rocscience

P1Z1

RS3 Analysis Report

Created on 09/12/2021 10:43:20

Software Version: RS3 4.020

P1Z1

Project Settings

Units

Units:	Metric, stress as kPa
Time Units:	Days
Permeability Units:	Meters/second
Coordinate:	Cartesian x,y,z

Stage Information

Index	Name
1	Inicial
2	Sin carga
3	600
4	650
5	700
6	750
7	800
8	850
9	900
10	950
11	1000
12	1050
13	1100
14	1150
15	1200

Stress Analysis

Maximum Number of Iterations:	500
Tolerance:	0.001
Load Steps:	Automatic
Convergence Type:	Absolute Force & Energy
Accelerate Initial Stiffness:	Yes
Minimum Alpha:	0.1
Maximum Alpha:	10
Tensile Failure Reduces Hoek-Brown Tensile Strength to Zero:	No
Tensile Failure Reduces Shear Strength to Residual:	Yes
Abort Calculation When Non-Convergence Detected:	No

Solver Options

Analysis Type:	Uncoupled
Solver Types:	Automatic

Groundwater

Method:	Phreatic Surfaces
Pore Fluid Unit Weight (kN/m3):	9.81

Shear Strength Reduction

Determine Shear Reduction Factor:	No

Material Properties

Clay (Relleno)	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	16.7
Failure Criterion:	Mohr Coulomb
Material Type:	Plastic
Peak Strength	
Peak Cohesion (kPa):	10
Peak Friction Angle (°):	23
Peak Tensile Strength (kPa):	0
Residual Strength	
Residual Cohesion (kPa):	8
Residual Friction Angle (°):	18.4
Residual Tensile Strength (kPa):	0
Dilation Angle (°):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.2
Young's Modulus (kPa):	2500
Use Residual Young's Modulus:	No
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3
Clay	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	19.4
Failure Criterion:	Mohr Coulomb
Material Type:	Plastic
Peak Strength	
Peak Cohesion (kPa):	16
Peak Friction Angle (°):	23
Peak Tensile Strength (kPa):	0
Residual Strength	
Residual Cohesion (kPa):	12.8
Residual Friction Angle (°):	18.4
Residual Tensile Strength (kPa):	0
Dilation Angle (°):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.49
Young's Modulus (kPa):	121000
Use Residual Young's Modulus:	No
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3

Concreto	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	24
Failure Criterion:	Mohr Coulomb
Material Type:	Elastic
Peak Strength	
Peak Cohesion (kPa):	10500
Peak Friction Angle (°):	0
Peak Tensile Strength (kPa):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.2
Young's Modulus (kPa):	21589300
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3

Results

Compute Time:	4540.45	
Result Element Type : Solid		
Stage : Inicial		
Data Type	**Min (kPa)**	**Max (kPa)**
Sigma 1 Effective	0.915	190.856
Sigma 2 Effective	0.915	190.856
Sigma 3 Effective	0.915	190.856
Mean Stress Effective	0.915	190.856
Von Mises Stress Effective	0	0
X Displacement	0	0
Y Displacement	0	0
Z Displacement	0	0
Total Displacement	0	0
SigmaXX Effective	0.915	190.856
SigmaYY Effective	0.915	190.856
SigmaZZ Effective	0.915	190.856
SigmaXY Effective	0	0
SigmaXZ Effective	0	0
SigmaYZ Effective	0	0
Stage : Sin carga		
Data Type	**Min (kPa)**	**Max (kPa)**
Sigma 1 Effective	-0.05	1709.991
Sigma 2 Effective	-5.253	240.489
Sigma 3 Effective	-531.609	190.337
Mean Stress Effective	-3.38	469.897
Von Mises Stress Effective	0.003	1973.995
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	-0.004	0
Total Displacement	0	0.004
SigmaXX Effective	-46.796	1339.713
SigmaYY Effective	-407.11	350.775
SigmaZZ Effective	-1.272	477.089
SigmaXY Effective	-69.383	312.043
SigmaXZ Effective	-649.413	242.205
SigmaYZ Effective	-215.516	218.811
Stage : 600		
Data Type	**Min (kPa)**	**Max (kPa)**
Sigma 1 Effective	-31.058	541.635
Sigma 2 Effective	-40.932	249.733
Sigma 3 Effective	-605.337	194.02
Mean Stress Effective	-206.05	248.061
Von Mises Stress Effective	0.072	761.656
X Displacement	-0.001	0.002
Y Displacement	-0.001	0.001
Z Displacement	-0.004	0.003
Total Displacement	0	0.004
SigmaXX Effective	-49.303	302.482

