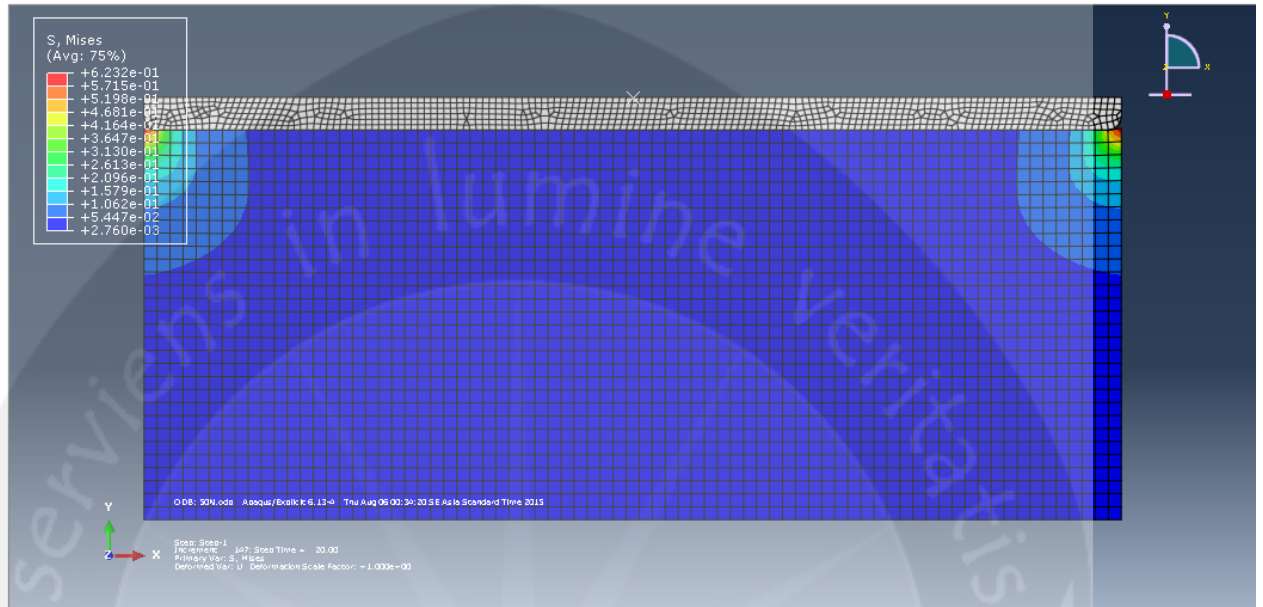


Gambar 216. Sill8800 dengan Tekanan 400 N

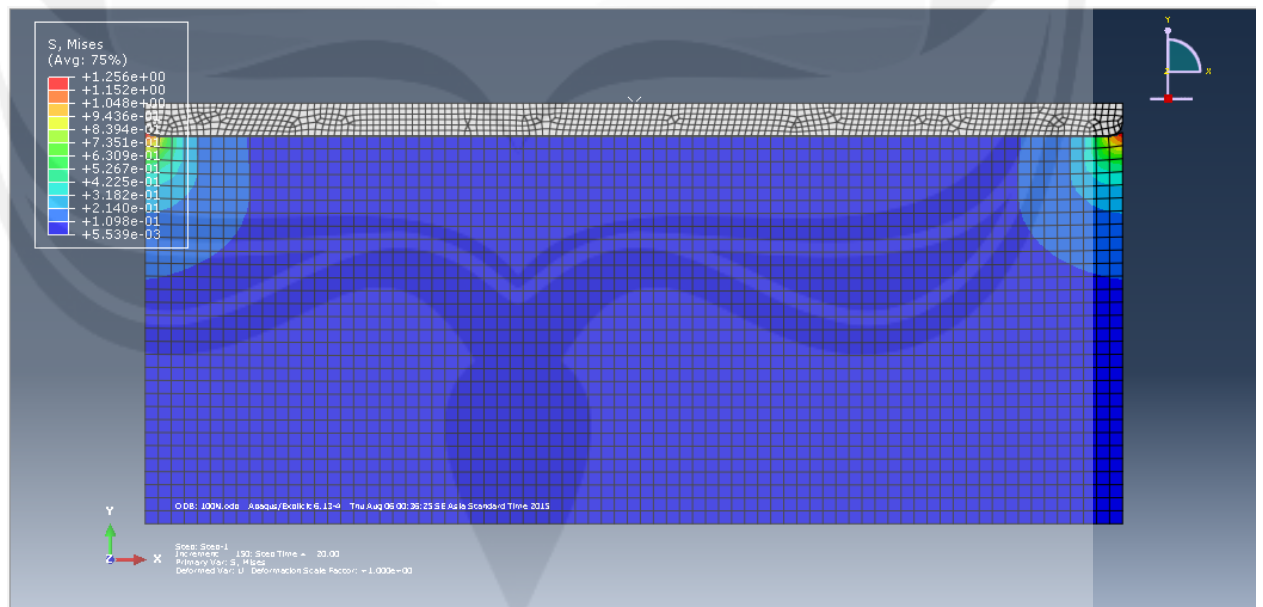
Sill8800

Layer 60 mm

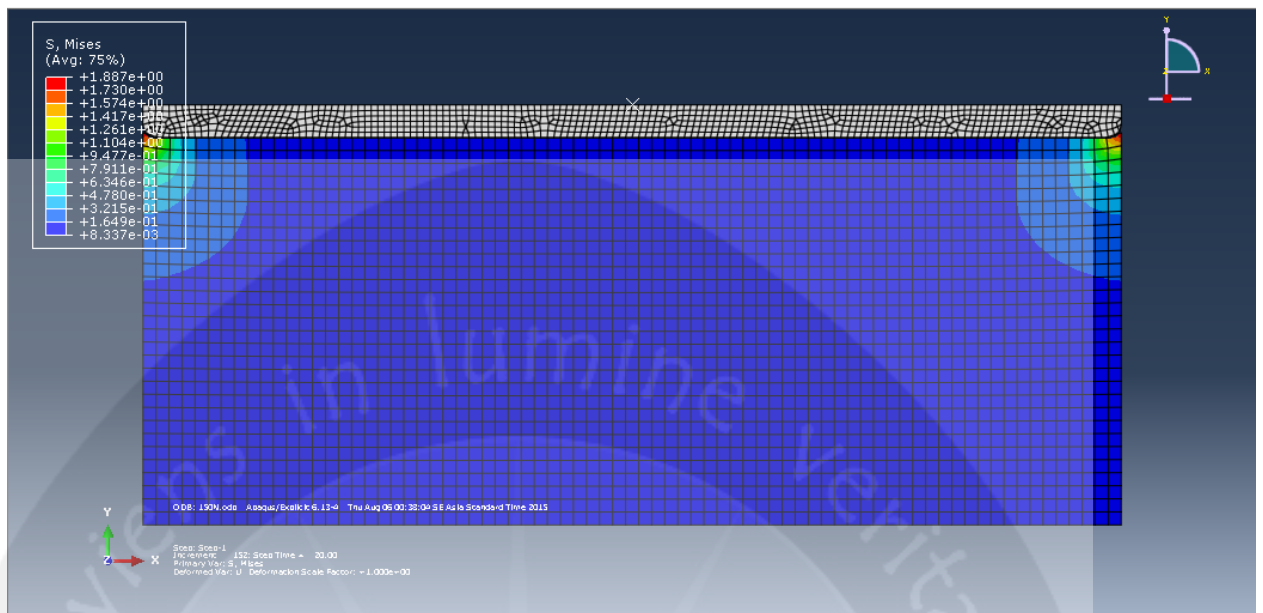
Indenter Radius tip 2 mm



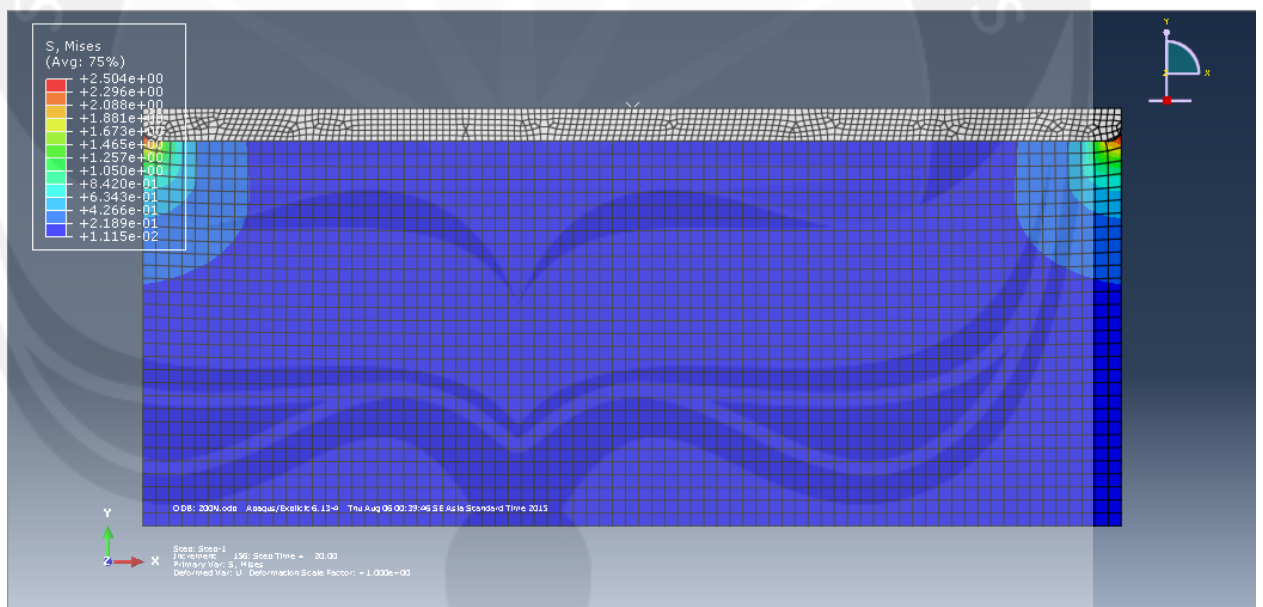
Gambar 217. Sill8800 dengan Tekanan 50 N



