Supporting Information

DOI: http://dx.doi.org/10.30919/es1331

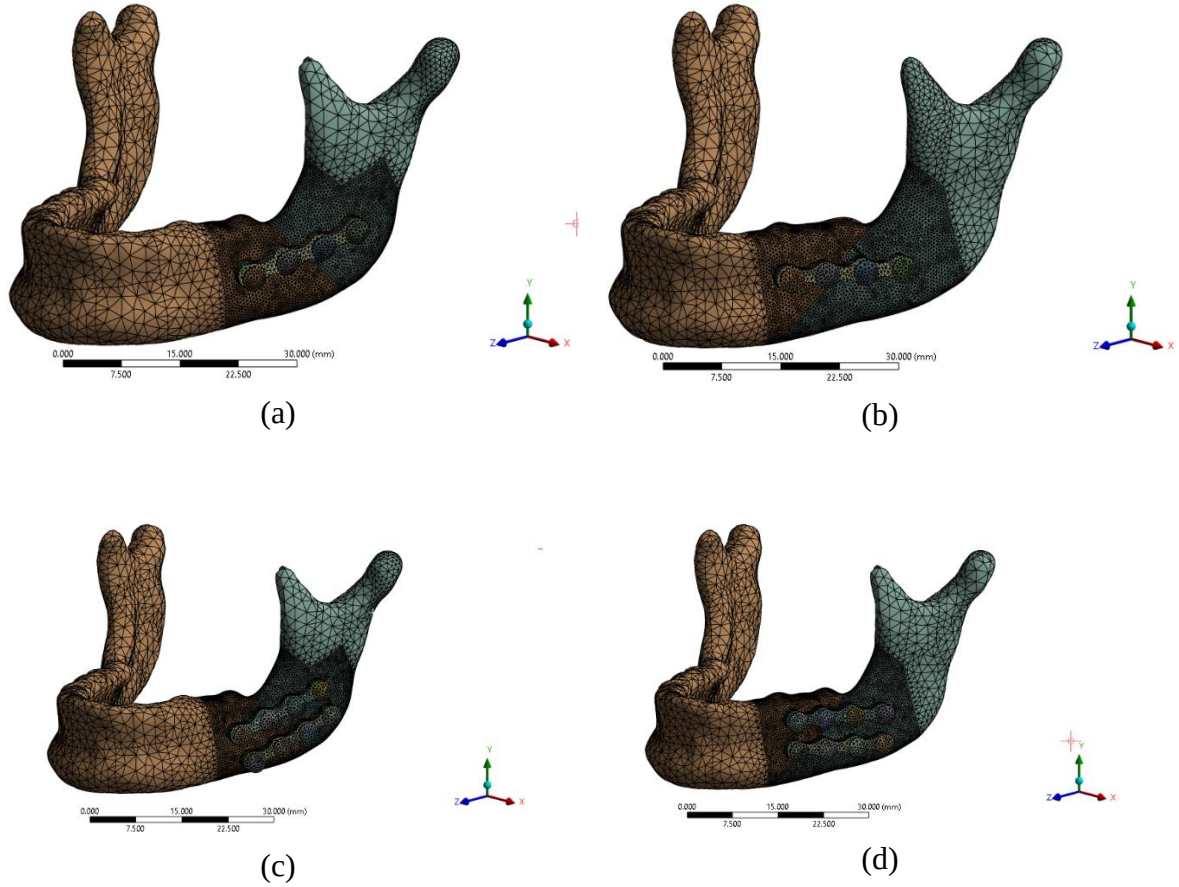
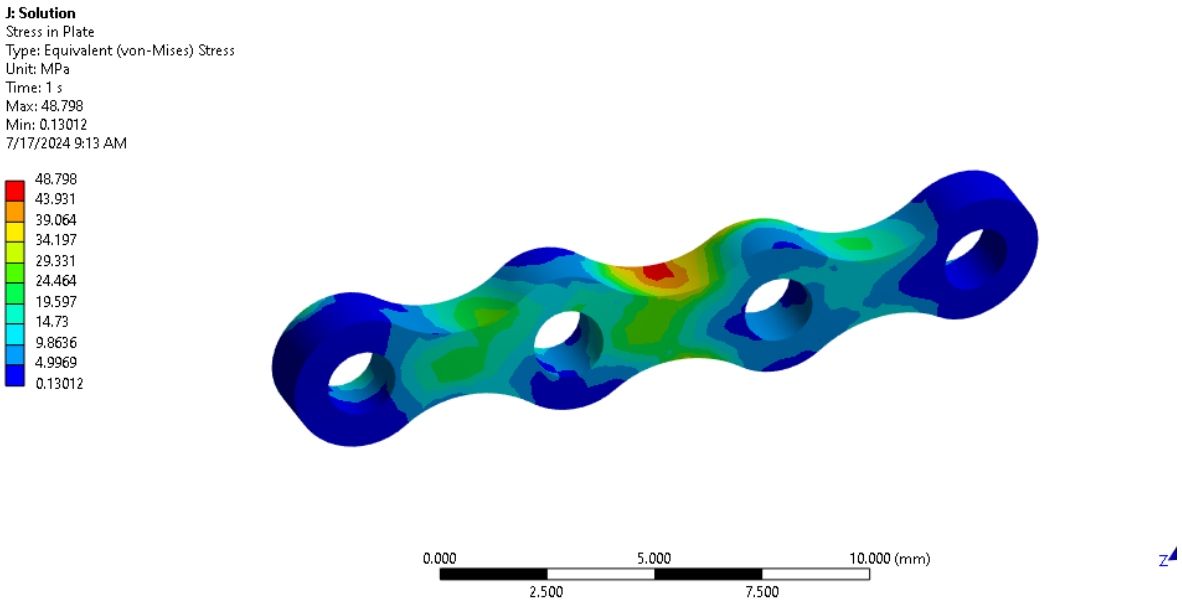
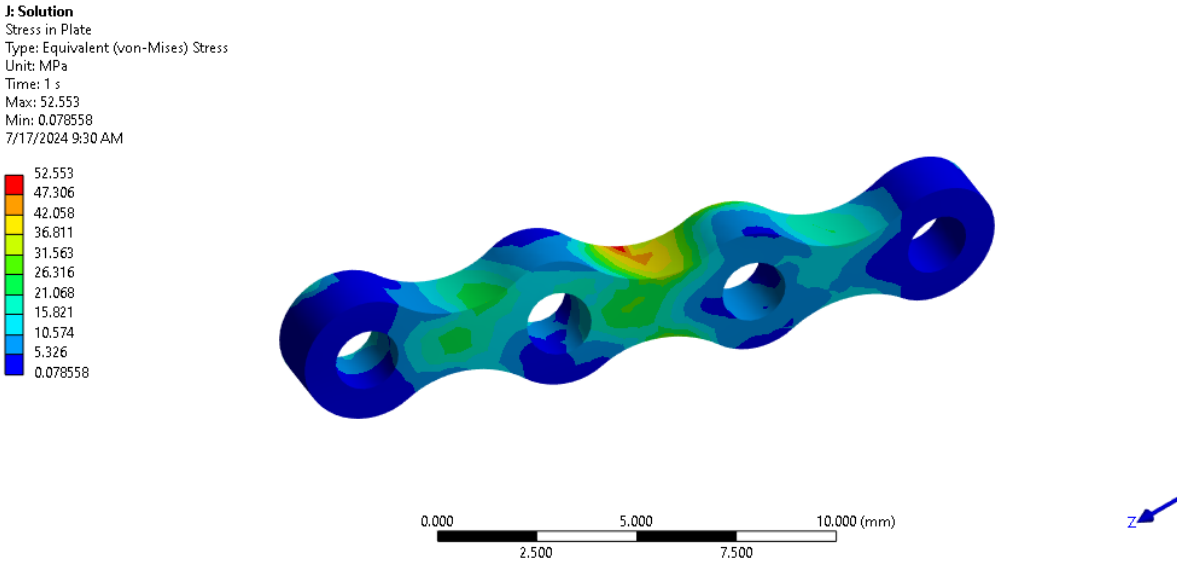


Fig S1: Finite Element Model of Mandible with Mini-Plate Fixation (a) Single plate (Type 1) without interval and unfavourable fracture. (b) Single plate (Type 1) without interval and favourable fracture. (c) Parallel plate (Type 2) without interval and unfavourable fracture. (d) Parallel plate (Type 2) without interval and favourable fracture.


J: Solution
Stress in Plate
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 48.798
Min: 0.13012
7/17/2024 9:13 AM
48.798
43.931
39.064
34.197
29.331
24.464
19.597
14.73
9.8636
4.9969
0.13012
0.000
5.000
10.000 (mm)
2.500
7.500
Z

(a)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Stress in Plate
Type: Equivalent (von-Mises) Stress
Unit: MPa
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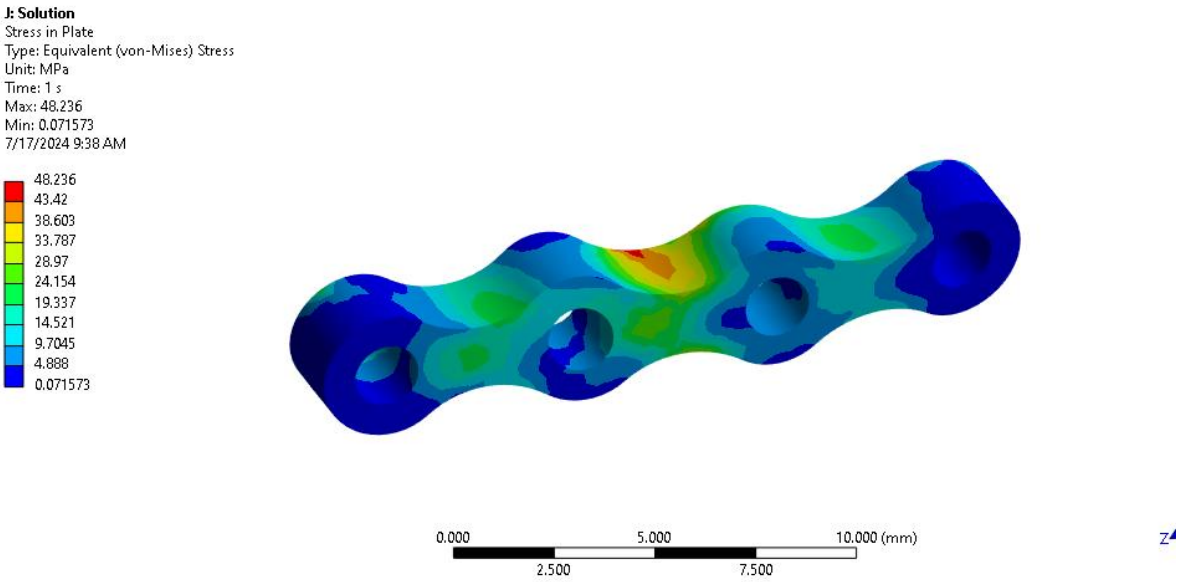
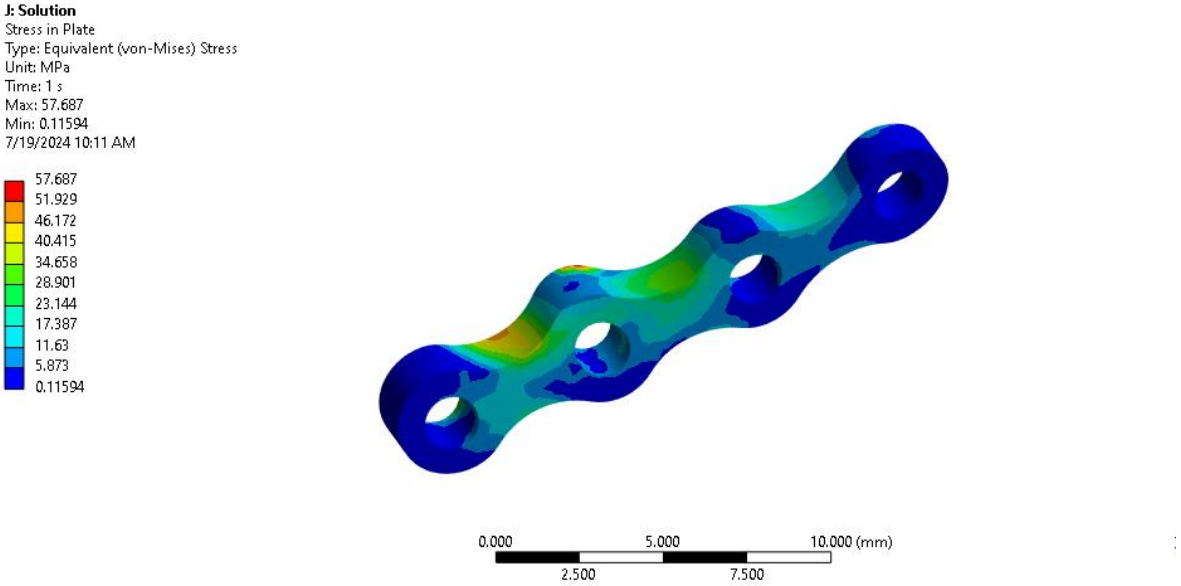
7/17/2024 9:30 AM
52.553
47.306
42.058
36.811
31.563
26.316
21.068
15.821
10.574
5.326
0.078558
0.000
5.000
10.000 (mm)
2.500
7.500
Z

(b)

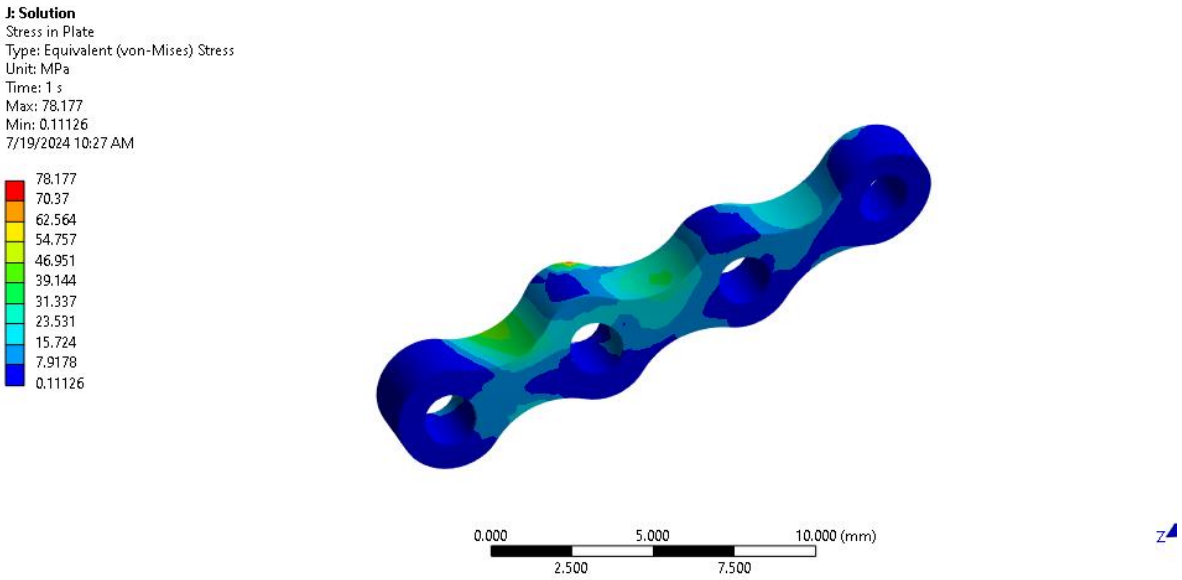


(c)

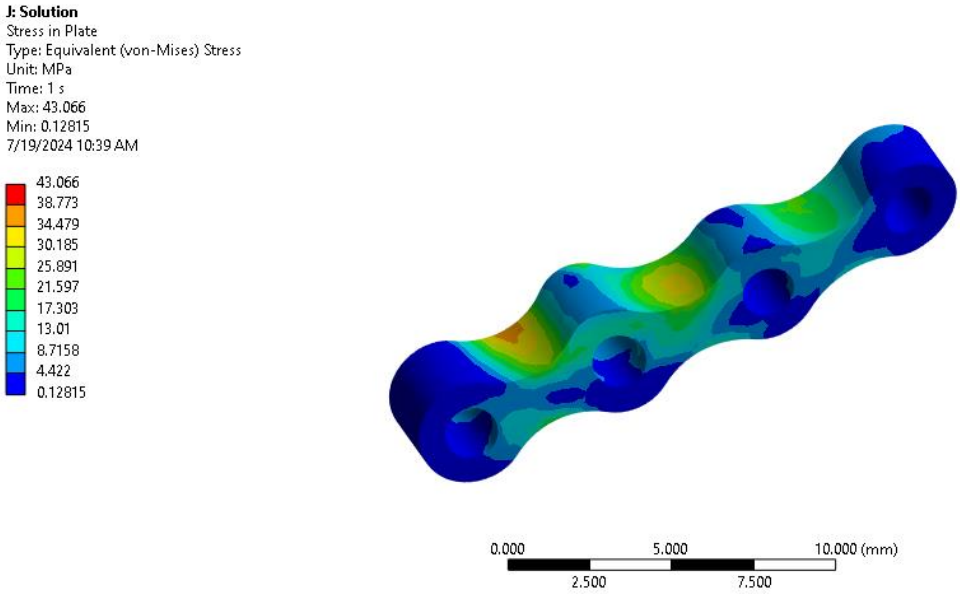
Fig S2: Maximum Stress (MPa) in the Mini Plate of Titanium (a) Single plate (Type 1) without interval and vertical fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and vertical fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and vertical fracture with thickness 2.0 mm.



(a)

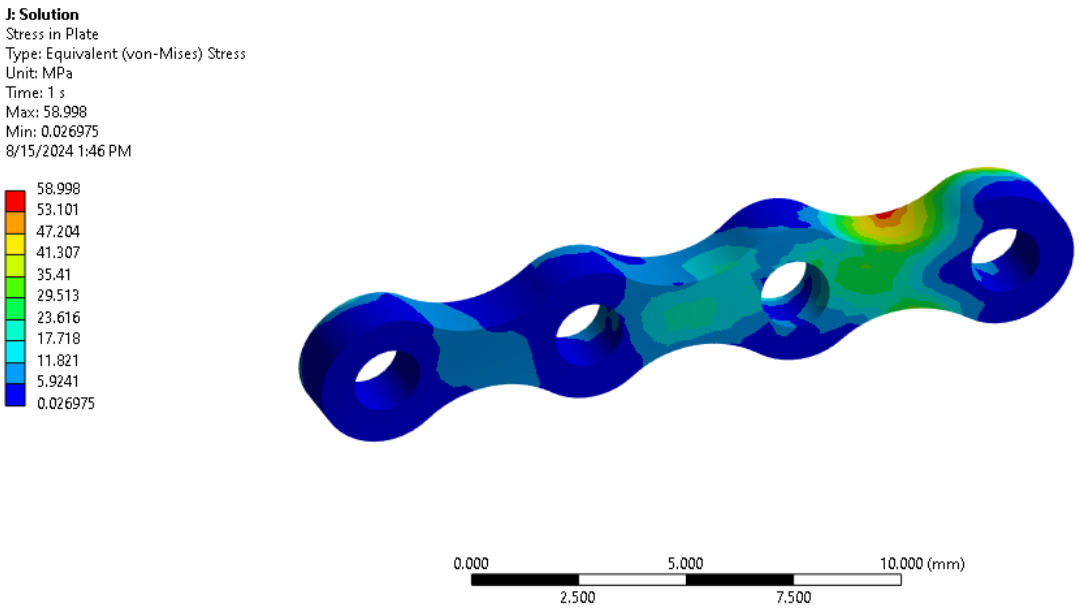


(b)

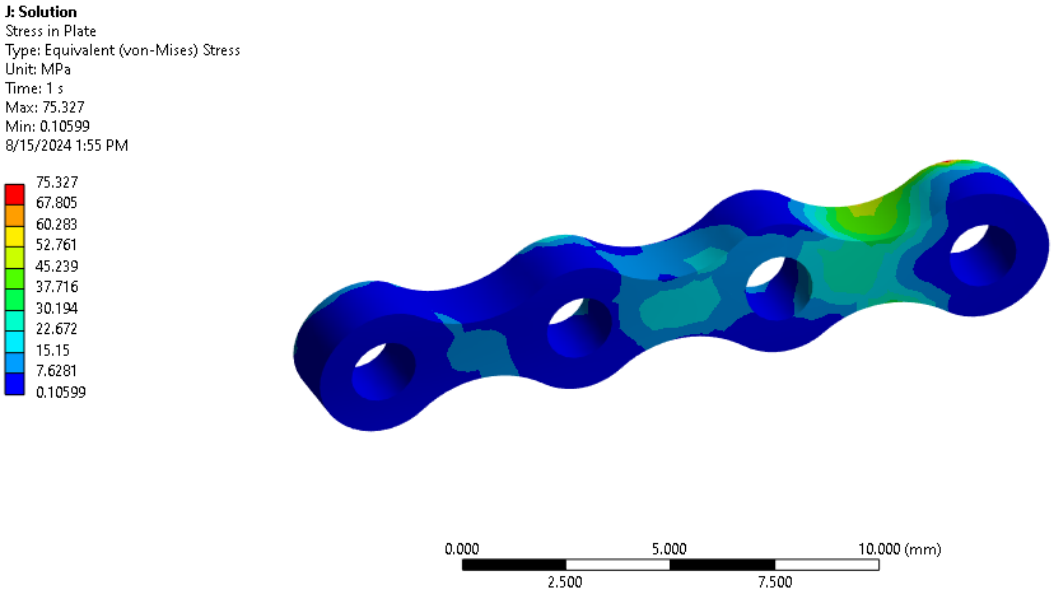


(c)

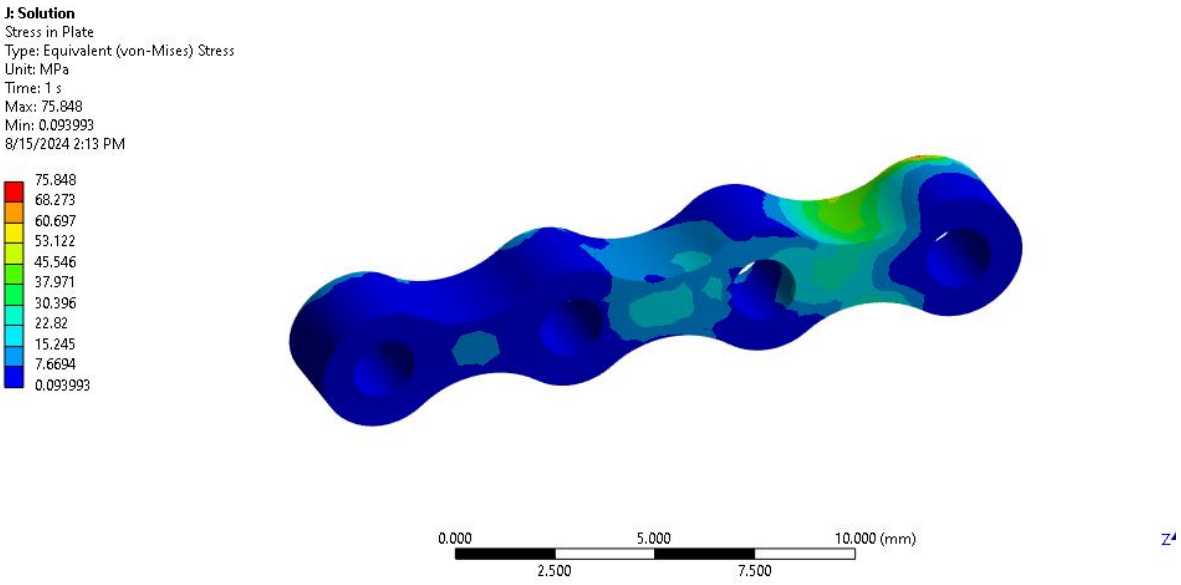
Fig S3: Maximum Stress (MPa) in the Mini Plate of Titanium (a) Single plate (Type 1) without interval and unfavorable fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and unfavorable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and unfavorable fracture with thickness 2.0 mm.


J: Solution
Stress in Plate
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 58.998
Min: 0.026975
8/15/2024 1:46 PM
58.998
53.101
47.204
41.307
35.41
29.513
23.616
17.718
11.821
5.9241
0.026975
0.000
5.000
10.000 (mm)
2.500
7.500

(a)

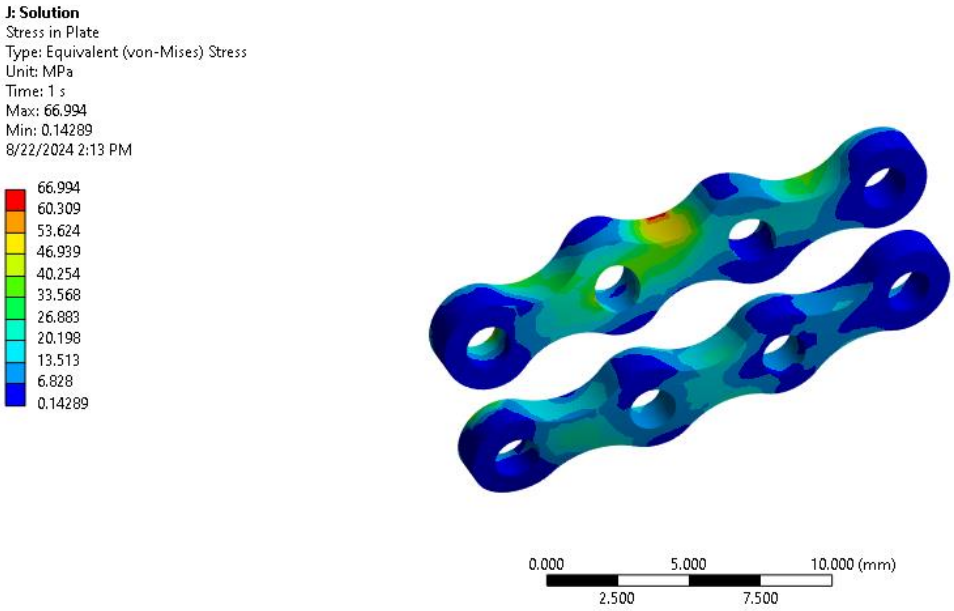

J: Solution
Stress in Plate
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 75.327
Min: 0.10599
8/15/2024 1:55 PM
75.327
67.805
60.283
52.761
45.239
37.716
30.194
22.672
15.15
7.6281
0.10599
0.000
5.000
10.000 (mm)
2.500
7.500

(b)

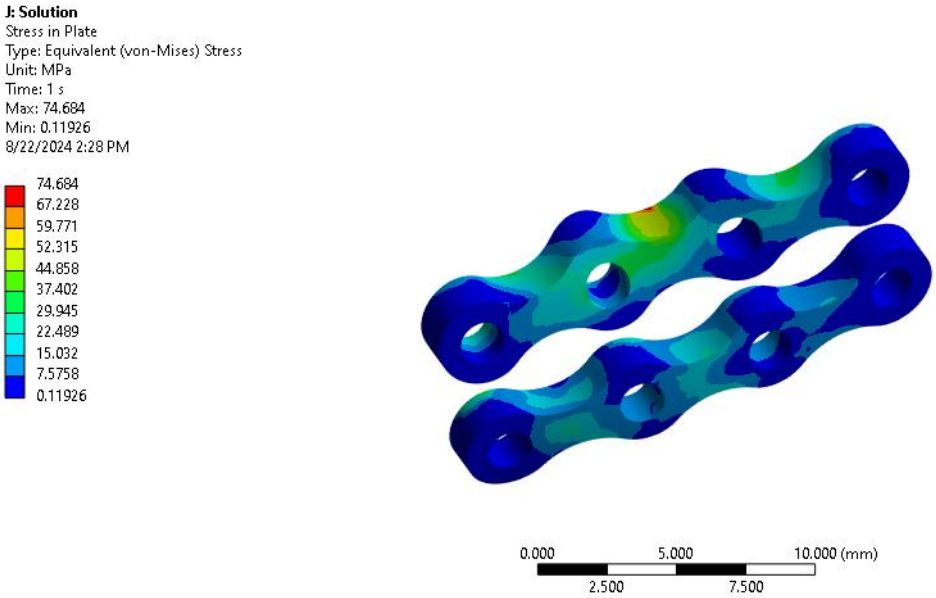


(c)

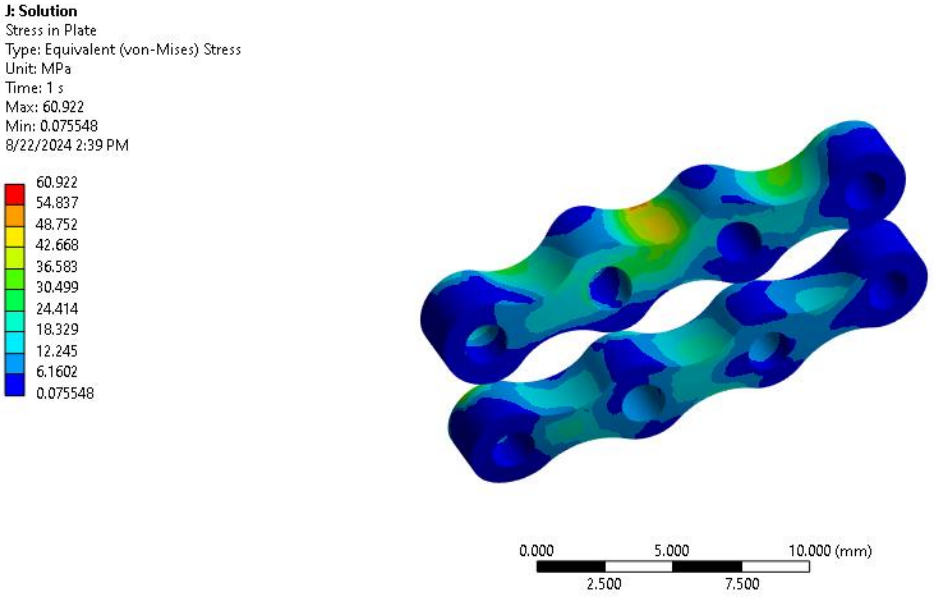
Fig S4: Maximum Stress (MPa) in the Mini Plate of Titanium (a) Single plate (Type 1) without interval and favorable fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and favorable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and favorable fracture with thickness 2.0 mm.



(a)

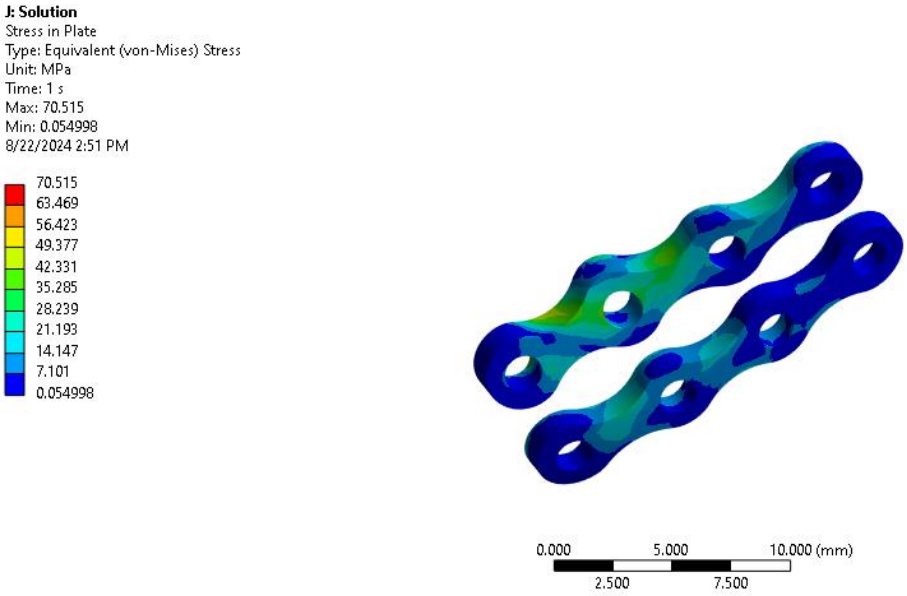


(b)

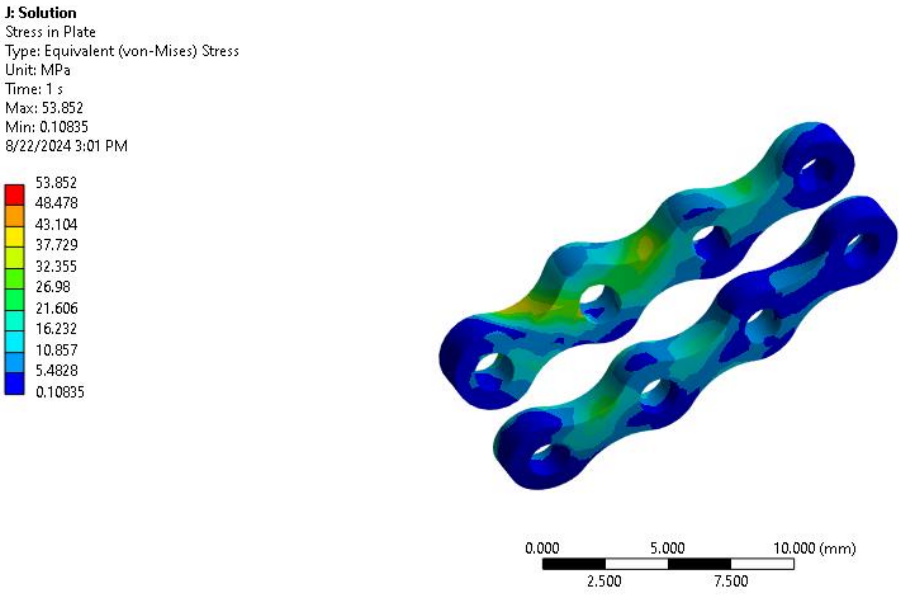


(c)

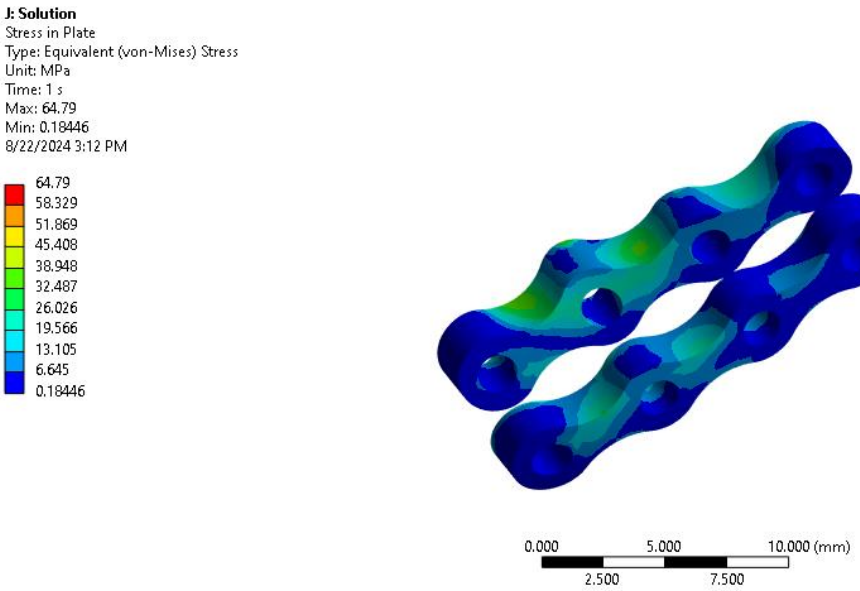
Fig S5: Maximum Stress (MPa) in the Mini Plate of Titanium (a) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and vertical fracture with thickness 2.0 mm.


J: Solution
Stress in Plate
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 70.515
Min: 0.054998
8/22/2024 2:51 PM
70.515
63.469
56.423
49.377
42.331
35.285
28.239
21.193
14.147
7.101
0.054998
0.000
5.000
10.000 (mm)
2.500
7.500

(a)

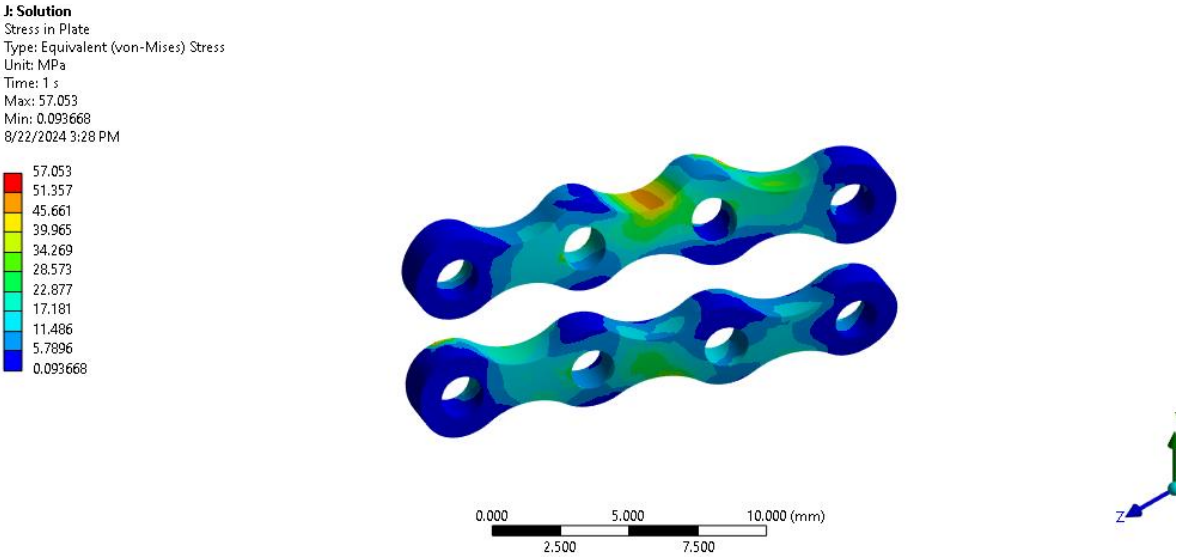

J: Solution
Stress in Plate
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 53.852
Min: 0.10835
8/22/2024 3:01 PM
53.852
48.478
43.104
37.729
32.355
26.98
21.606
16.232
10.857
5.4828
0.10835
0.000
5.000
10.000 (mm)
2.500
7.500

(b)

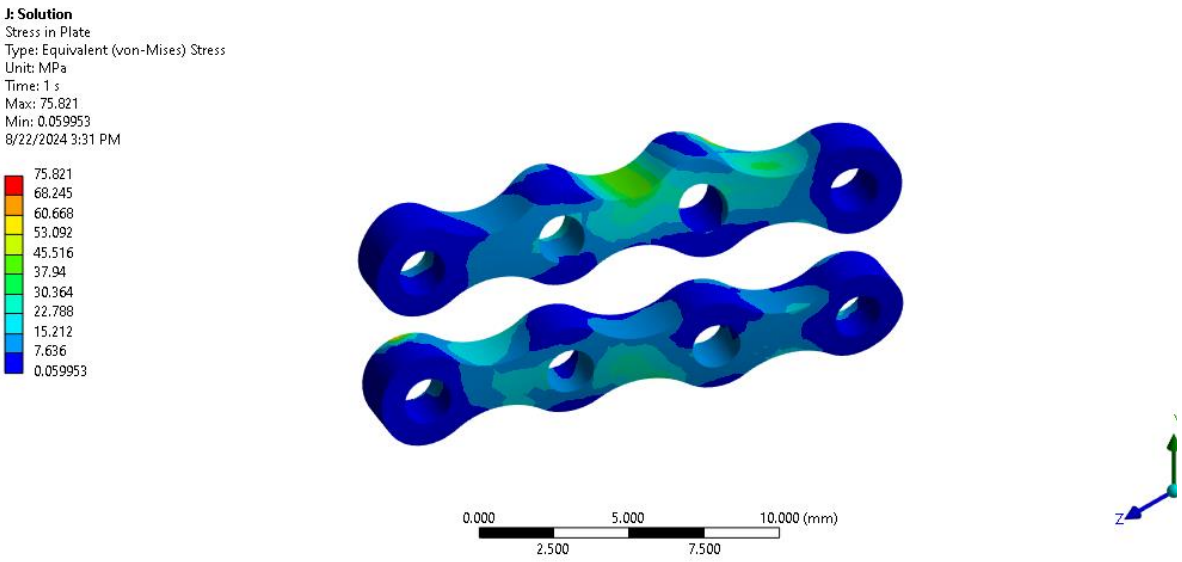


(c)

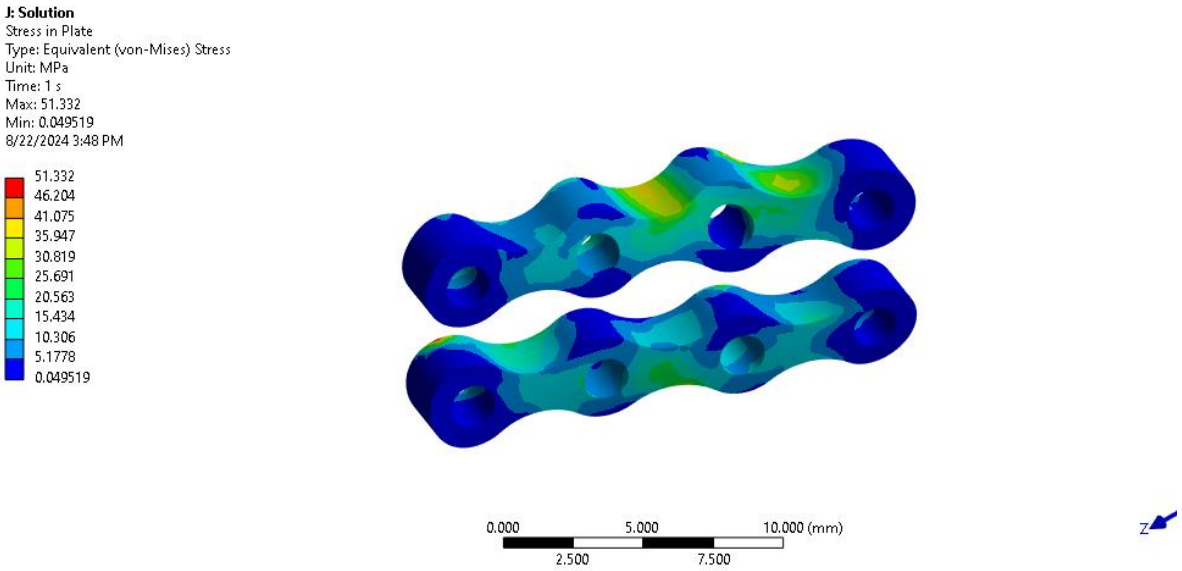
Fig S6: Maximum Stress (MPa) in the Mini Plate of Titanium (a) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 2.0 mm.