SigmaYY Effective	-88.177	247.02
SigmaZZ Effective	-605.325	247.112
SigmaXY Effective	-169.226	136.667
SigmaXZ Effective	-192.001	149.383
SigmaYZ Effective	-152.819	281.858

Stage : 650

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-33.781	507.971
Sigma 2 Effective	-45.223	246.446
Sigma 3 Effective	-657.364	194.334
Mean Stress Effective	-223.825	246.05
Von Mises Stress Effective	0.076	715.926
X Displacement	-0.002	0.001
Y Displacement	-0.001	0.002
Z Displacement	-0.003	0.004
Total Displacement	0	0.004
SigmaXX Effective	-54.359	277.261
SigmaYY Effective	-73.429	232.207
SigmaZZ Effective	-657.355	243.9
SigmaXY Effective	-146.452	143.056
SigmaXZ Effective	-192.79	152.152
SigmaYZ Effective	-168.908	265.601

Stage : 700

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-36.29	525.301
Sigma 2 Effective	-49.418	240.024
Sigma 3 Effective	-708.928	194.599
Mean Stress Effective	-241.32	239.815
Von Mises Stress Effective	0.081	748.021
X Displacement	-0.003	0.002
Y Displacement	-0.002	0.002
Z Displacement	-0.003	0.006
Total Displacement	0	0.006
SigmaXX Effective	-58.531	309.691
SigmaYY Effective	-75.125	234.352
SigmaZZ Effective	-708.92	237.492
SigmaXY Effective	-150.295	140.487
SigmaXZ Effective	-209.818	194.615
SigmaYZ Effective	-213.84	281.989

Stage : 750

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-37.277	644.211
Sigma 2 Effective	-51.653	233.517
Sigma 3 Effective	-760.211	194.944
Mean Stress Effective	-258.705	233.36
Von Mises Stress Effective	0.085	940.709
X Displacement	-0.003	0.002
Y Displacement	-0.002	0.003
Z Displacement	-0.003	0.008
Total Displacement	0	0.008
SigmaXX Effective	-61.188	301.261
SigmaYY Effective	-70.109	277.668
SigmaZZ Effective	-760.204	230.883

SigmaXY Effective	-173.092	176.503
SigmaXZ Effective	-280.214	184.082
SigmaYZ Effective	-200.978	356.903

Stage : 800

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-40.519	800.674
Sigma 2 Effective	-55.755	223.447
Sigma 3 Effective	-811.933	195.338
Mean Stress Effective	-276.455	223.184
Von Mises Stress Effective	0.089	1107.623
X Displacement	-0.005	0.003
Y Displacement	-0.004	0.004
Z Displacement	-0.003	0.011
Total Displacement	0	0.011
SigmaXX Effective	-66.69	321.743
SigmaYY Effective	-72.632	299.828
SigmaZZ Effective	-811.923	220.7
SigmaXY Effective	-211.978	167.743
SigmaXZ Effective	-338.685	215.704
SigmaYZ Effective	-250.018	404.864

Stage : 850

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-44.831	871.261
Sigma 2 Effective	-60.524	206.582
Sigma 3 Effective	-862.095	195.754
Mean Stress Effective	-293.416	208.012
Von Mises Stress Effective	0.094	1275.382
X Displacement	-0.006	0.004
Y Displacement	-0.005	0.005
Z Displacement	-0.003	0.014
Total Displacement	0	0.014
SigmaXX Effective	-73.204	364.152
SigmaYY Effective	-84.631	408.029
SigmaZZ Effective	-862.084	204.532
SigmaXY Effective	-221.642	209.752
SigmaXZ Effective	-392.793	256.438
SigmaYZ Effective	-277.809	488.762