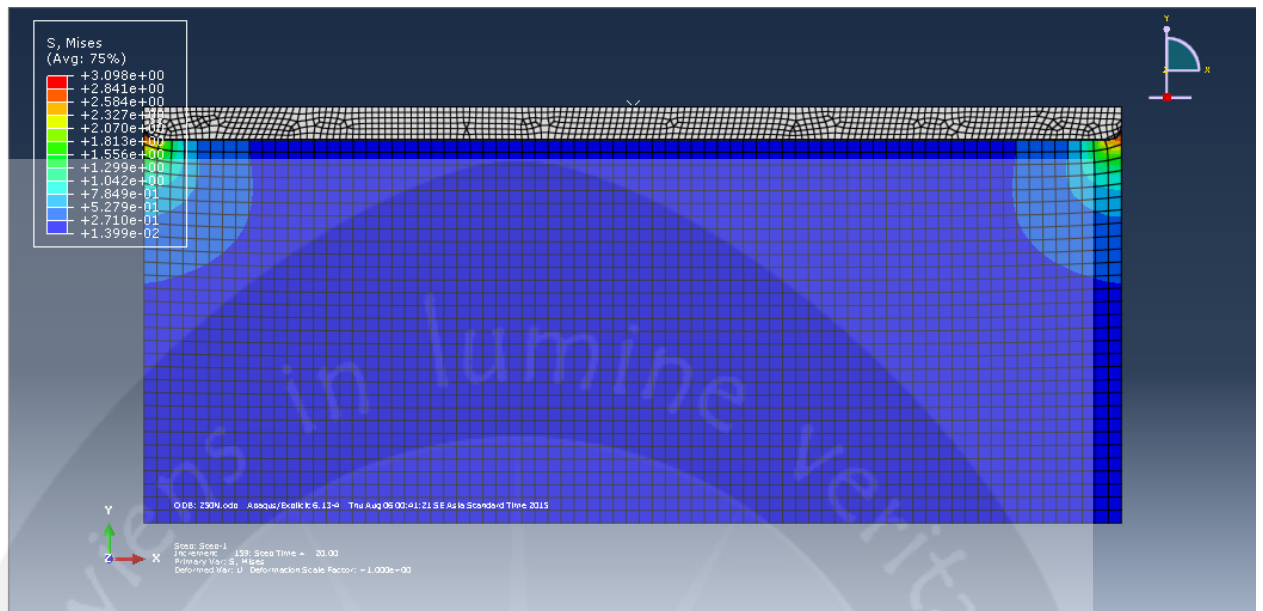
Gambar 218. Sill8800 dengan Tekanan 100 N



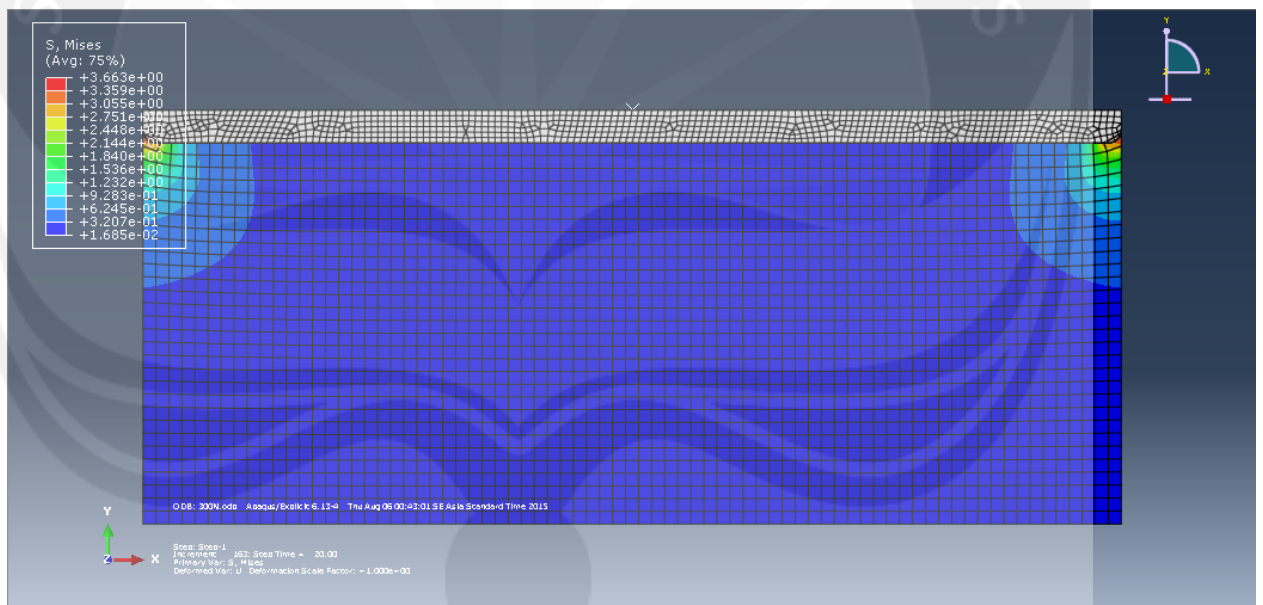
Gambar 219. Sill8800 dengan Tekanan 150 N



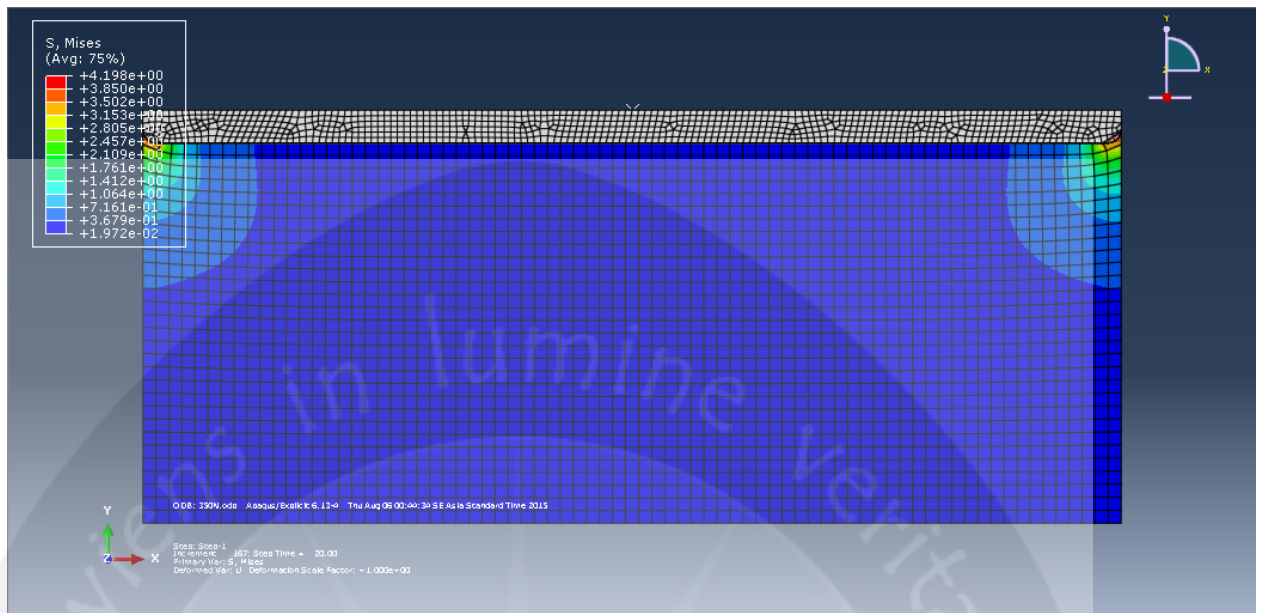
Gambar 220. Sill8800 dengan Tekanan 200 N



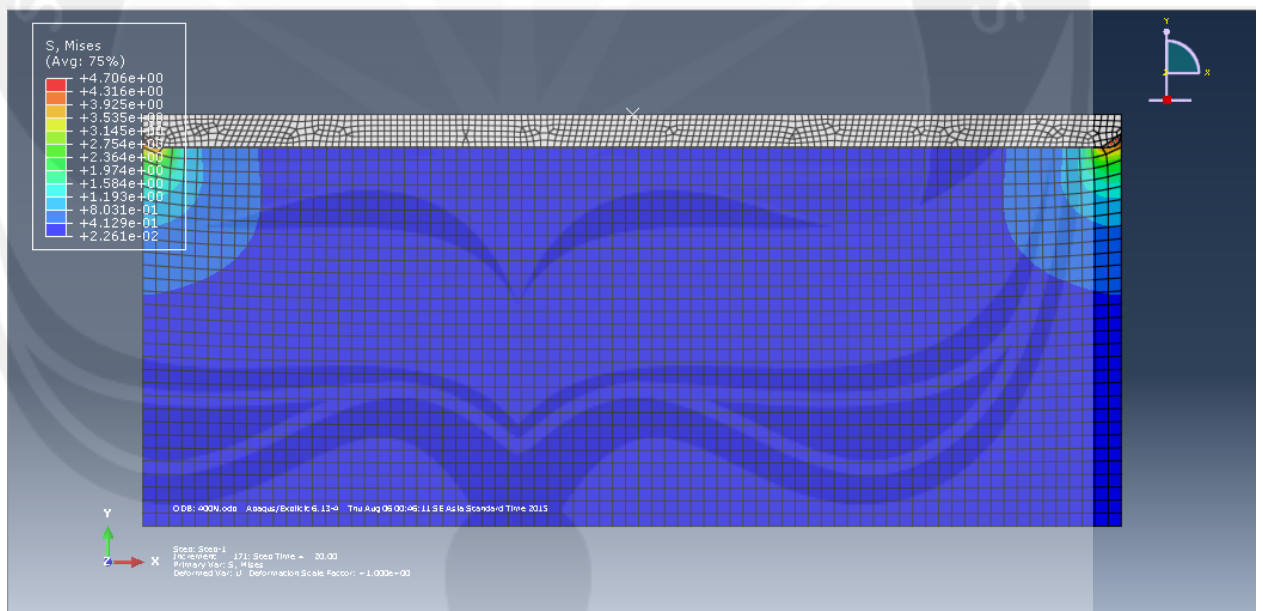
Gambar 221. Sill8800 dengan Tekanan 250 N