(a)

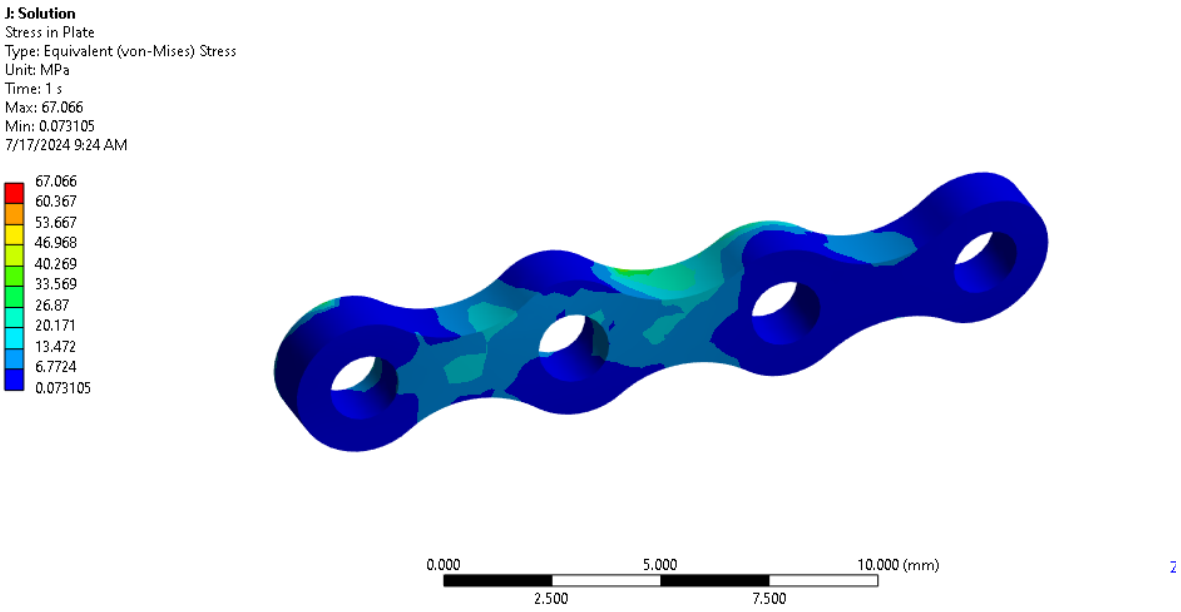


(b)

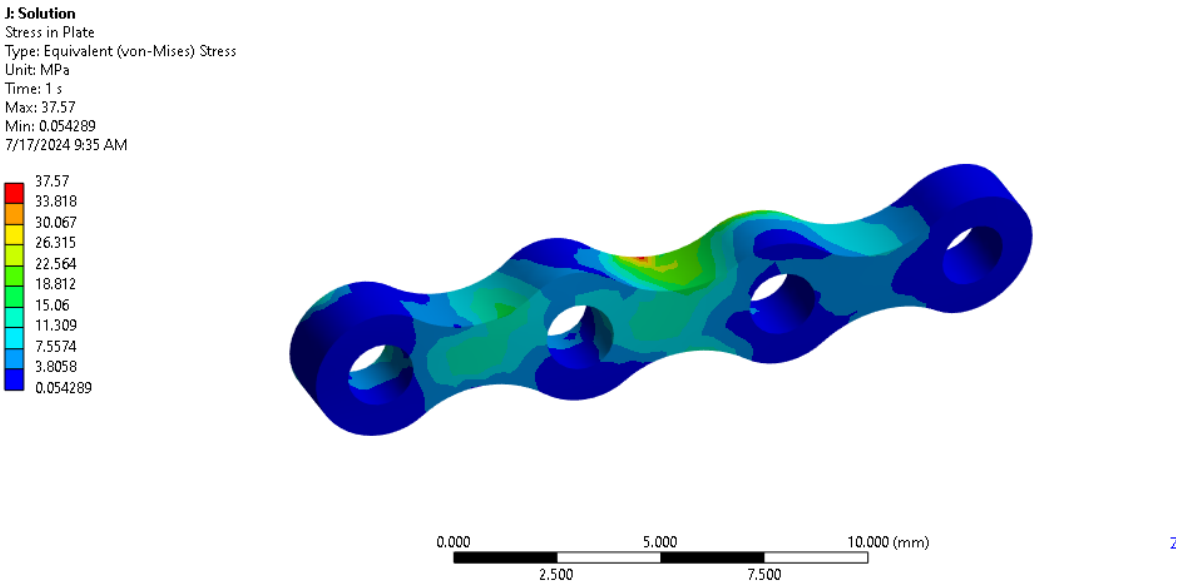


(c)

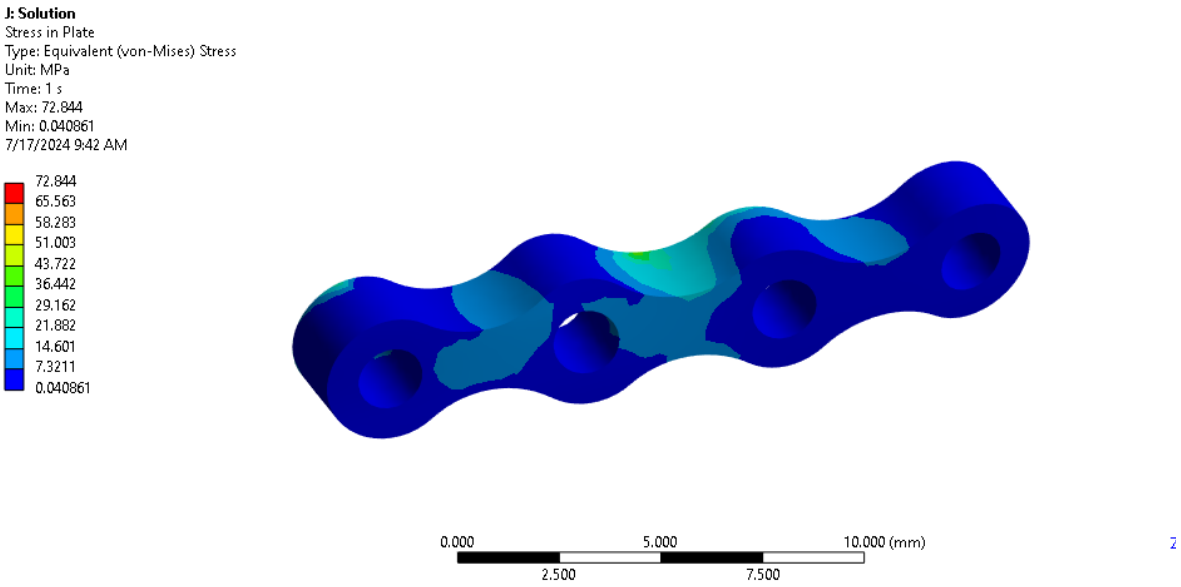
Fig S7: Maximum Stress (MPa) in the Mini Plate of Titanium (a) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and favorable fracture with thickness 2.0 mm.


J: Solution
Stress in Plate
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 67.066
Min: 0.073105
7/17/2024 9:24 AM
67.066
60.367
53.667
46.968
40.269
33.569
26.87
20.171
13.472
6.7724
0.073105
0.000
5.000
10.000 (mm)
2.500
7.500

(a)

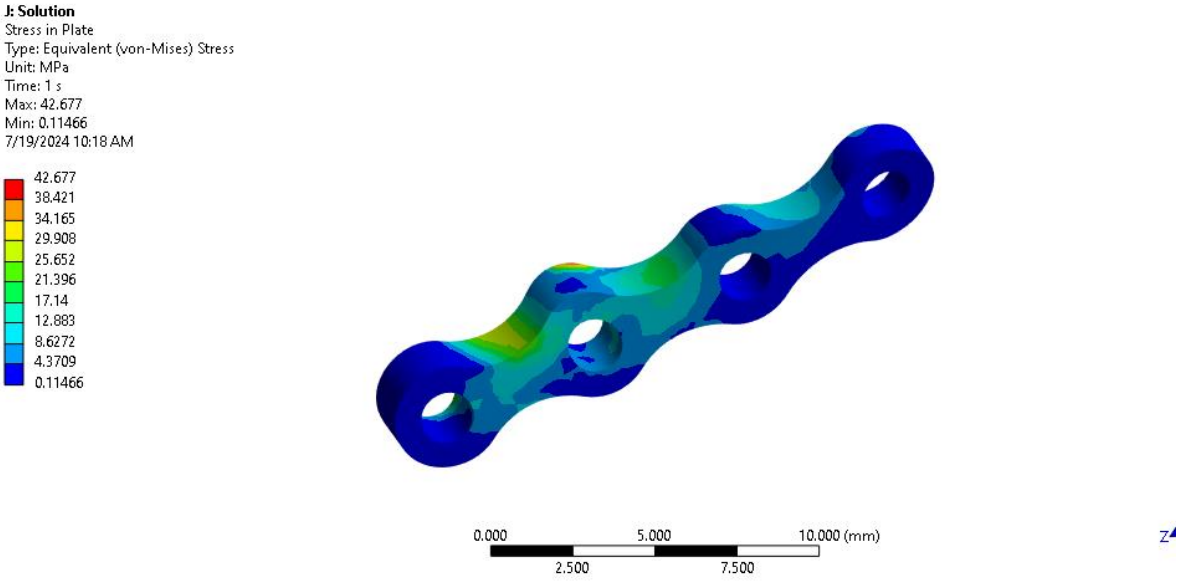

J: Solution
Stress in Plate
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 37.57
Min: 0.054289
7/17/2024 9:35 AM
37.57
33.818
30.067
26.315
22.564
18.812
15.06
11.309
7.5574
3.8058
0.054289
0.000
5.000
10.000 (mm)
2.500
7.500

(b)

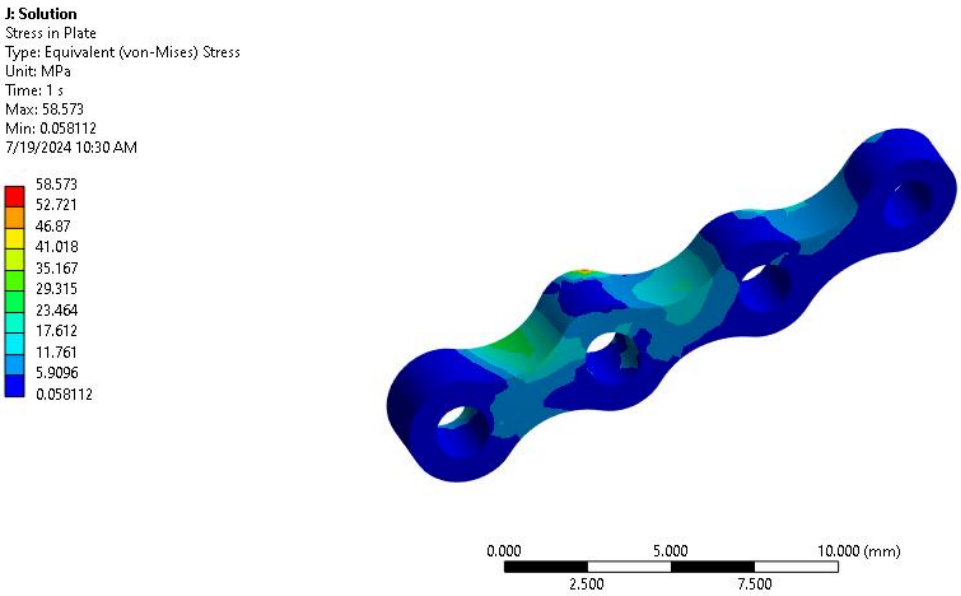


(c)

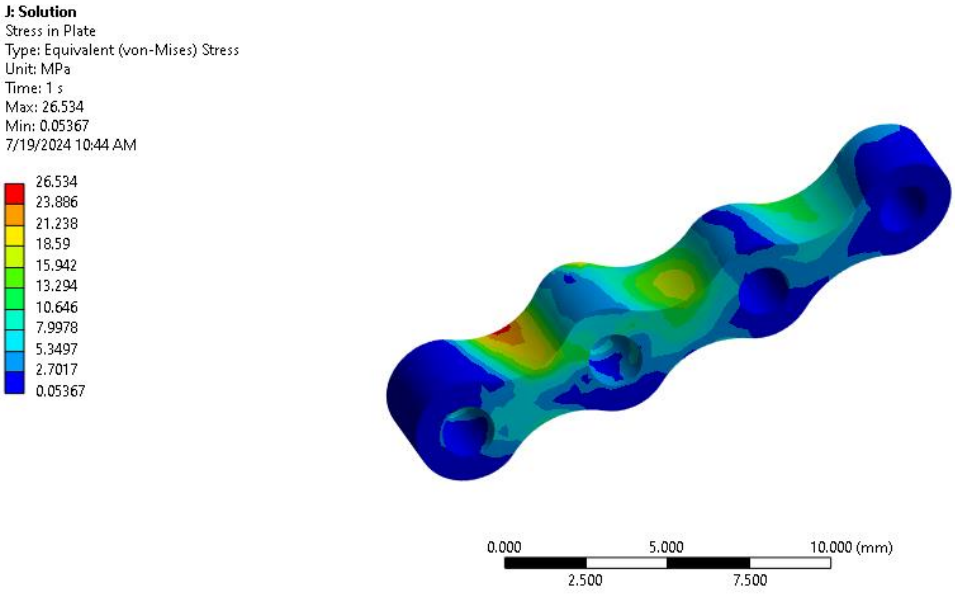
Fig S8: Maximum Stress (MPa) in the Mini Plate of Magnesium (a) Single plate (Type 1) without interval and vertical fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and vertical fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and vertical fracture with thickness 2.0 mm.



(a)

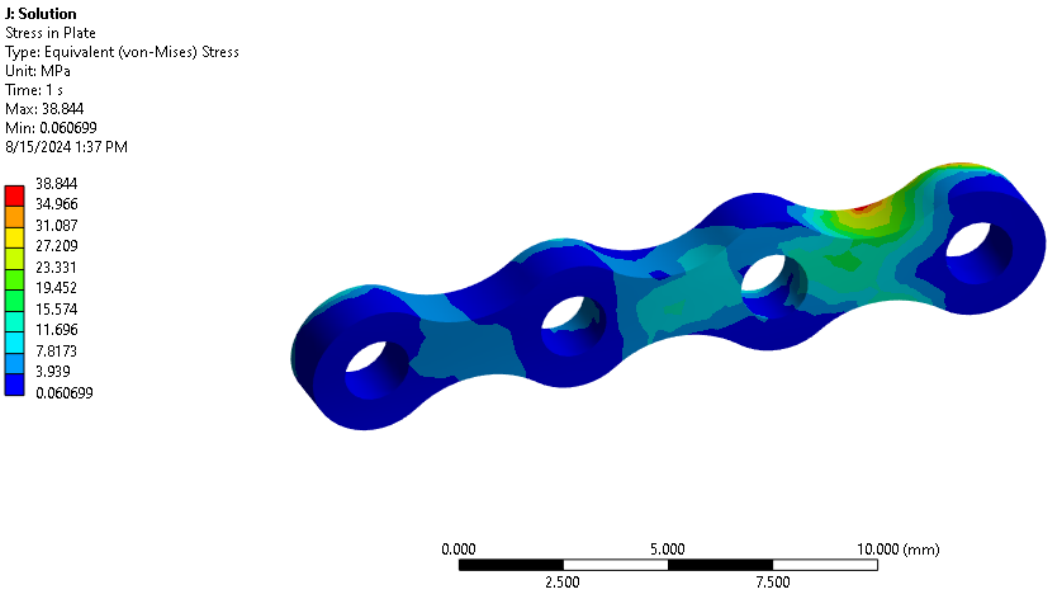


(b)



(c)

Fig S9: Maximum Stress (MPa) in the Mini Plate of Magnesium (a) Single plate (Type 1) without interval and unfavorable fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and unfavorable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and unfavorable fracture with thickness 2.0 mm.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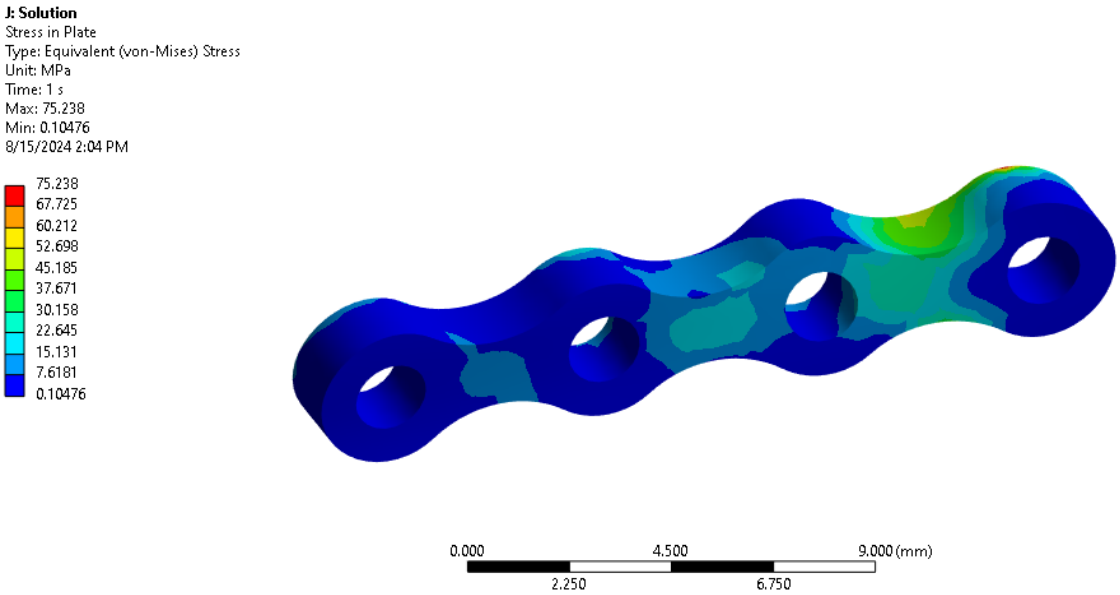
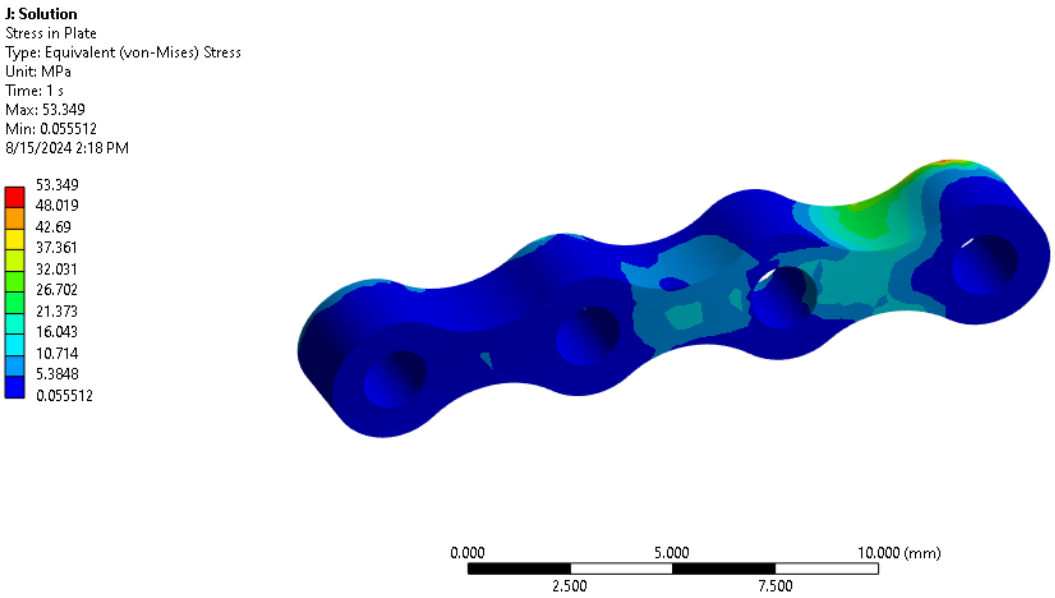
Stress in Plate
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 38.844
Min: 0.060699
8/15/2024 1:37 PM
38.844
34.966
31.087
27.209
23.331
19.452
15.574
11.696
7.8173
3.939
0.060699
0.000
5.000
10.000 (mm)
2.500
7.500

(a)

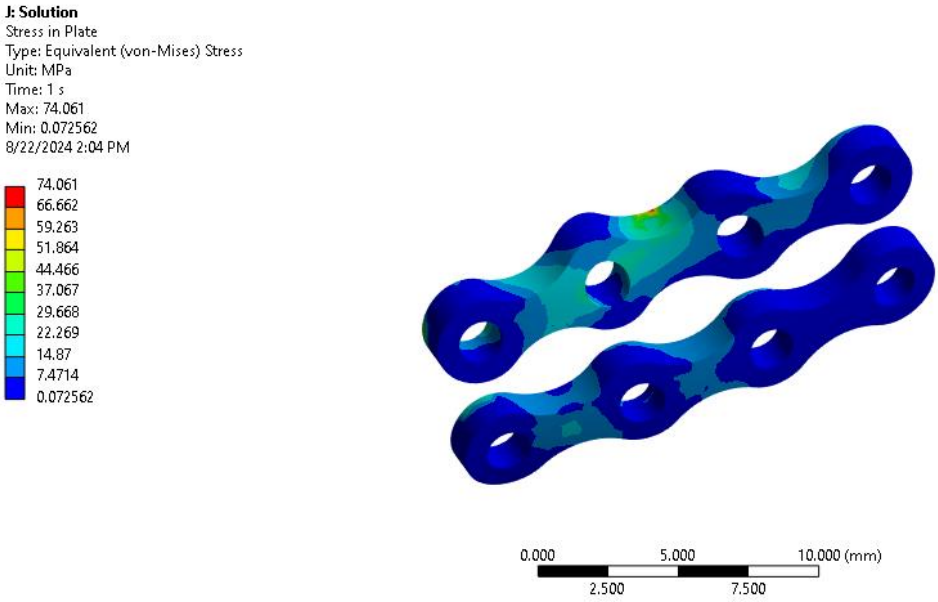

J: Solution
Stress in Plate
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 75.238
Min: 0.10476
8/15/2024 2:04 PM
75.238
67.725
60.212
52.698
45.185
37.671
30.158
22.645
15.131
7.6181
0.10476
0.000
4.500
9.000 (mm)
2.250
6.750

(b)

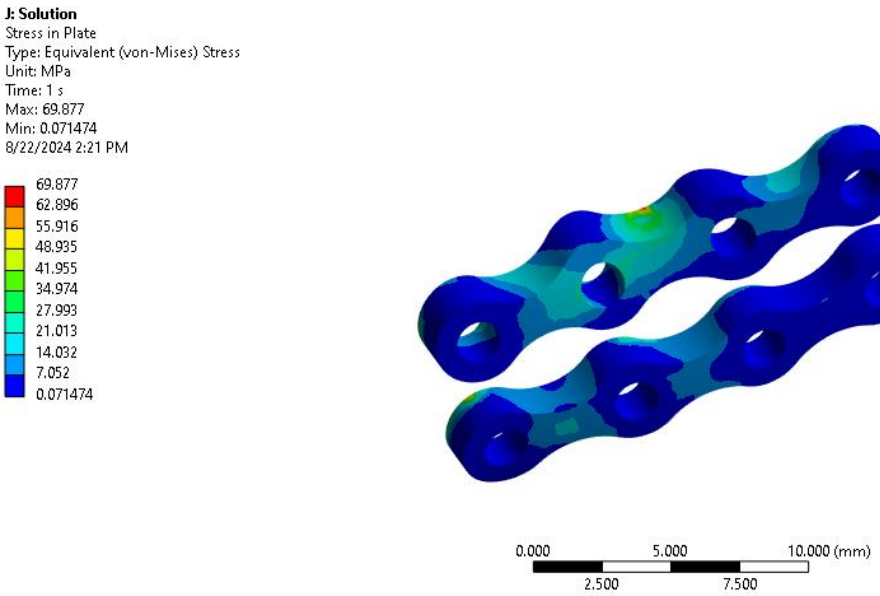


(c)

Fig S10: Maximum Stress (MPa) in the Mini Plate of Magnesium (a) Single plate (Type 1) without interval and favorable fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and favorable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and favorable fracture with thickness 2.0 mm.



(a)



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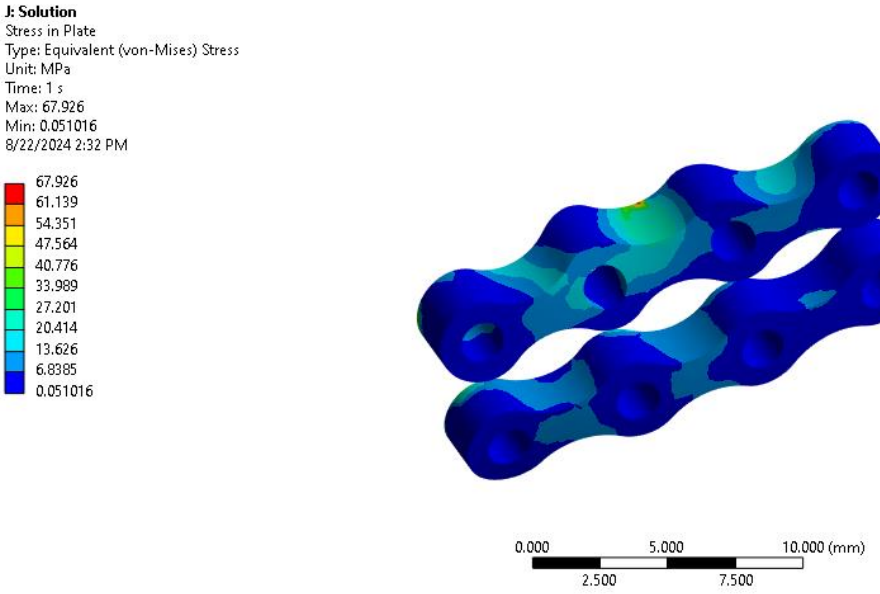
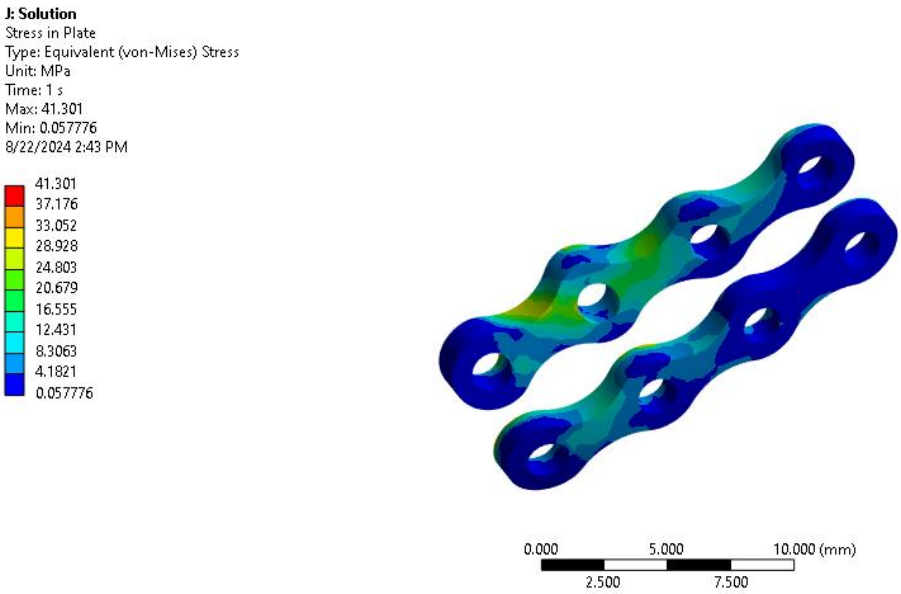
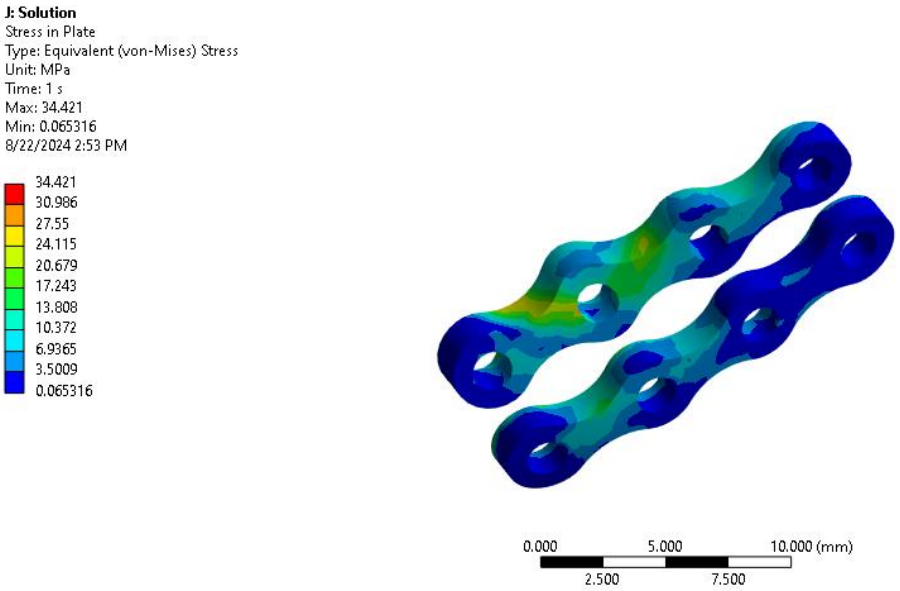


(c)

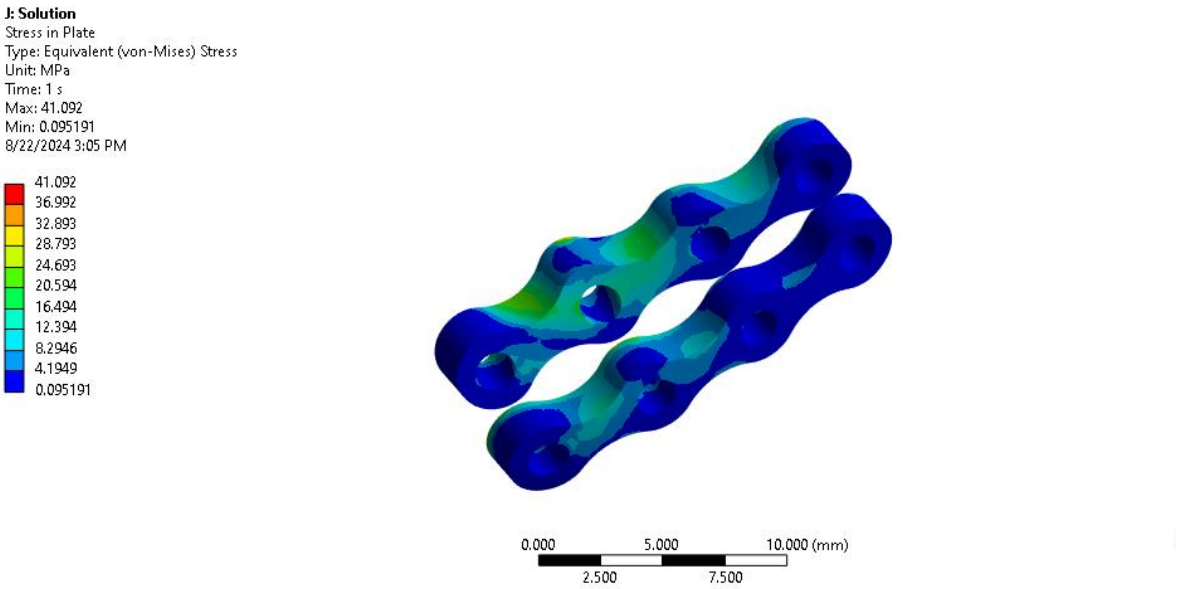
Fig S11: Maximum Stress (MPa) in the Mini Plate of Magnesium (a) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and vertical fracture with thickness 2.0 mm.


J: Solution
Stress in Plate
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 41.301
Min: 0.057776
8/22/2024 2:43 PM
41.301
37.176
33.052
28.928
24.803
20.679
16.555
12.431
8.3063
4.1821
0.057776
0.000
5.000
10.000 (mm)
2.500
7.500

(a)

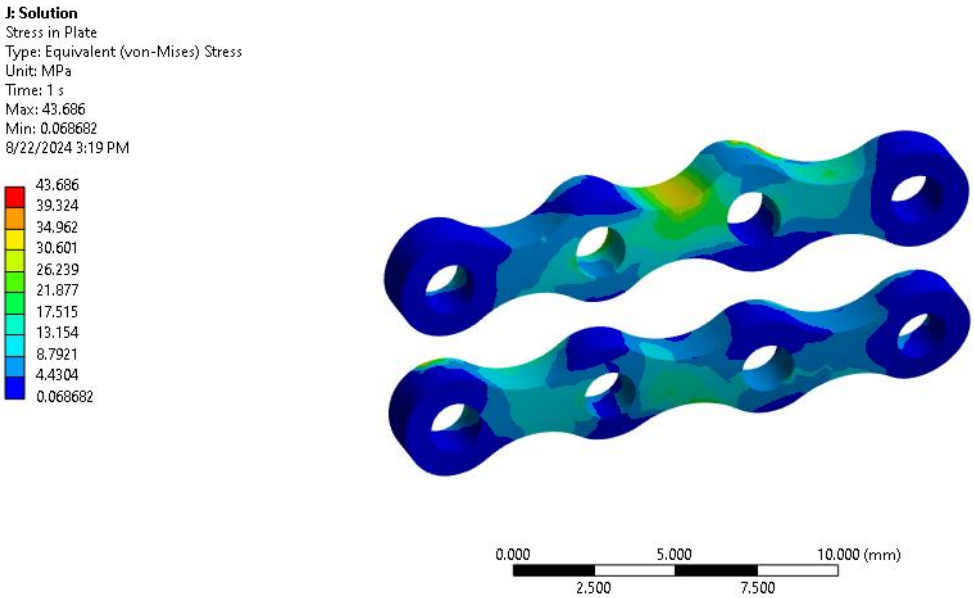

J: Solution
Stress in Plate
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 34.421
Min: 0.065316
8/22/2024 2:53 PM
34.421
30.986
27.55
24.115
20.679
17.243
13.808
10.372
6.9365
3.5009
0.065316
0.000
5.000
10.000 (mm)
2.500
7.500

(b)

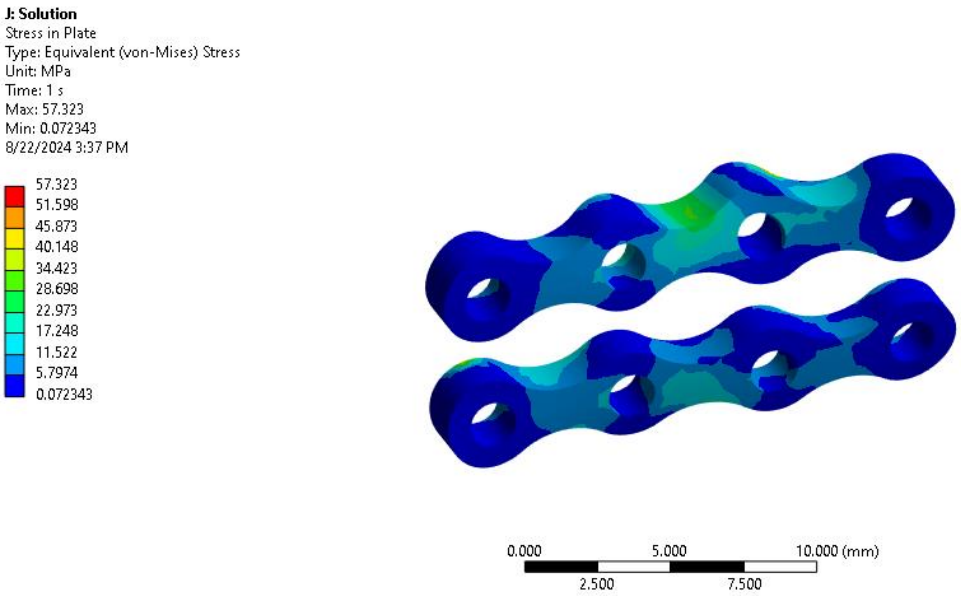


(c)

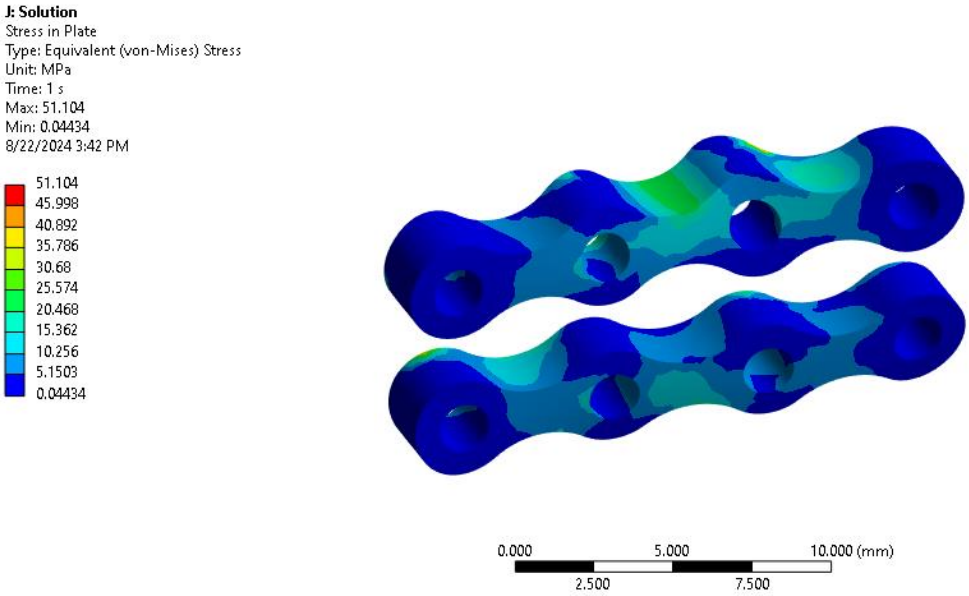
Fig S12: Maximum Stress (MPa) in the Mini Plate of Magnesium (a) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 2.0 mm.