Stage : 900

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-48.217	1013.898
Sigma 2 Effective	-66.281	196.179
Sigma 3 Effective	-912.309	196.168
Mean Stress Effective	-310.297	205.277
Von Mises Stress Effective	0.098	1445.305
X Displacement	-0.008	0.006
Y Displacement	-0.007	0.007
Z Displacement	-0.003	0.017
Total Displacement	0	0.017
SigmaXX Effective	-79.586	404.808
SigmaYY Effective	-82.754	449.683
SigmaZZ Effective	-912.298	196.474
SigmaXY Effective	-261.819	198.018
SigmaXZ Effective	-452.715	295.14

SigmaYZ Effective	-302.731	542.994

Stage : 950

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-52.116	1108.631
Sigma 2 Effective	-70.92	222.612
Sigma 3 Effective	-963.204	196.611
Mean Stress Effective	-327.57	239.128
Von Mises Stress Effective	0.102	1592.546
X Displacement	-0.01	0.007
Y Displacement	-0.009	0.009
Z Displacement	-0.004	0.021
Total Displacement	0	0.021
SigmaXX Effective	-85.595	424.648
SigmaYY Effective	-89.415	520.316
SigmaZZ Effective	-963.192	196.935
SigmaXY Effective	-263.147	208.672
SigmaXZ Effective	-515.528	305.414
SigmaYZ Effective	-328.642	599.322

Stage : 1000

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-56.459	1215.976
Sigma 2 Effective	-76.042	220.225
Sigma 3 Effective	-1014.581	197.034
Mean Stress Effective	-345.019	251.453
Von Mises Stress Effective	0.107	1738.833
X Displacement	-0.013	0.009
Y Displacement	-0.011	0.01
Z Displacement	-0.004	0.025
Total Displacement	0	0.025
SigmaXX Effective	-91.911	457.071
SigmaYY Effective	-96.16	511.175
SigmaZZ Effective	-1014.561	197.376
SigmaXY Effective	-297.381	234.864
SigmaXZ Effective	-561.615	347.791
SigmaYZ Effective	-362.139	656.282

Stage : 1050

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-60.038	1325.167
Sigma 2 Effective	-80.18	223.992
Sigma 3 Effective	-1092.705	197.503
Mean Stress Effective	-362.491	266.223
Von Mises Stress Effective	0.112	1892.884
X Displacement	-0.016	0.011
Y Displacement	-0.013	0.012
Z Displacement	-0.005	0.03
Total Displacement	0	0.03
SigmaXX Effective	-97.596	520.459
SigmaYY Effective	-102.053	514.153
SigmaZZ Effective	-1065.864	197.865
SigmaXY Effective	-311.625	228.735
SigmaXZ Effective	-624.861	365.824
SigmaYZ Effective	-402.18	708.696

Stage : 1100

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-63.718	1455.299
Sigma 2 Effective	-85.49	246.275
Sigma 3 Effective	-1180.792	197.824
Mean Stress Effective	-377.897	287.687
Von Mises Stress Effective	0.117	2054.829
X Displacement	-0.018	0.013
Y Displacement	-0.016	0.014
Z Displacement	-0.006	0.035
Total Displacement	0	0.035
SigmaXX Effective	-106.032	530.841
SigmaYY Effective	-123.641	565.597
SigmaZZ Effective	-1113.275	198.199
SigmaXY Effective	-341.12	252.42
SigmaXZ Effective	-678.25	404.985
SigmaYZ Effective	-452.877	763.442