Gambar 222. Sill8800 dengan Tekanan 300 N



Gambar 223. Sill8800 dengan Tekanan 350 N

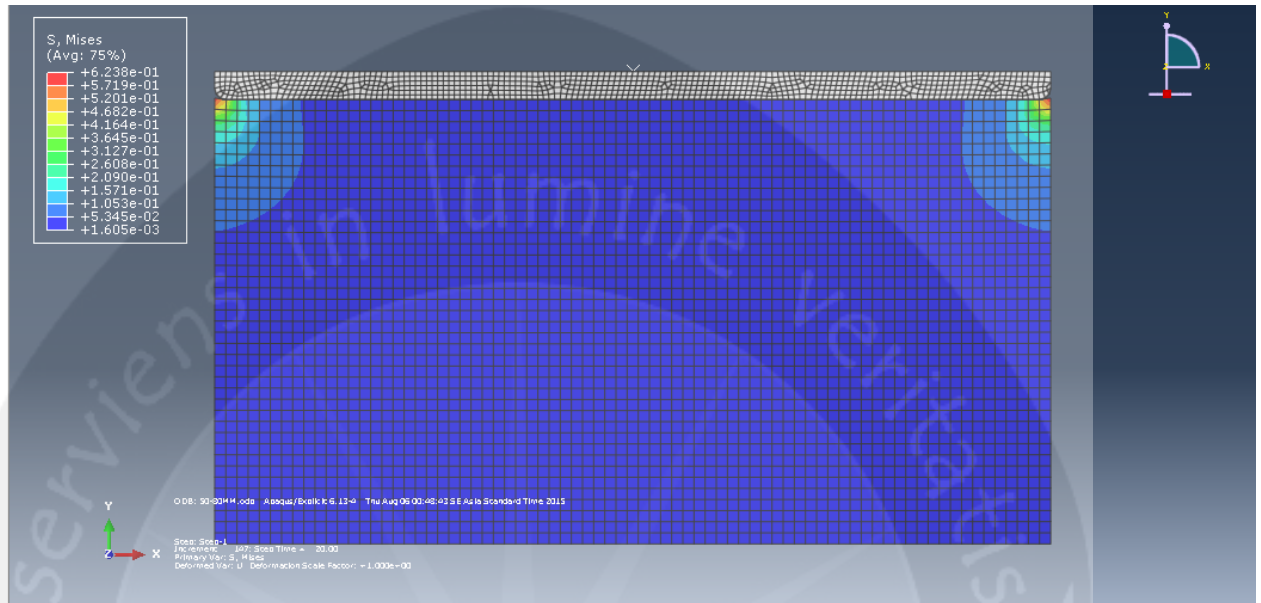


Gambar 224. Sill8800 dengan Tekanan 400 N

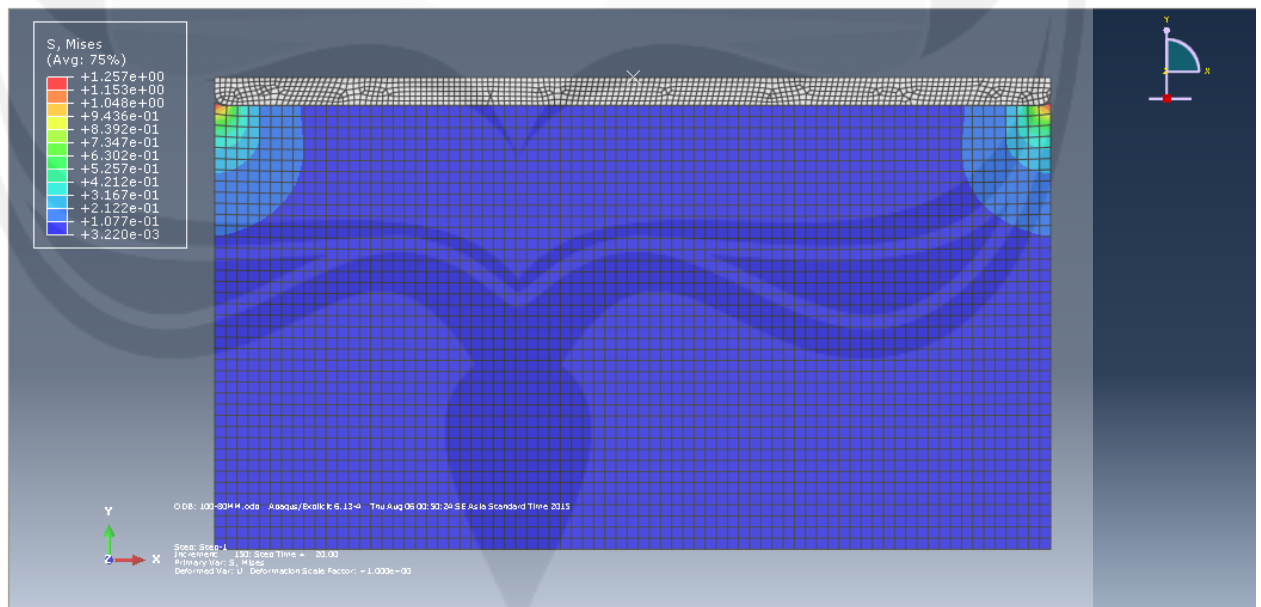
Sill8800

Layer 80 mm

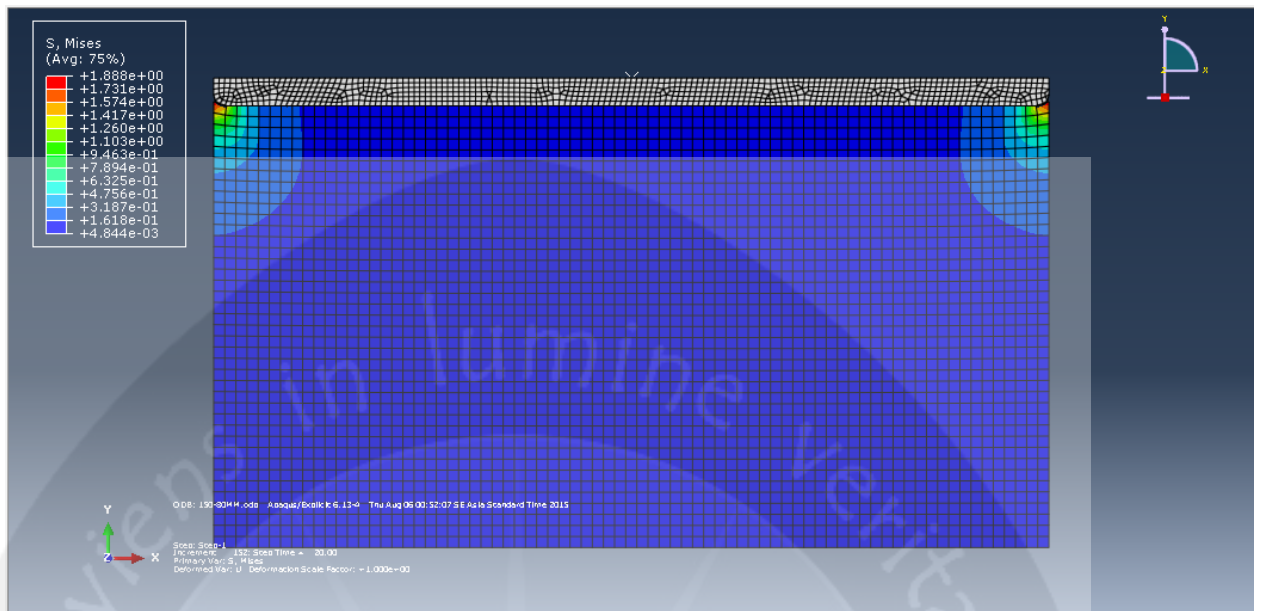
Indenter Radius tip 2 mm



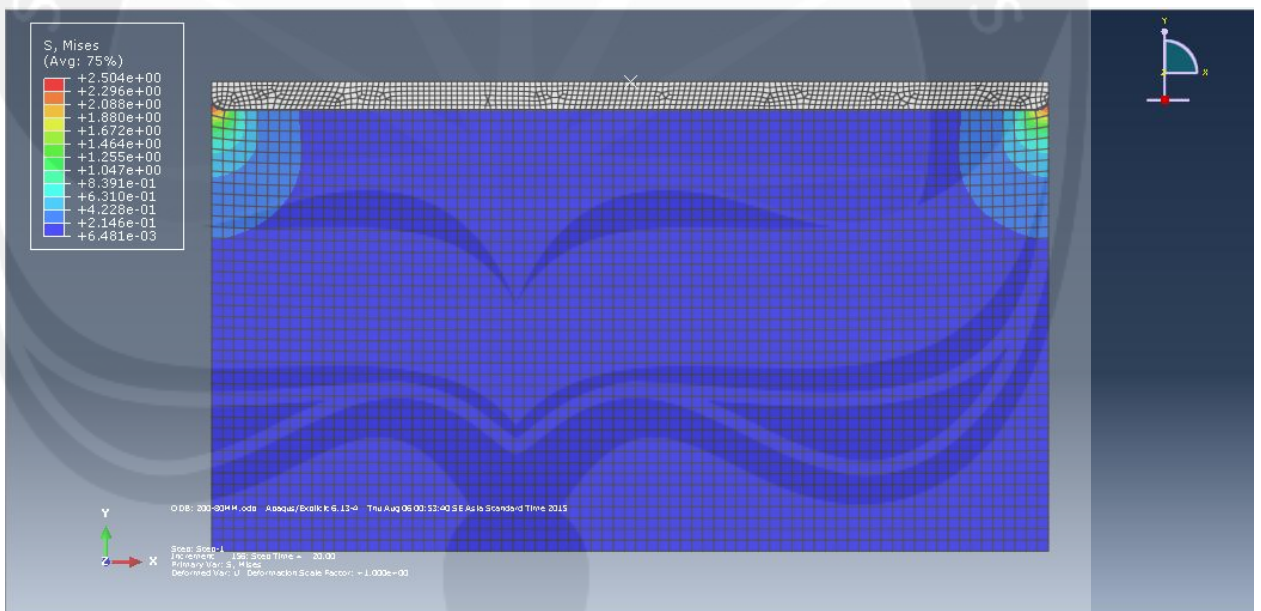
Gambar 225. Sill8800 dengan Tekanan 50 N