(a)

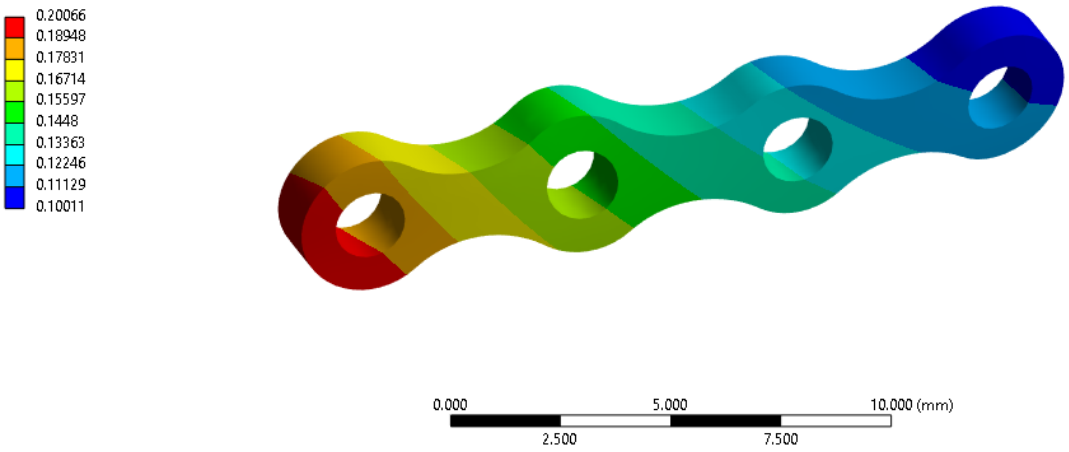


(b)

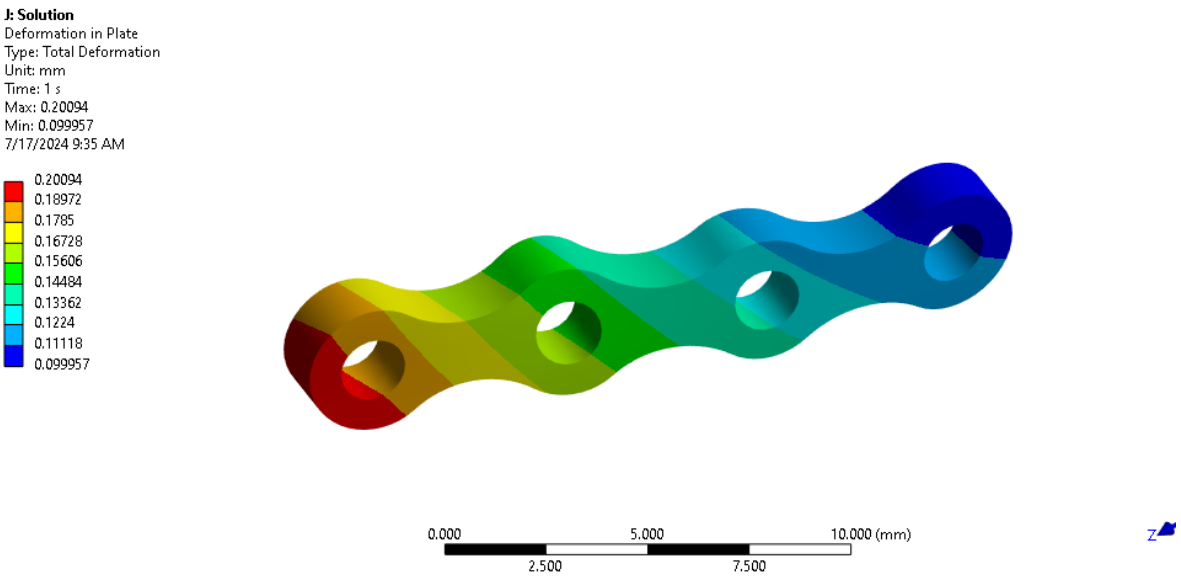


(c)

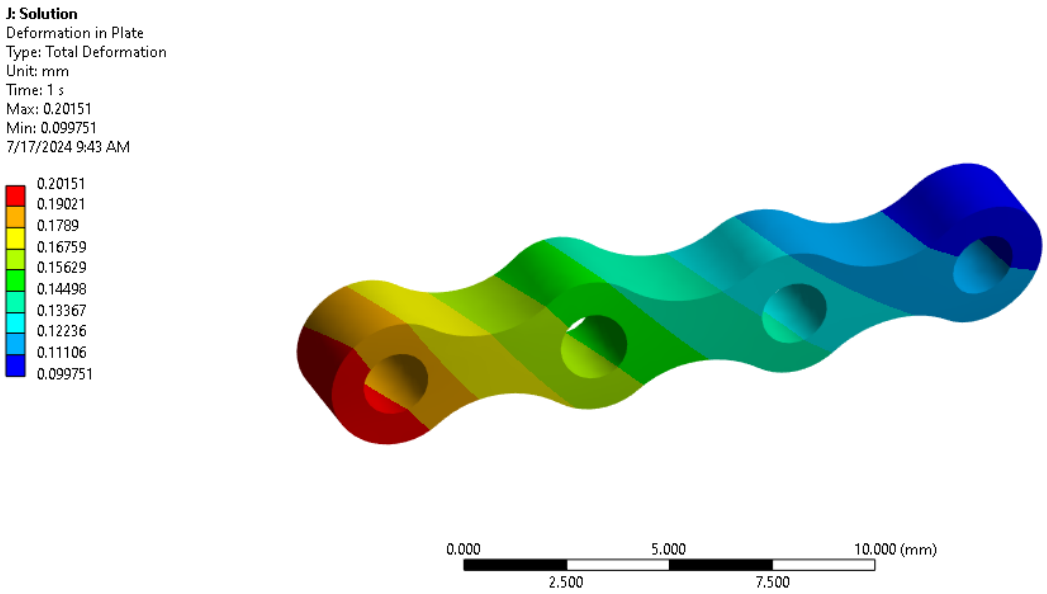
Fig S13: Maximum Stress (MPa) in the Mini Plate of Magnesium (a) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and favorable fracture with thickness 2.0 mm.


J: Solution
Deformation in Plate
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.20066
Min: 0.10011
7/17/2024 9:23 AM
0.20066
0.18948
0.17831
0.16714
0.15597
0.1448
0.13363
0.12246
0.11129
0.10011
0.000
5.000
10.000 (mm)
2.500
7.500

(a)

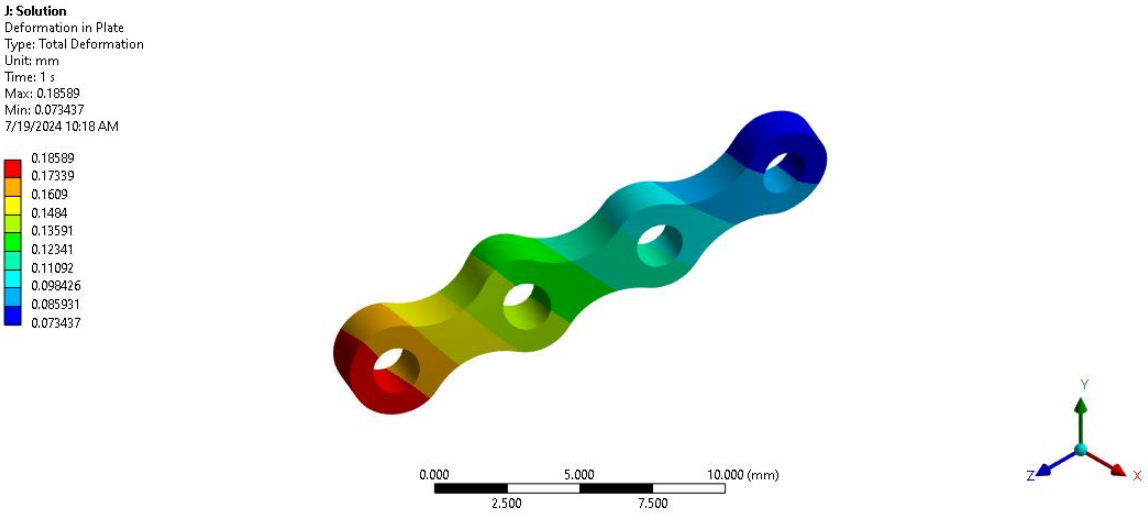

J: Solution
Deformation in Plate
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.20094
Min: 0.099957
7/17/2024 9:35 AM
0.20094
0.18972
0.1785
0.16728
0.15606
0.14484
0.13362
0.1224
0.11118
0.099957
0.000
5.000
10.000 (mm)
2.500
7.500
Z

(b)



(c)

Fig S14: Total Deformation in the Mini Plate of Magnesium (a) Single plate (Type 1) without interval and vertical fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and vertical fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and vertical fracture with thickness 2.0 mm.



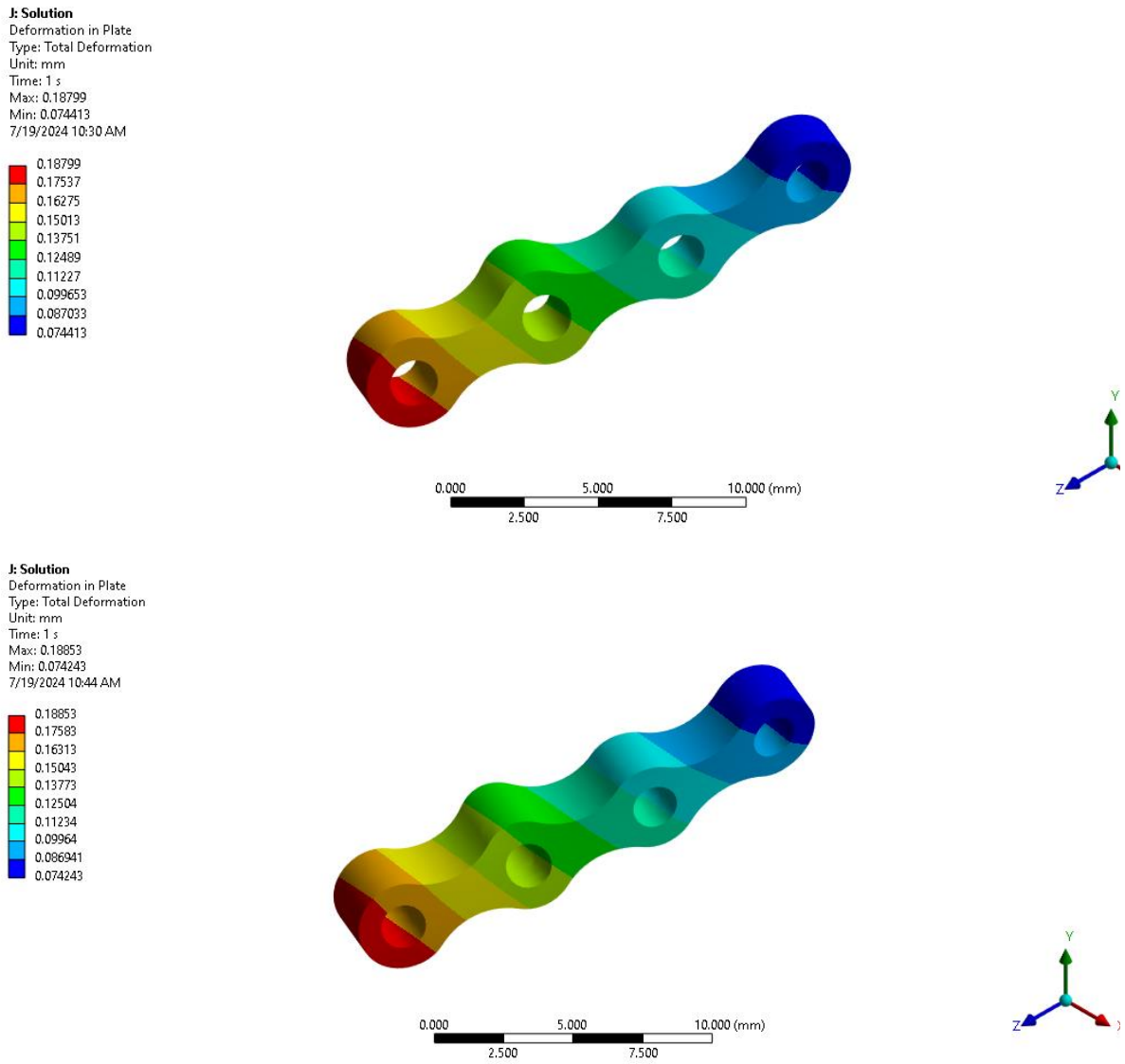
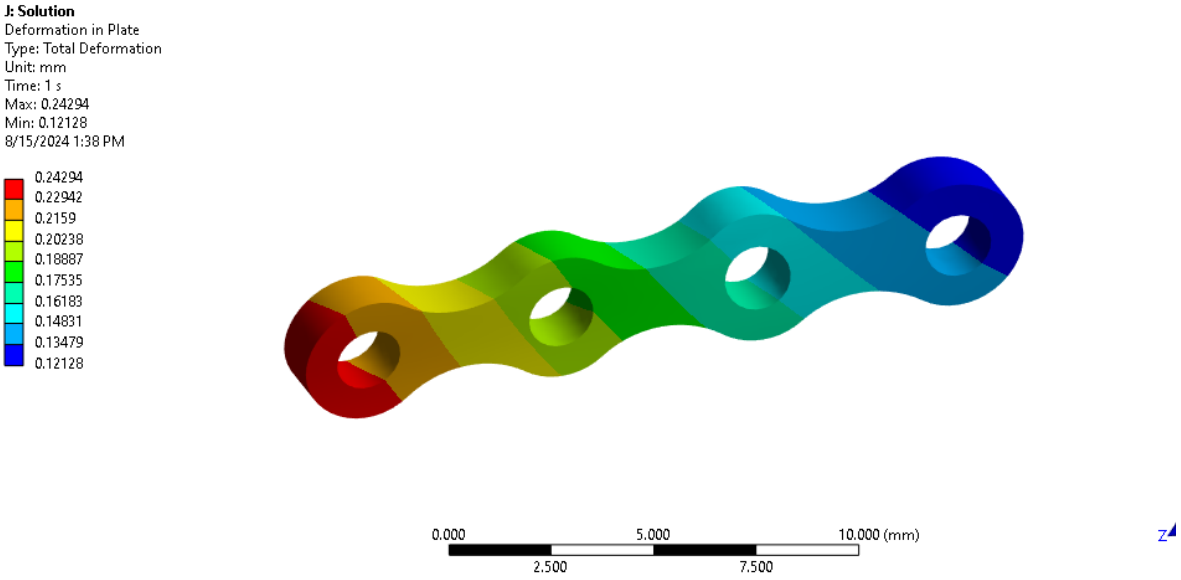
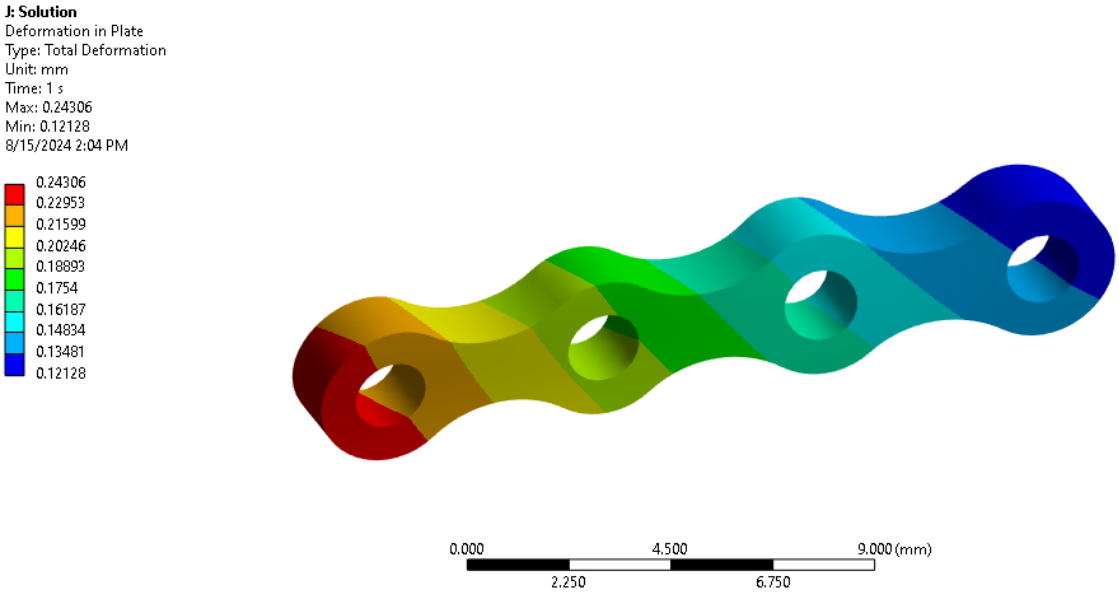


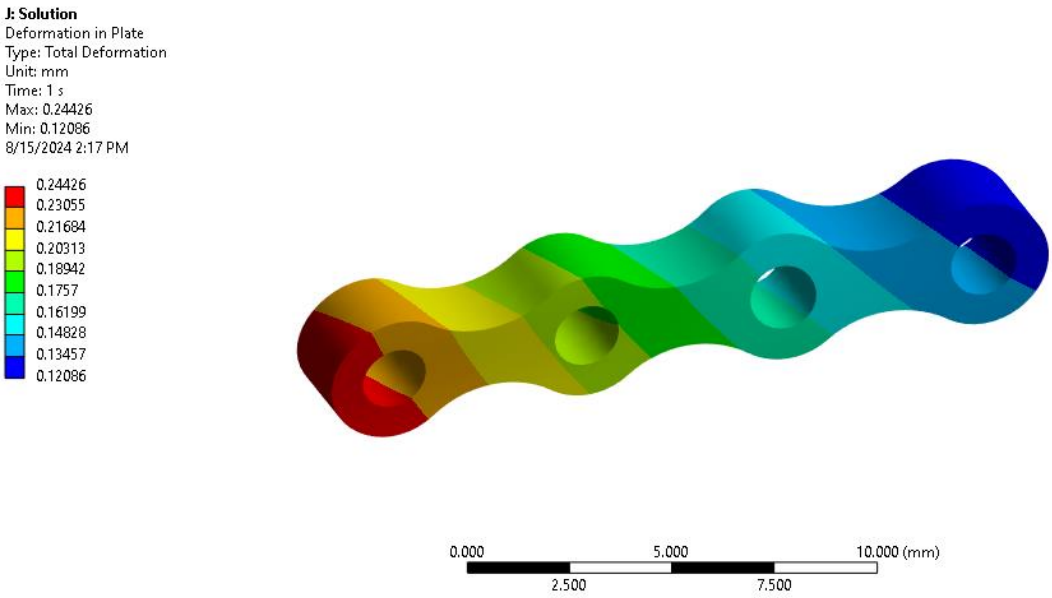
Fig S15: Total Deformation in the Mini Plate of Magnesium (a) Single plate (Type 1) without interval and unfavorable fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and unfavorable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and unfavorable fracture with thickness 2.0 mm.


J: Solution
Deformation in Plate
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.24294
Min: 0.12128
8/15/2024 1:38 PM
0.24294
0.22942
0.2159
0.20238
0.18887
0.17535
0.16183
0.14831
0.13479
0.12128
0.000
5.000
10.000 (mm)
2.500
7.500
Z

(a)

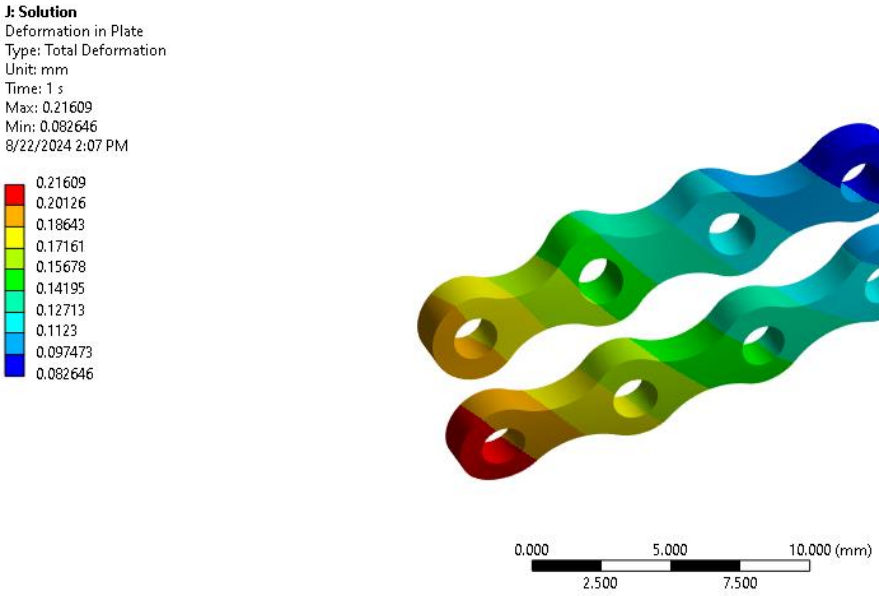

J: Solution
Deformation in Plate
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.24306
Min: 0.12128
8/15/2024 2:04 PM
0.24306
0.22953
0.21599
0.20246
0.18893
0.1754
0.16187
0.14834
0.13481
0.12128
0.000
4.500
9.000 (mm)
2.250
6.750

(b)

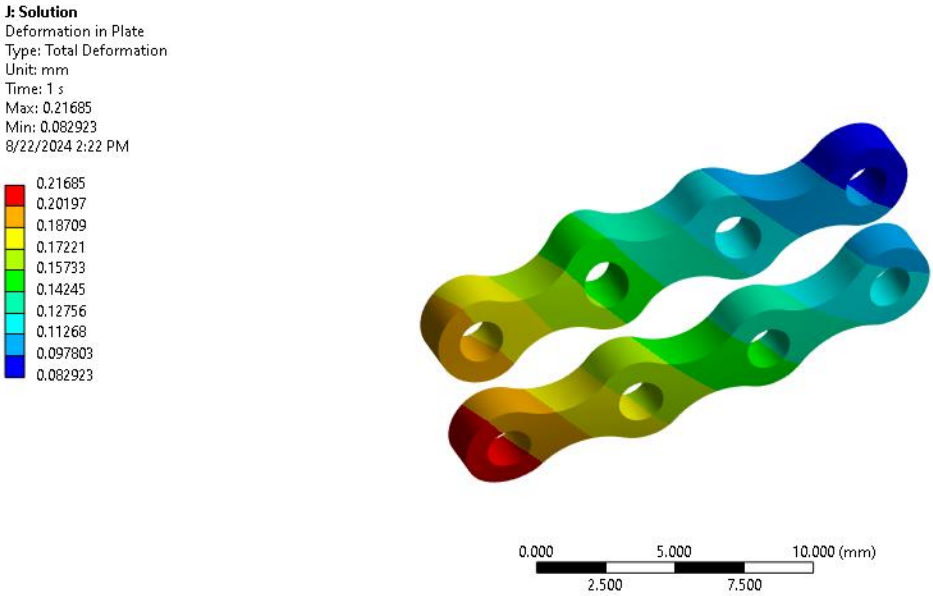


(c)

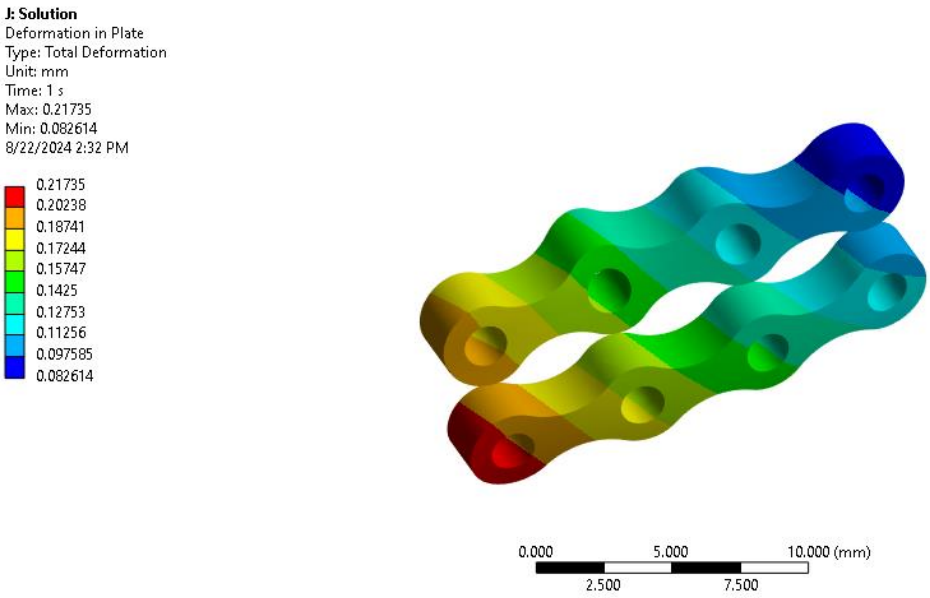
Fig S16: Total Deformation in the Mini Plate of Magnesium (a) Single plate (Type 1) without interval and favorable fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and favorable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and favorable fracture with thickness 2.0 mm.



(a)

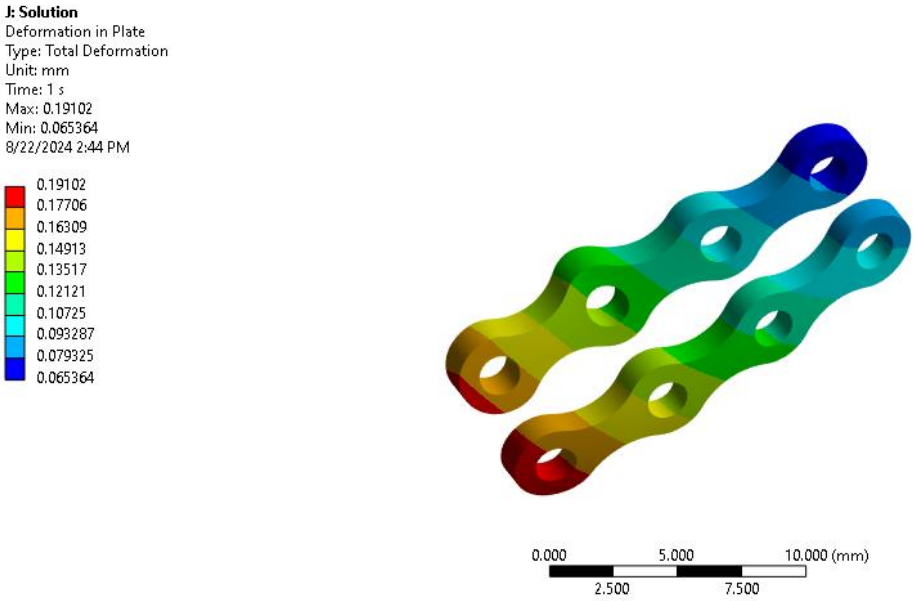


(b)

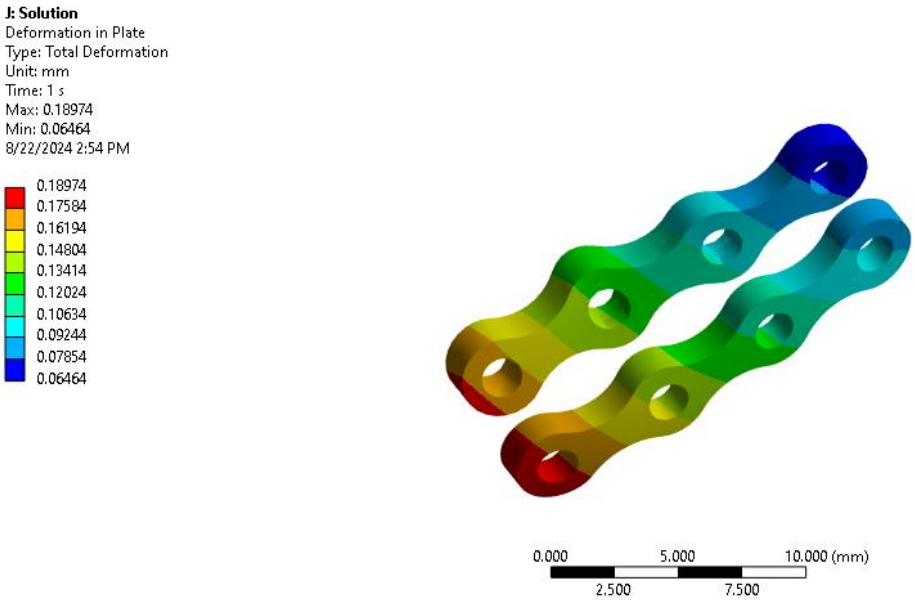


(c)

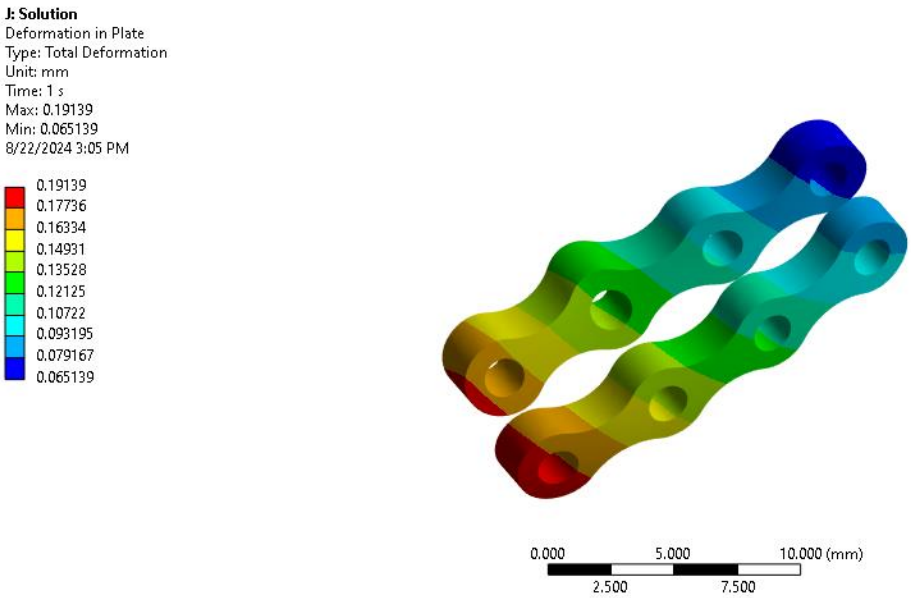
Fig S17: Total Deformation in the Mini Plate of Magnesium (a) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and vertical fracture with thickness 2.0 mm.


J: Solution
Deformation in Plate
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.19102
Min: 0.065364
8/22/2024 2:44 PM
0.19102
0.17706
0.16309
0.14913
0.13517
0.12121
0.10725
0.093287
0.079325
0.065364
0.000
5.000
10.000 (mm)
2.500
7.500

(a)

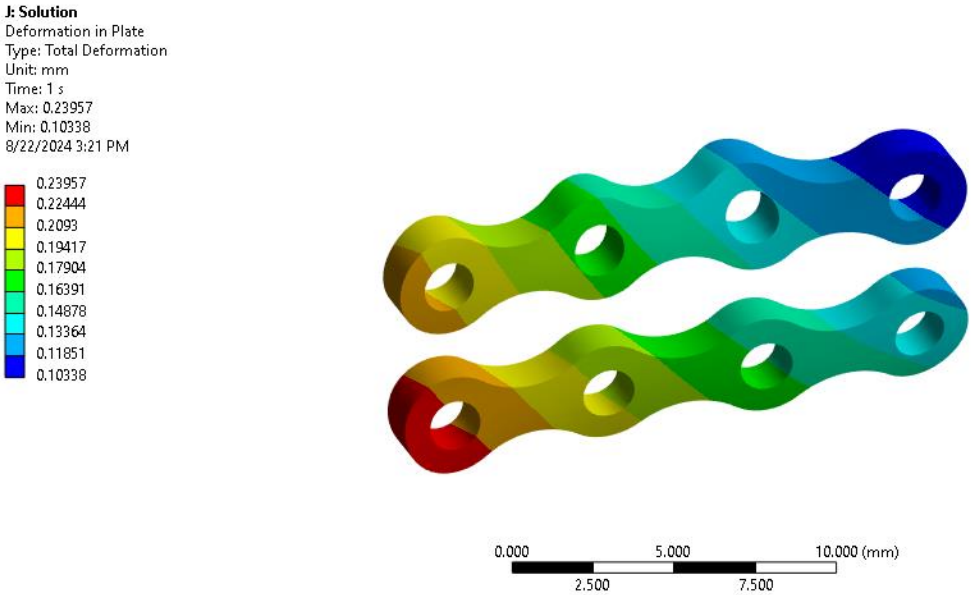

J: Solution
Deformation in Plate
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.18974
Min: 0.06464
8/22/2024 2:54 PM
0.18974
0.17584
0.16194
0.14804
0.13414
0.12024
0.10634
0.09244
0.07854
0.06464
0.000
5.000
10.000 (mm)
2.500
7.500

(b)

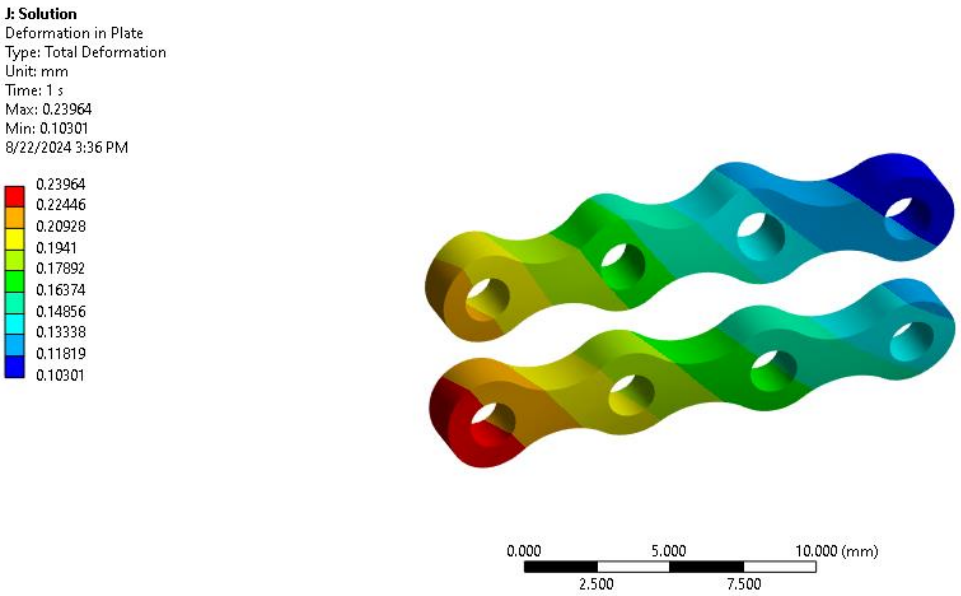


(c)

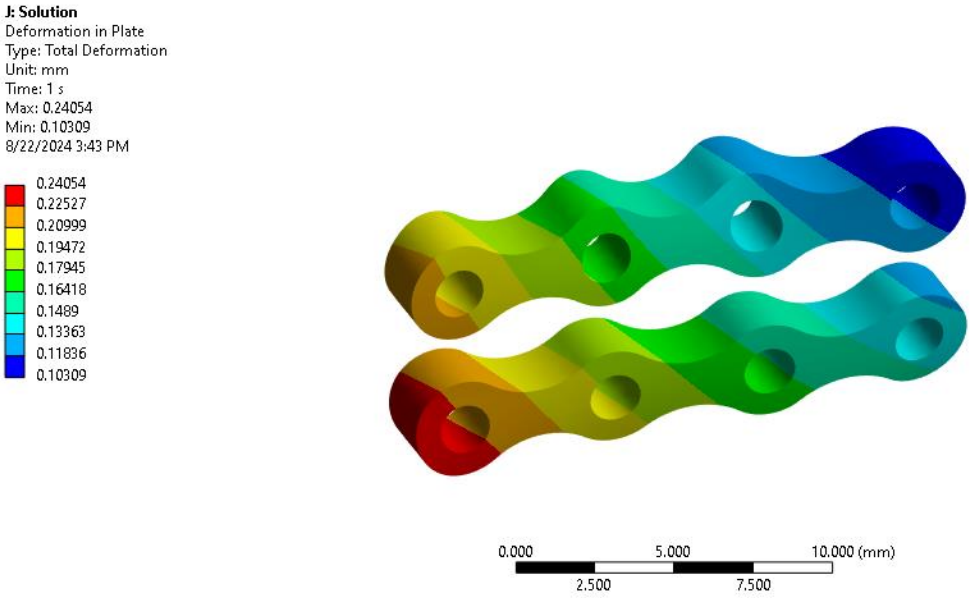
Fig S18: Total Deformation in the Mini Plate of Magnesium (a) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 2.0 mm.