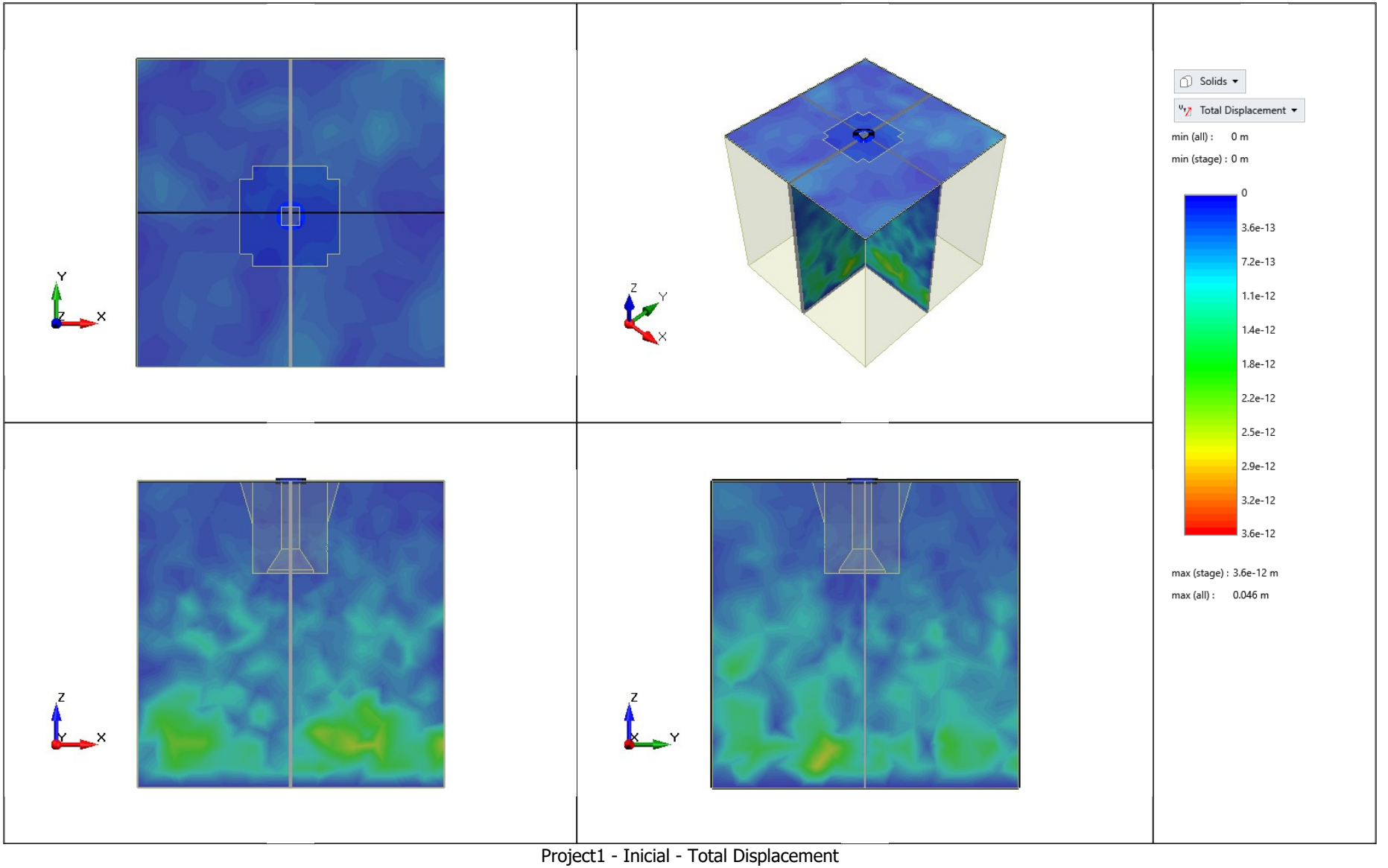
Stage : 1150

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-67.241	1553.926
Sigma 2 Effective	-89.791	273.287
Sigma 3 Effective	-1284.138	198.158
Mean Stress Effective	-394.181	329.454
Von Mises Stress Effective	0.122	2212.714
X Displacement	-0.022	0.015
Y Displacement	-0.019	0.016
Z Displacement	-0.006	0.04
Total Displacement	0	0.04
SigmaXX Effective	-111.539	595.105
SigmaYY Effective	-118.649	607.945
SigmaZZ Effective	-1162.803	198.548
SigmaXY Effective	-361.584	301.74
SigmaXZ Effective	-735.815	434.163
SigmaYZ Effective	-455.117	828.031