Gambar 226. Sill8800 dengan Tekanan 100 N



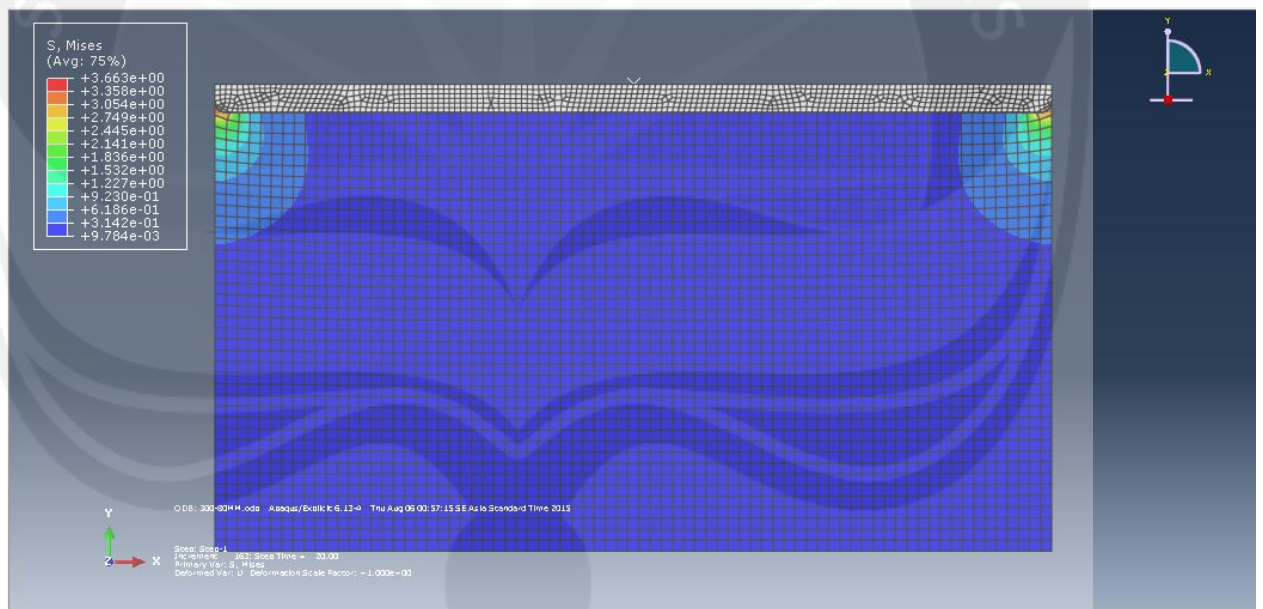
Gambar 227. Sill8800 dengan Tekanan 150 N



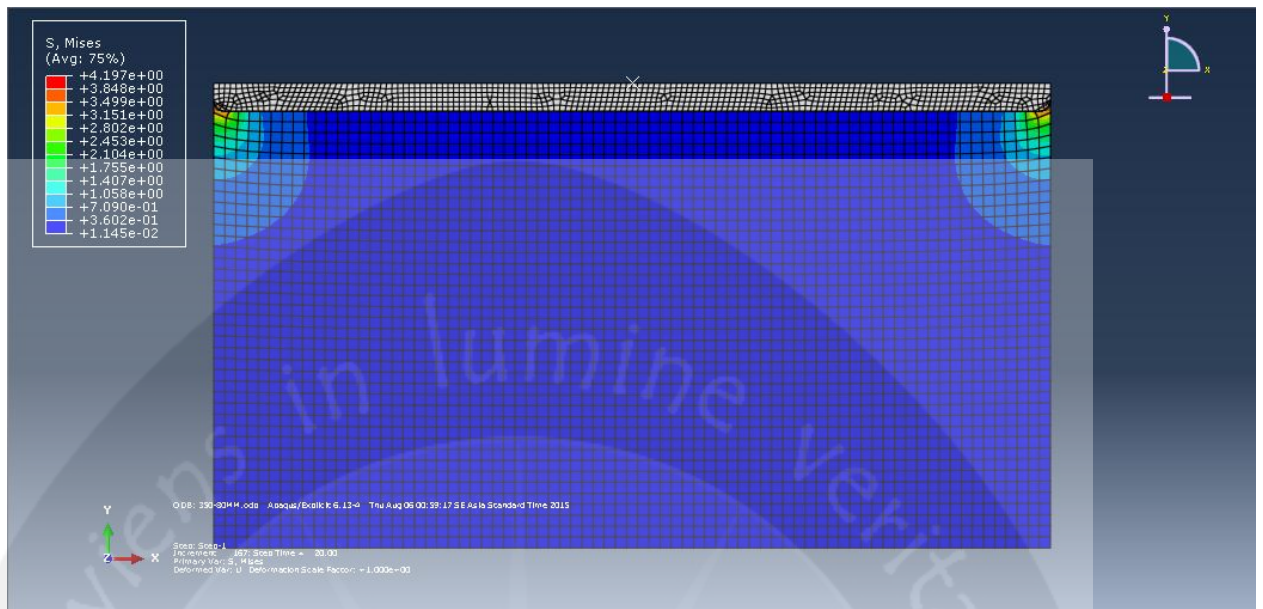
Gambar 228. Sill8800 dengan Tekanan 200 N



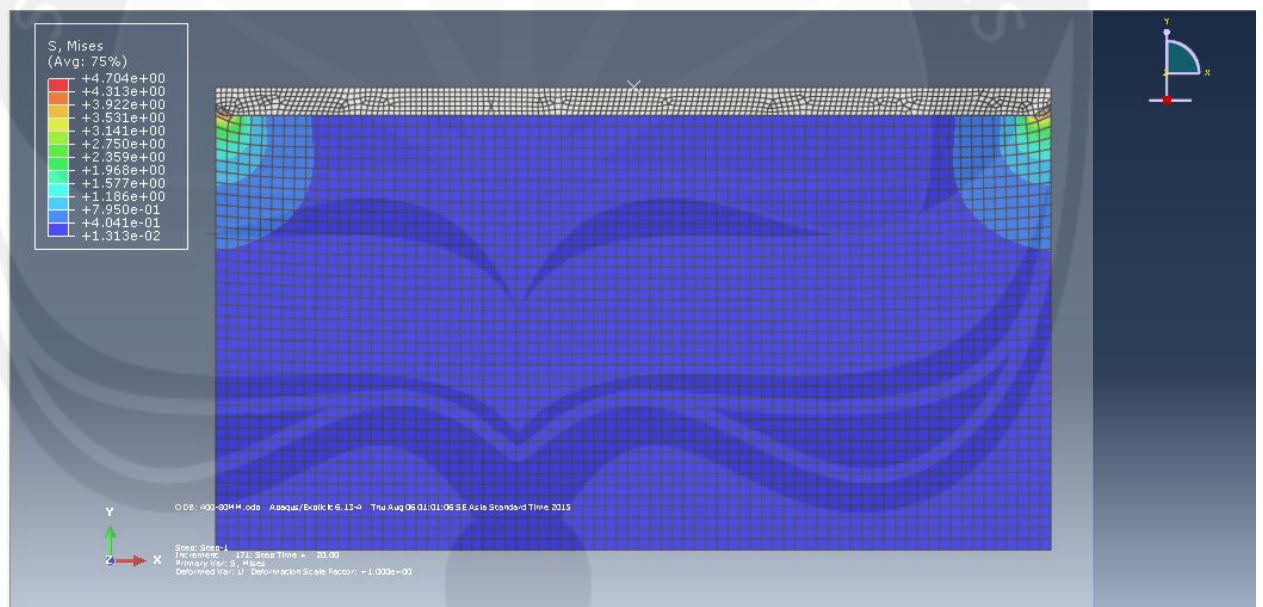
Gambar 229. Sill8800 dengan Tekanan 250 N