(a)

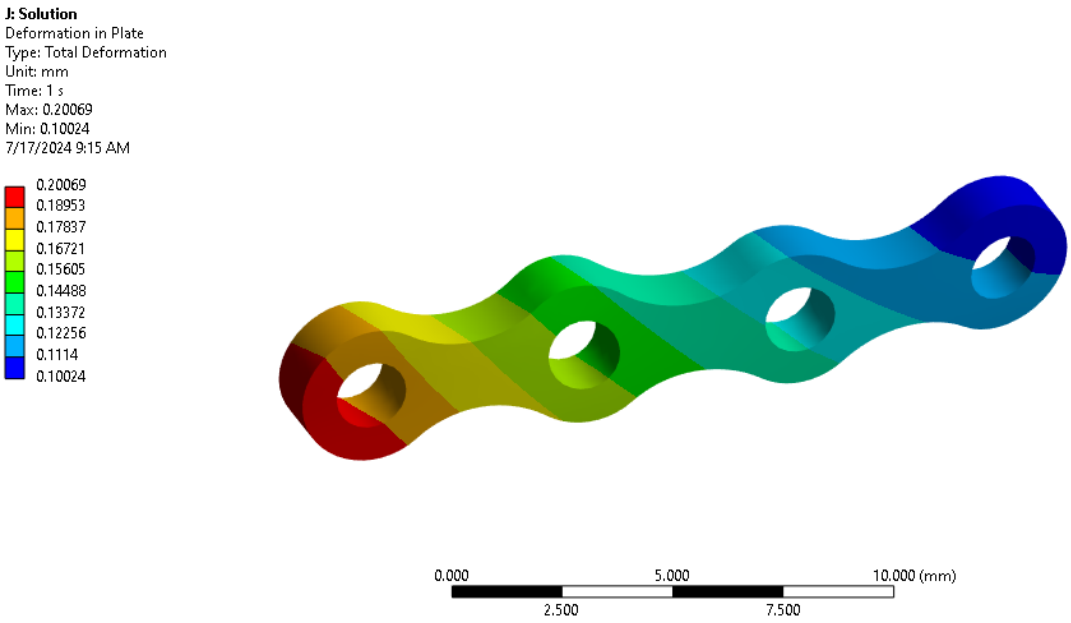


(b)

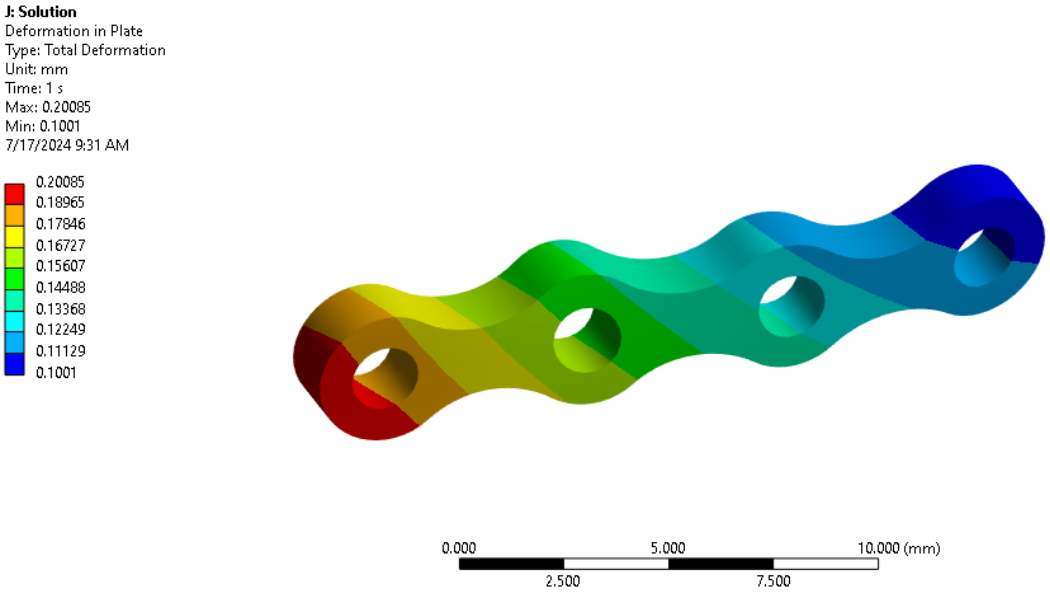


(c)

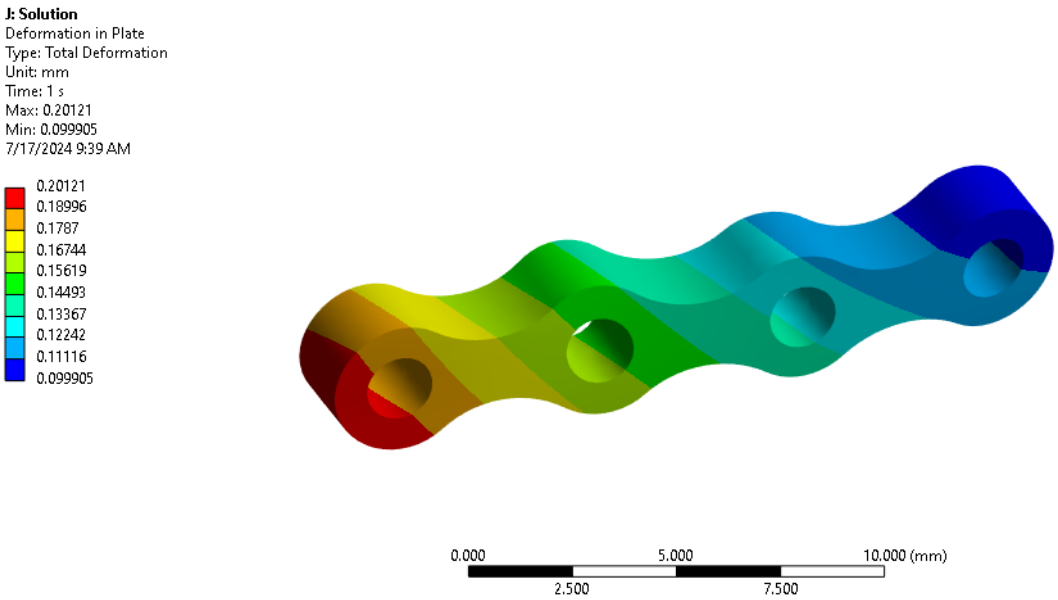
Fig S19: Total Deformation in the Mini Plate of Magnesium (a) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and favorable fracture with thickness 2.0 mm.


J: Solution
Deformation in Plate
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.20069
Min: 0.10024
7/17/2024 9:15 AM
0.20069
0.18953
0.17837
0.16721
0.15605
0.14488
0.13372
0.12256
0.1114
0.10024
0.000
5.000
10.000 (mm)
2.500
7.500

(a)

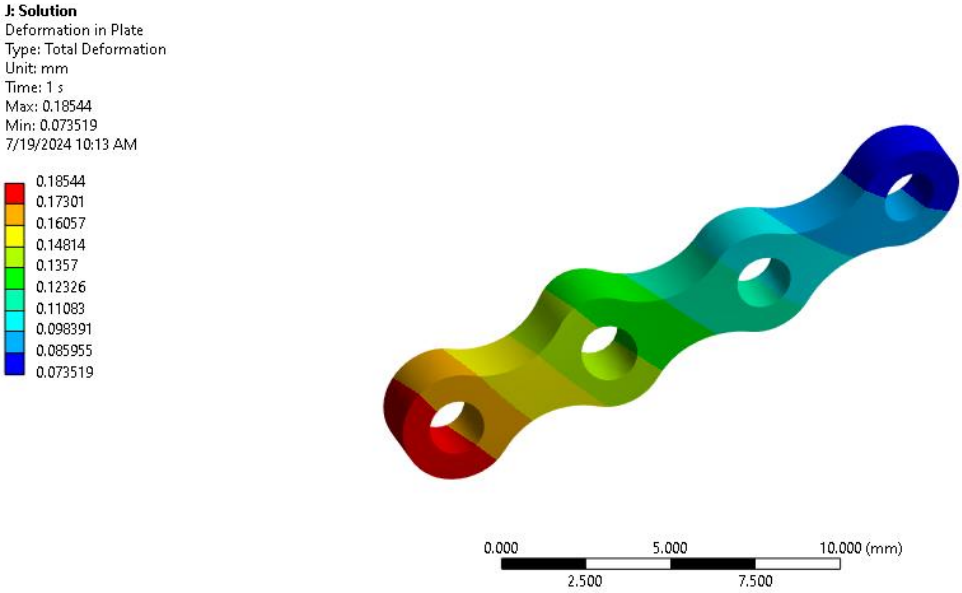

J: Solution
Deformation in Plate
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.20085
Min: 0.1001
7/17/2024 9:31 AM
0.20085
0.18965
0.17846
0.16727
0.15607
0.14488
0.13368
0.12249
0.11129
0.1001
0.000
5.000
10.000 (mm)
2.500
7.500

(b)

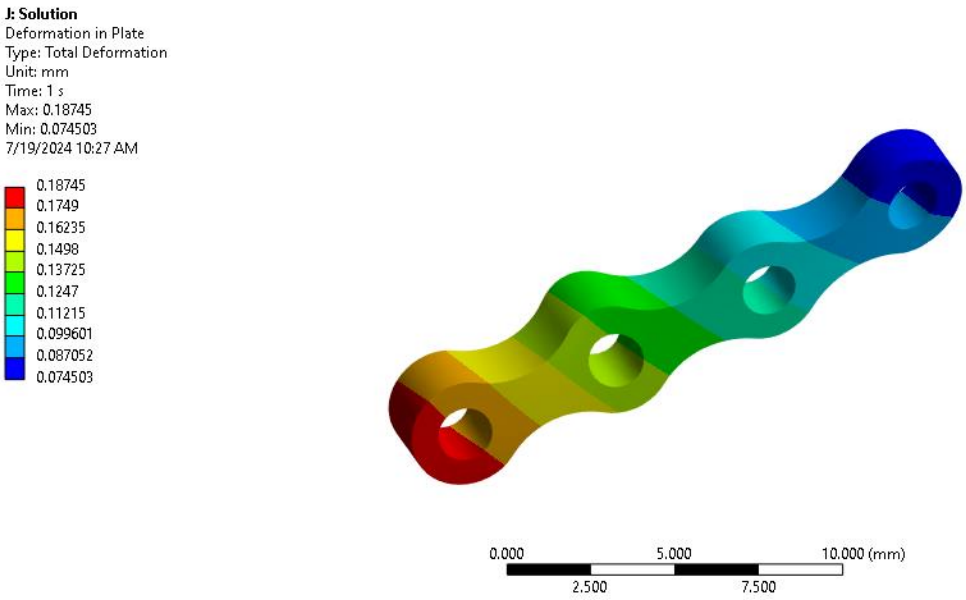


(c)

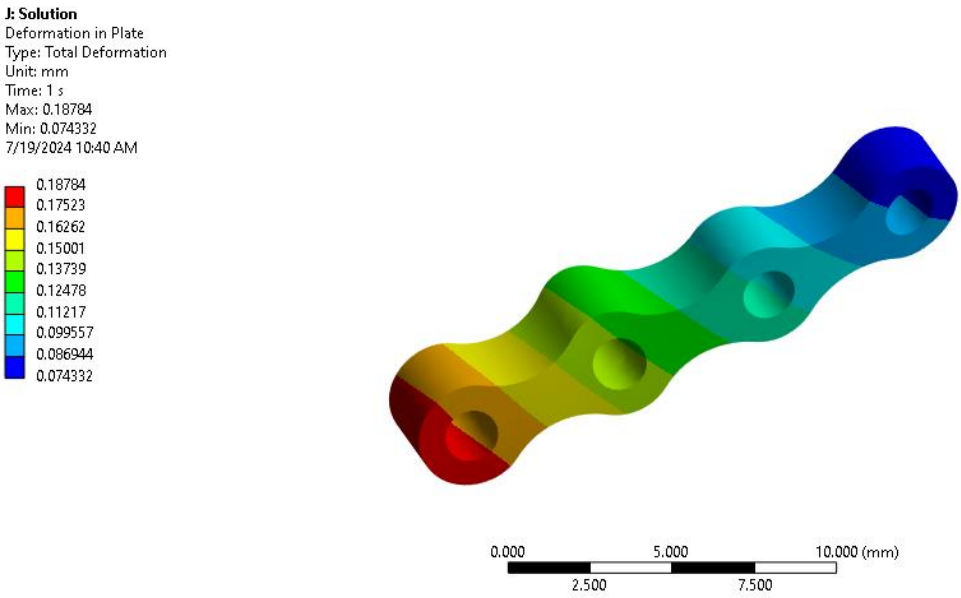
Fig S20: Total Deformation in the Mini Plate of Titanium alloy (a) Single plate (Type 1) without interval and vertical fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and vertical fracture with thickness 1.5 mm (c Single plate (Type 1) without interval and vertical fracture with thickness 2.0 mm.



(a)

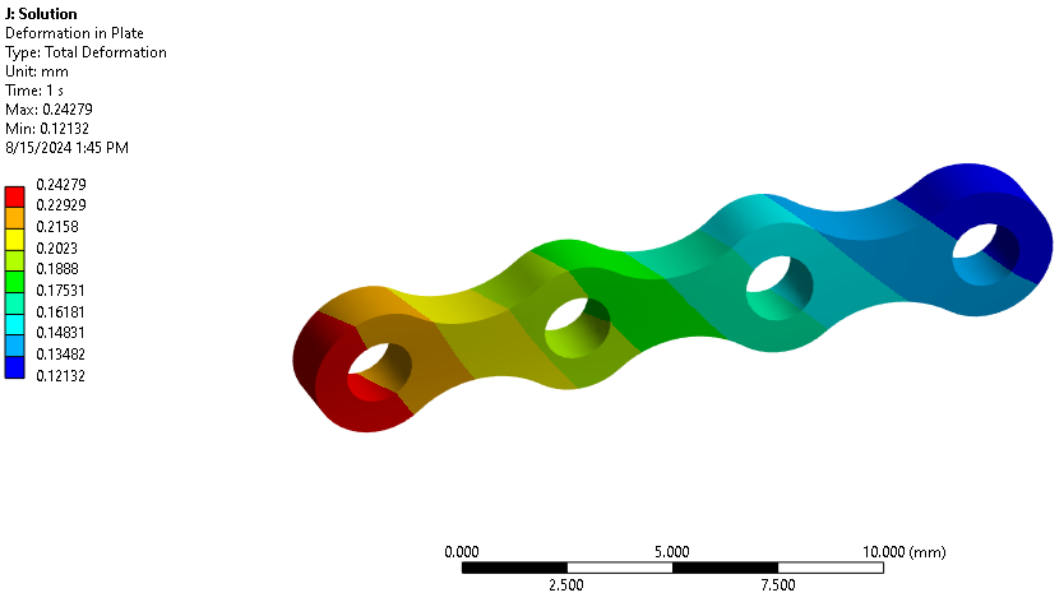


(b)

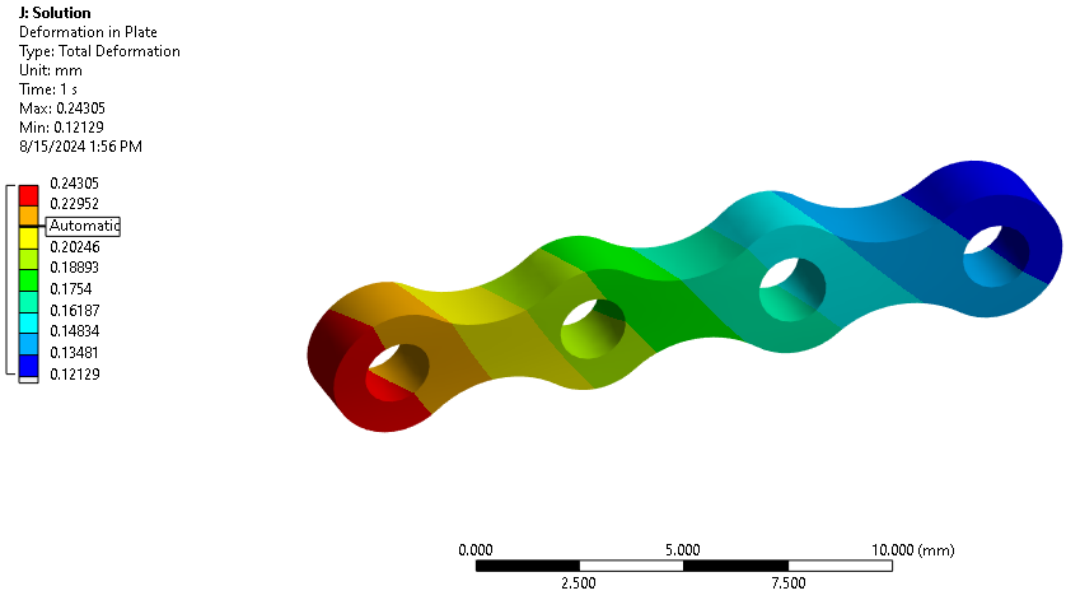


(c)

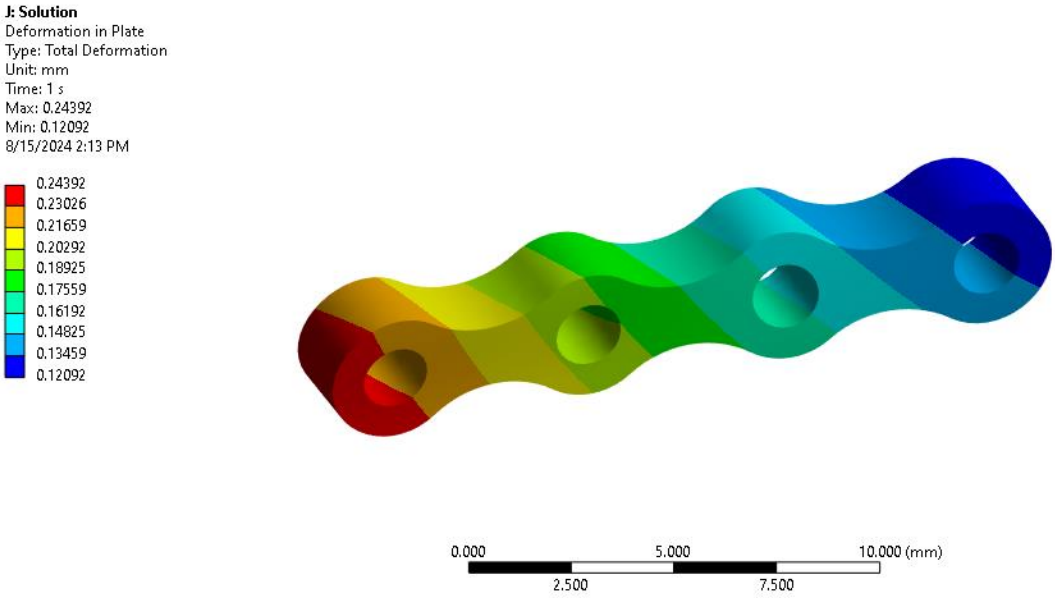
Fig S21: Total Deformation in the Mini Plate of Titanium alloy (a) Single plate (Type 1) without interval and unfavorable fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and favorable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and unfavorable fracture with thickness 2.0 mm.


J: Solution
Deformation in Plate
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.24279
Min: 0.12132
8/15/2024 1:45 PM
0.24279
0.22929
0.2158
0.2023
0.1888
0.17531
0.16181
0.14831
0.13482
0.12132
0.000
5.000
10.000 (mm)
2.500
7.500

(a)

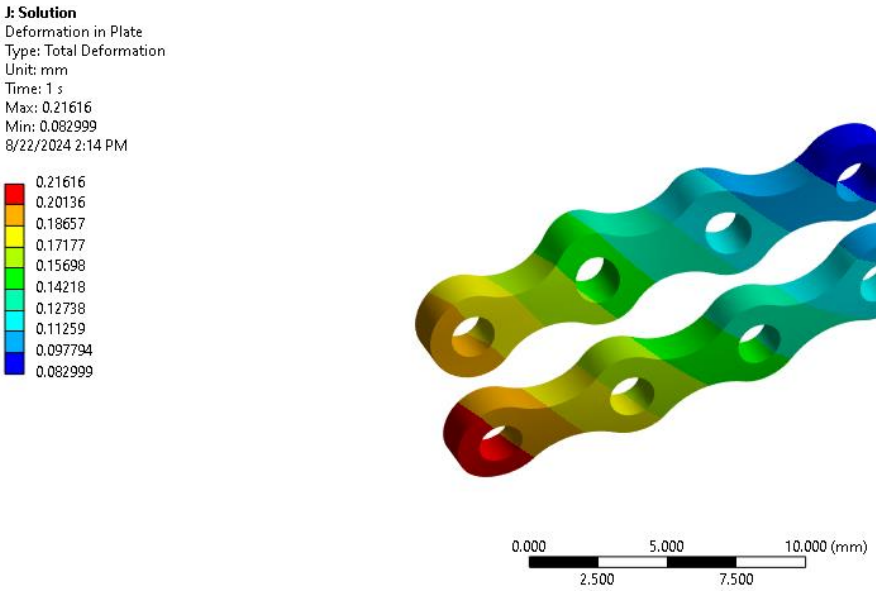

J: Solution
Deformation in Plate
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.24305
Min: 0.12129
8/15/2024 1:56 PM
0.24305
0.22952
Automatic
0.20246
0.18893
0.1754
0.16187
0.14834
0.13481
0.12129
0.000
5.000
10.000 (mm)
2.500
7.500

(b)

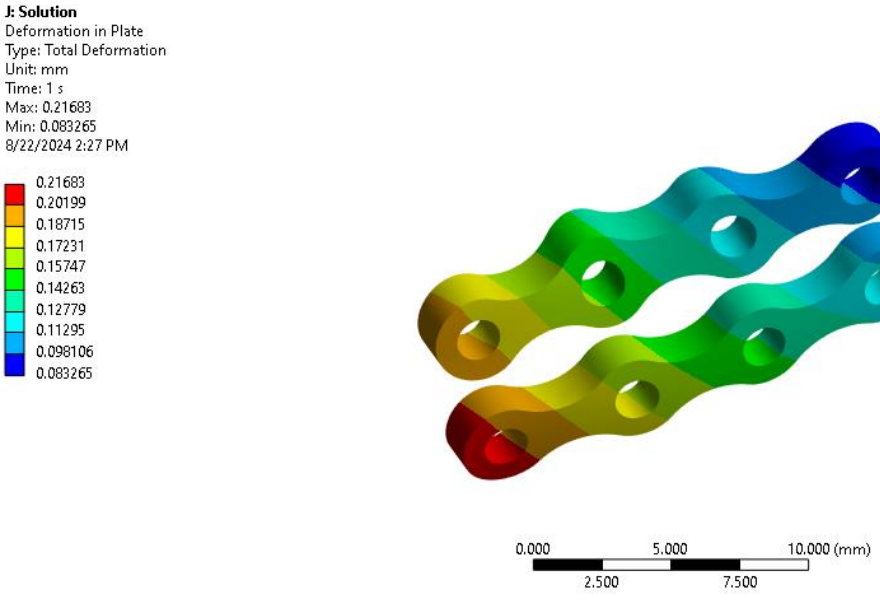


(c)

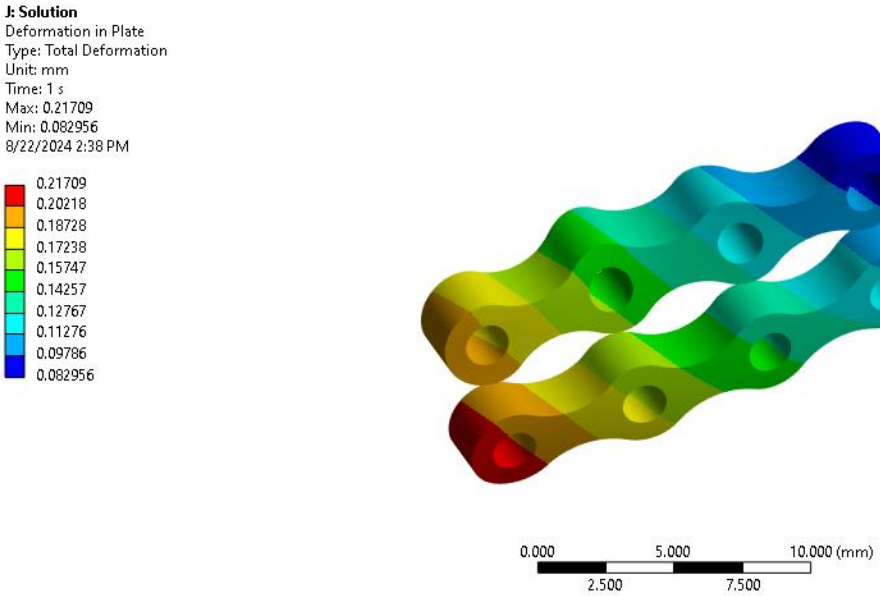
Fig S22: Total Deformation in the Mini Plate of Titanium alloy (a) Single plate (Type 1) without interval and favorable fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and favorable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and favorable fracture with thickness 2.0 mm.



(a)

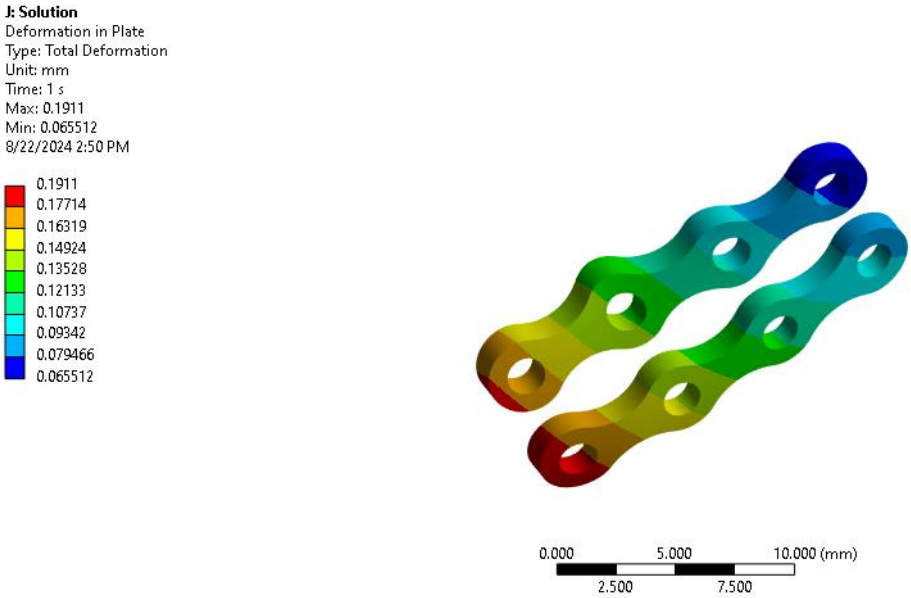


(b)

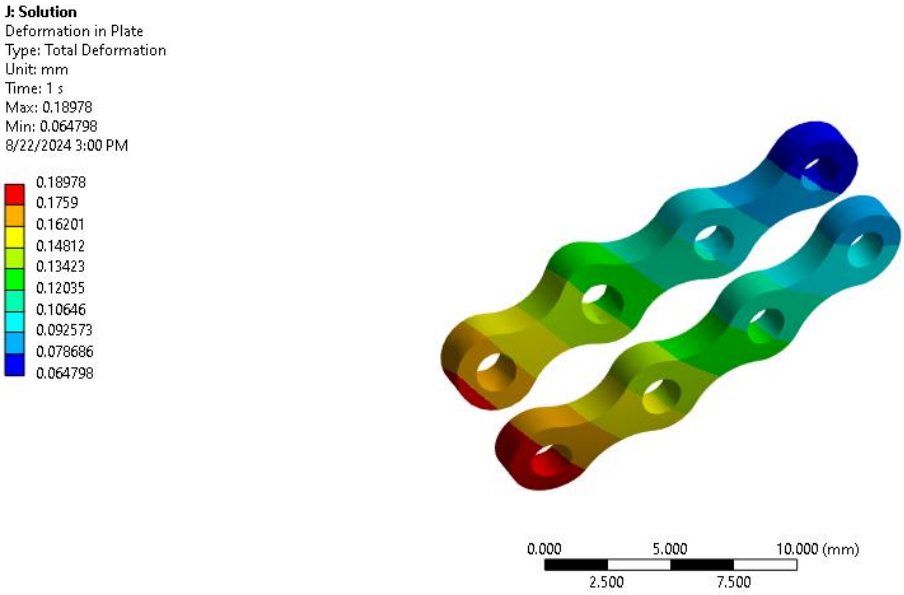


(c)

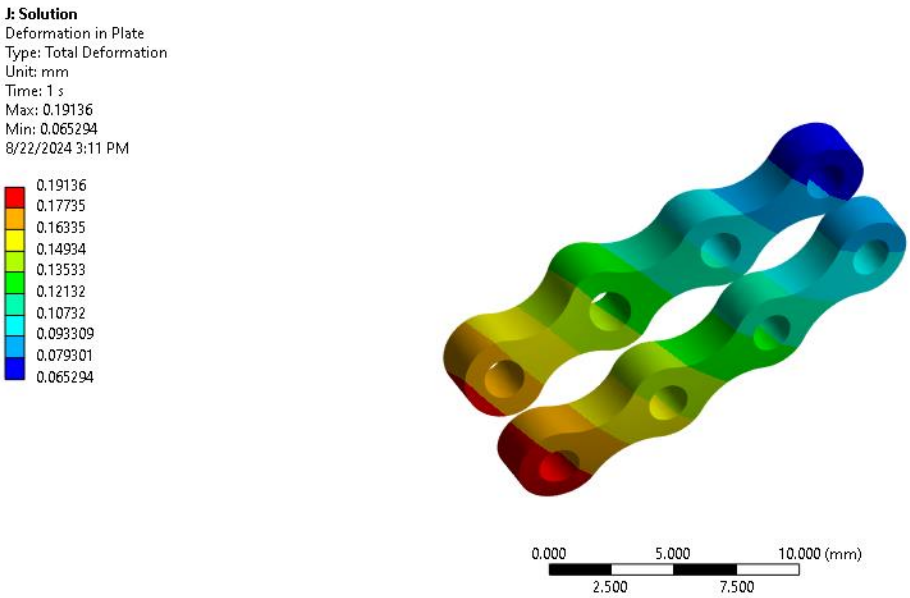
Fig S23: Total Deformation in the Mini Plate of Titanium alloy (a) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and vertical fracture with thickness 2.0 mm.


J: Solution
Deformation in Plate
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.1911
Min: 0.065512
8/22/2024 2:50 PM
0.1911
0.17714
0.16319
0.14924
0.13528
0.12133
0.10737
0.09342
0.079466
0.065512
0.000
5.000
10.000 (mm)
2.500
7.500

(a)

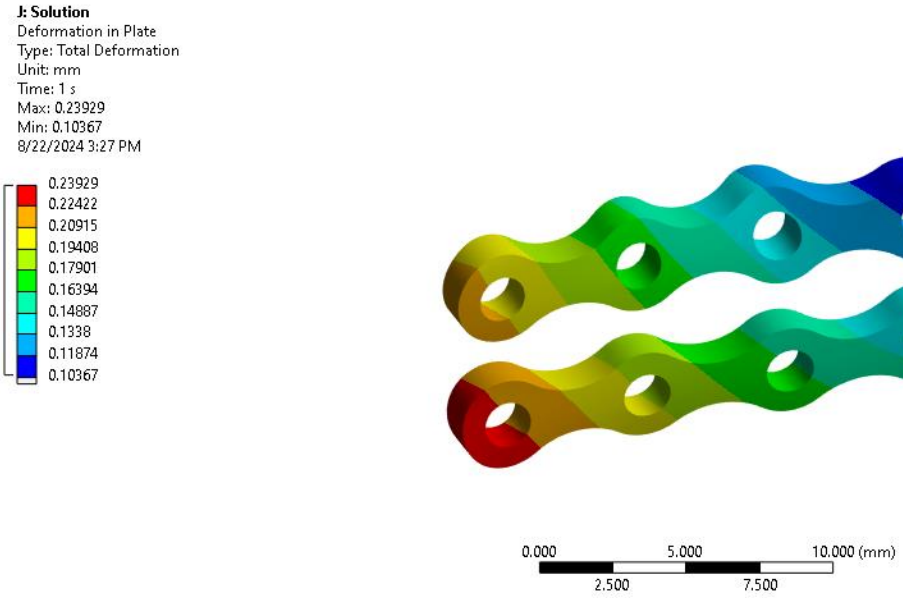

J: Solution
Deformation in Plate
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.18978
Min: 0.064798
8/22/2024 3:00 PM
0.18978
0.1759
0.16201
0.14812
0.13423
0.12035
0.10646
0.092573
0.078686
0.064798
0.000
5.000
10.000 (mm)
2.500
7.500

(b)

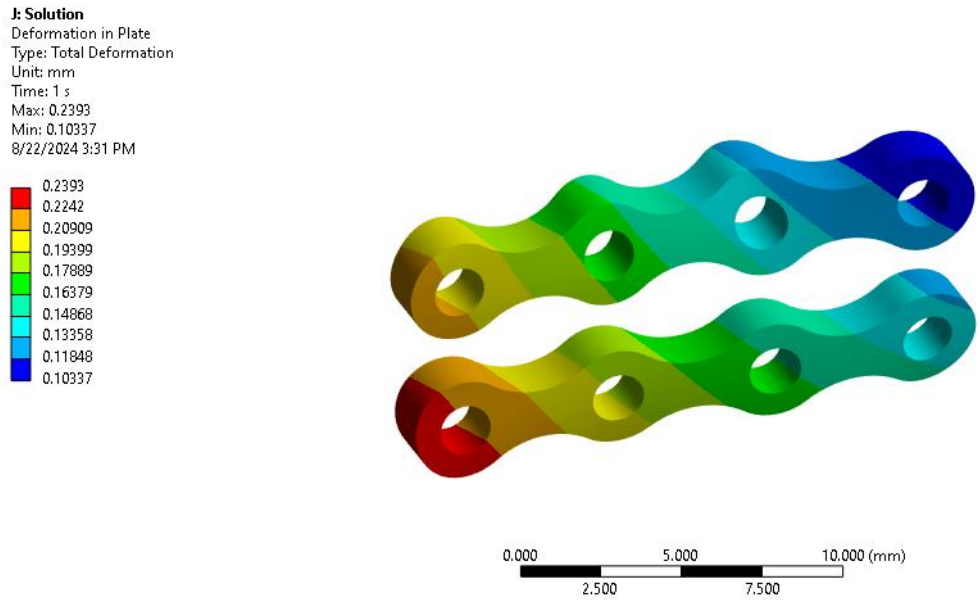


(c)

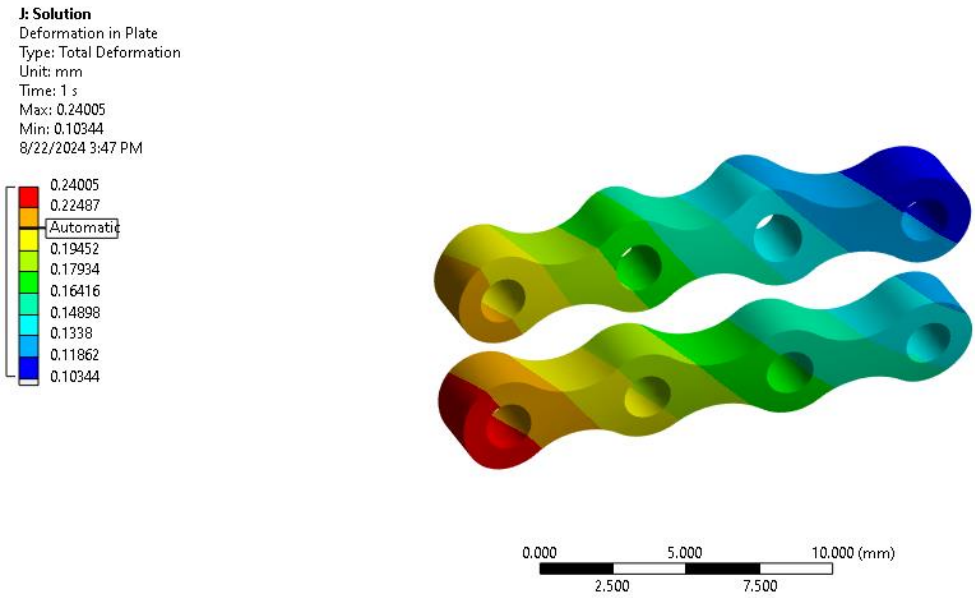
Fig S24: Total Deformation in the Mini Plate of Titanium alloy (a) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 2.0 mm.



(a)

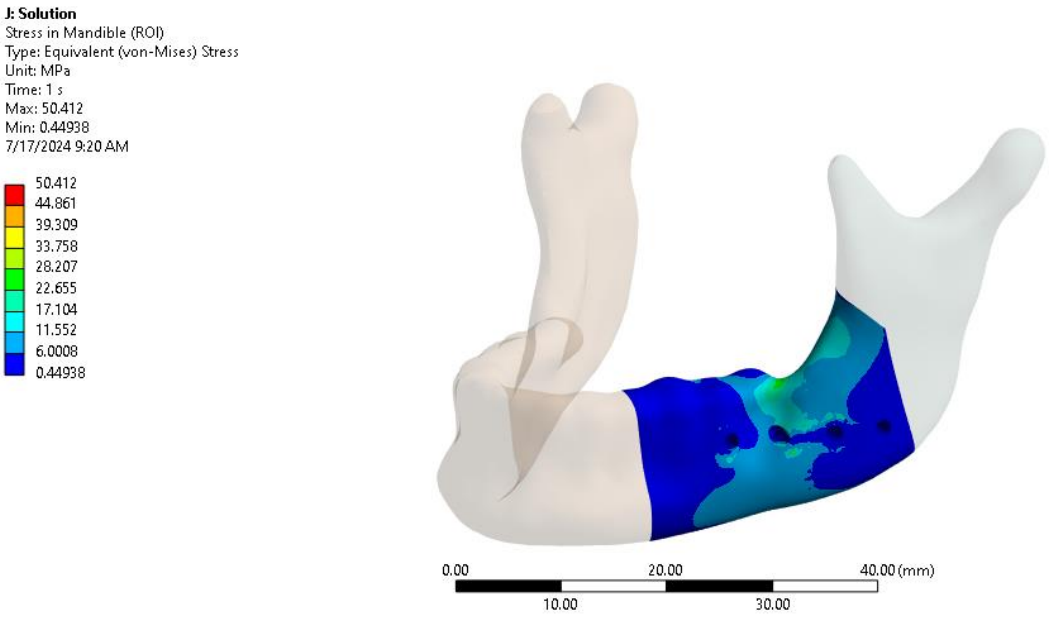


(b)

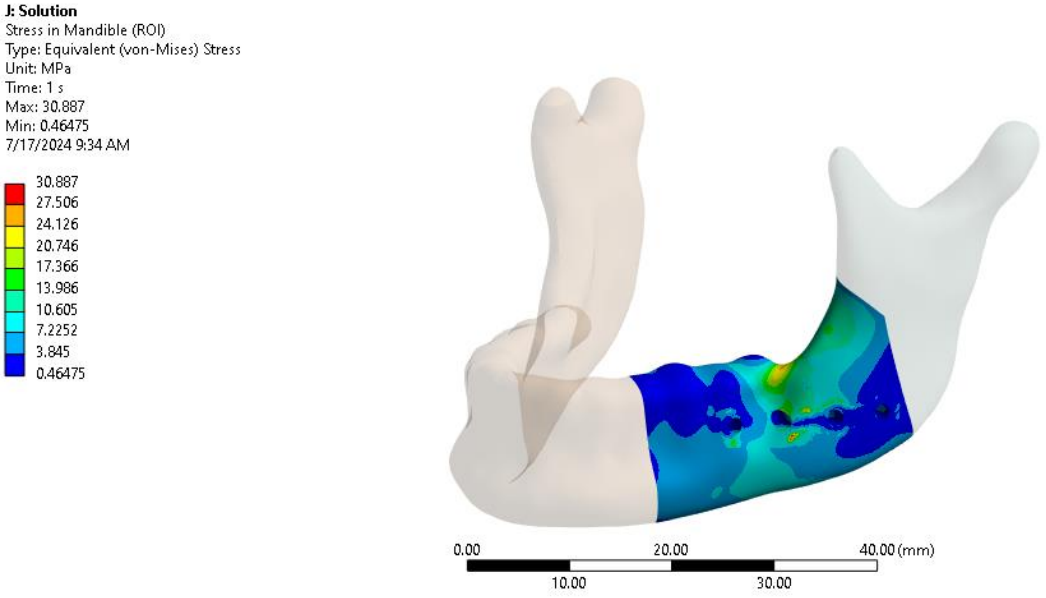


(c)

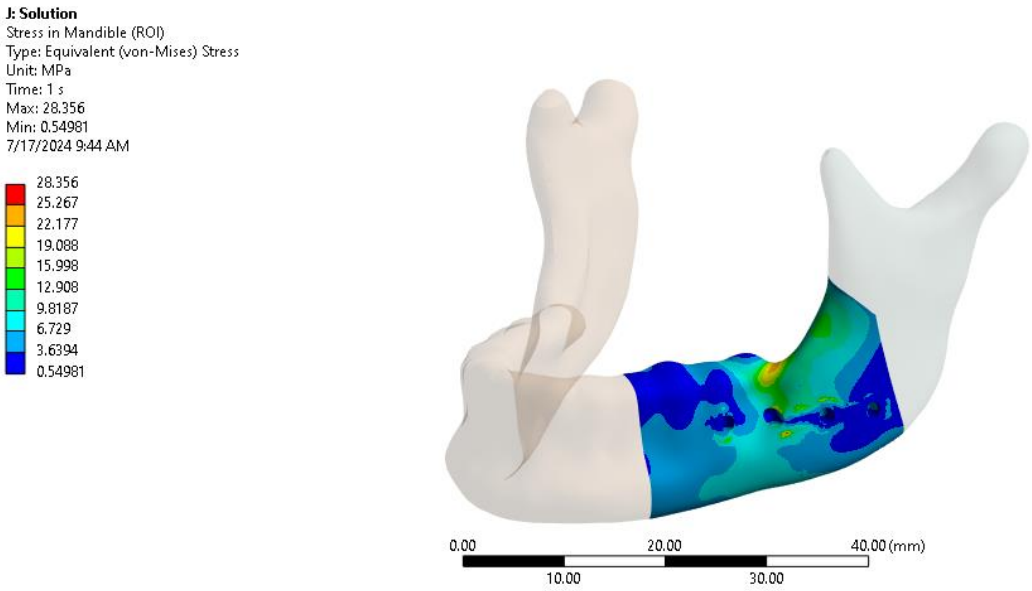
Fig S25: Total Deformation in the Mini Plate of Titanium alloy (a) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and favorable fracture with thickness 2.0 mm.