Gambar 230. Sill8800 dengan Tekanan 300 N



Gambar 231. Sill8800 dengan Tekanan 350 N

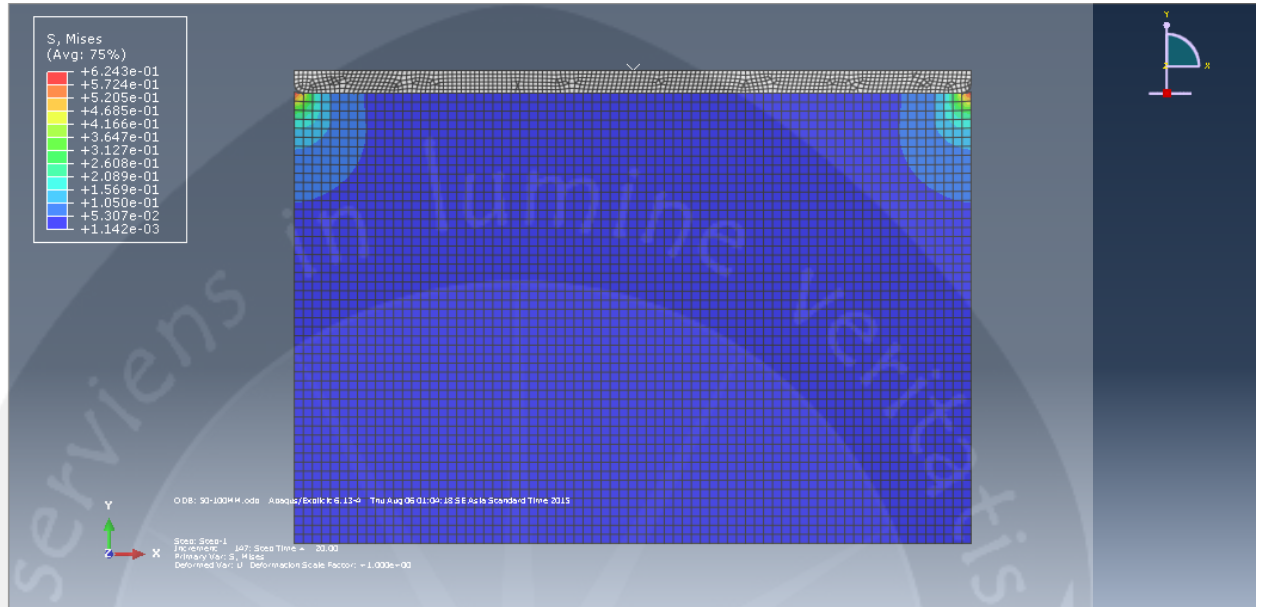


Gambar 232. Sill8800 dengan Tekanan 400 N

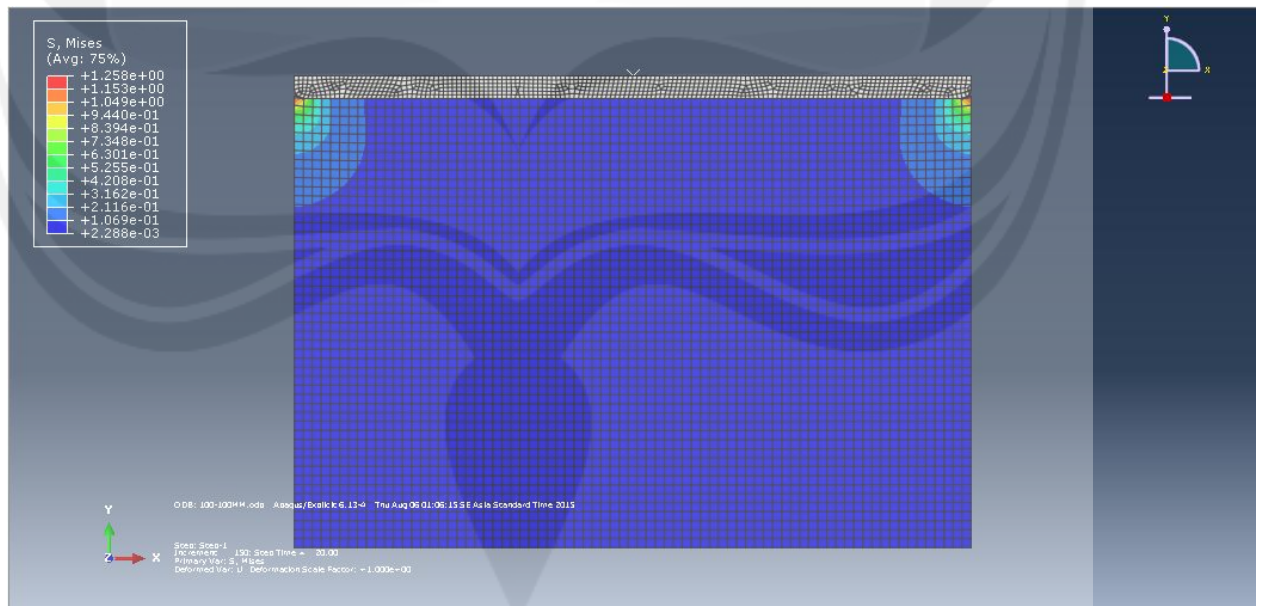
Sill8800

Layer 100 mm

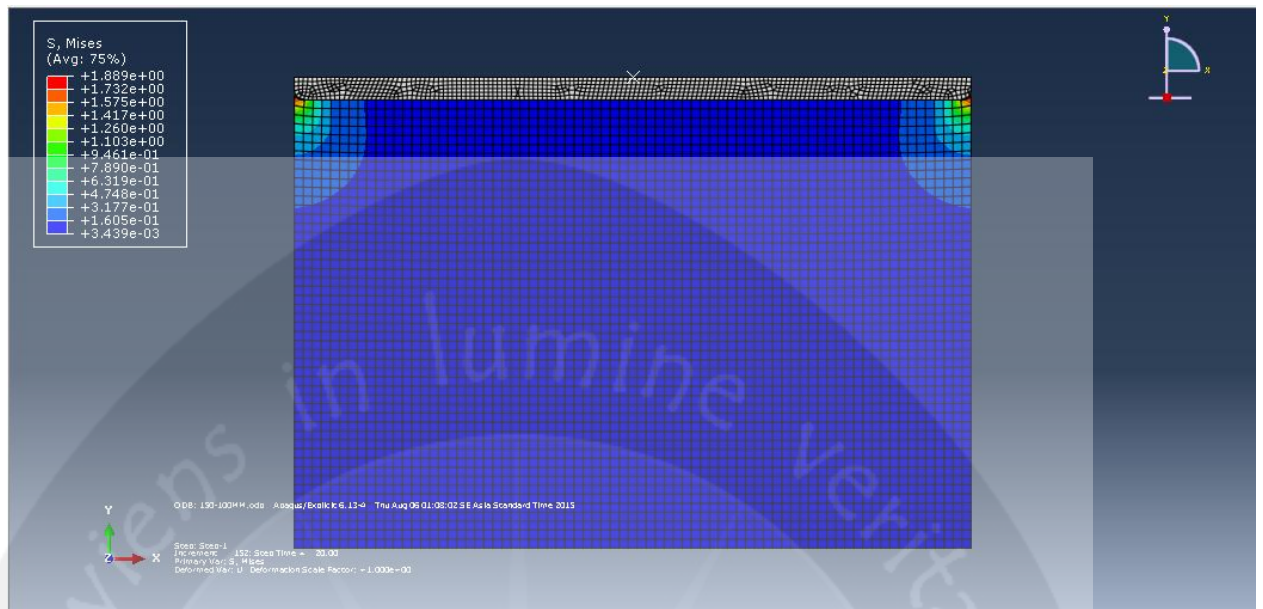
Indenter Radius tip 2 mm



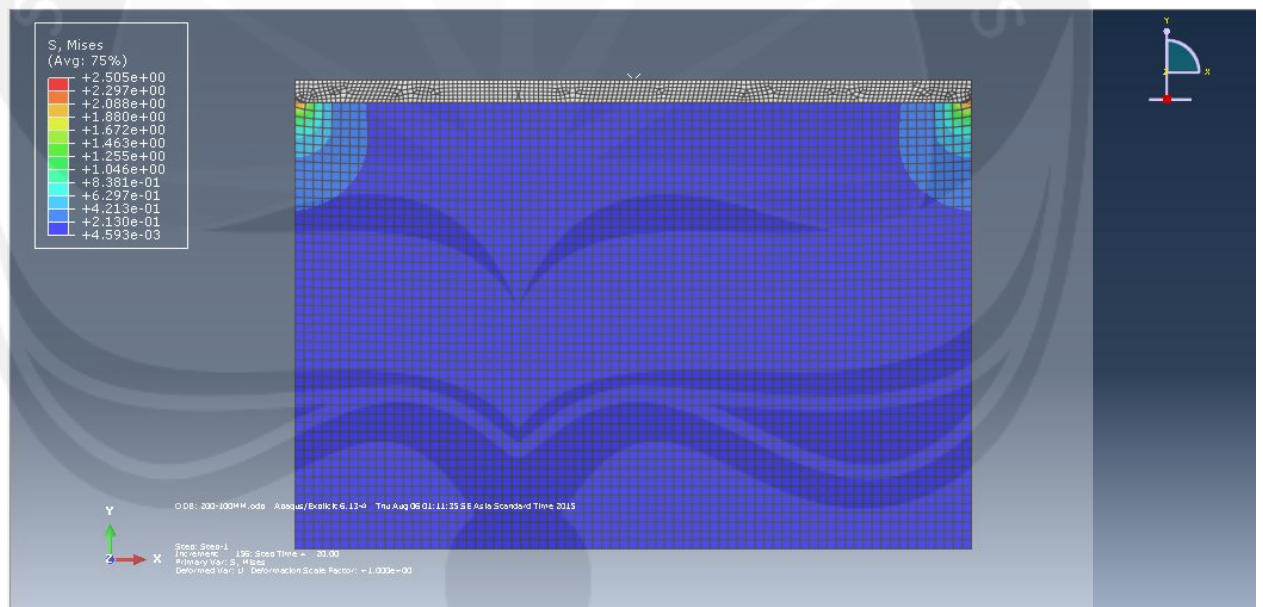
Gambar 233. Sill8800 dengan Tekanan 50 N



Gambar 234. Sill8800 dengan Tekanan 100 N



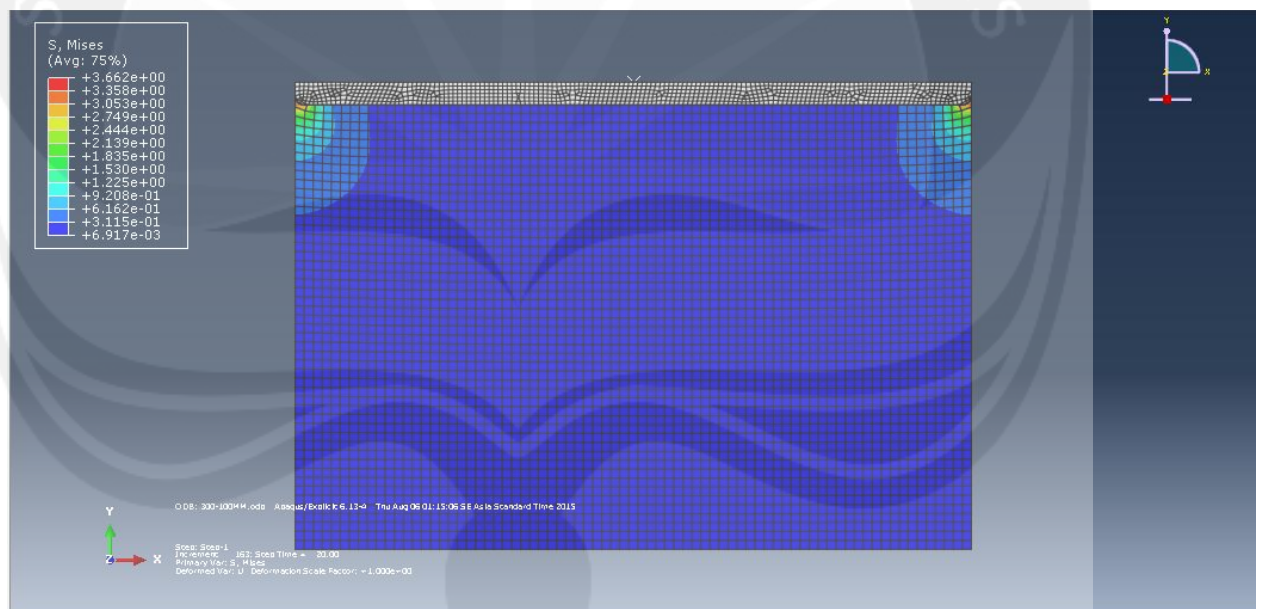
Gambar 235. Sill8800 dengan Tekanan 150 N