J: Solution
Stress in Mandible (ROI)
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 50.412
Min: 0.44938
7/17/2024 9:20 AM
50.412
44.861
39.309
33.758
28.207
22.655
17.104
11.552
6.0008
0.44938
0.00
20.00
40.00 (mm)
10.00
30.00

(a)

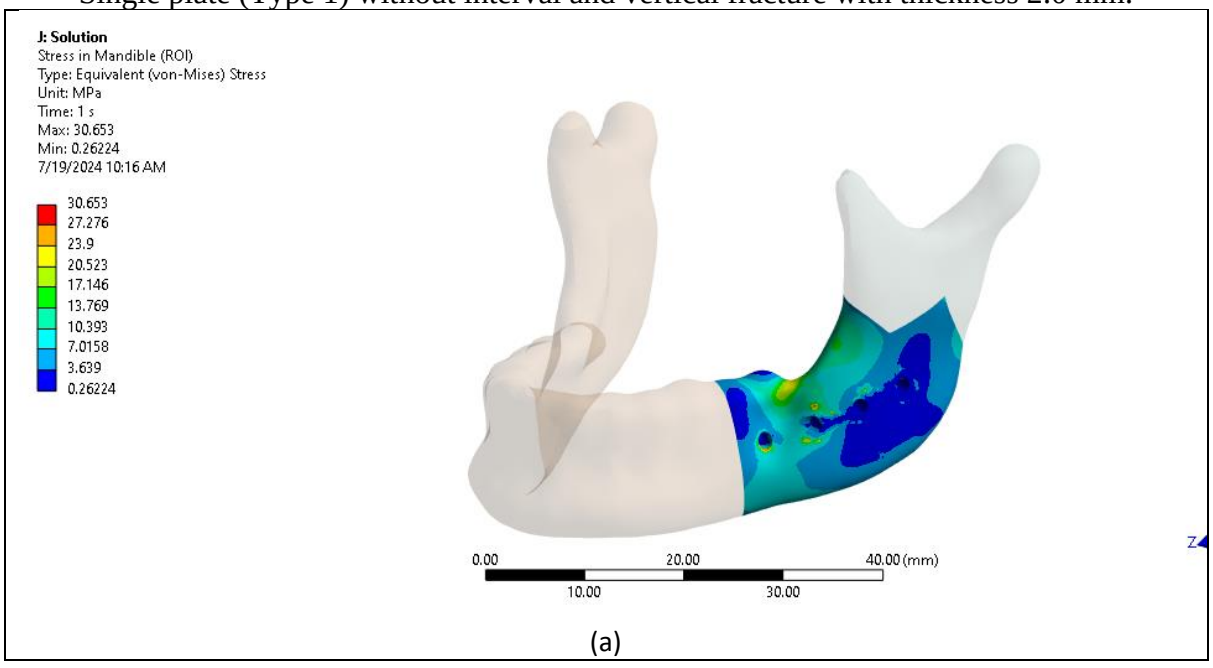

J: Solution
Stress in Mandible (ROI)
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 30.887
Min: 0.46475
7/17/2024 9:34 AM
30.887
27.506
24.126
20.746
17.366
13.986
10.605
7.2252
3.845
0.46475
0.00
20.00
40.00 (mm)
10.00
30.00

(b)

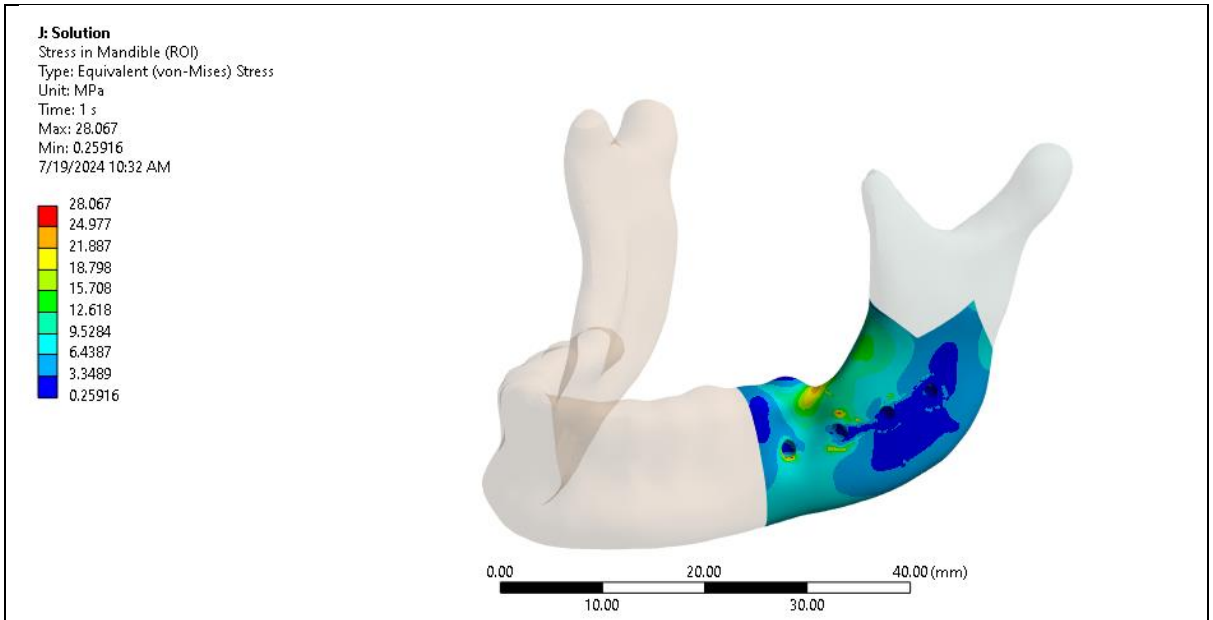


(c)

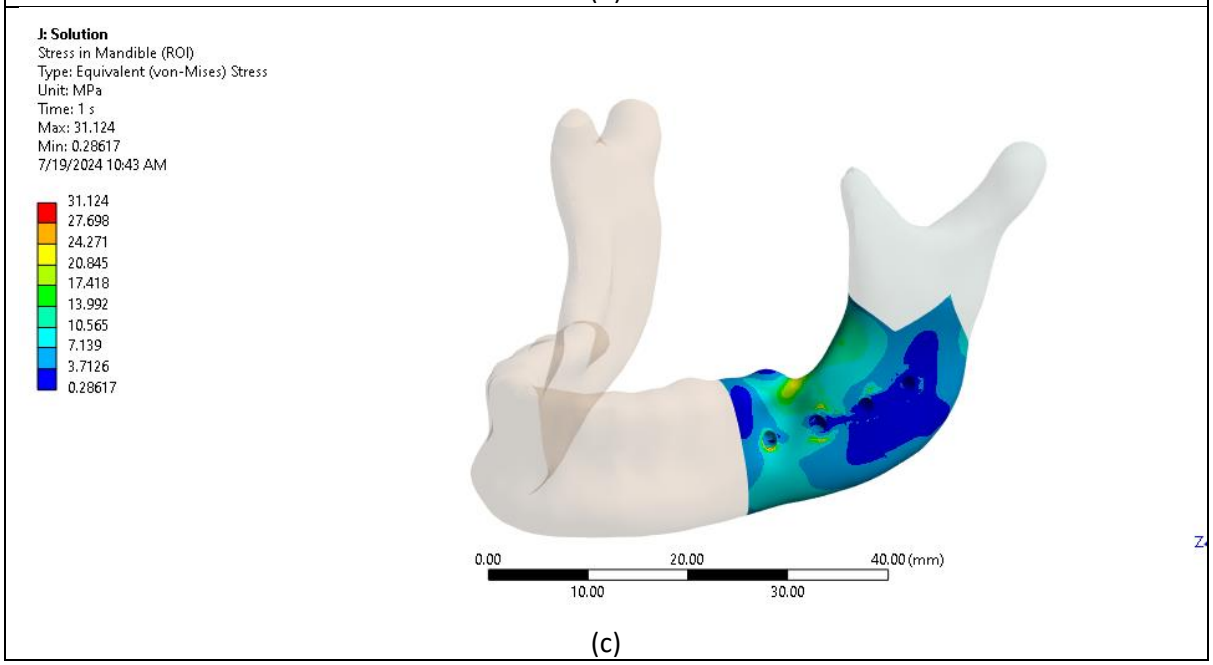
Fig S26: Maximum Stress (MPa) in the Mandible with Mini Plate Fixation of Magnesium Alloy (a) Single plate (Type 1) without interval and vertical fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and vertical fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and vertical fracture with thickness 2.0 mm.



(a)

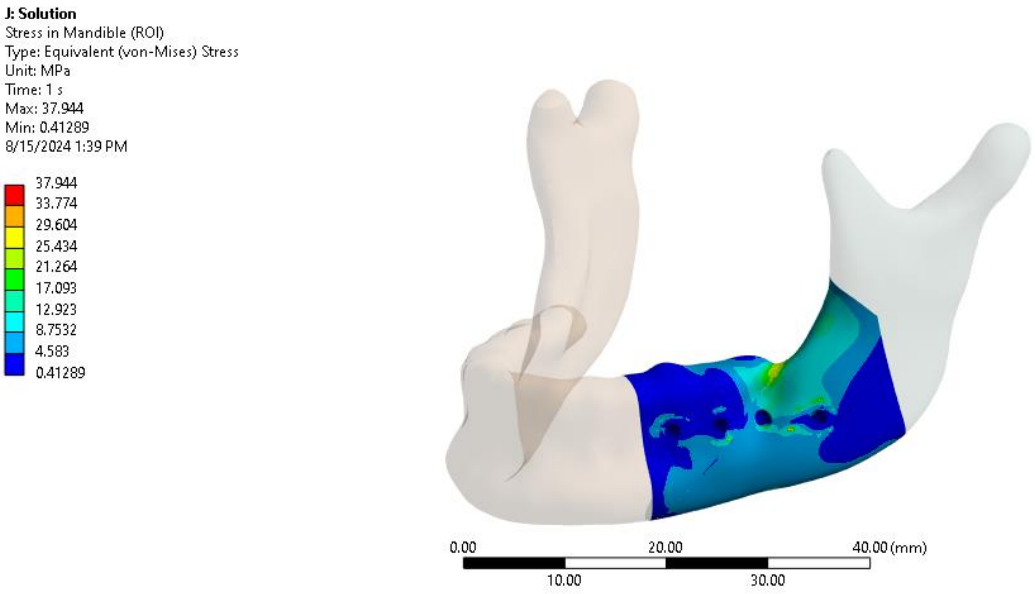


(b)

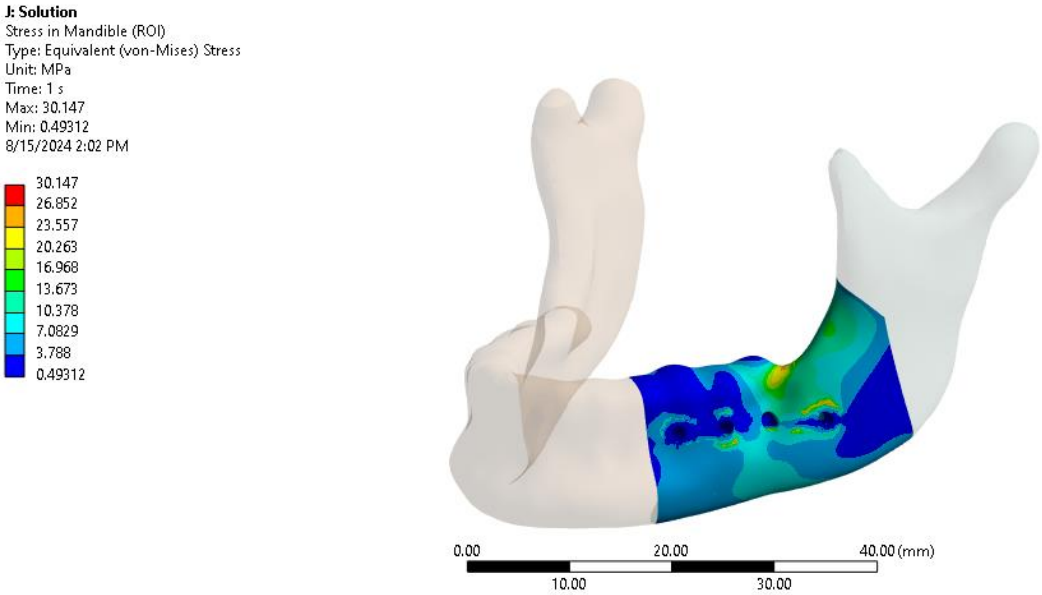


(c)

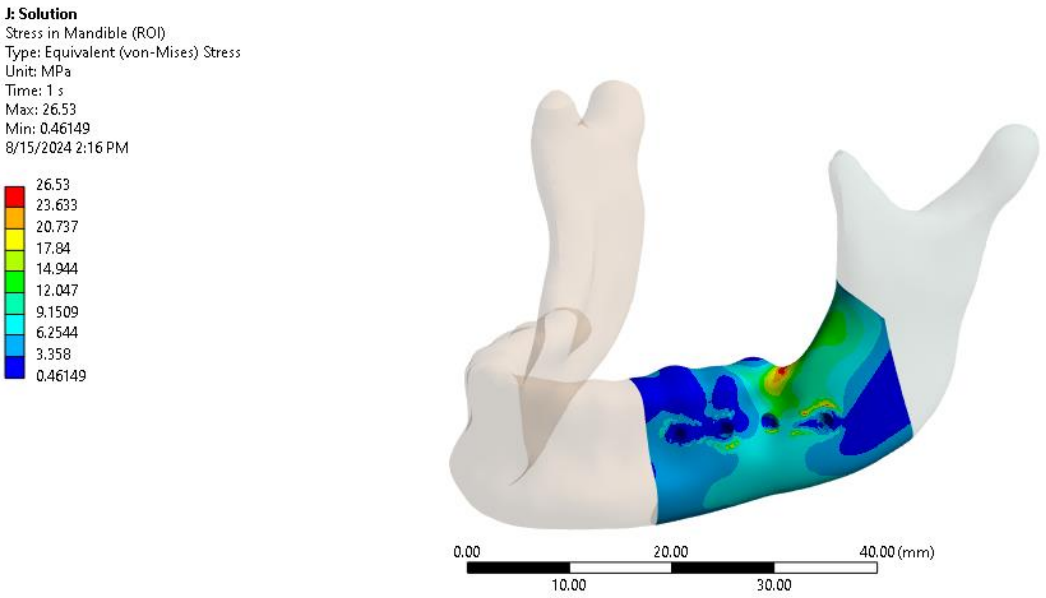
Fig S27: Maximum Stress (MPa) in the Mandible with Mini Plate Fixation of Magnesium Alloy (a) Single plate (Type 1) without interval and unfavourable fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and unfavourable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and unfavourable fracture with thickness 2.0 mm.


J: Solution
Stress in Mandible (ROI)
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 37.944
Min: 0.41289
8/15/2024 1:39 PM
37.944
33.774
29.604
25.434
21.264
17.093
12.923
8.7532
4.583
0.41289
0.00
20.00
40.00 (mm)
10.00
30.00

(a)

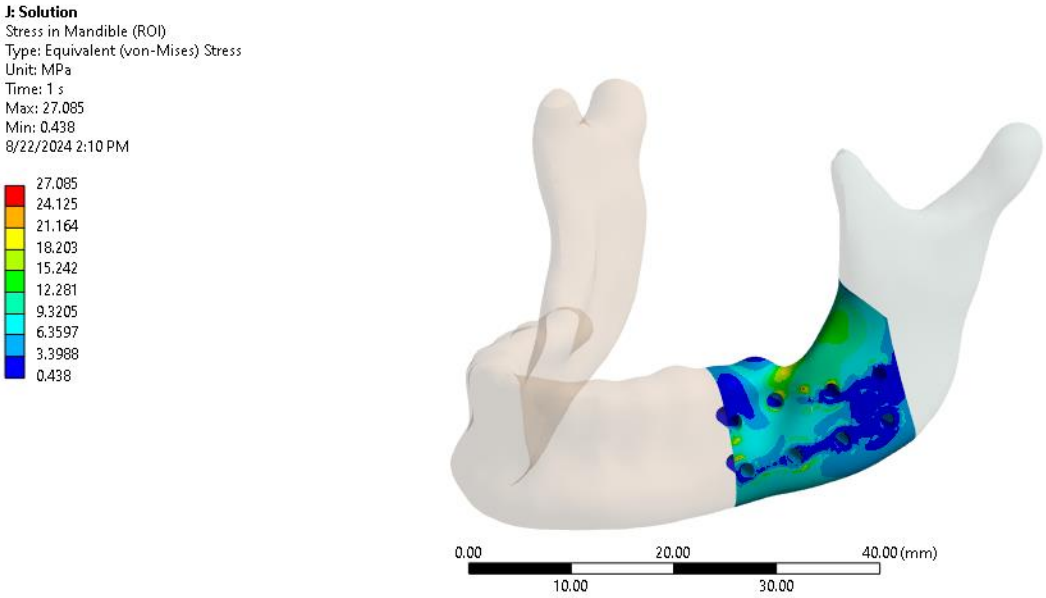

J: Solution
Stress in Mandible (ROI)
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 30.147
Min: 0.49312
8/15/2024 2:02 PM
30.147
26.852
23.557
20.263
16.968
13.673
10.378
7.0829
3.788
0.49312
0.00
20.00
40.00 (mm)
10.00
30.00

(b)

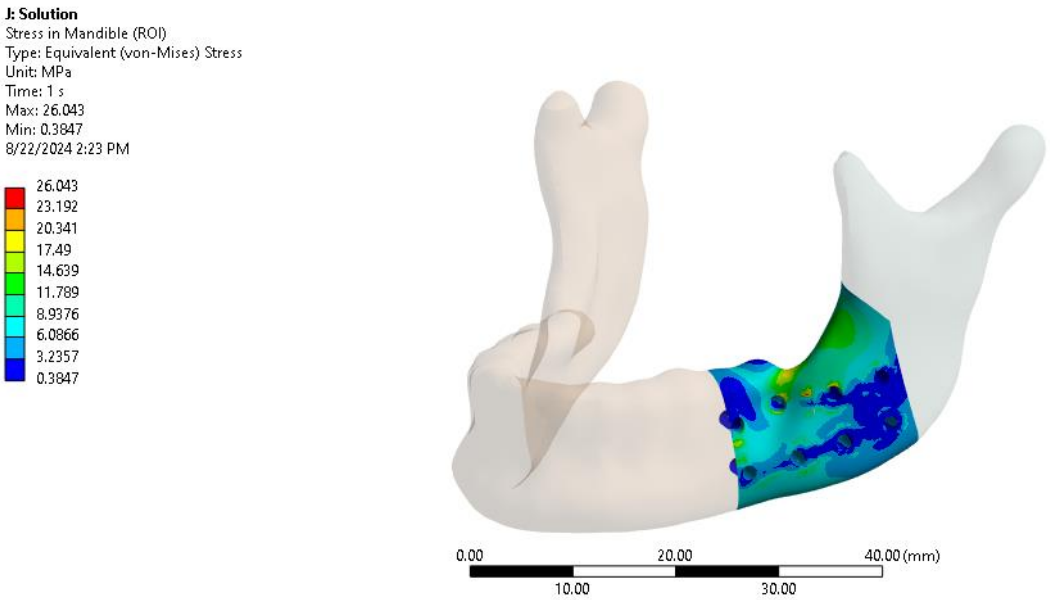


(c)

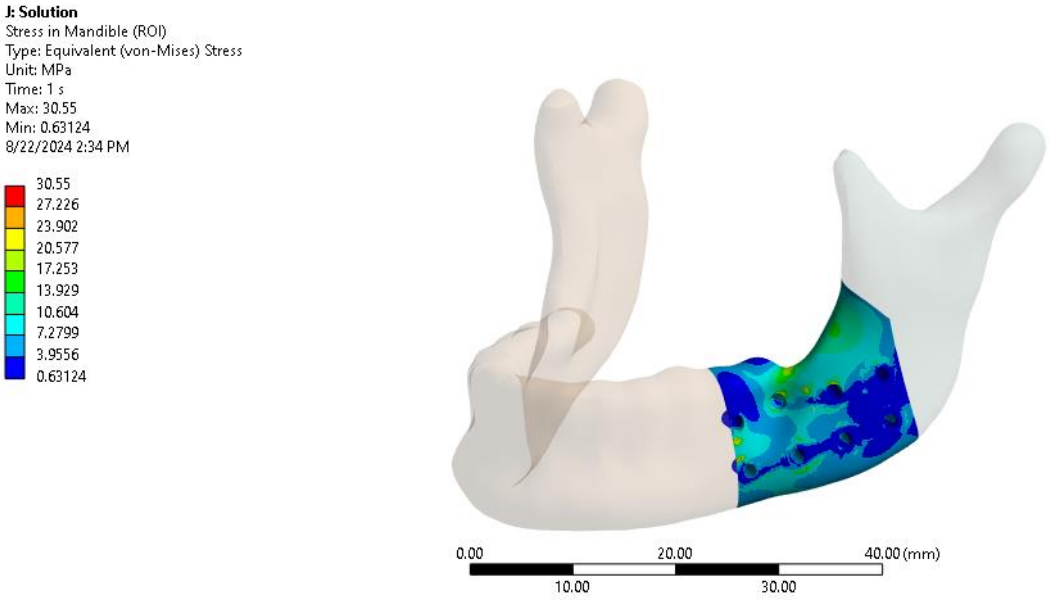
Fig S28: Maximum Stress (MPa) in the Mandible with Mini Plate Fixation of Magnesium Alloy (a) Single plate (Type 1) without interval and favourable fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and favourable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and favourable fracture with thickness 2.0 mm.



(a)

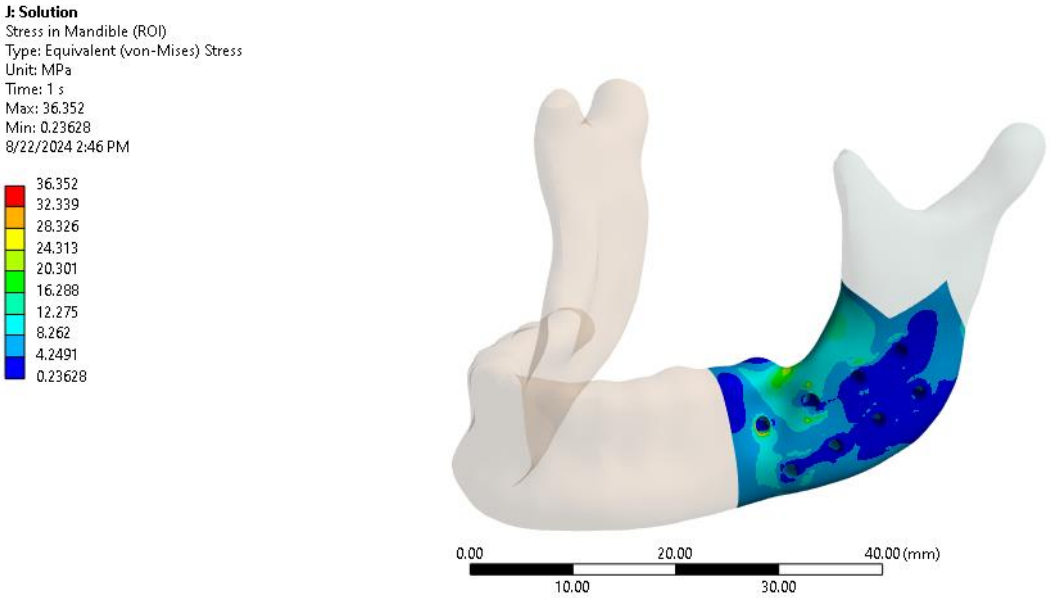


(b)

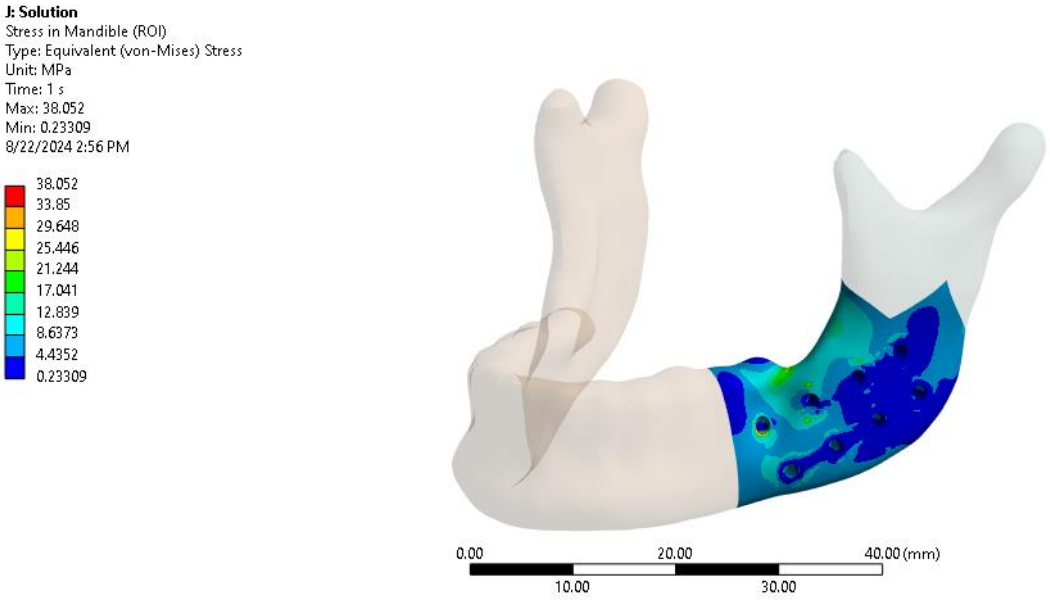


(c)

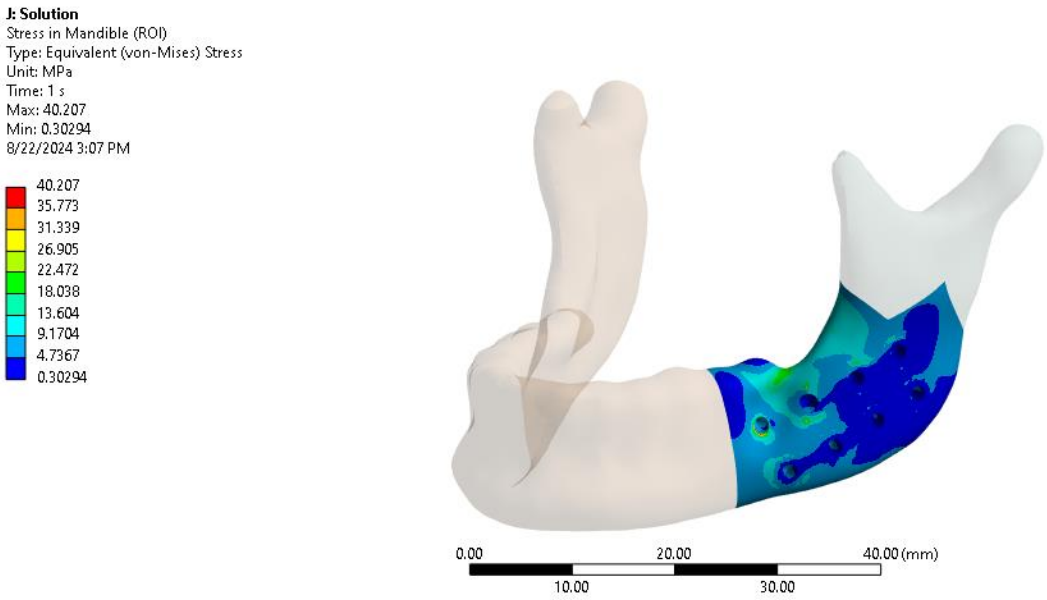
Fig. S29: Maximum Stress (MPa) in the Mandible with Mini Plate Fixation of Magnesium Alloy (a) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and vertical fracture with thickness 2.0 mm.


J: Solution
Stress in Mandible (ROI)
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 36.352
Min: 0.23628
8/22/2024 2:46 PM
36.352
32.339
28.326
24.313
20.301
16.288
12.275
8.262
4.2491
0.23628
0.00
20.00
40.00 (mm)
10.00
30.00

(a)

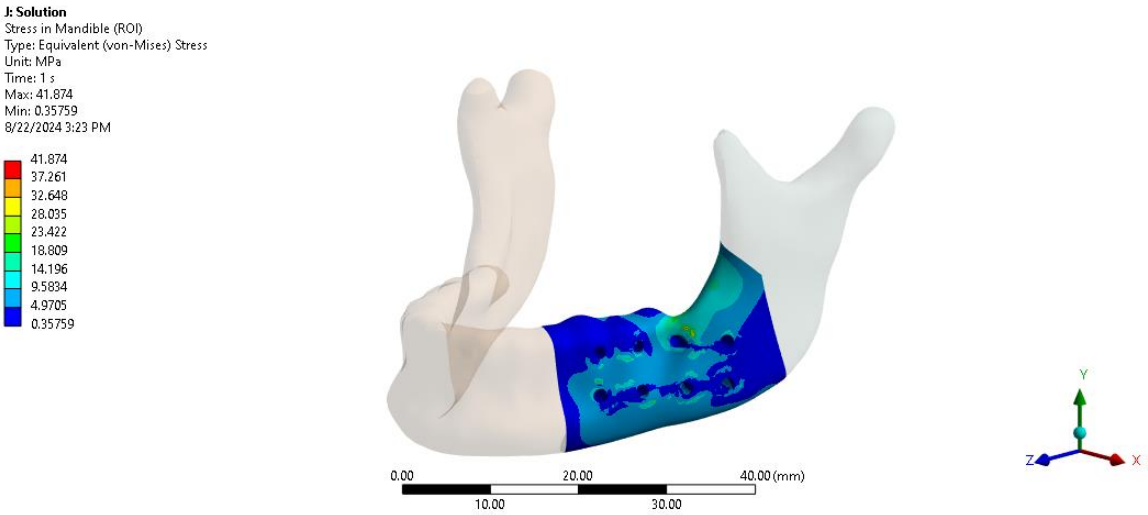

J: Solution
Stress in Mandible (ROI)
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 38.052
Min: 0.23309
8/22/2024 2:56 PM
38.052
33.85
29.648
25.446
21.244
17.041
12.839
8.6373
4.4352
0.23309
0.00
20.00
40.00 (mm)
10.00
30.00

(b)

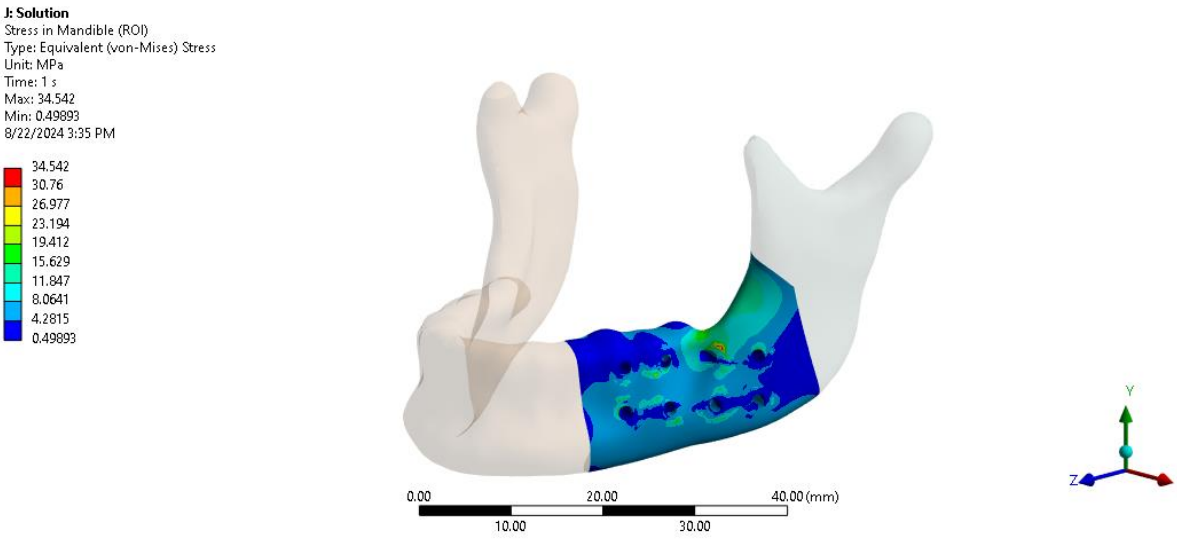


(c)

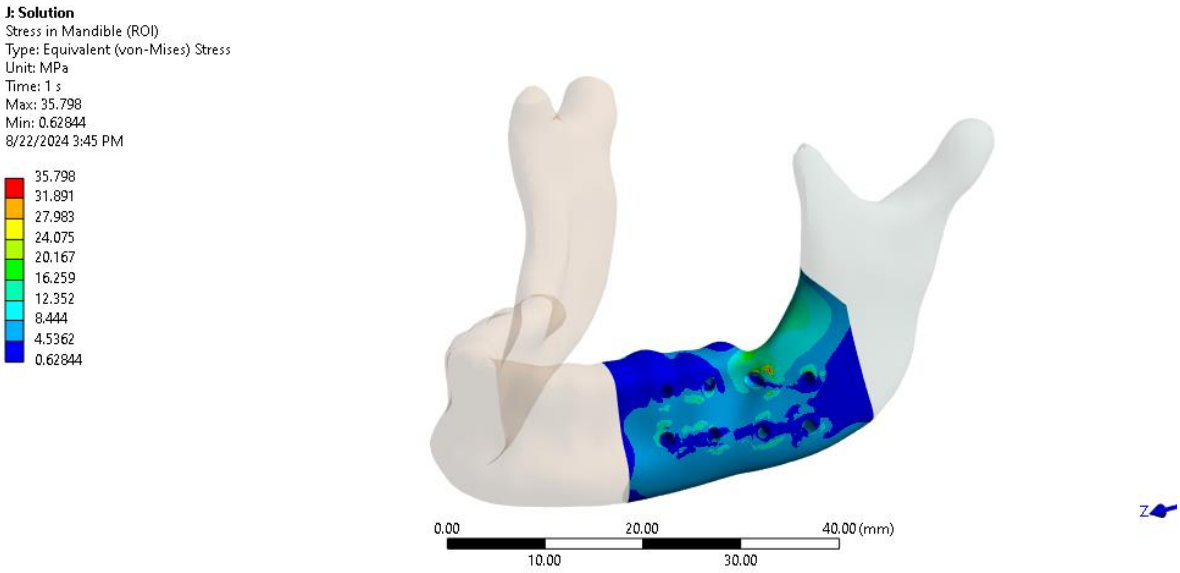
Fig. S30: Maximum Stress (MPa) in the Mandible with Mini Plate Fixation of Magnesium Alloy (a) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 2.0 mm.



(a)

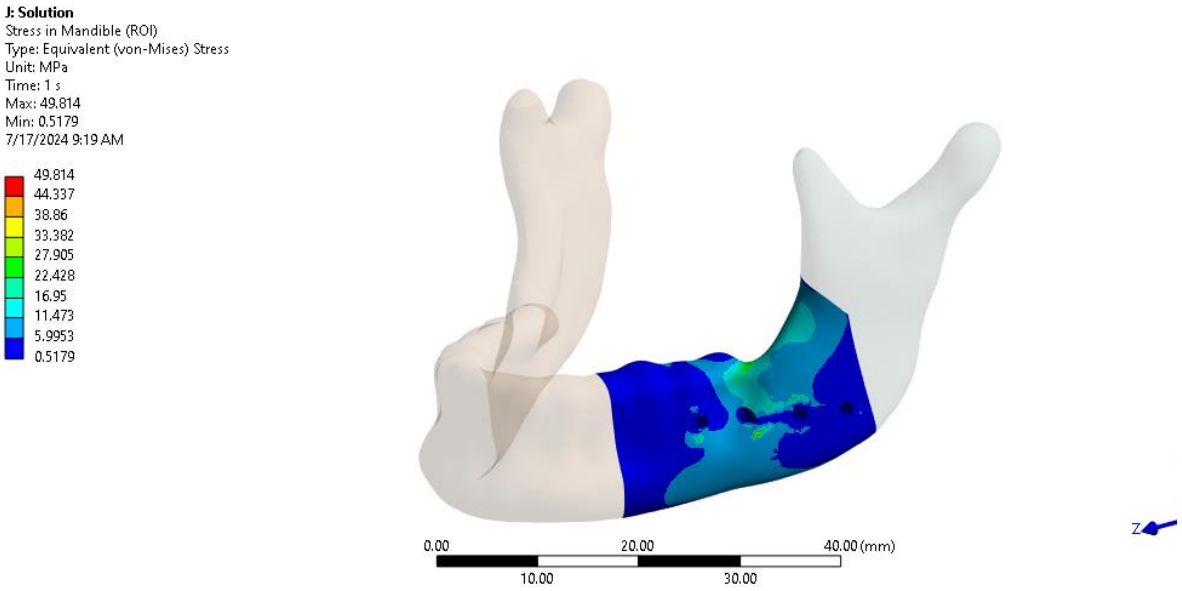


(b)

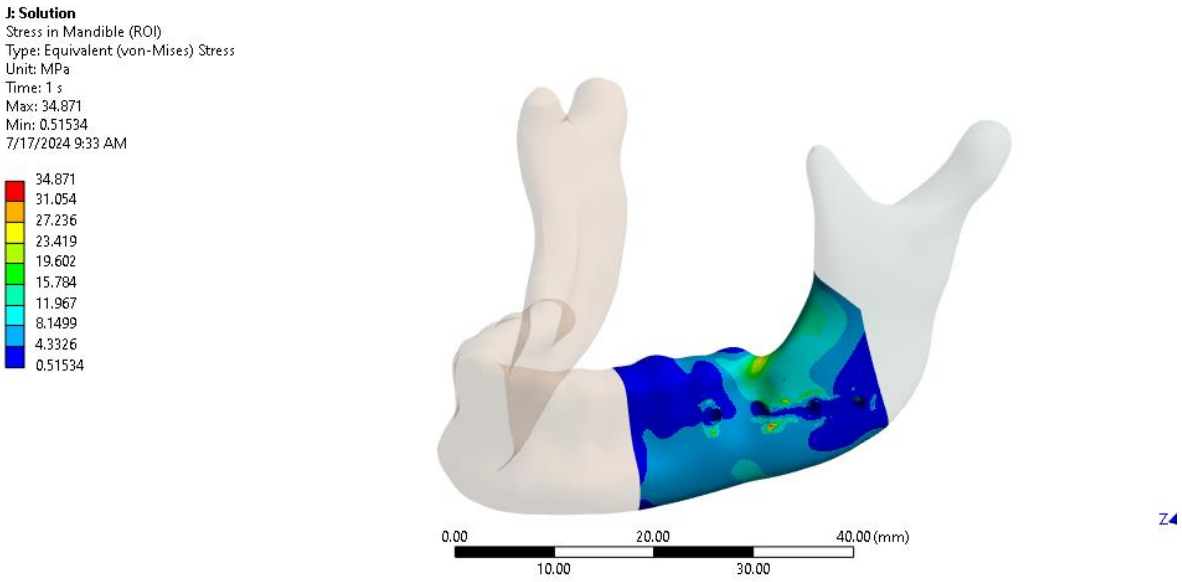


(c)

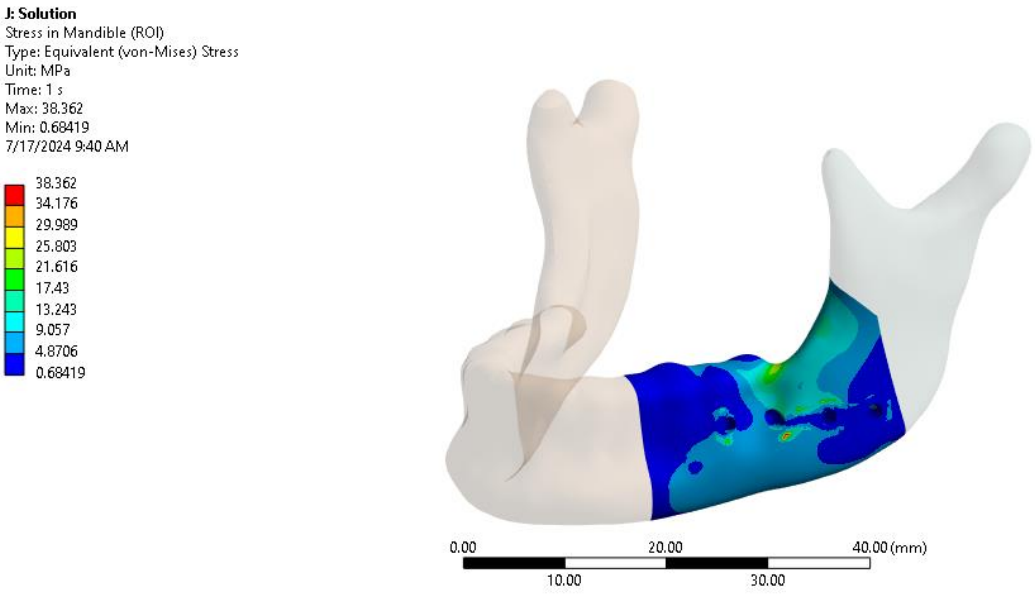
Fig. S31: Maximum Stress (MPa) in the Mandible with Mini Plate Fixation of Magnesium Alloy (a) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and favorable fracture with thickness 2.0 mm.


J: Solution
Stress in Mandible (ROI)
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 49.814
Min: 0.5179
7/17/2024 9:19 AM
49.814
44.337
38.86
33.382
27.905
22.428
16.95
11.473
5.9953
0.5179
0.00
20.00
40.00 (mm)
10.00
30.00
Z

(a)

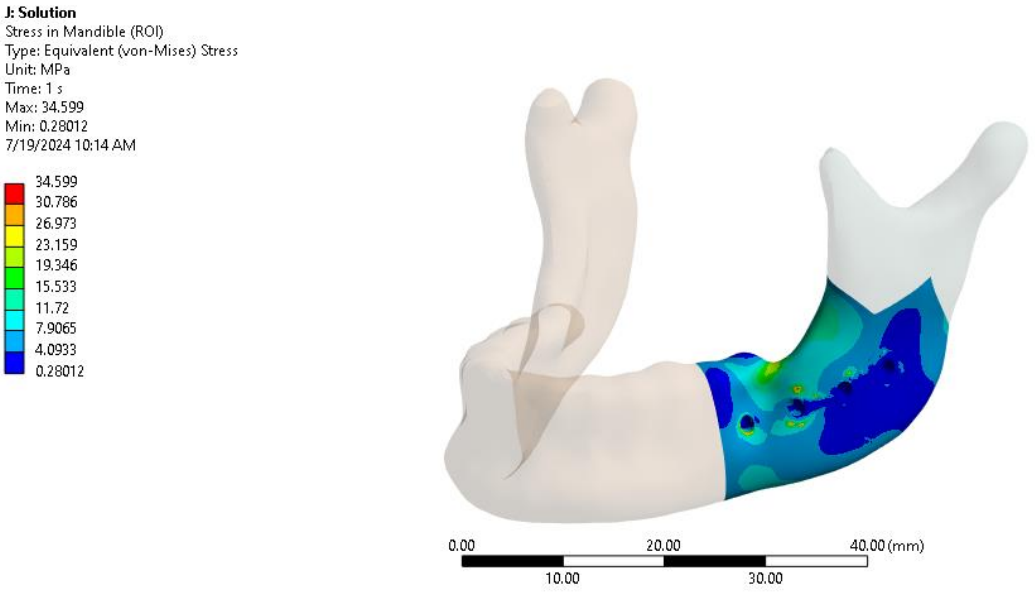

J: Solution
Stress in Mandible (ROI)
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 34.871
Min: 0.51534
7/17/2024 9:33 AM
34.871
31.054
27.236
23.419
19.602
15.784
11.967
8.1499
4.3326
0.51534
0.00
20.00
40.00 (mm)
10.00
30.00
Z

(b)

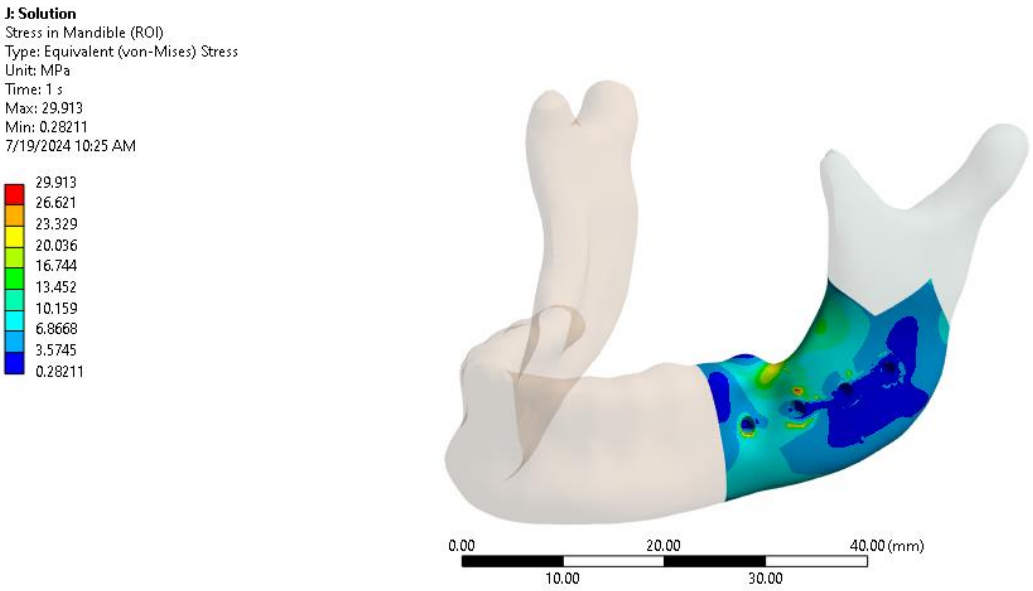


(c)

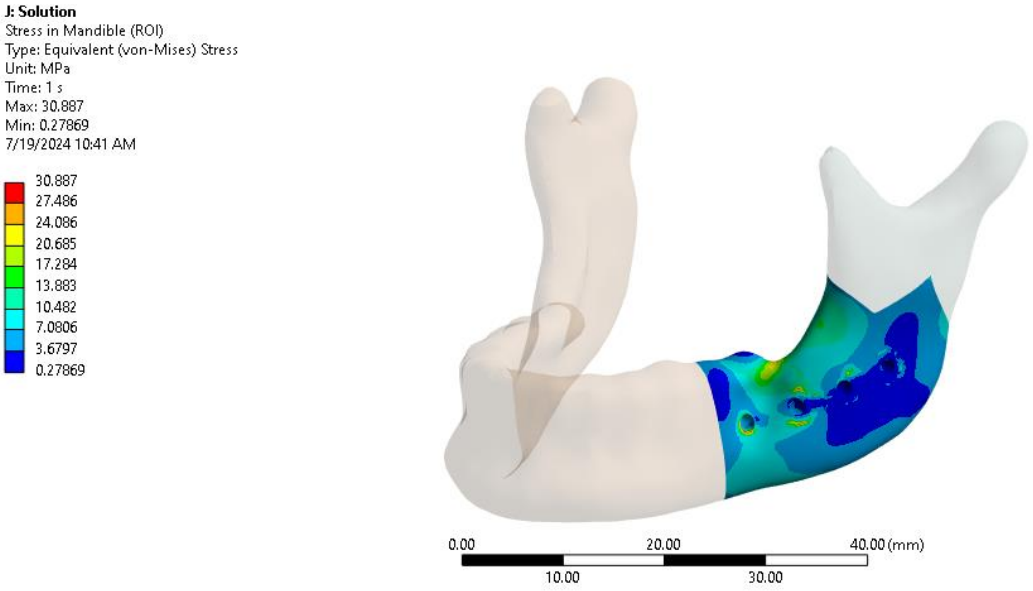
Fig. S32: Maximum Stress (MPa) in the Mandible with Mini Plate Fixation of Titanium Alloy (a) Single plate (Type 1) without interval and vertical fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and vertical fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and vertical fracture with thickness 2.0 mm.



(a)

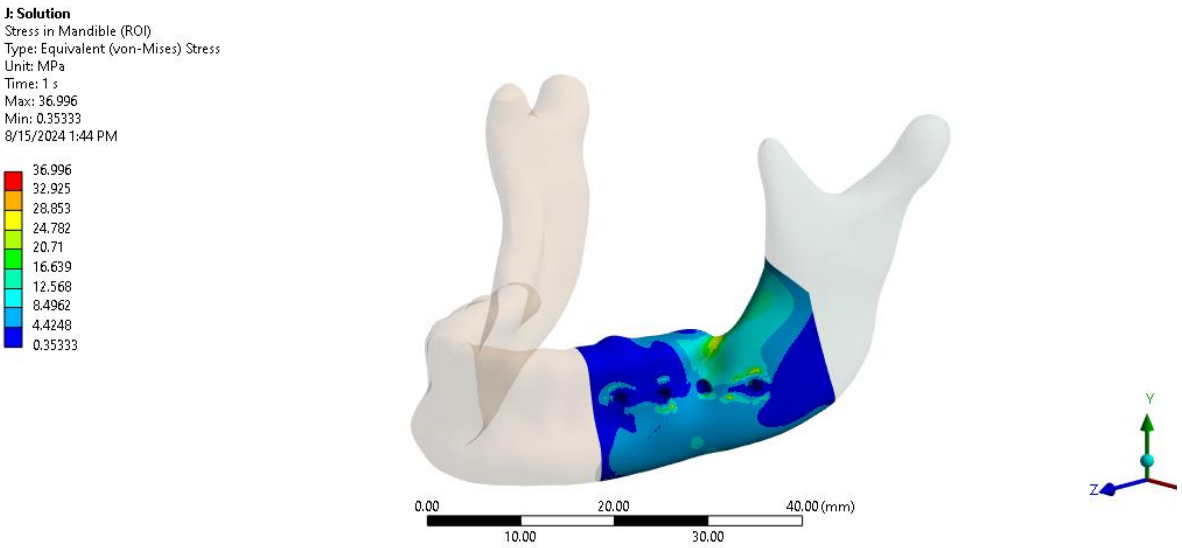


(b)

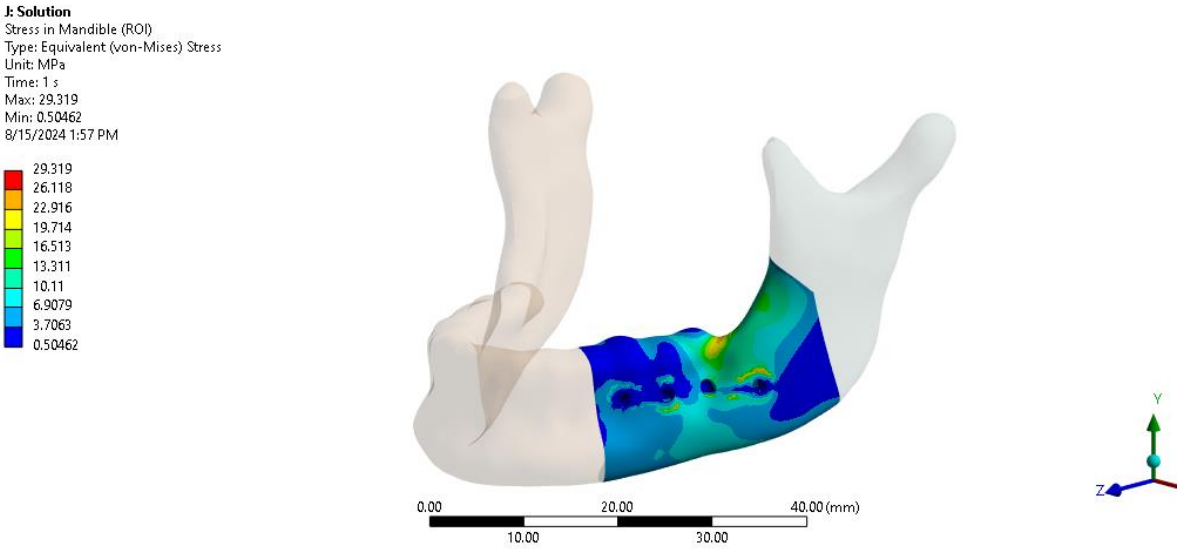


(c)

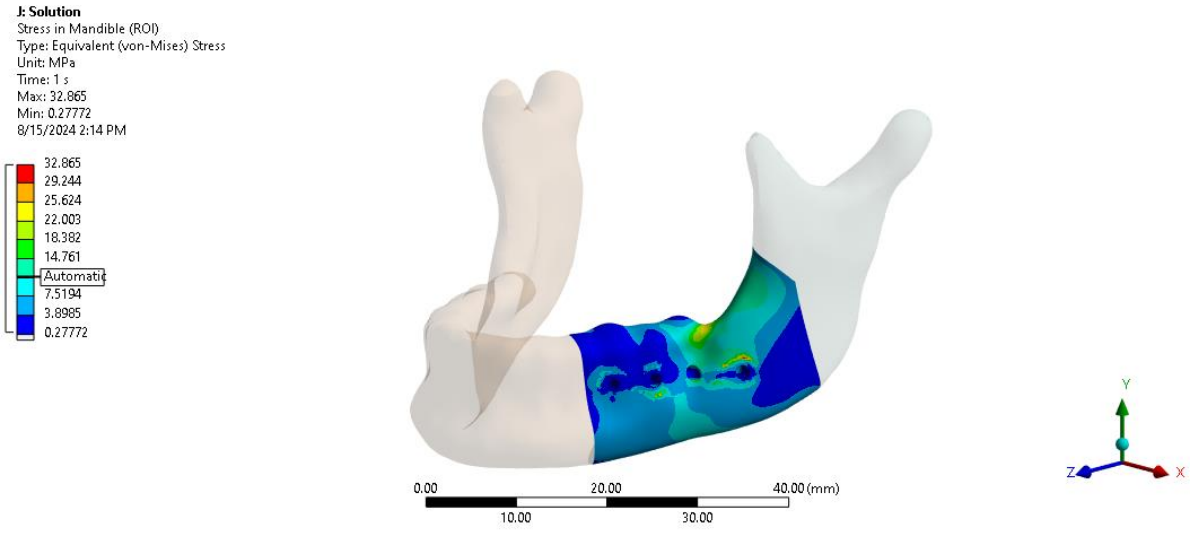
Fig S33: Maximum Stress (MPa) in the Mandible with Mini Plate Fixation of Titanium Alloy (a) Single plate (Type 1) without interval and unfavorable fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and unfavorable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and unfavorable fracture with thickness 2.0 mm.


J: Solution
Stress in Mandible (ROI)
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 36.996
Min: 0.35333
8/15/2024 1:44 PM
36.996
32.925
28.853
24.782
20.71
16.639
12.568
8.4962
4.4248
0.35333
0.00
20.00
40.00 (mm)
10.00
30.00
Y
Z

(a)

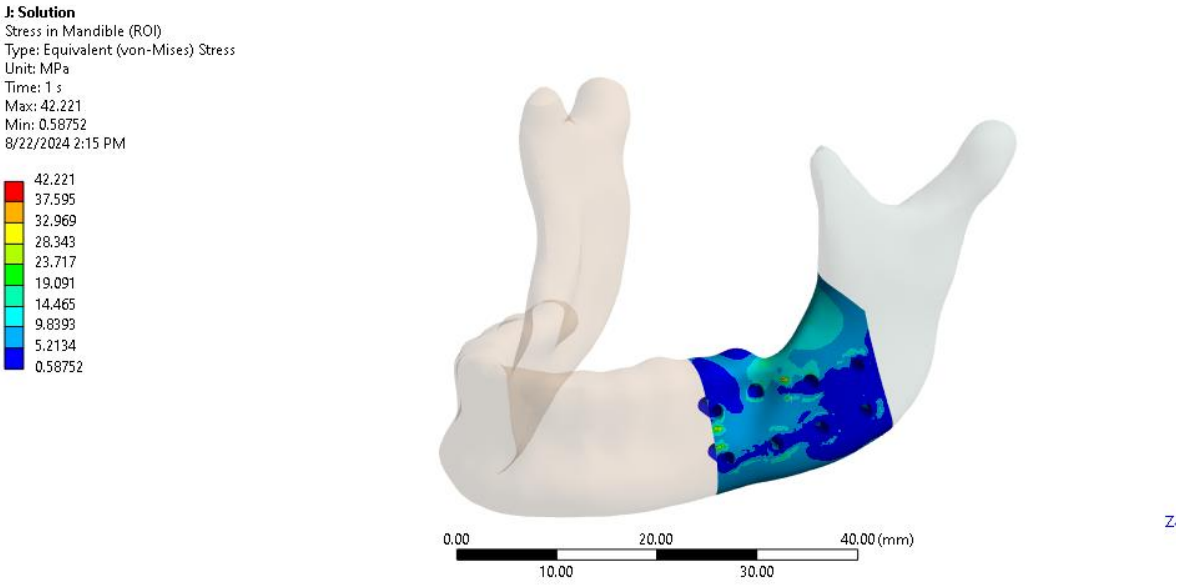

J: Solution
Stress in Mandible (ROI)
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 29.319
Min: 0.50462
8/15/2024 1:57 PM
29.319
26.118
22.916
19.714
16.513
13.311
10.11
6.9079
3.7063
0.50462
0.00
20.00
40.00 (mm)
10.00
30.00
Y
Z

(b)

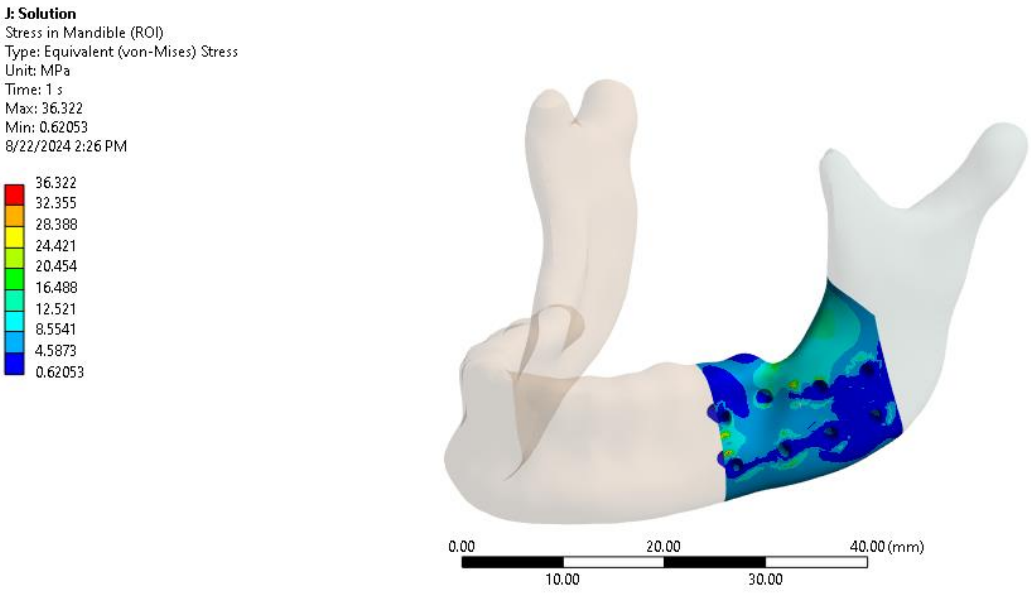

J: Solution
Stress in Mandible (ROI)
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 32.865
Min: 0.27772
8/15/2024 2:14 PM
32.865
29.244
25.624
22.003
18.382
14.761
Automatic
7.5194
3.8985
0.27772
0.00
20.00
40.00 (mm)
10.00
30.00
Y
Z
X

(c)

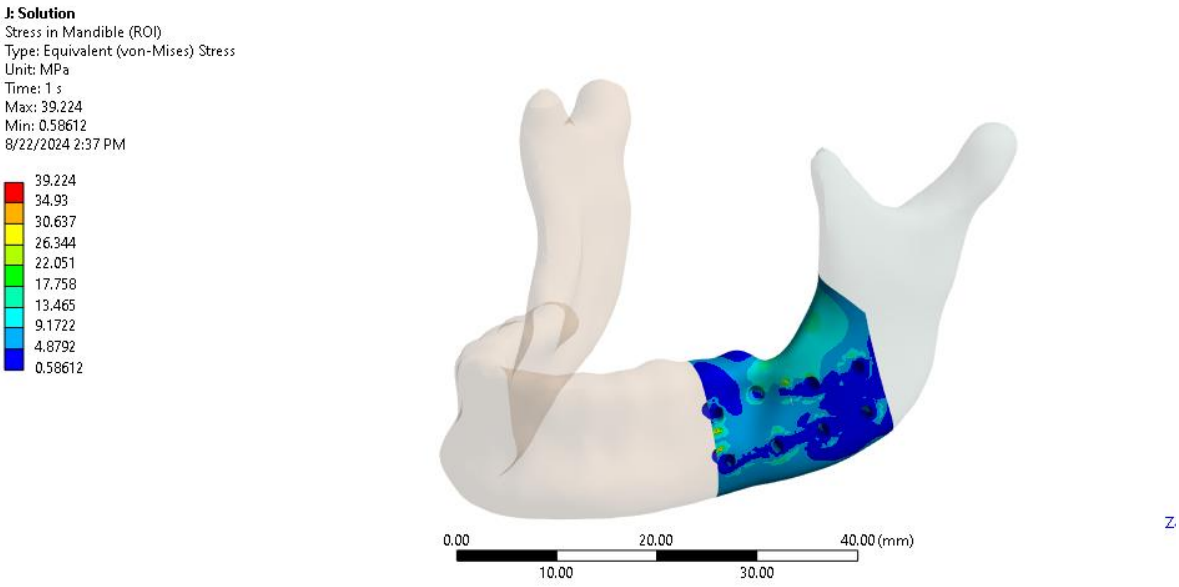
Fig S34: Maximum Stress (MPa) in the Mandible with Mini Plate Fixation of Titanium Alloy (a) Single plate (Type 1) without interval and favorable fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and favorable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and favorable fracture with thickness 2.0 mm.



(a)

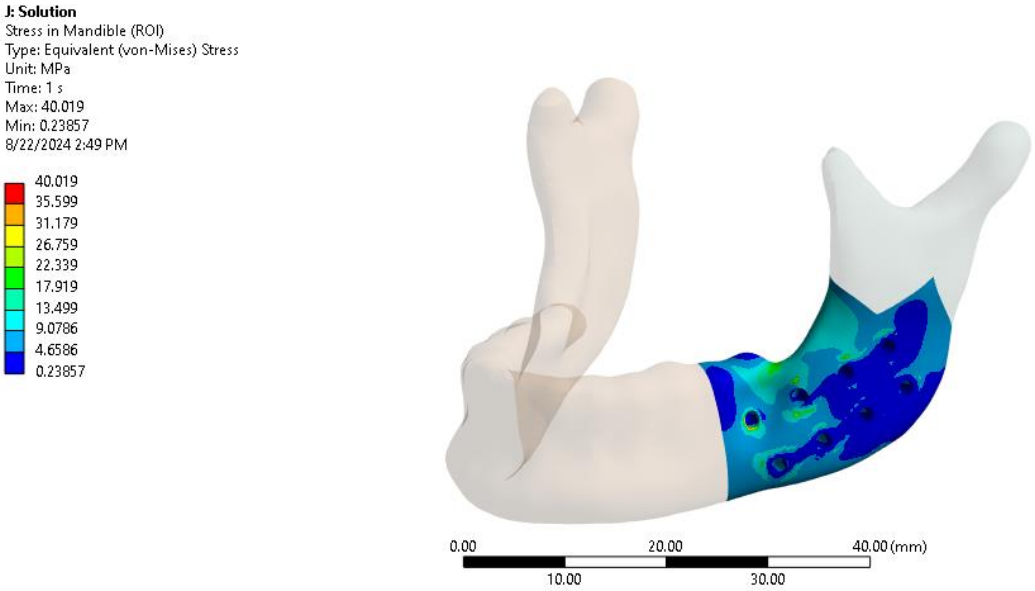


(b)

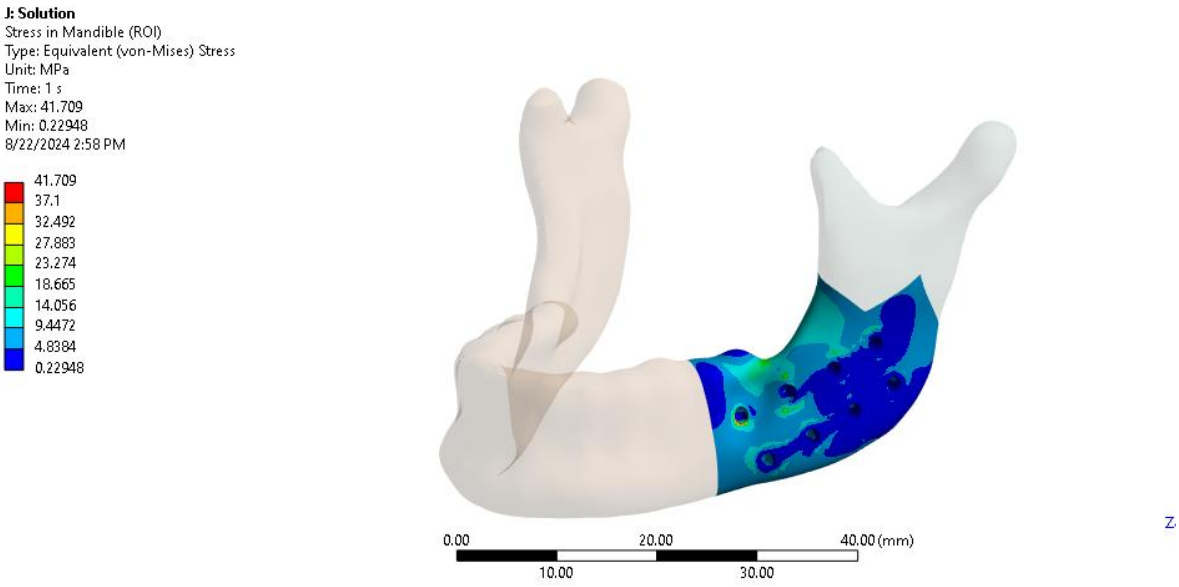


(c)

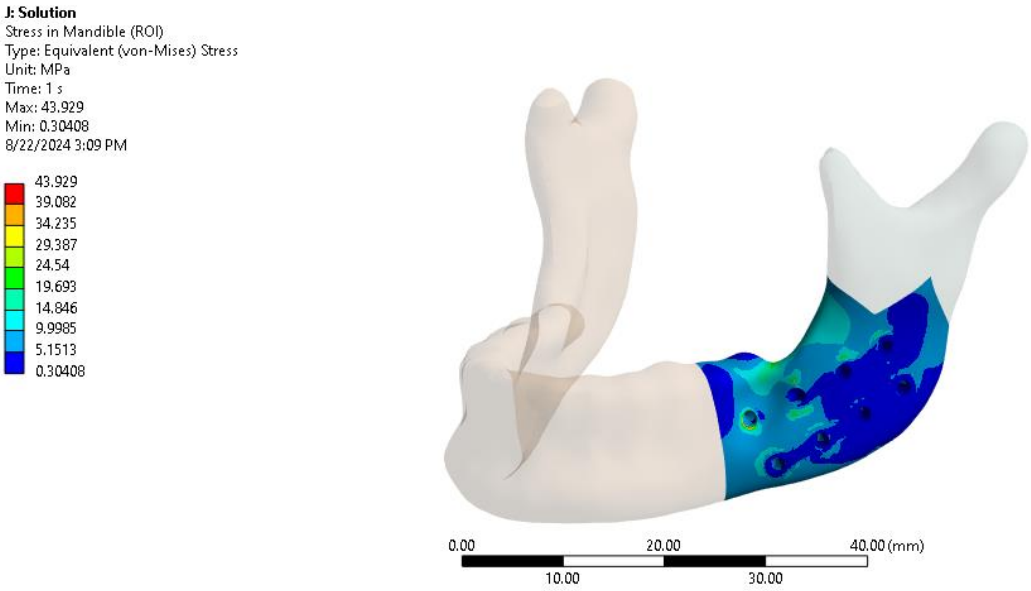
Fig S35: Maximum Stress (MPa) in the Mandible with Mini Plate Fixation of Titanium Alloy (a) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and vertical fracture with thickness 2.0 mm.



(a)

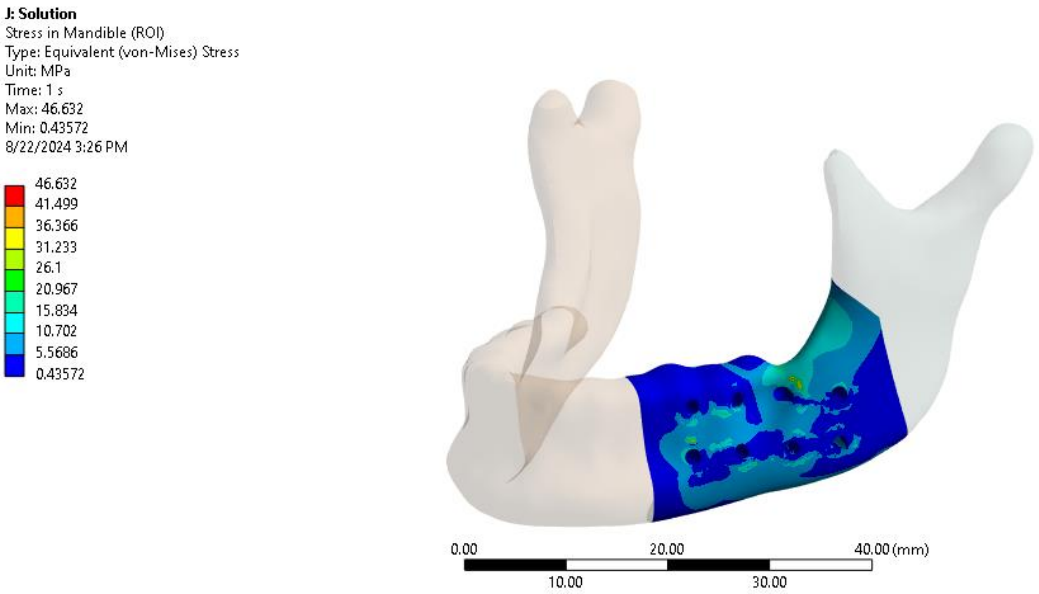


(b)

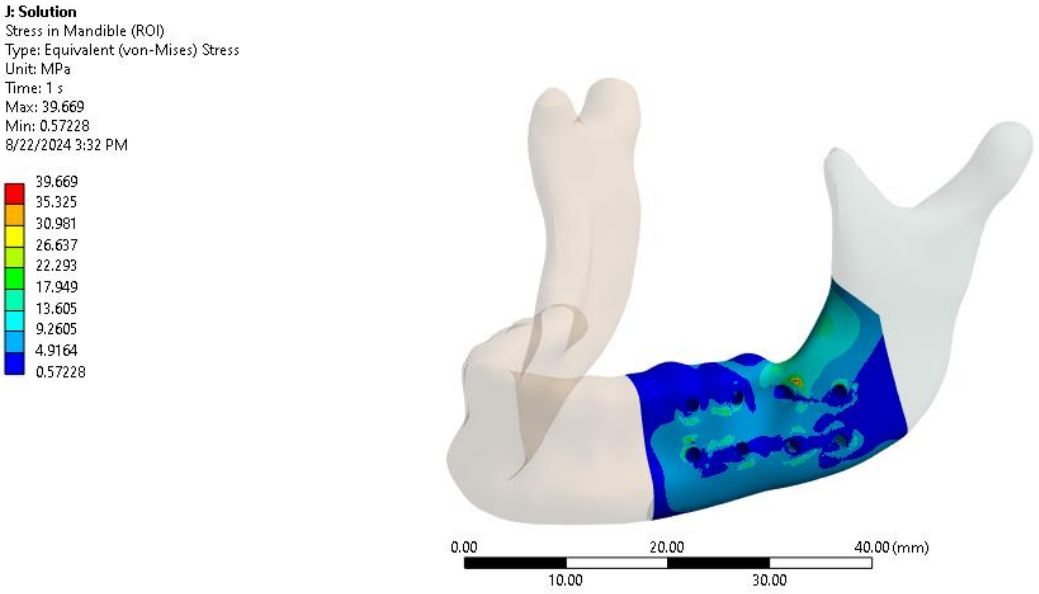


(c)

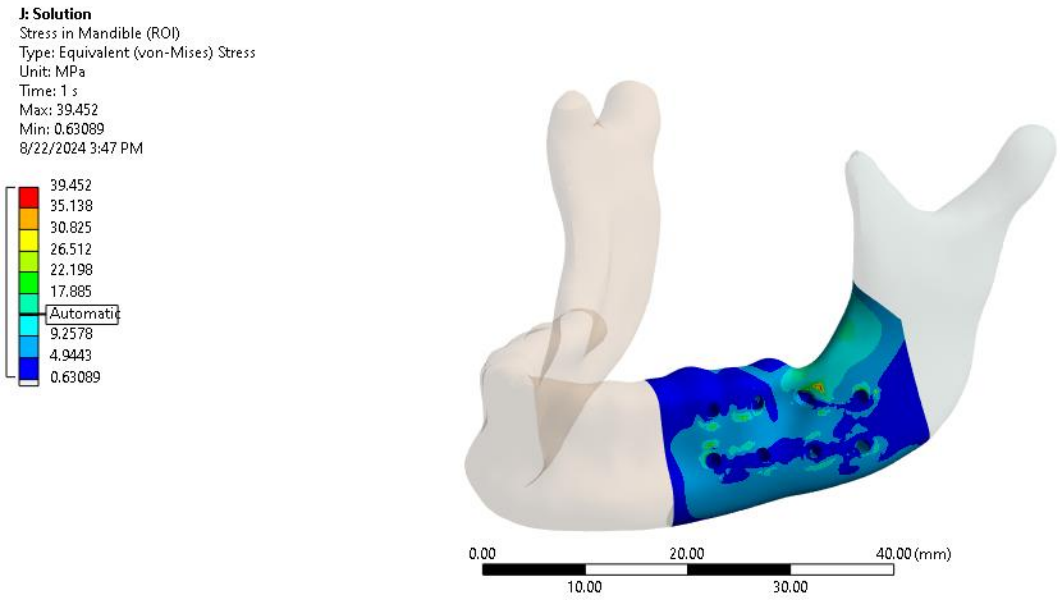
Fig S36: Maximum Stress (MPa) in the Mandible with Mini Plate Fixation of Titanium Alloy (a) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 2.0 mm.