Gambar 236. Sill8800 dengan Tekanan 200 N



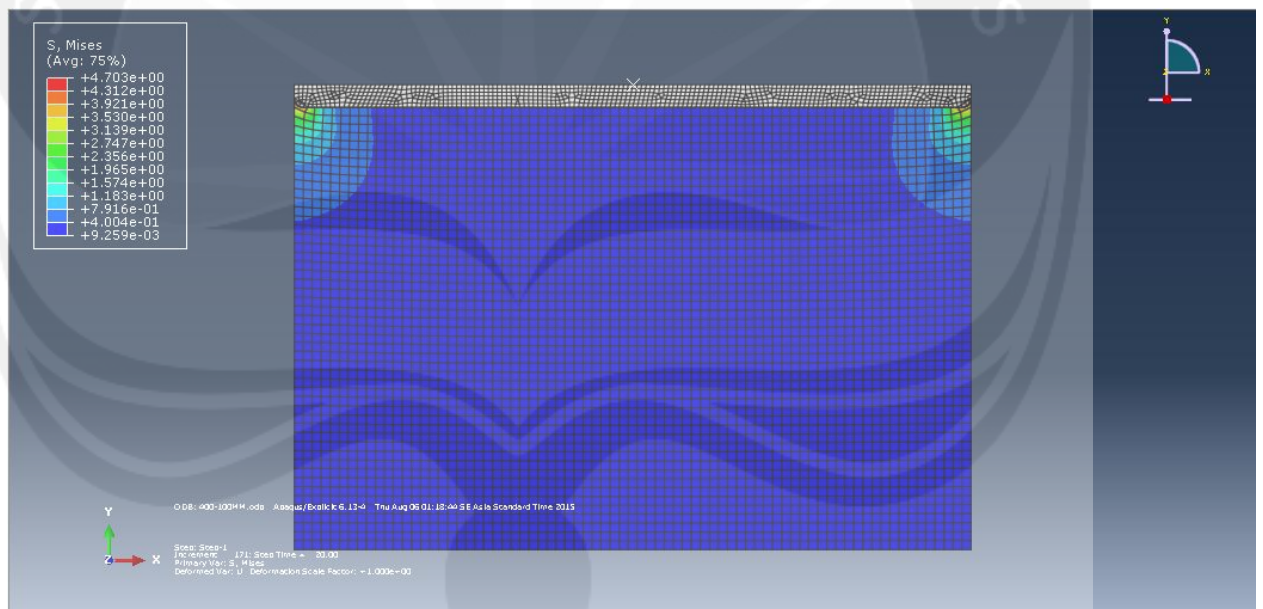
Gambar 237. Sill8800 dengan Tekanan 250 N



Gambar 238. Sill8800 dengan Tekanan 300 N



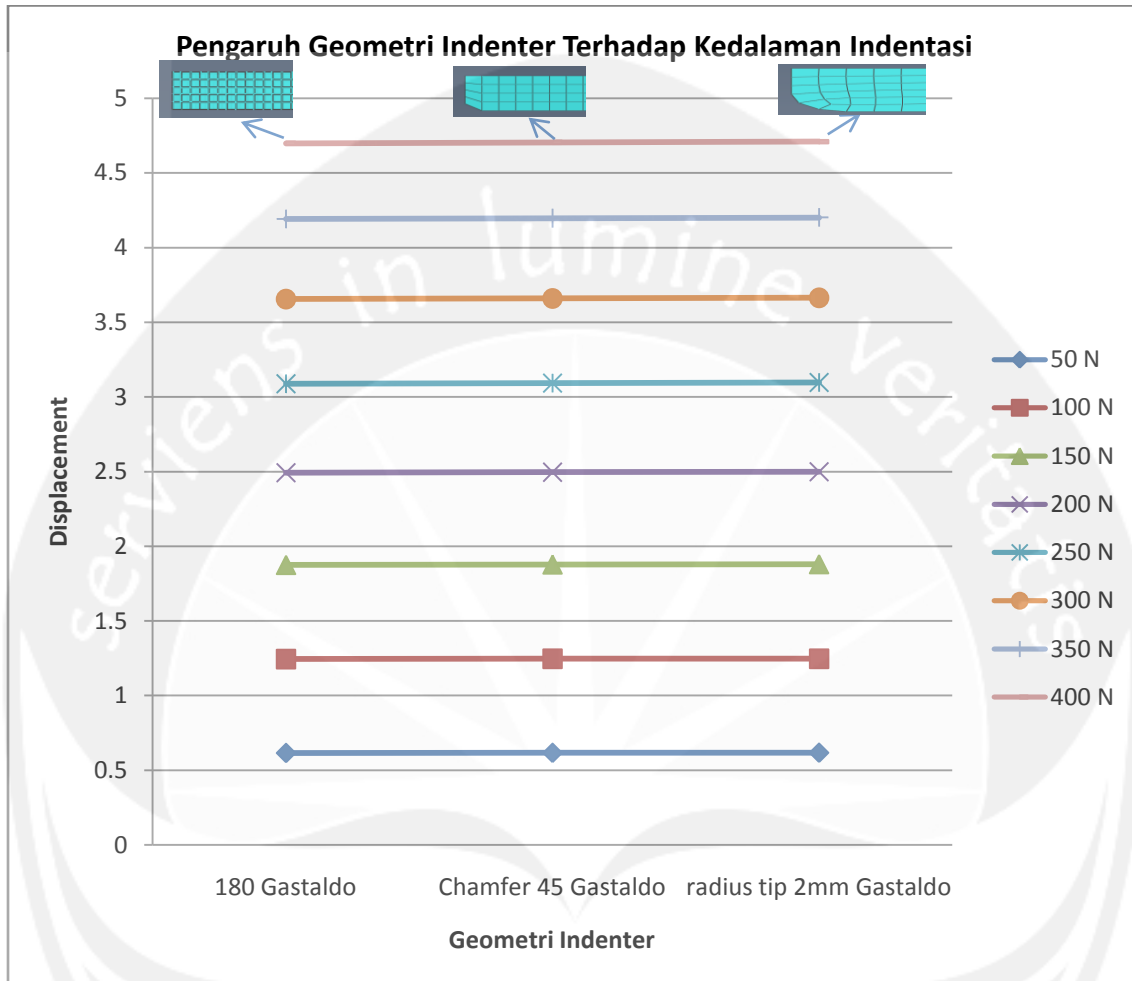
Gambar 239. Sill8800 dengan Tekanan 350 N