J: Solution
Stress in Mandible (ROI)
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 46.632
Min: 0.43572
8/22/2024 3:26 PM
46.632
41.499
36.366
31.233
26.1
20.967
15.834
10.702
5.5686
0.43572
0.00
20.00
40.00 (mm)
10.00
30.00

(a)

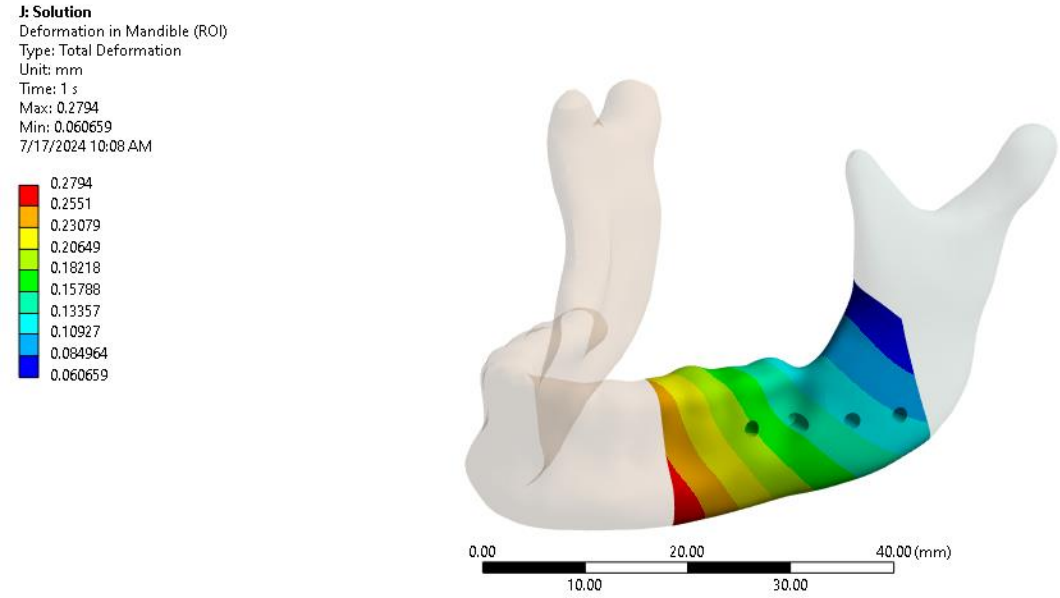

J: Solution
Stress in Mandible (ROI)
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 1 s
Max: 39.669
Min: 0.57228
8/22/2024 3:32 PM
39.669
35.325
30.981
26.637
22.293
17.949
13.605
9.2605
4.9164
0.57228
0.00
20.00
40.00 (mm)
10.00
30.00

(b)

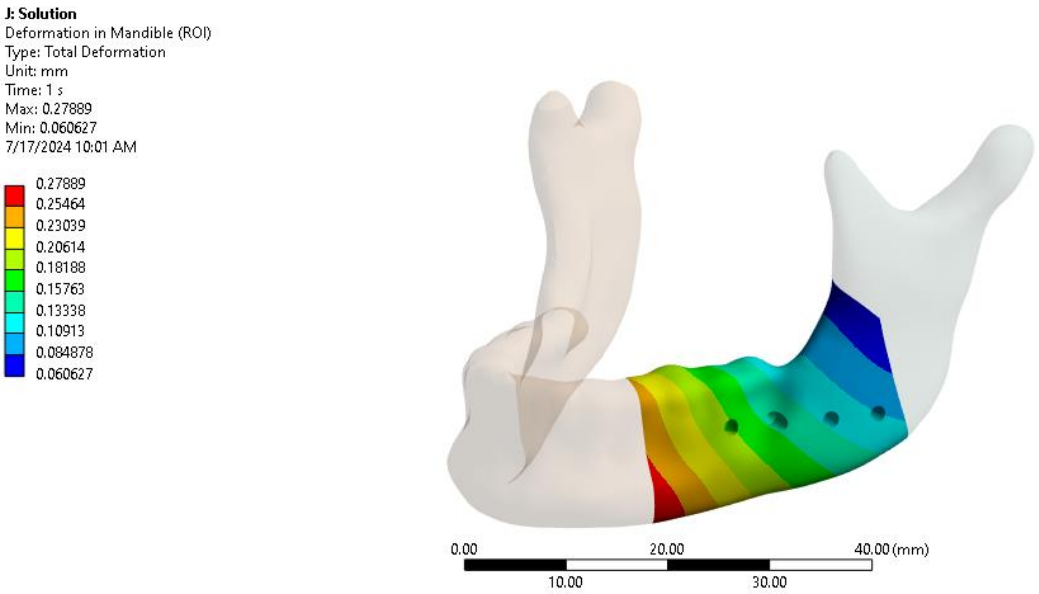


(c)

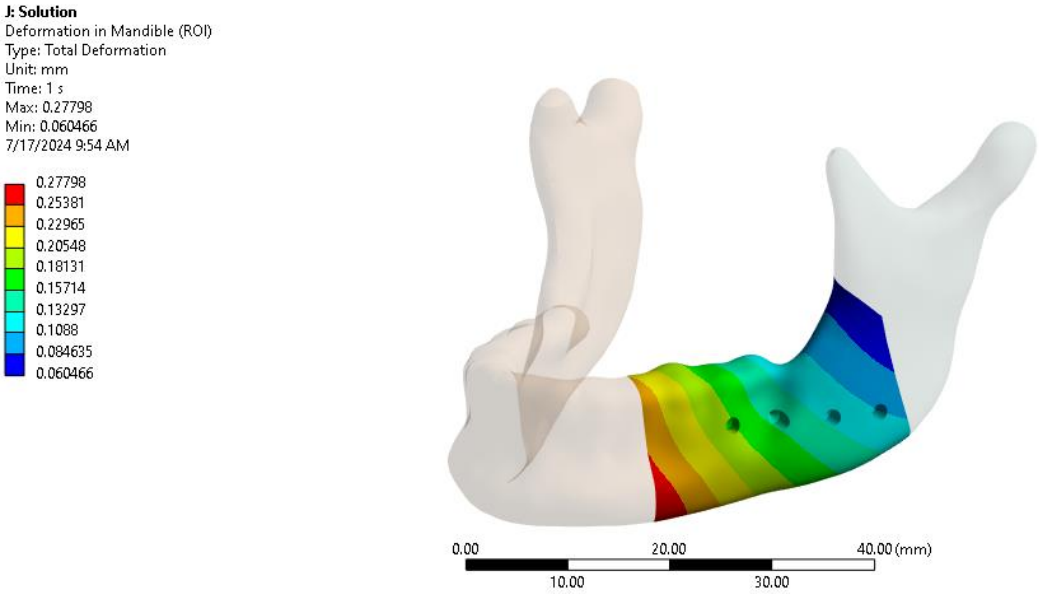
Fig S37: Maximum Stress (MPa) in the Mandible with Mini Plate Fixation of Titanium Alloy (a) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and favorable fracture with thickness 2.0 mm.



(a)

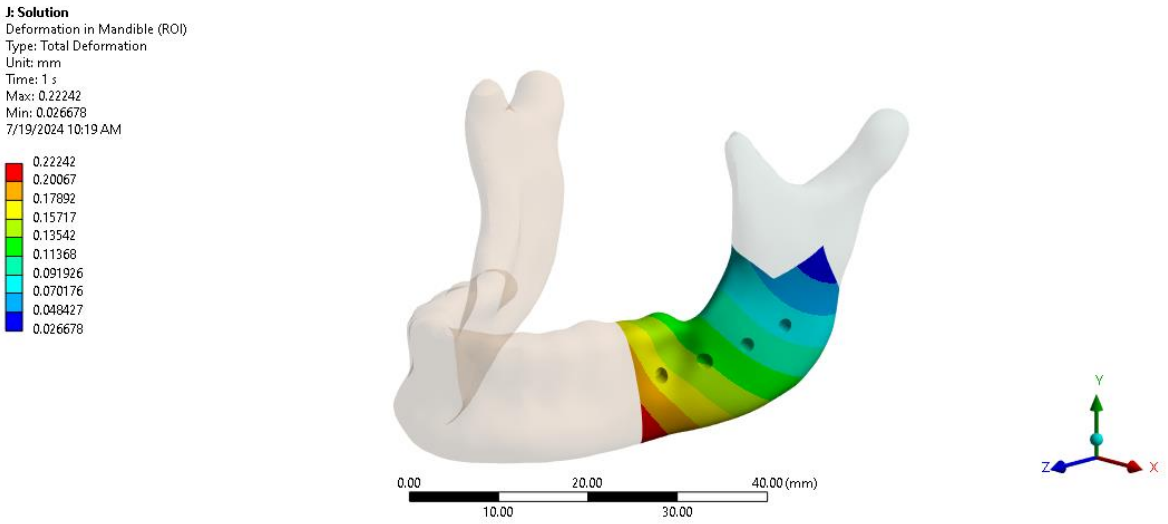


(b)

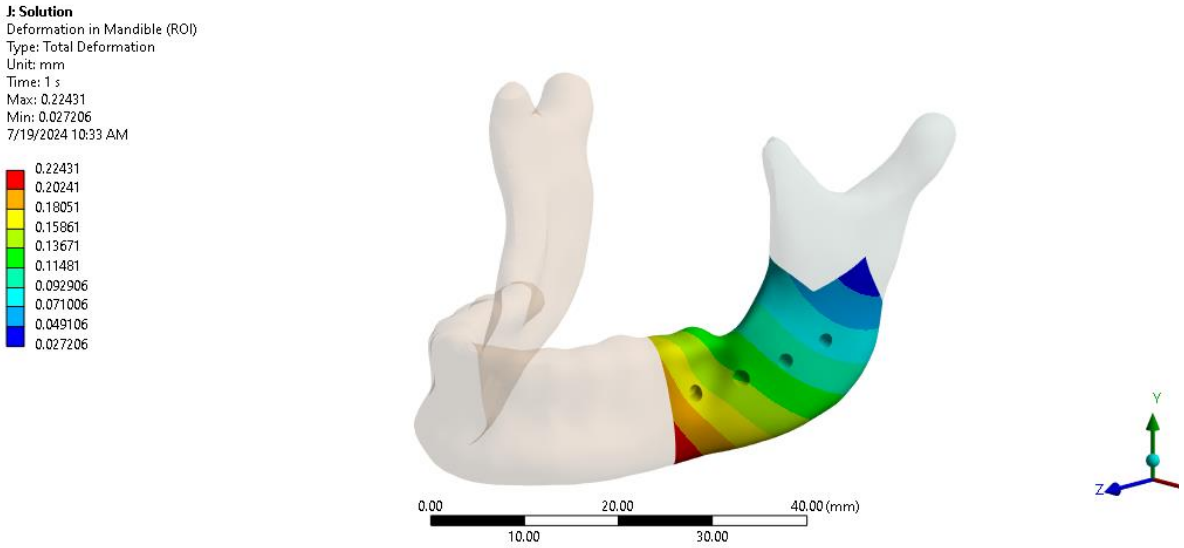


(c)

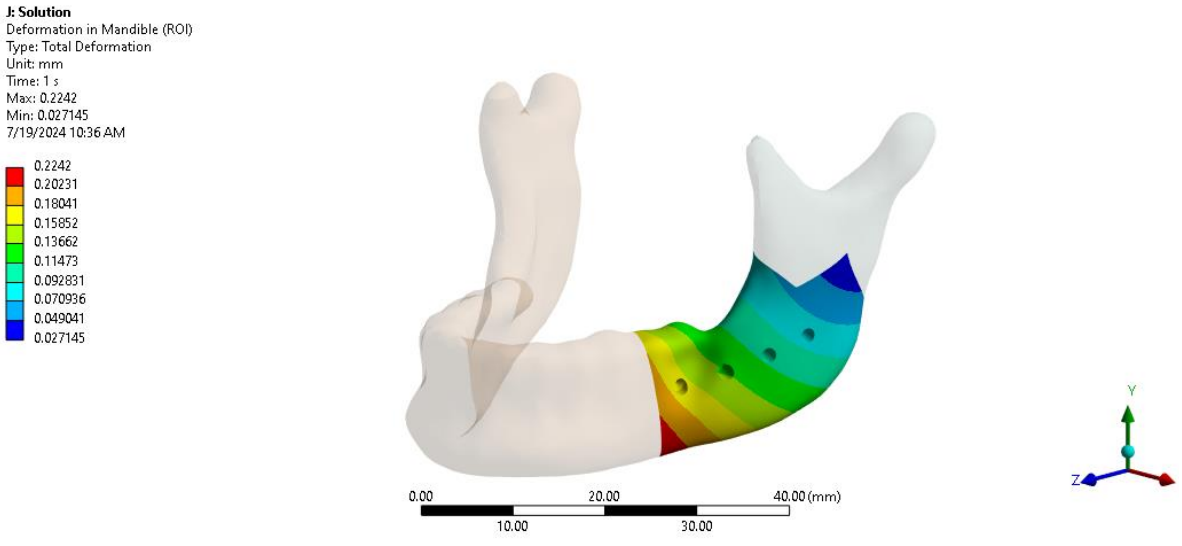
Fig S38: Total deformation in the Mandible with Mini Plate Fixation of Magnesium Alloy (a) Single plate (Type 1) without interval and vertical fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and vertical fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and vertical fracture with thickness 2.0 mm.


J: Solution
Deformation in Mandible (ROI)
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.22242
Min: 0.026678
7/19/2024 10:19 AM
0.22242
0.20067
0.17892
0.15717
0.13542
0.11368
0.091926
0.070176
0.048427
0.026678
0.00
20.00
40.00 (mm)
10.00
30.00
Y
Z
X

(a)

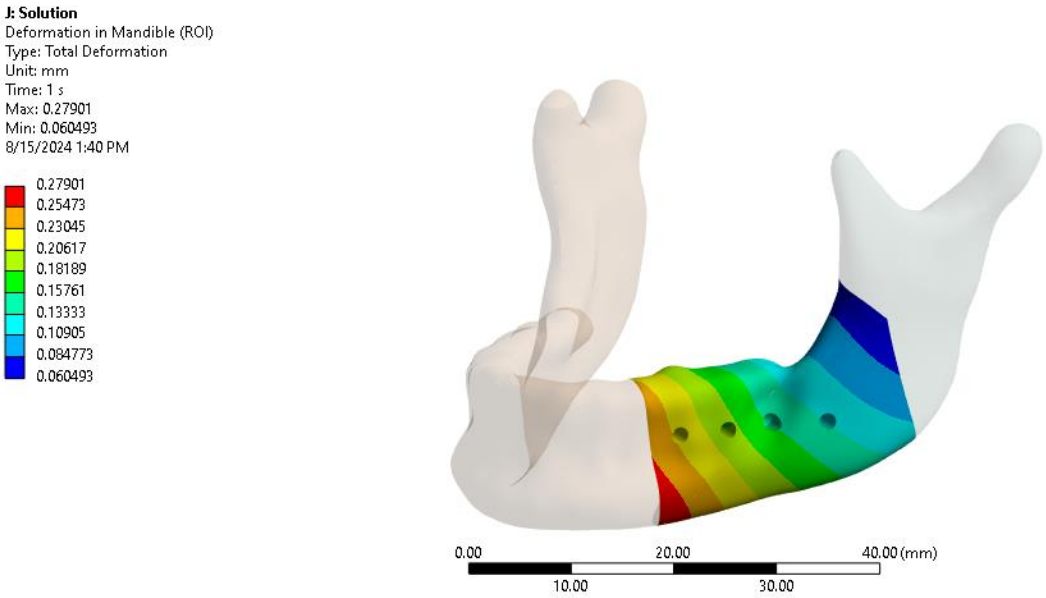

J: Solution
Deformation in Mandible (ROI)
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.22431
Min: 0.027206
7/19/2024 10:33 AM
0.22431
0.20241
0.18051
0.15861
0.13671
0.11481
0.092906
0.071006
0.049106
0.027206
0.00
20.00
40.00 (mm)
10.00
30.00
Y
Z

(b)

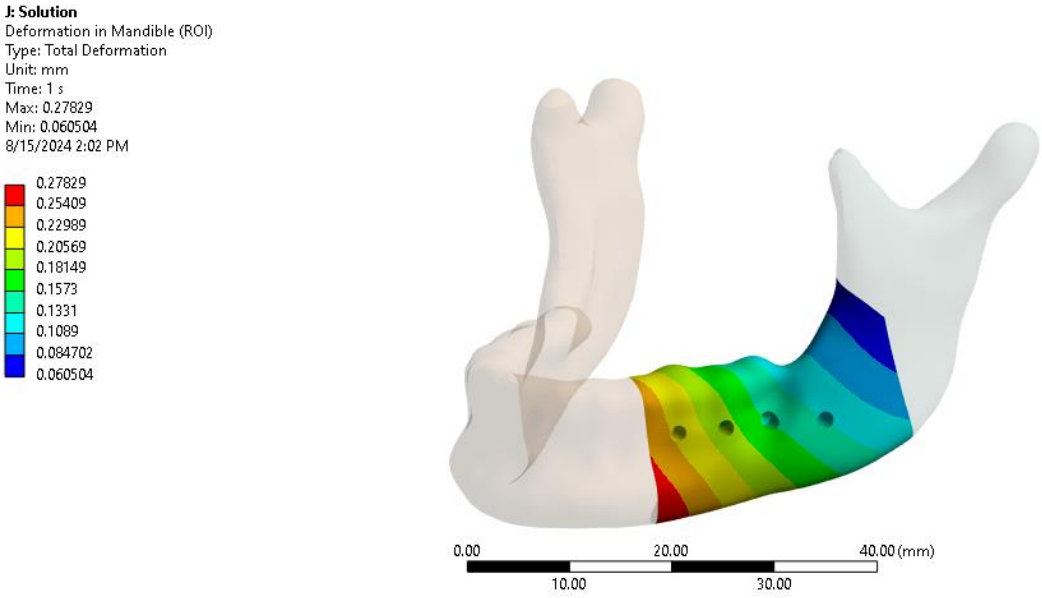

J: Solution
Deformation in Mandible (ROI)
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.2242
Min: 0.027145
7/19/2024 10:36 AM
0.2242
0.20231
0.18041
0.15852
0.13662
0.11473
0.092831
0.070936
0.049041
0.027145
0.00
20.00
40.00 (mm)
10.00
30.00
Y
Z

(c)

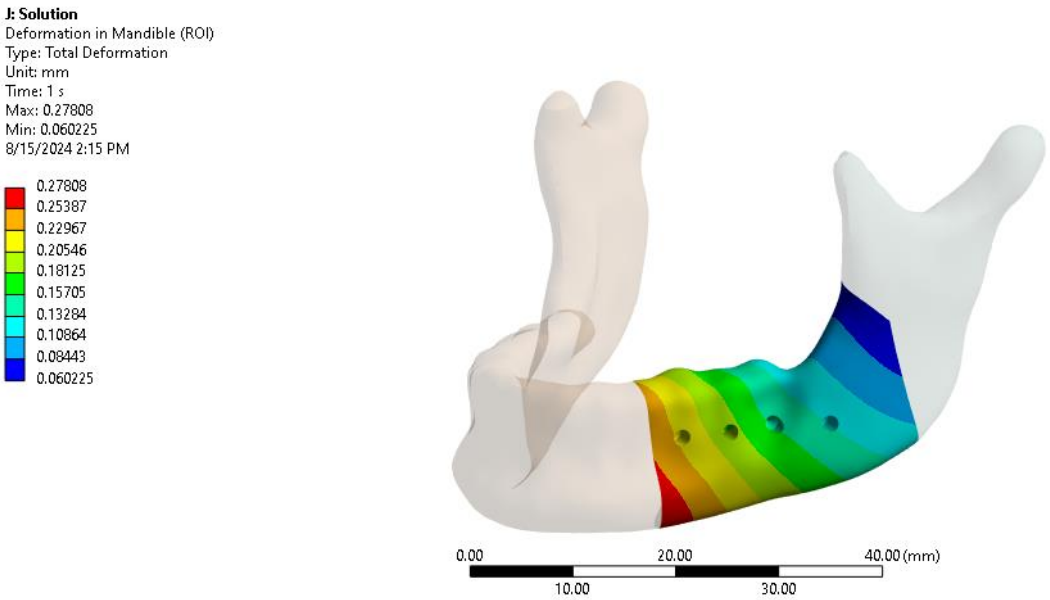
Fig S39: Total deformation in the Mandible with Mini Plate Fixation of Magnesium Alloy (a) Single plate (Type 1) without interval and unfavorable fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and unfavorable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and unfavorable fracture with thickness 2.0 mm.



(a)

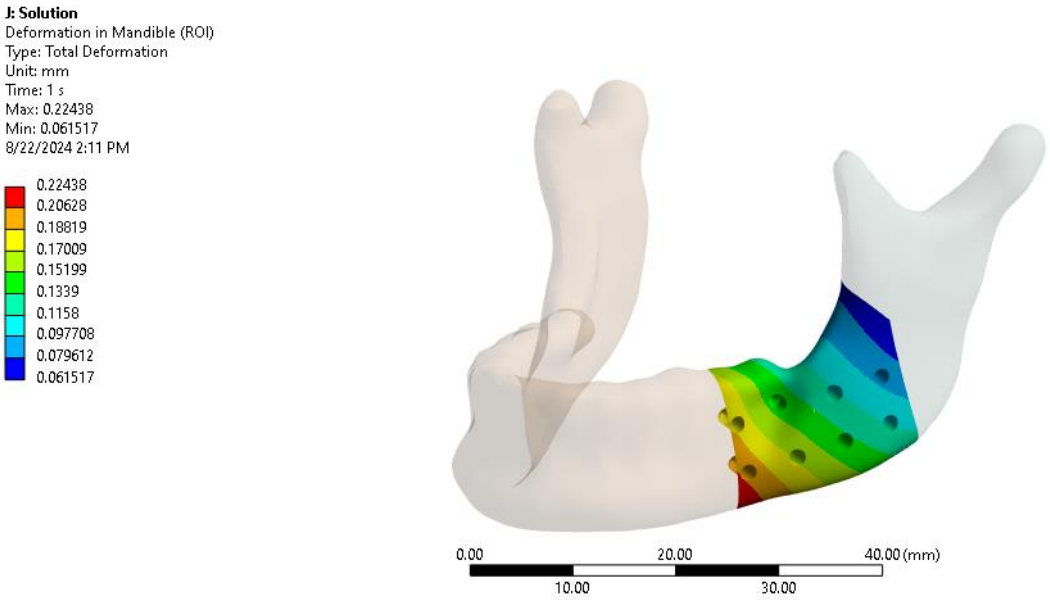


(b)

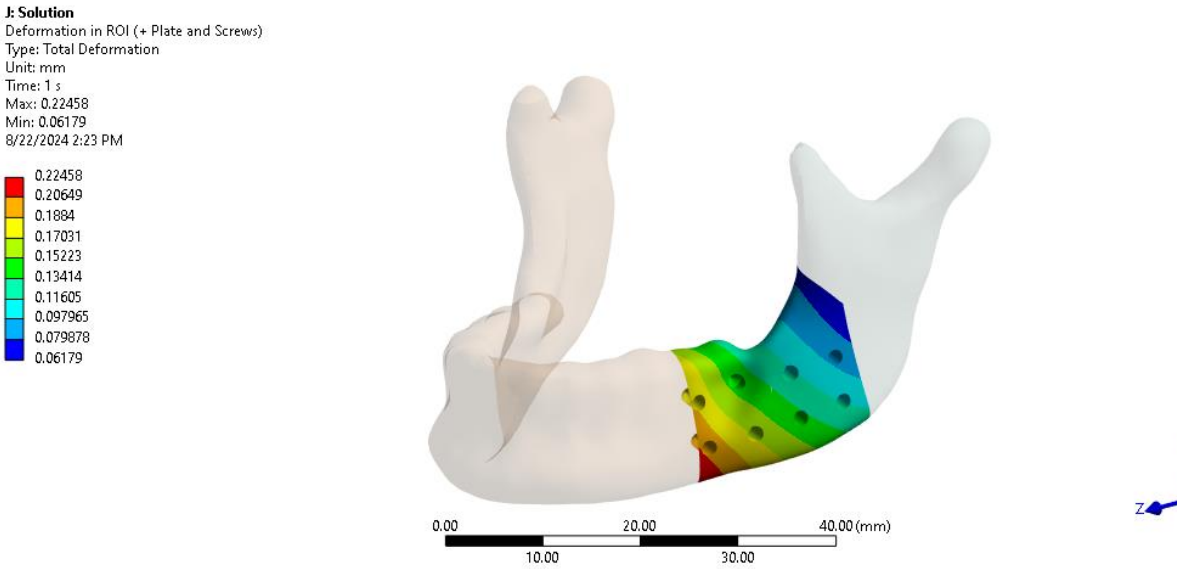


(c)

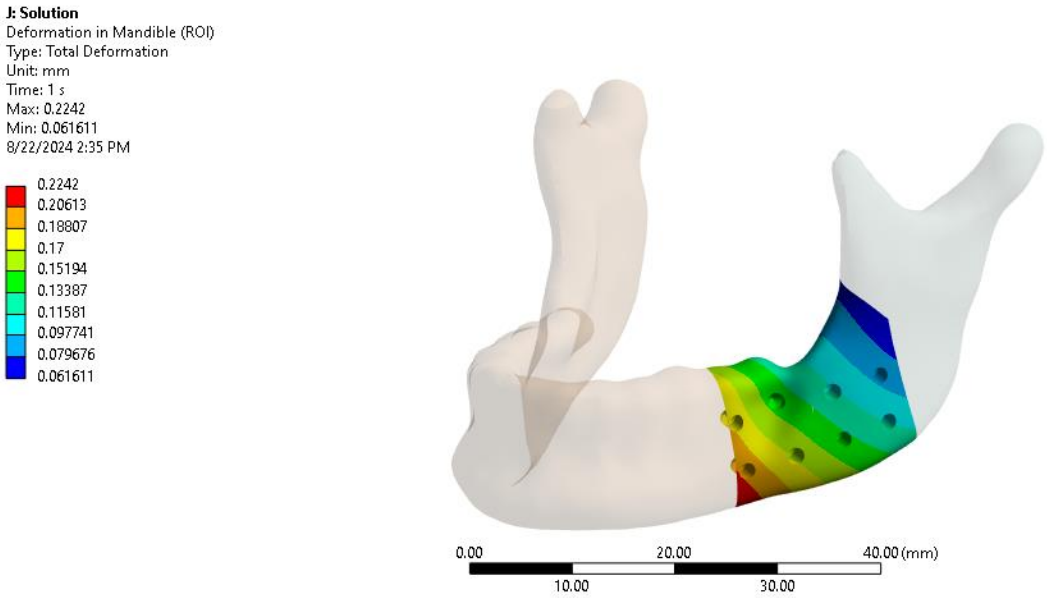
Fig S40: Total deformation in the Mandible with Mini Plate Fixation of Magnesium Alloy (a) Single plate (Type 1) without interval and favorable fracture with thickness 1.25 mm (b) Single plate (Type 1) without interval and favorable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and favorable fracture with thickness 2.0 mm.



(a)

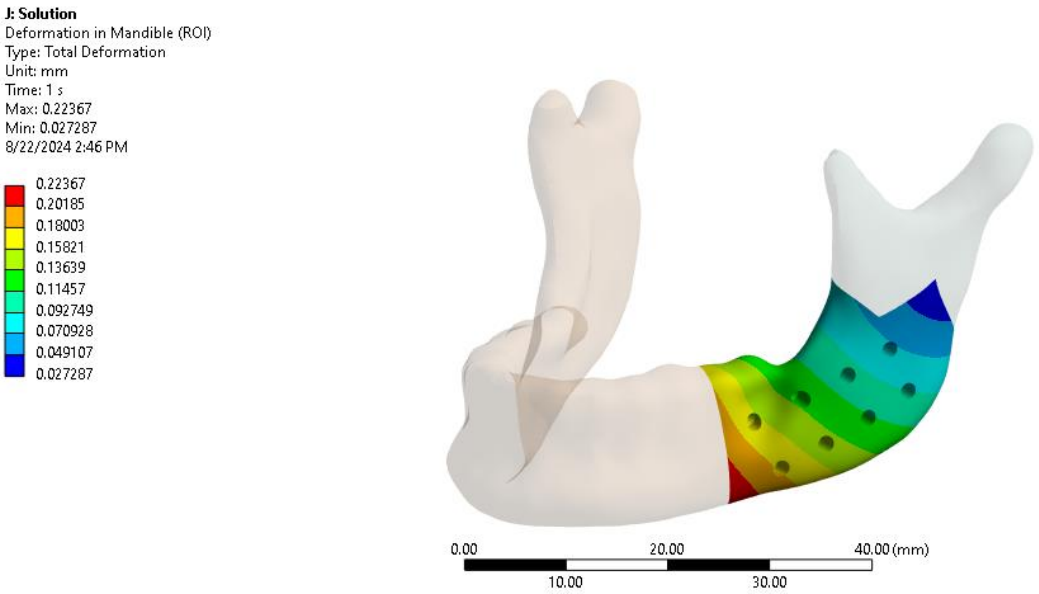


(b)

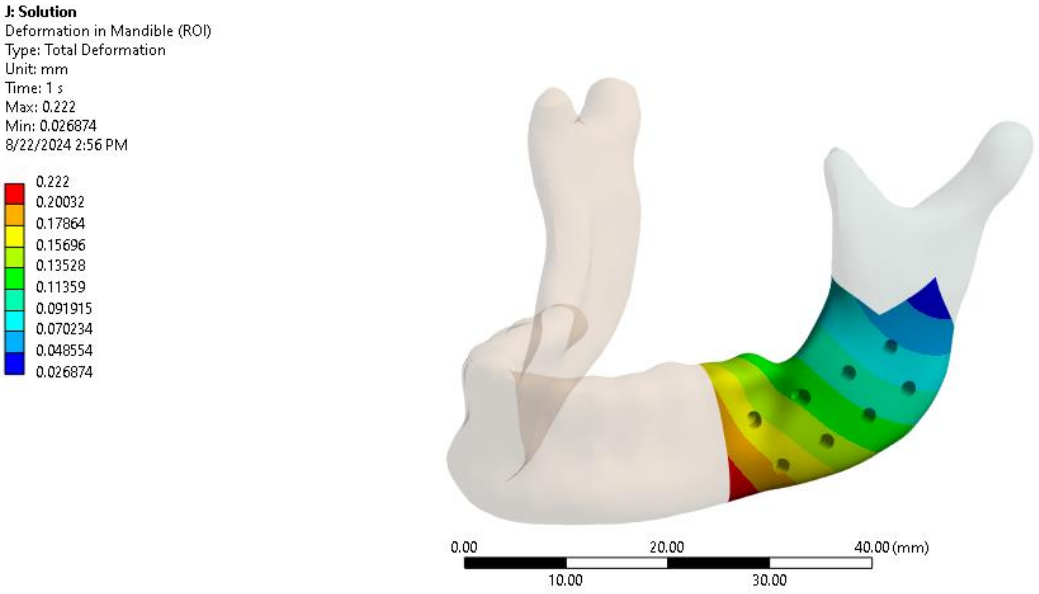


(c)

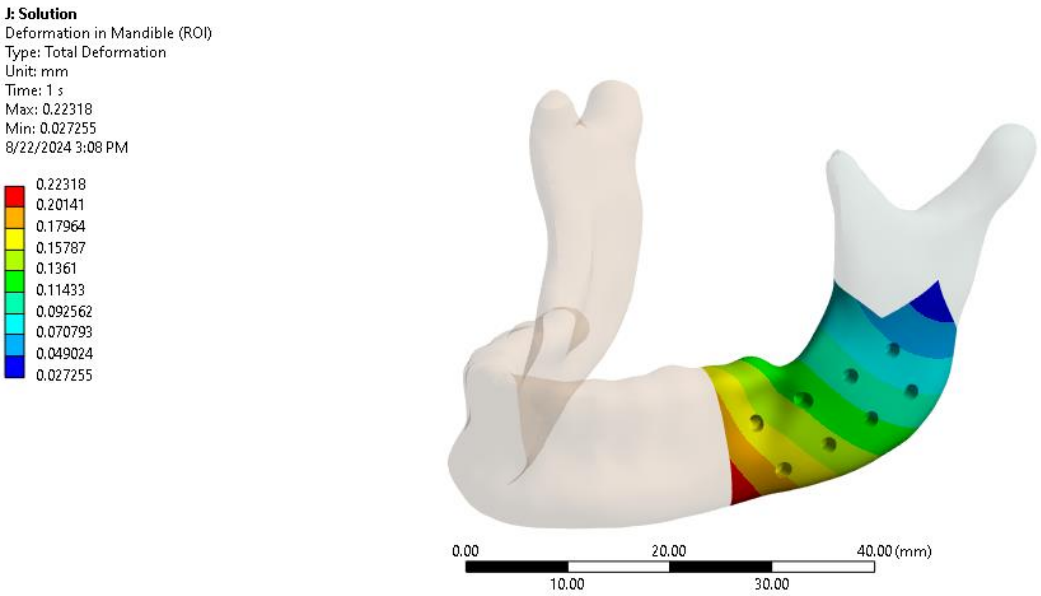
Fig S41: Total deformation in the Mandible with Mini Plate Fixation of Magnesium Alloy (a) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and vertical fracture with thickness 2.0 mm.


J: Solution
Deformation in Mandible (ROI)
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.22367
Min: 0.027287
8/22/2024 2:46 PM
0.22367
0.20185
0.18003
0.15821
0.13639
0.11457
0.092749
0.070928
0.049107
0.027287
0.00
20.00
40.00 (mm)
10.00
30.00

(a)

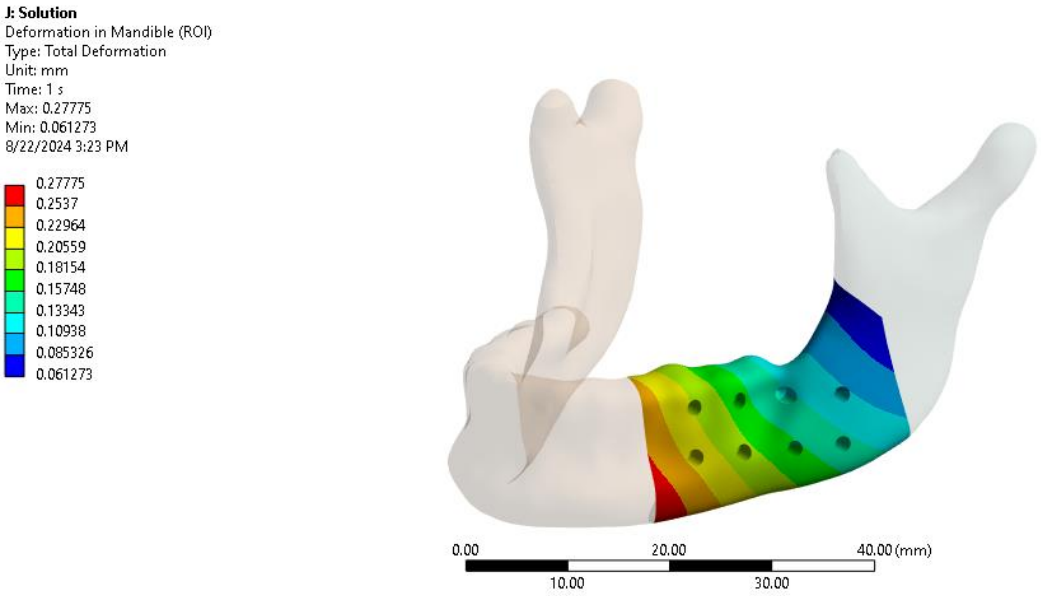

J: Solution
Deformation in Mandible (ROI)
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.222
Min: 0.026874
8/22/2024 2:56 PM
0.222
0.20032
0.17864
0.15696
0.13528
0.11359
0.091915
0.070234
0.048554
0.026874
0.00
20.00
40.00 (mm)
10.00
30.00

(b)

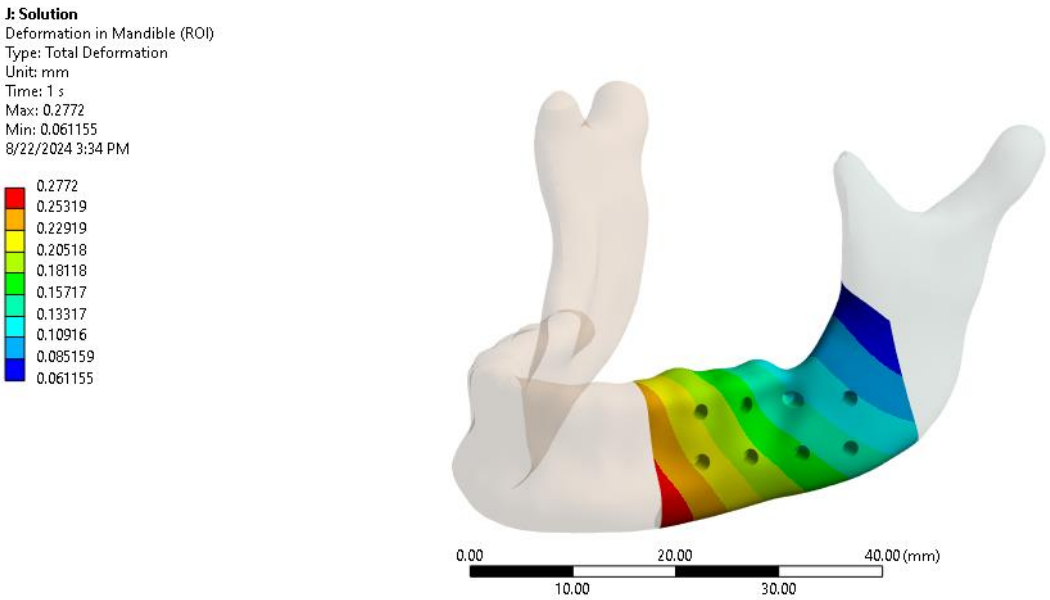


(c)

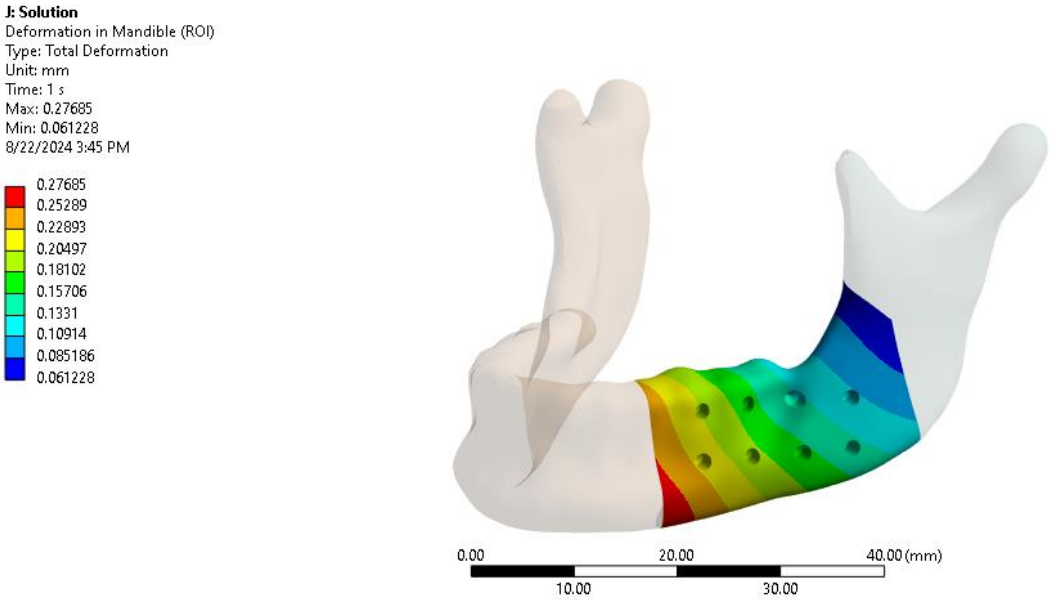
Fig S42: Total deformation in the Mandible with Mini Plate Fixation of Magnesium Alloy (a) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 2.0 mm.



(a)

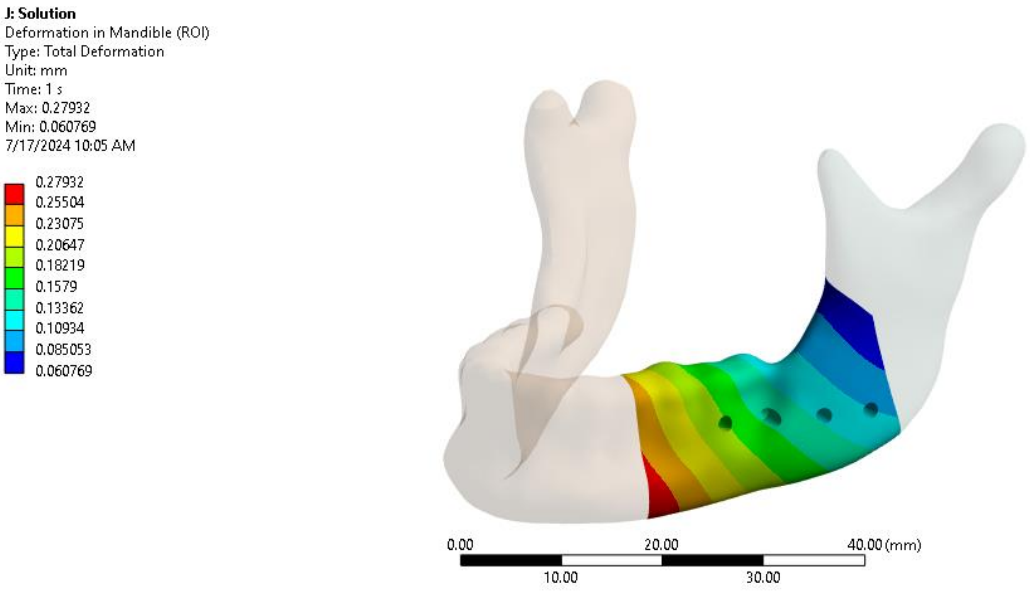


(b)

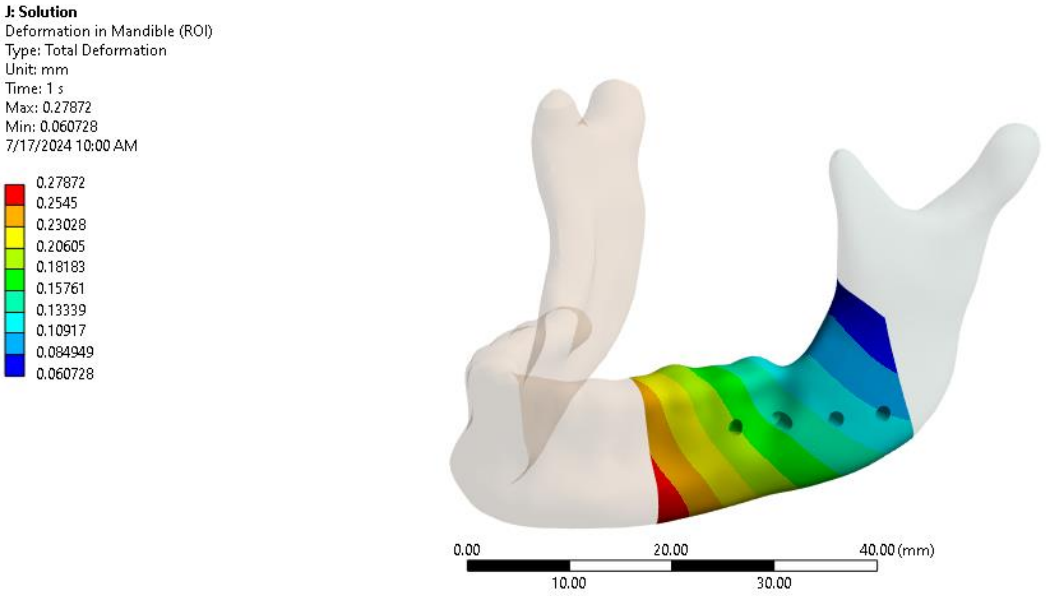


(c)

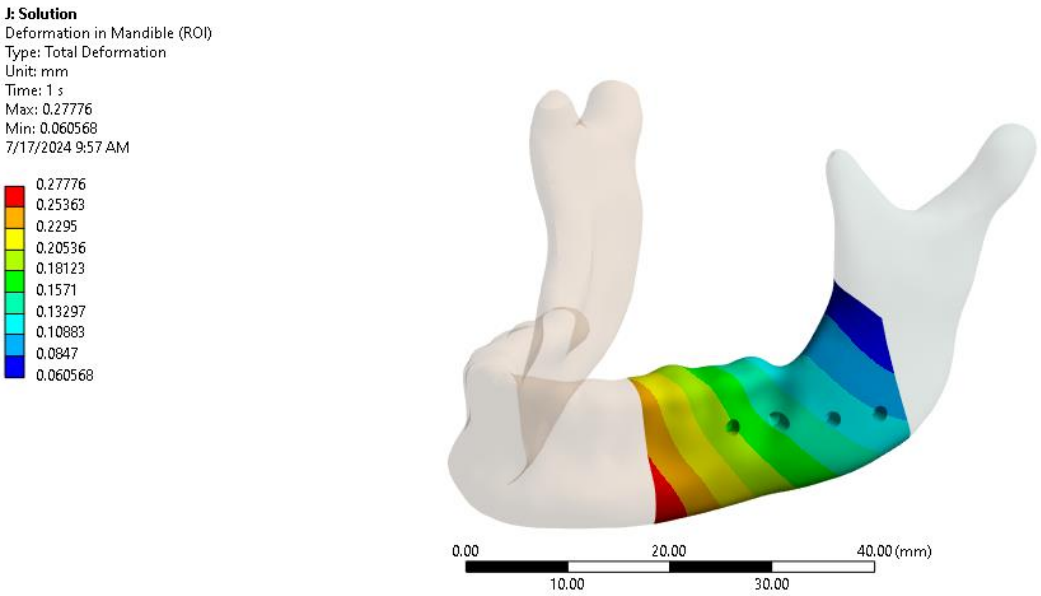
Fig S43: Total deformation in the Mandible with Mini Plate Fixation of Magnesium Alloy (a) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and favorable fracture with thickness 2.0 mm.


J: Solution
Deformation in Mandible (ROI)
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.27932
Min: 0.060769
7/17/2024 10:05 AM
0.27932
0.25504
0.23075
0.20647
0.18219
0.1579
0.13362
0.10934
0.085053
0.060769
0.00
20.00
40.00 (mm)
10.00
30.00

(a)

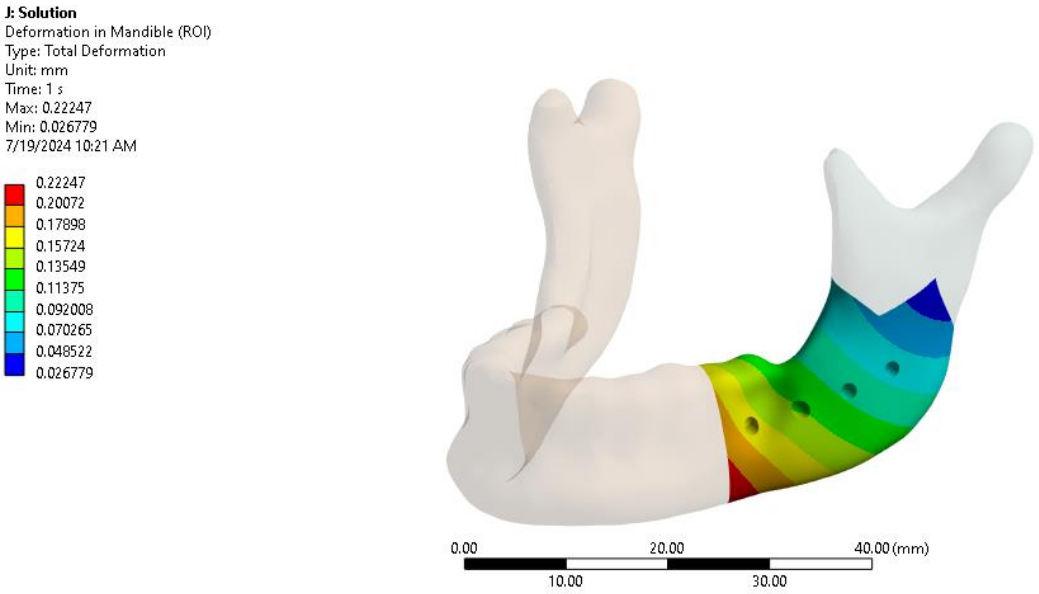

J: Solution
Deformation in Mandible (ROI)
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.27872
Min: 0.060728
7/17/2024 10:00 AM
0.27872
0.2545
0.23028
0.20605
0.18183
0.15761
0.13339
0.10917
0.084949
0.060728
0.00
20.00
40.00 (mm)
10.00
30.00

(b)

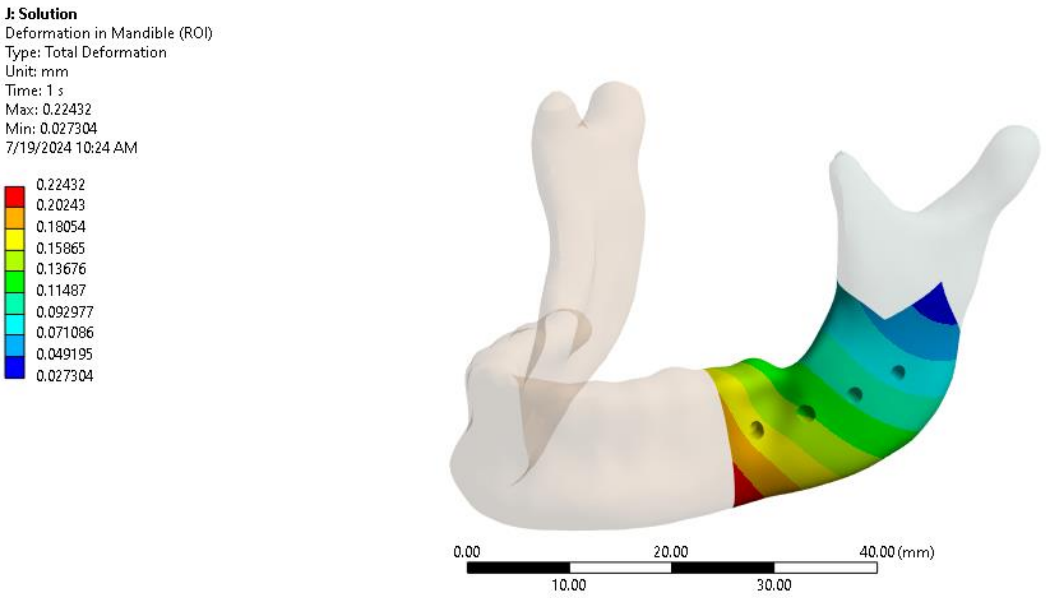


(c)

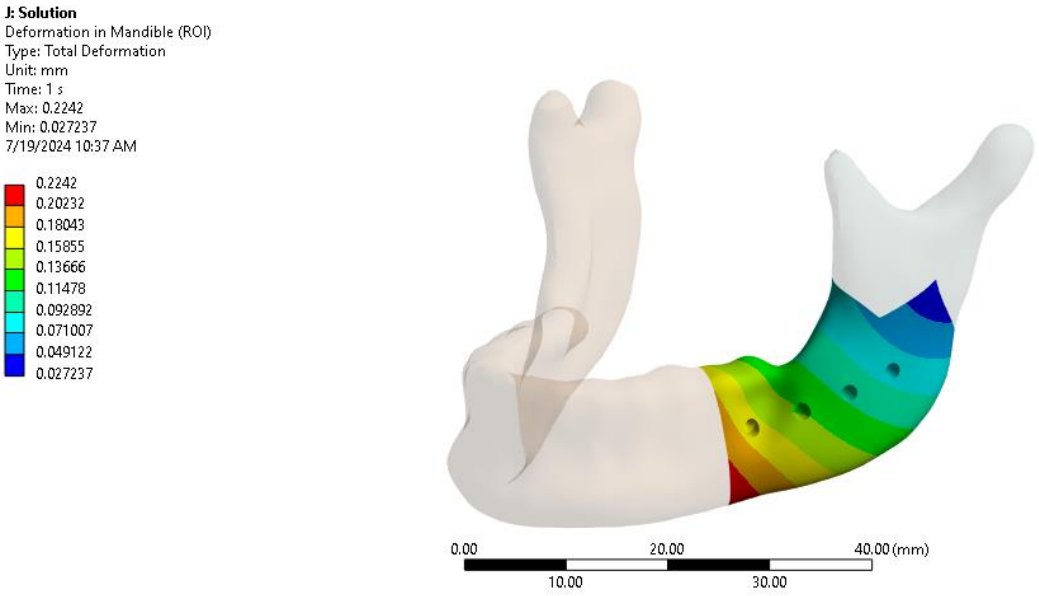
Fig S44: Total deformation in the Mandible with Mini Plate Fixation of Titanium Alloy (a) Single plate (Type 1) without interval and vertical fracture with thickness 1.25 mm (b Single plate (Type 1) without interval and vertical fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and vertical fracture with thickness 2.0 mm.



(a)

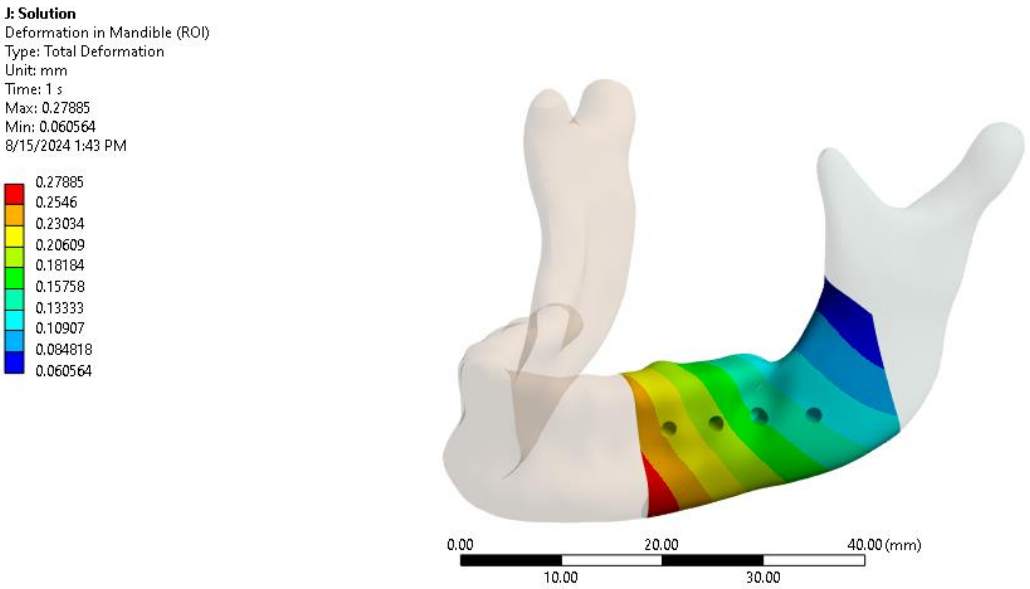


(b)



(c)

Fig S45: Total deformation in the Mandible with Mini Plate Fixation of Titanium Alloy (a) Single plate (Type 1) without interval and unfavorable fracture with thickness 1.25 mm (b Single plate (Type 1) without interval and unfavorable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and unfavorable fracture with thickness 2.0 mm.


J: Solution
Deformation in Mandible (ROI)
Type: Total Deformation
Unit: mm
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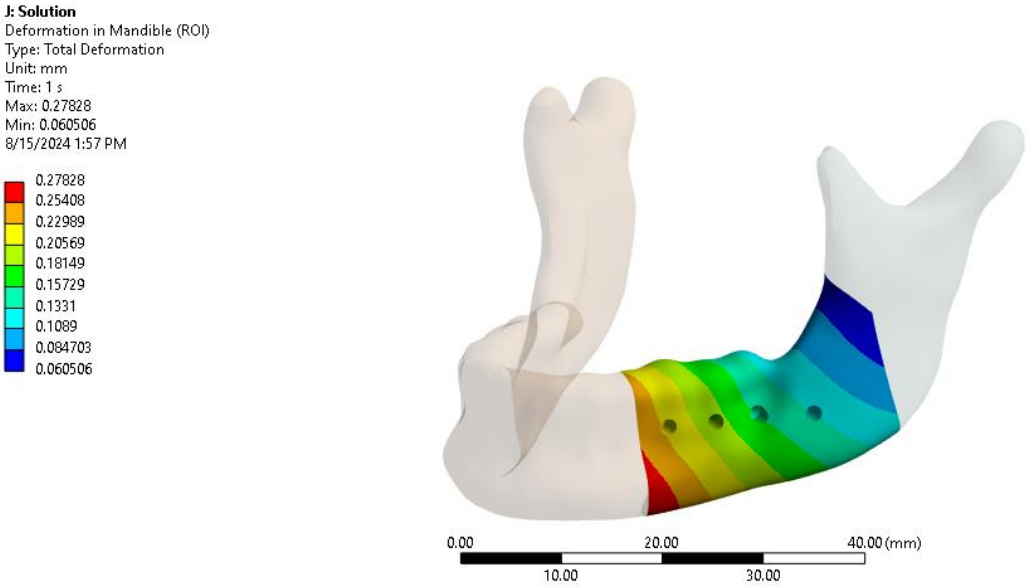
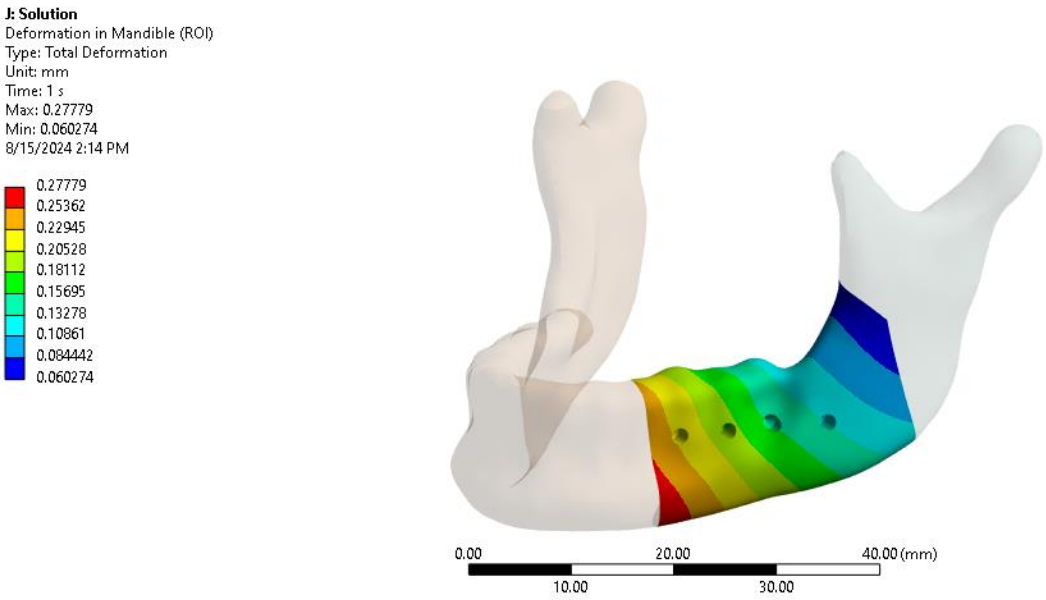
Min: 0.060564
8/15/2024 1:43 PM
0.27885
0.2546
0.23034
0.20609
0.18184
0.15758
0.13333
0.10907
0.084818
0.060564
0.00
20.00
40.00 (mm)
10.00
30.00

(a)

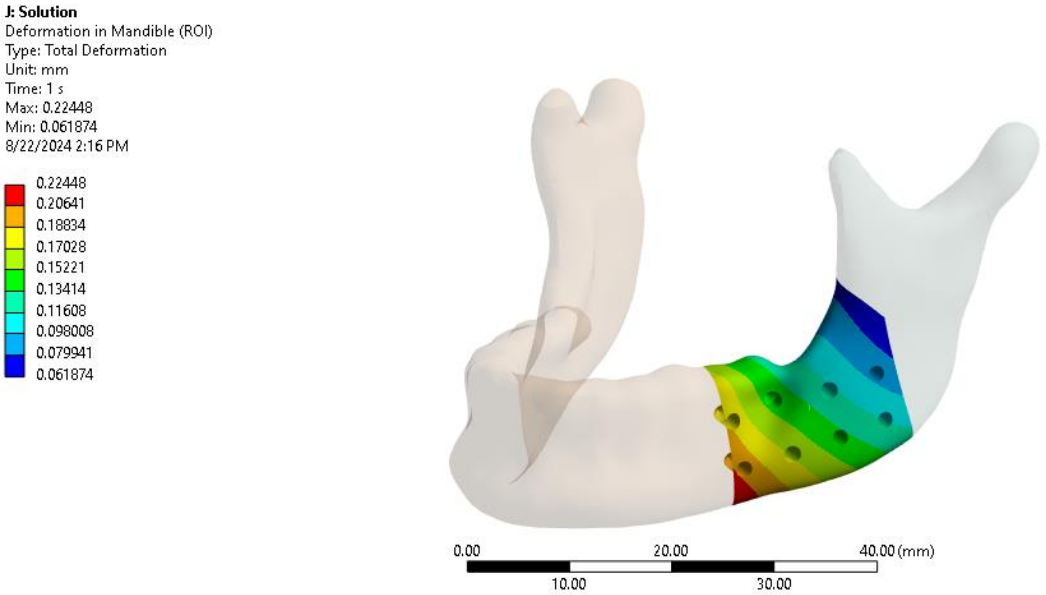

J: Solution
Deformation in Mandible (ROI)
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.27828
Min: 0.060506
8/15/2024 1:57 PM
0.27828
0.25408
0.22989
0.20569
0.18149
0.15729
0.1331
0.1089
0.084703
0.060506
0.00
20.00
40.00 (mm)
10.00
30.00

(b)

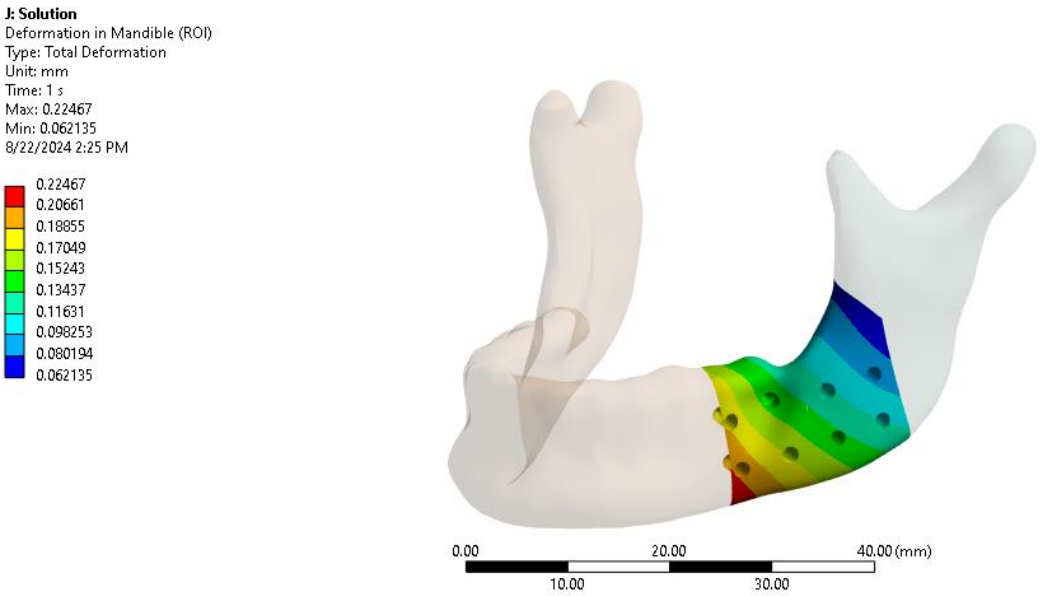


(c)

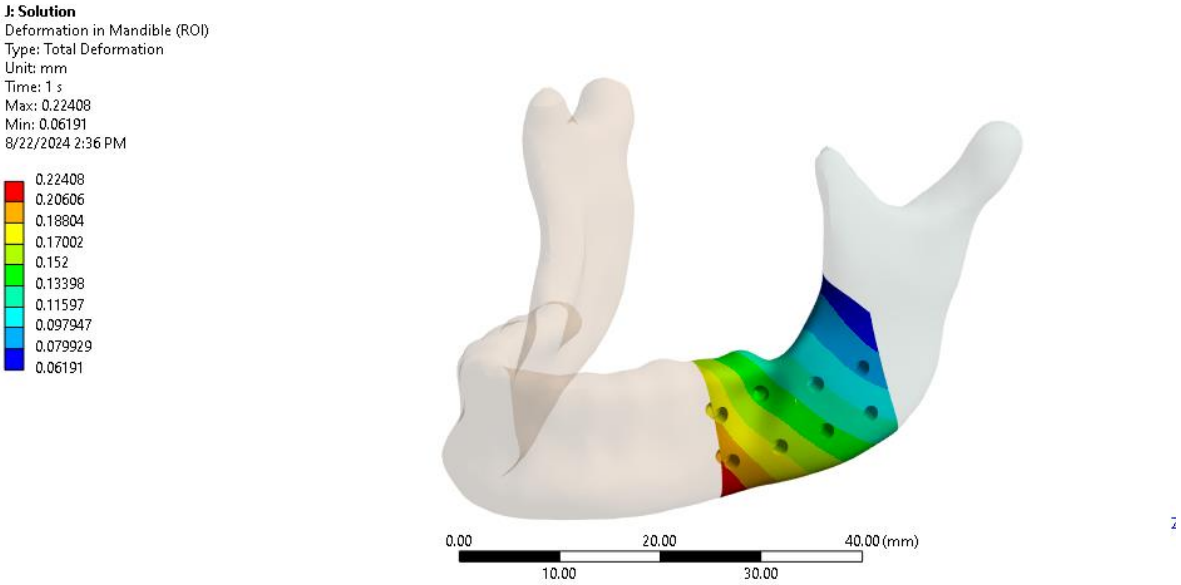
Fig S46: Total deformation in the Mandible with Mini Plate Fixation of Titanium Alloy (a) Single plate (Type 1) without interval and favorable fracture with thickness 1.25 mm (b Single plate (Type 1) without interval and favorable fracture with thickness 1.5 mm (c) Single plate (Type 1) without interval and favorable fracture with thickness 2.0 mm.



(a)

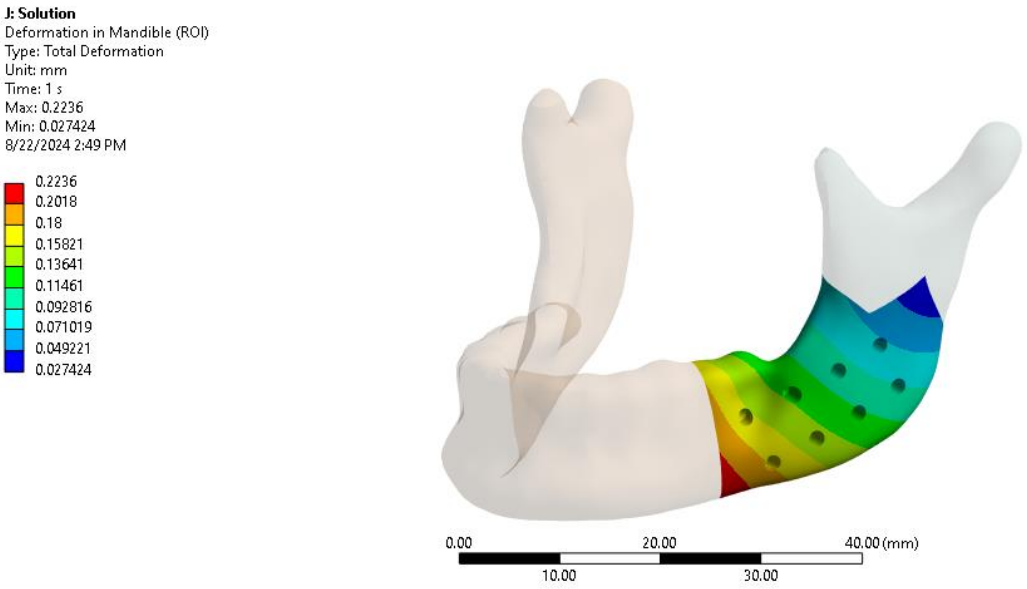


(b)



(c)

Fig S47: Total deformation in the Mandible with Mini Plate Fixation of Titanium Alloy (a) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and vertical fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and vertical fracture with thickness 2.0 mm.


J: Solution
Deformation in Mandible (ROI)
Type: Total Deformation
Unit: mm
Time: 1 s
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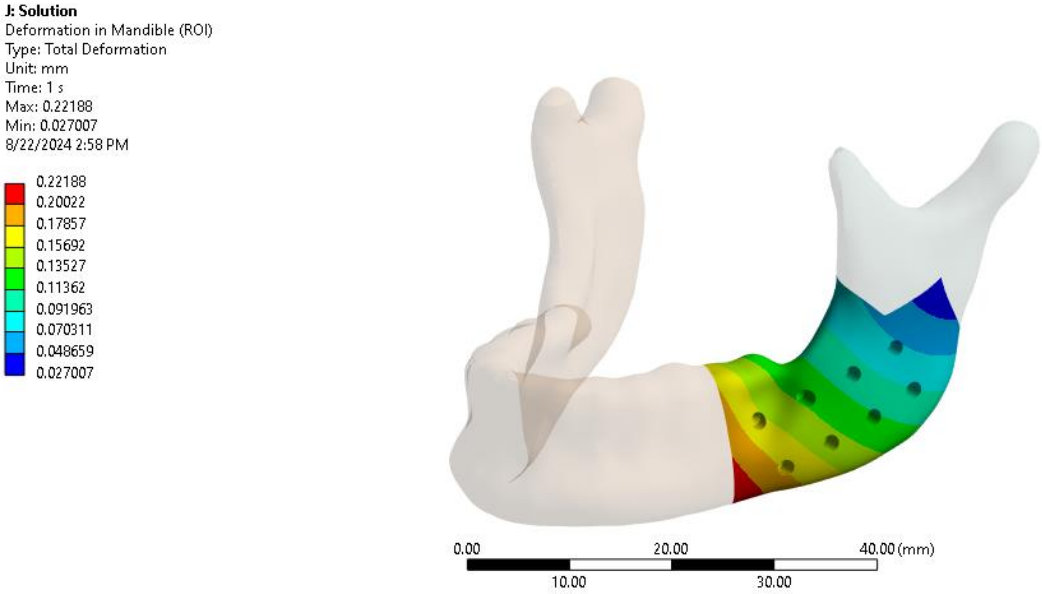
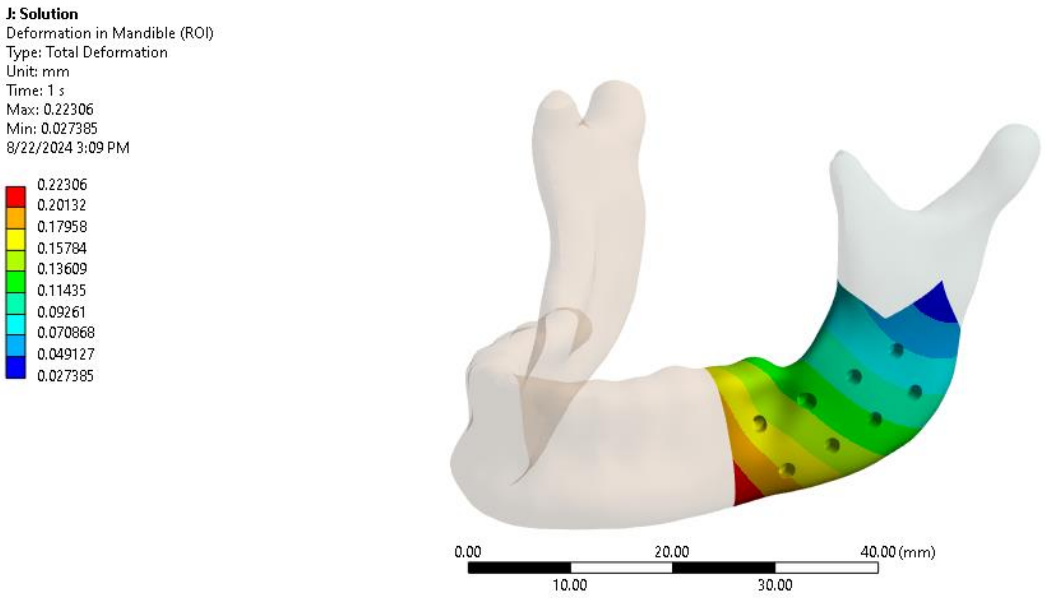
Min: 0.027424
8/22/2024 2:49 PM
0.2236
0.2018
0.18
0.15821
0.13641
0.11461
0.092816
0.071019
0.049221
0.027424
0.00
20.00
40.00 (mm)
10.00
30.00

(a)

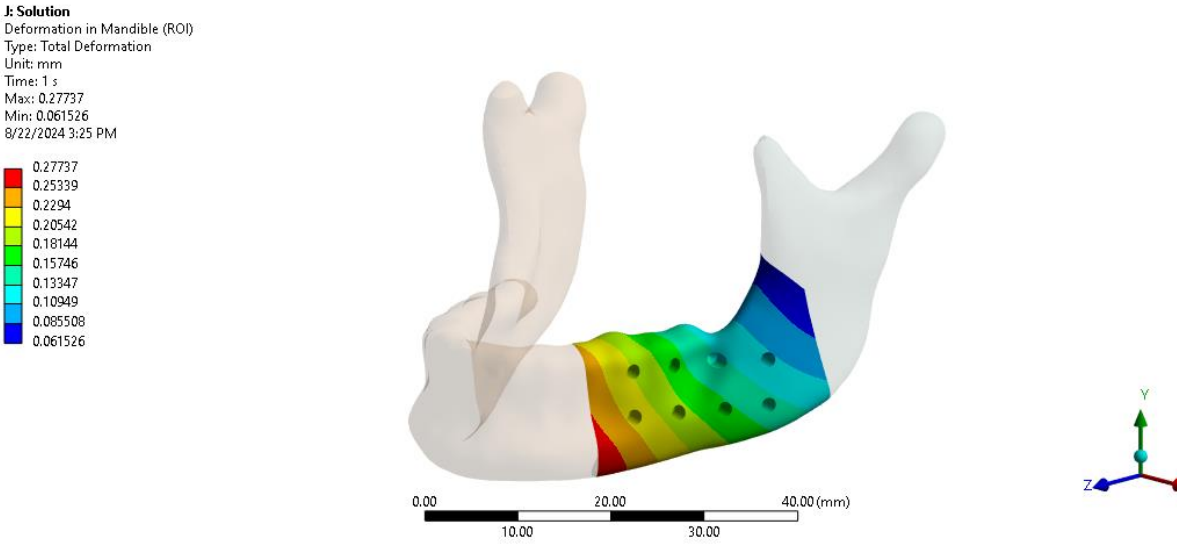

J: Solution
Deformation in Mandible (ROI)
Type: Total Deformation
Unit: mm
Time: 1 s
Max: 0.22188
Min: 0.027007
8/22/2024 2:58 PM
0.22188
0.20022
0.17857
0.15692
0.13527
0.11362
0.091963
0.070311
0.048659
0.027007
0.00
20.00
40.00 (mm)
10.00
30.00

(b)

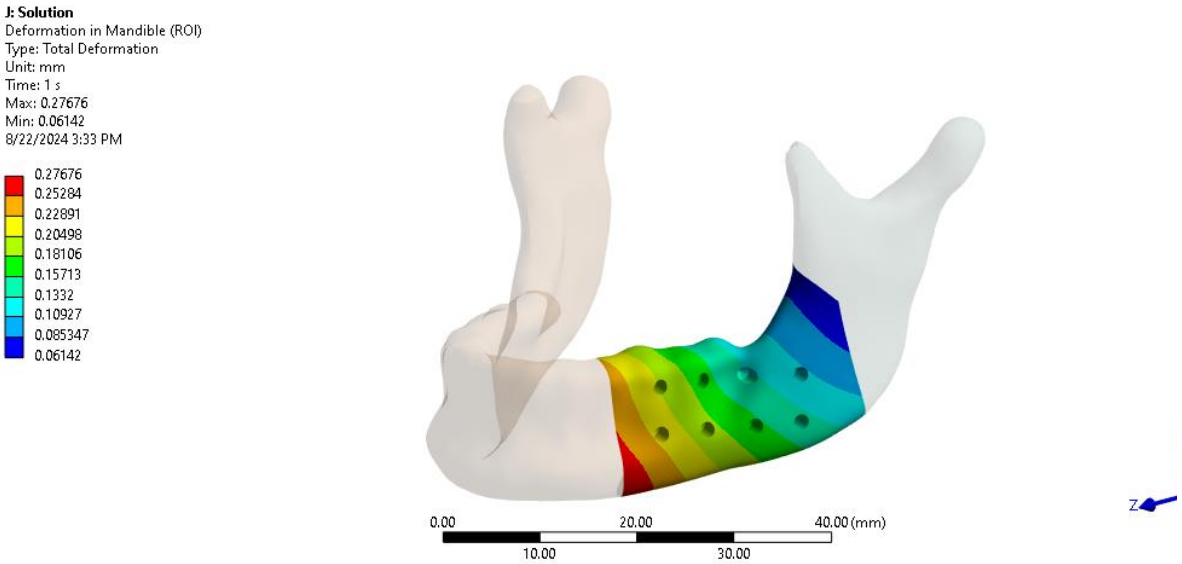


(c)

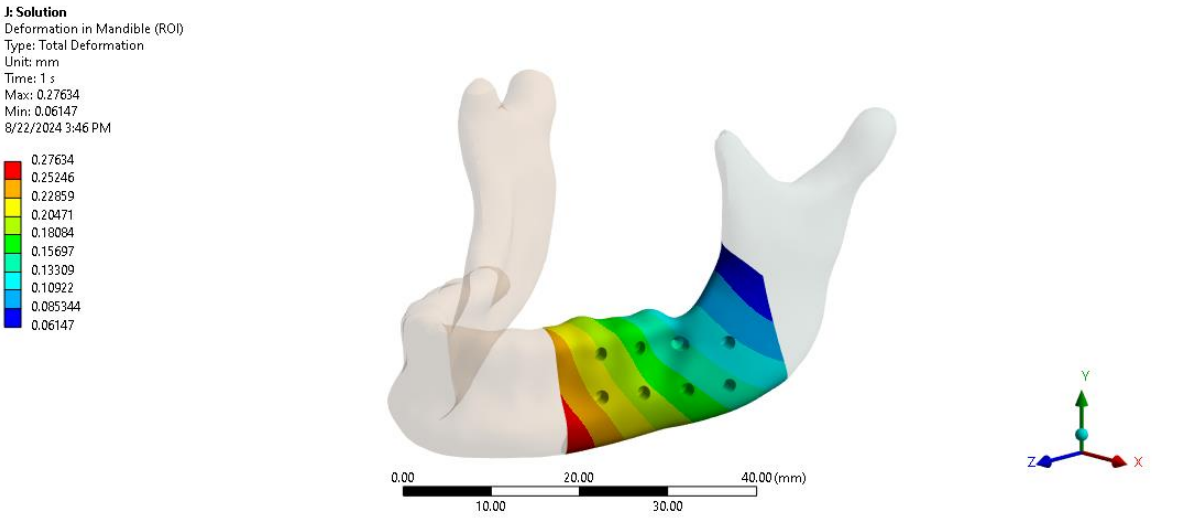
Fig S48: Total deformation in the Mandible with Mini Plate Fixation of Titanium Alloy (a) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and unfavorable fracture with thickness 2.0 mm.



(a)



(b)



(c)

Fig S49: Total deformation in the Mandible with Mini Plate Fixation of Titanium Alloy (a) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.25 mm (b) Parallel plate (Type 2) without interval and favorable fracture with thickness 1.5 mm (c) Parallel plate (Type 2) without interval and favorable fracture with thickness 2.0 mm.