Gambar 240. Sill8800 dengan Tekanan 400 N

Lampiran 3

SRCGF dengan Ketebalan Layer 20 mm

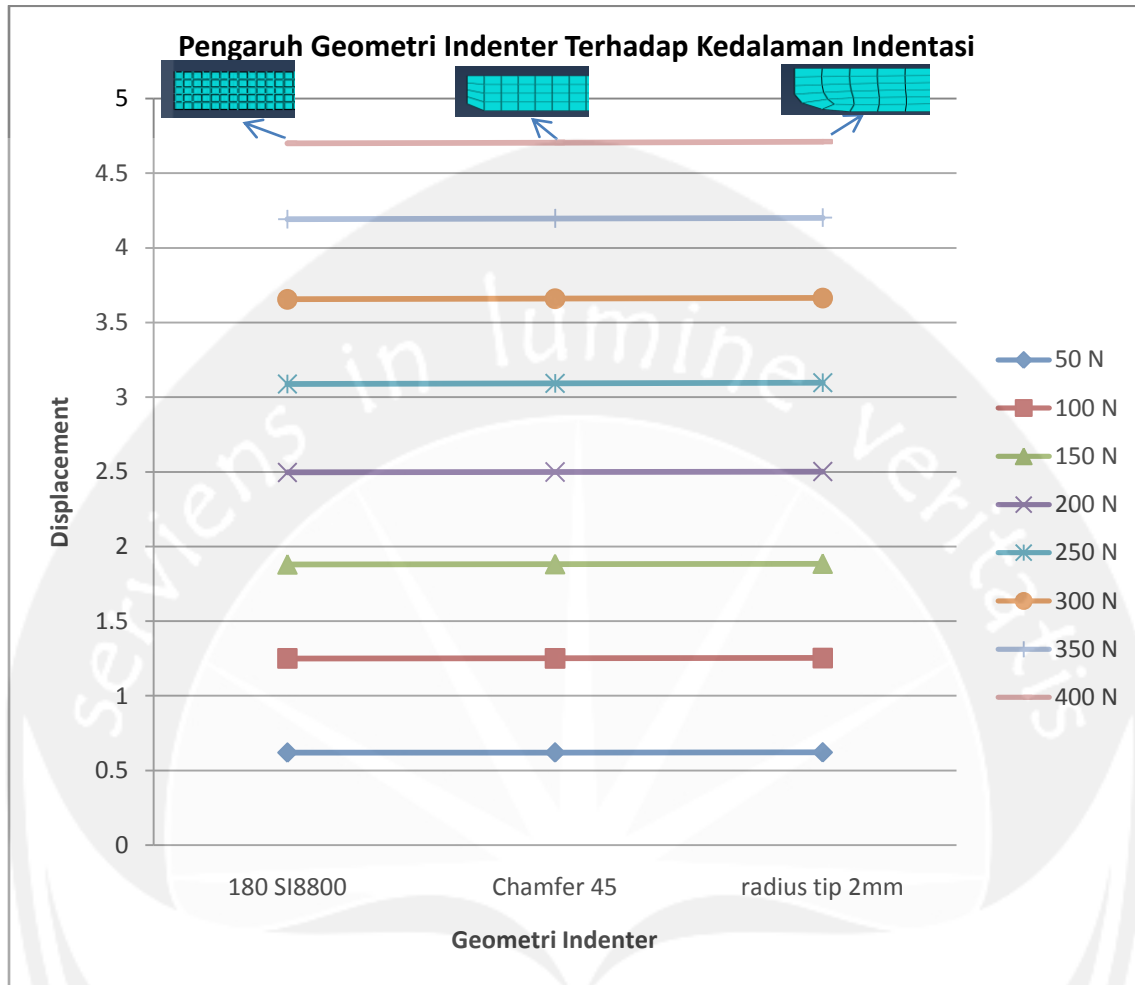


Gambar 241. Pengaruh Geometri Indenter Terhadap Kedalaman Indentasi Layer 20 mm

	Kedalaman Indenter		
Magnitude	180 Gastaldo	Chamfer 45 Gastaldo	radius tip 2mm Gastaldo
0	0	0	0
50	0.6156	0.6165	0.6173
100	0.6294	0.6305	0.6307
150	0.63	0.631	0.632
200	0.618	0.618	0.619
250	0.595	0.596	0.597
300	0.567	0.568	0.568
350	0.536	0.536	0.537
400	0.507	0.508	0.508

Tabel 1. Data Pengaruh Geometri Indenter Terhadap Kedalaman Indentasi Layer 20 mm

SRCGF dengan Ketebalan Layer 40 mm

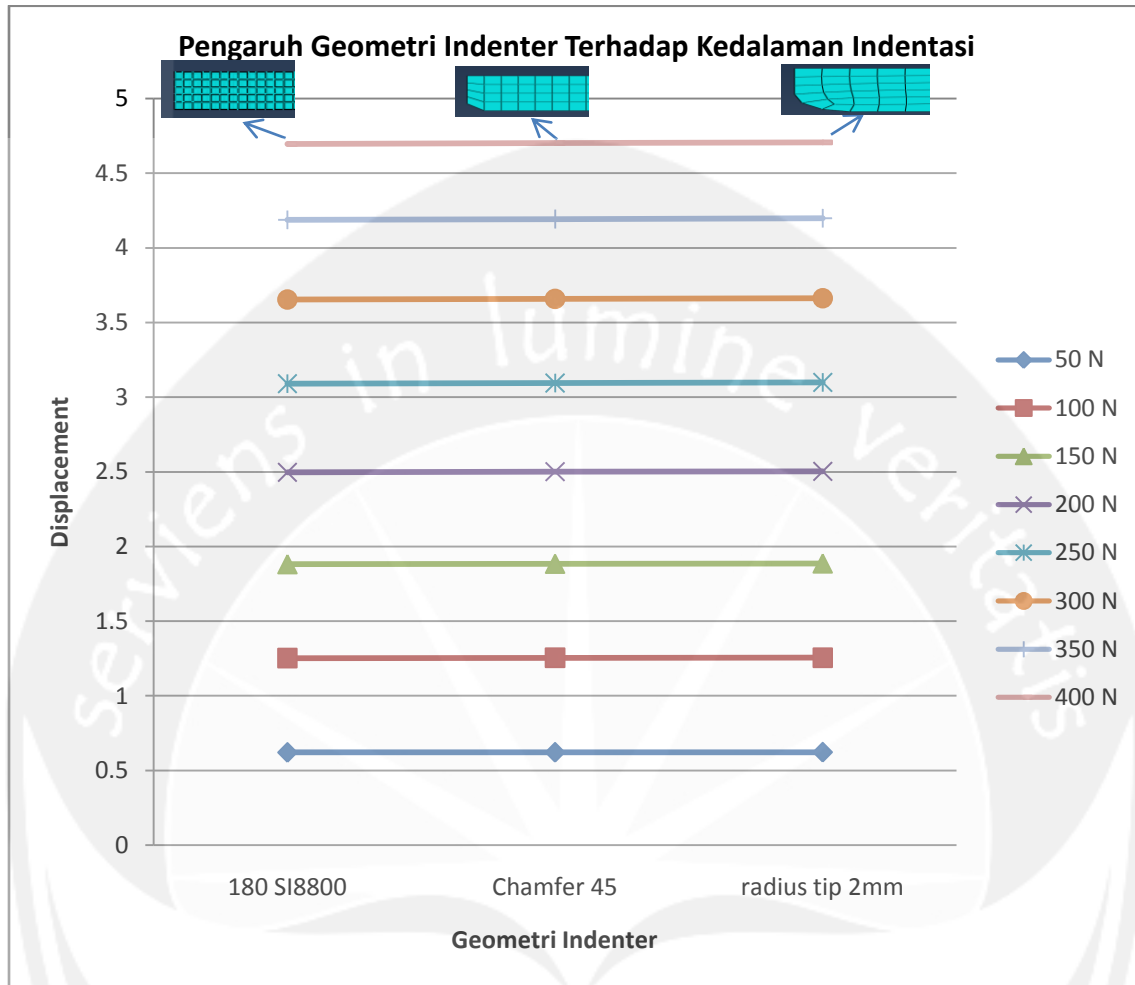


Gambar 242. Pengaruh Geometri Indenter Terhadap Kedalaman Indentasi Layer 40 mm

Magnitude	Kedalaman Indenter		
	180 Gastaldo	Chamfer 45 Gastaldo	radius tip 2mm Gastaldo
0	0	0	0
50	0.62	0.6208	0.6216
100	0.631	0.6312	0.6324
150	0.629	0.63	0.631
200	0.616	0.617	0.617
250	0.593	0.594	0.595
300	0.566	0.567	0.567
350	0.536	0.536	0.537
400	0.509	0.509	0.509

Tabel 2. Data Pengaruh Geometri Indenter Terhadap Kedalaman Indentasi Layer 40 mm

SRCGF dengan Ketebalan Layer 60 mm

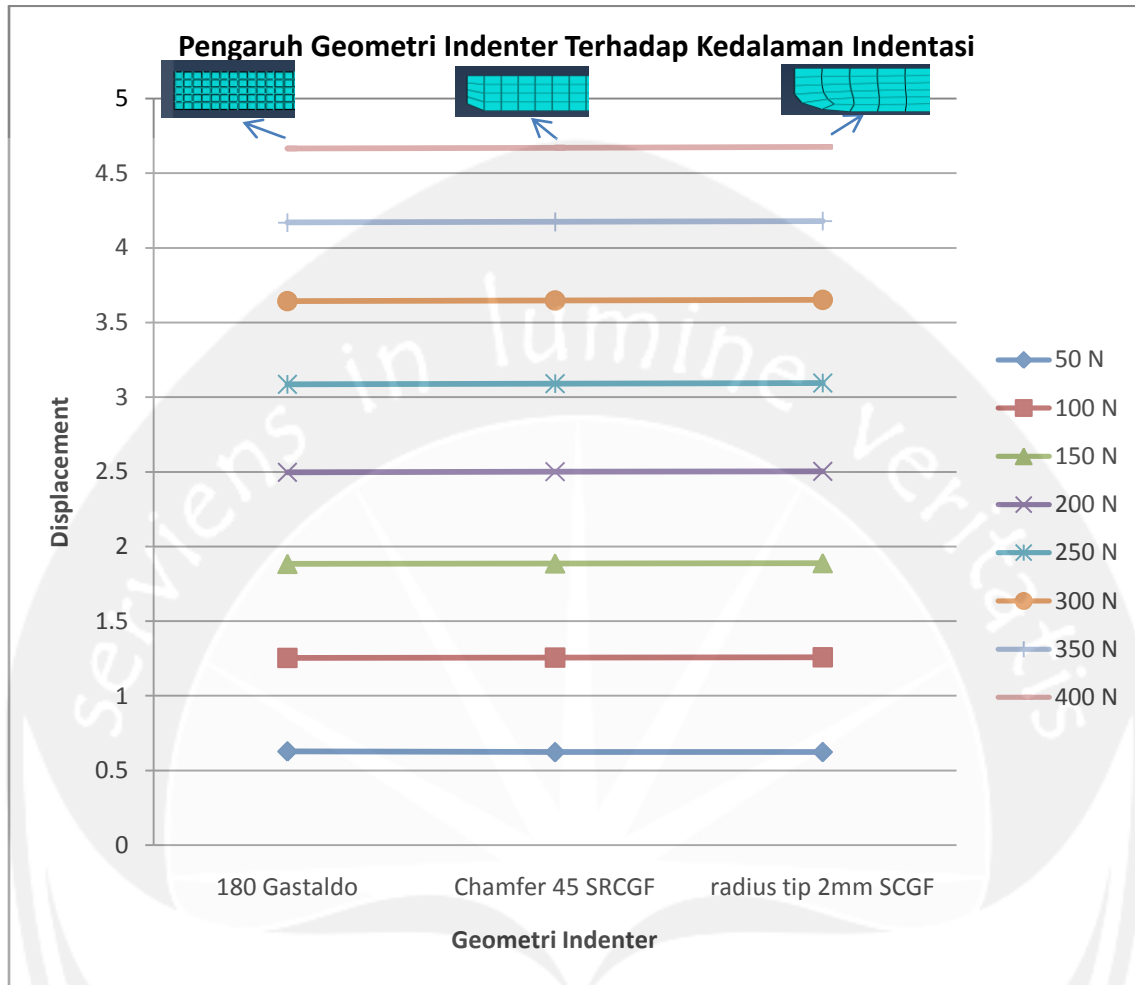


Gambar 243. Pengaruh Geometri Indenter Terhadap Kedalaman Indentasi Layer 60 mm

Magnitude	Kedalaman Indenter		
	180 Gastaldo	Chamfer 45 Gastaldo	radius tip 2mm Gastaldo
0	0	0	0
50	0.6319	0.6331	0.6342
100	0.629	0.63	0.63
150	0.614	0.614	0.615
200	0.589	0.589	0.59
250	0.558	0.559	0.56
300	0.527	0.527	0.527
350	0.496	0.497	0.498
400	-4.667	-4.672	-4.678

Tabel 3. Data Pengaruh Geometri Indenter Terhadap Kedalaman Indentasi Layer 60 mm

SRCGF dengan Ketebalan Layer 80 mm

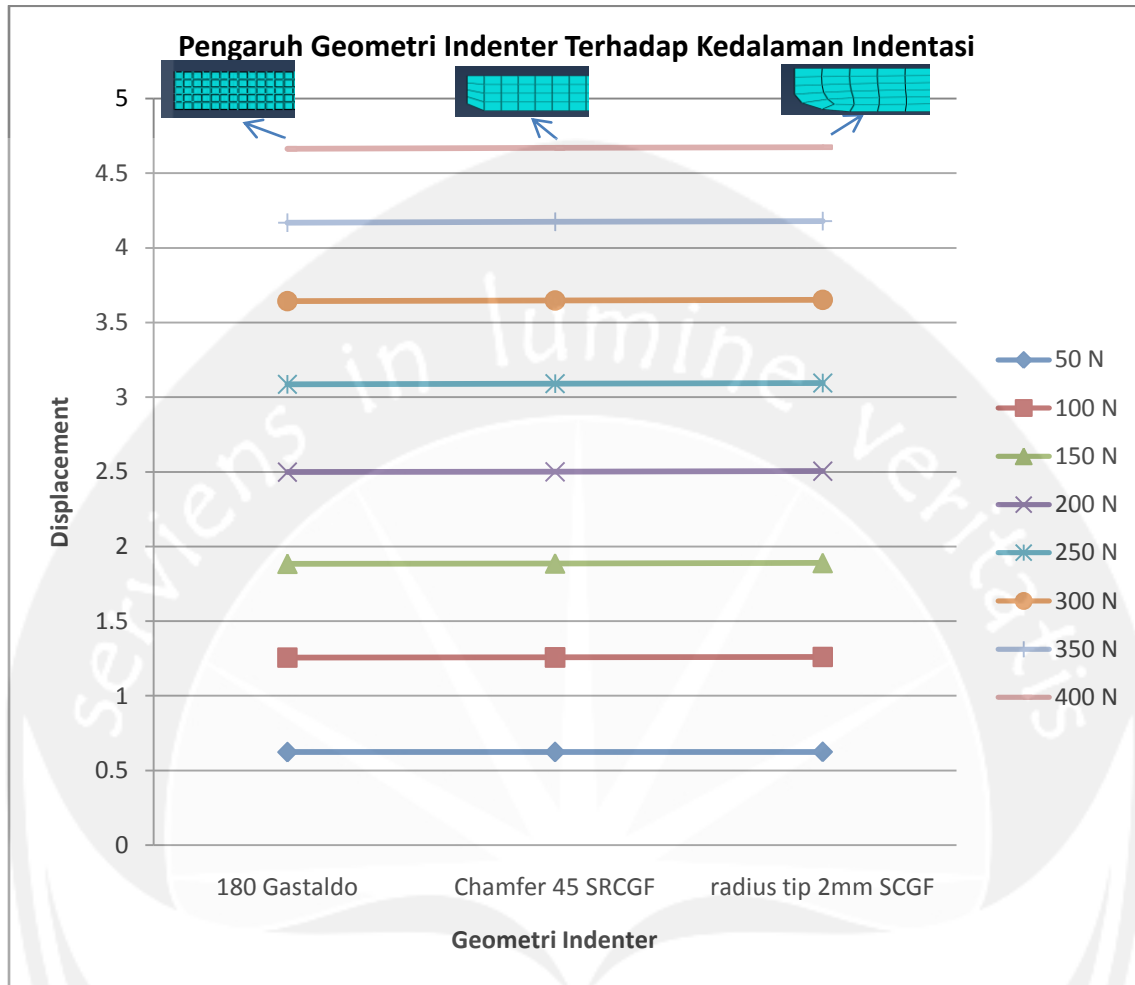


Gambar 244. Pengaruh Geometri Indenter Terhadap Kedalaman Indentasi Layer 80 mm

Magnitude	Kedalaman Indenter		
	180 Gastaldo	Chamfer 45 Gastaldo	radius tip 2mm Gastaldo
0	0	0	0
50	0.6262	0.6333	0.6344
100	0.629	0.63	0.63
150	0.613	0.614	0.615
200	0.589	0.589	0.59
250	0.557	0.558	0.558
300	0.526	0.526	0.527
350	0.496	0.496	0.496
400	-4.665	-4.67	-4.675

Tabel 4. Data Pengaruh Geometri Indenter Terhadap Kedalaman Indentasi Layer 80 mm

SRCGF dengan Ketebalan Layer 100 mm



Gambar 245. Pengaruh Geometri Indenter Terhadap Kedalaman Indentasi Layer 100 mm

Magnitude	Kedalaman Indenter		
	180 Gastaldo	Chamfer 45 Gastaldo	radius tip 2mm Gastaldo
0	0	0	0
50	0.6325	0.6326	0.6348
100	0.629	0.63	0.63
150	0.613	0.614	0.615
200	0.588	0.589	0.589
250	0.557	0.558	0.558
300	0.525	0.526	0.526
350	0.495	0.496	0.496
400	-4.663	-4.67	-4.674

Tabel 5. Data Pengaruh Geometri Indenter Terhadap Kedalaman Indentasi Layer 20 mm

Lampiran 5

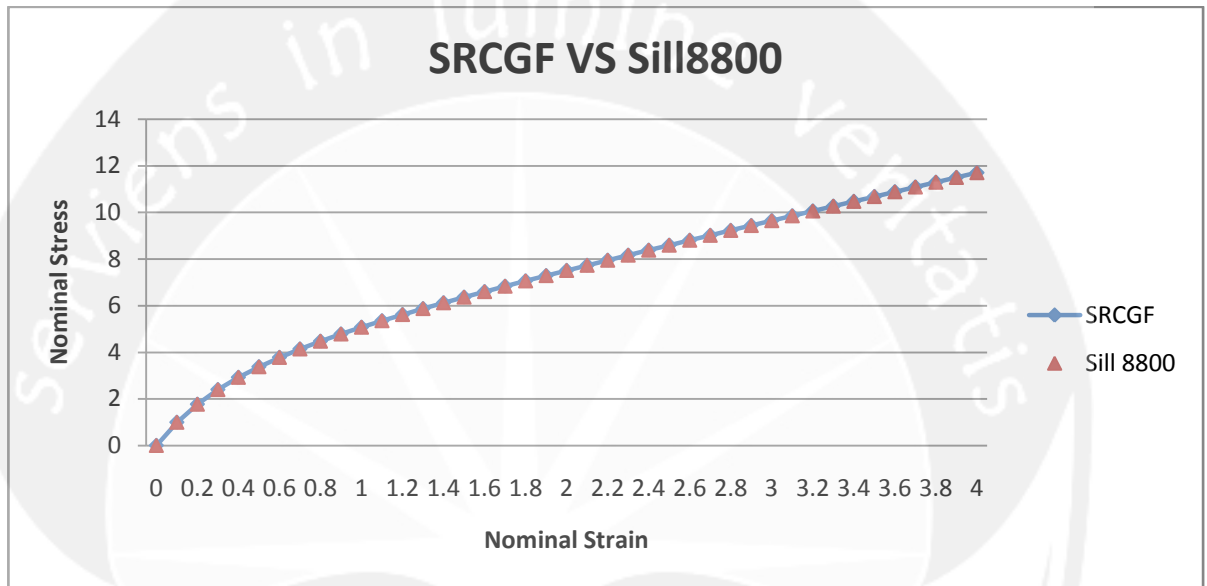
Data Kurva SEF pada Material SRCGF VS Sil8800

SRCGF	
Nominal Stress	Nominal Strain
0	0
0.1	0.994741
0.2	1.76944
0.3	2.39727
0.4	2.92362
0.5	3.37778
0.6	3.7793
0.7	4.14158
0.8	4.47407
0.9	4.78355
1	5.075
1.1	5.35212
1.2	5.61773
1.3	5.87399
1.4	6.12257
1.5	6.3648
1.6	6.60173
1.7	6.8342
1.8	7.0629
1.9	7.28838
2	7.51111
2.1	7.73146
2.2	7.94976
2.3	8.16626
2.4	8.38119
2.5	8.59475
2.6	8.8071
2.7	9.01837
2.8	9.22869
2.9	9.43816
3	9.64688
3.1	9.85491
3.2	10.0623
3.3	10.2692

Sill 8800	
Nominal Stress	Nominal Strain
0	0
0.1	0.994741
0.2	1.76944
0.3	2.39727
0.4	2.92362
0.5	3.37778
0.6	3.7793
0.7	4.14158
0.8	4.47407
0.9	4.78355
1	5.075
1.1	5.35212
1.2	5.61773
1.3	5.87399
1.4	6.12257
1.5	6.3648
1.6	6.60173
1.7	6.8342
1.8	7.0629
1.9	7.28838
2	7.51111
2.1	7.73146
2.2	7.94976
2.3	8.16626
2.4	8.38119
2.5	8.59475
2.6	8.8071
2.7	9.01837
2.8	9.22869
2.9	9.43816
3	9.64688
3.1	9.85491
3.2	10.0623
3.3	10.2692

3.4	10.4756
3.5	10.6815
3.6	10.887
3.7	11.0921
3.8	11.2969
3.9	11.5014
4	11.7056

3.4	10.4756
3.5	10.6815
3.6	10.887
3.7	11.0921
3.8	11.2969
3.9	11.5014
4	11.7056



Hasil perbandingan material SRCGF dan Sill8800 sudah mengalami kemiripan atau dapat dikatakan grafik yang dihasilkan menempel satu sama lain. Hal ini dapat dikatakan bahwa hasil verifikasi antara present model dan model sebelumnya sudah pada tahap yang benar.