Stage : 1200

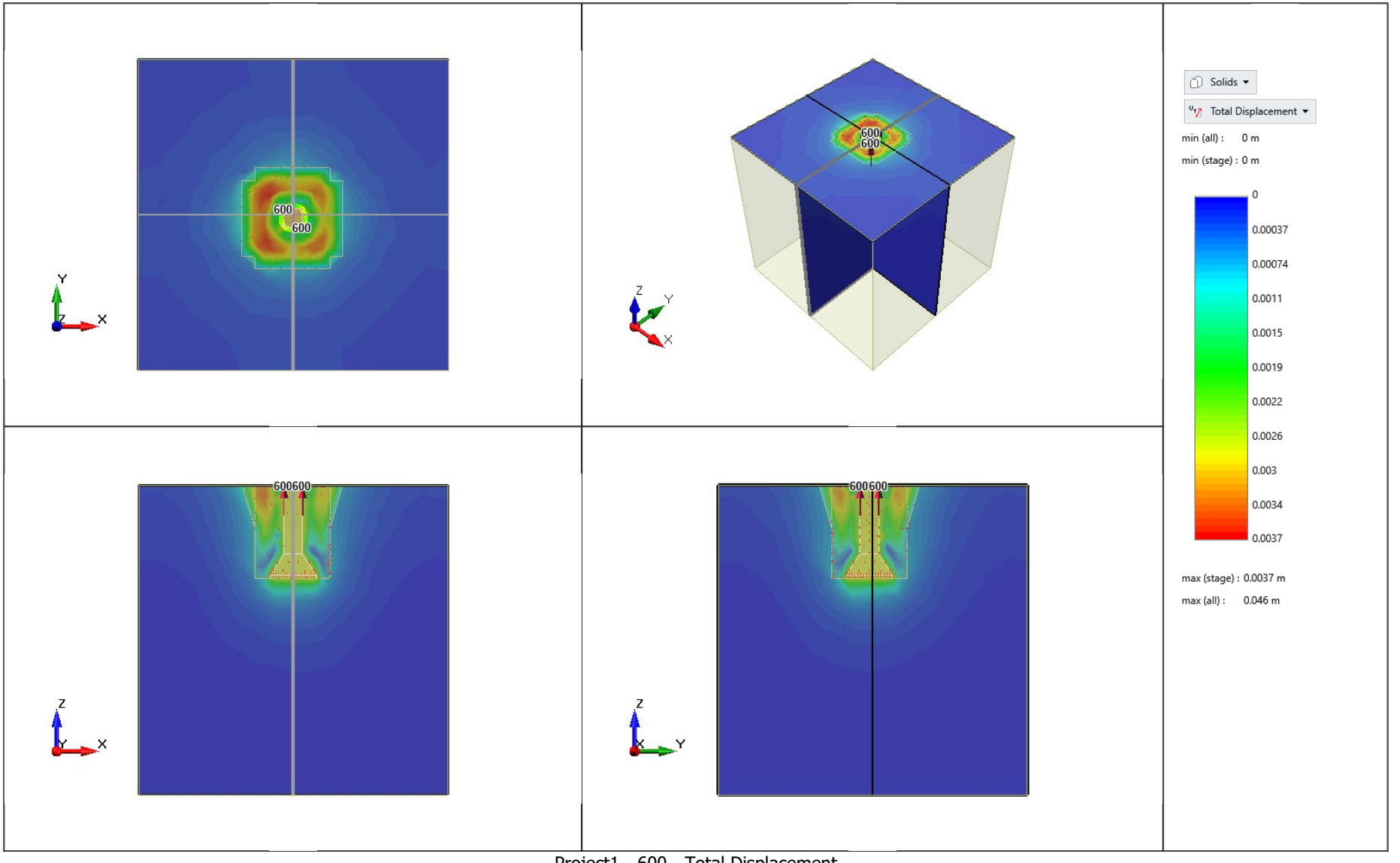
Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-71.993	1675.983
Sigma 2 Effective	-96.229	324.601
Sigma 3 Effective	-1314.208	198.481
Mean Stress Effective	-410.663	353.143
Von Mises Stress Effective	0.127	2321.623
X Displacement	-0.025	0.017
Y Displacement	-0.022	0.018
Z Displacement	-0.007	0.046
Total Displacement	0	0.046
SigmaXX Effective	-118.901	719.545
SigmaYY Effective	-141.011	749.512
SigmaZZ Effective	-1212.854	198.884
SigmaXY Effective	-381.688	321.126
SigmaXZ Effective	-783.49	467.721
SigmaYZ Effective	-525.536	838.996

Project1 - Inicial - Total Displacement



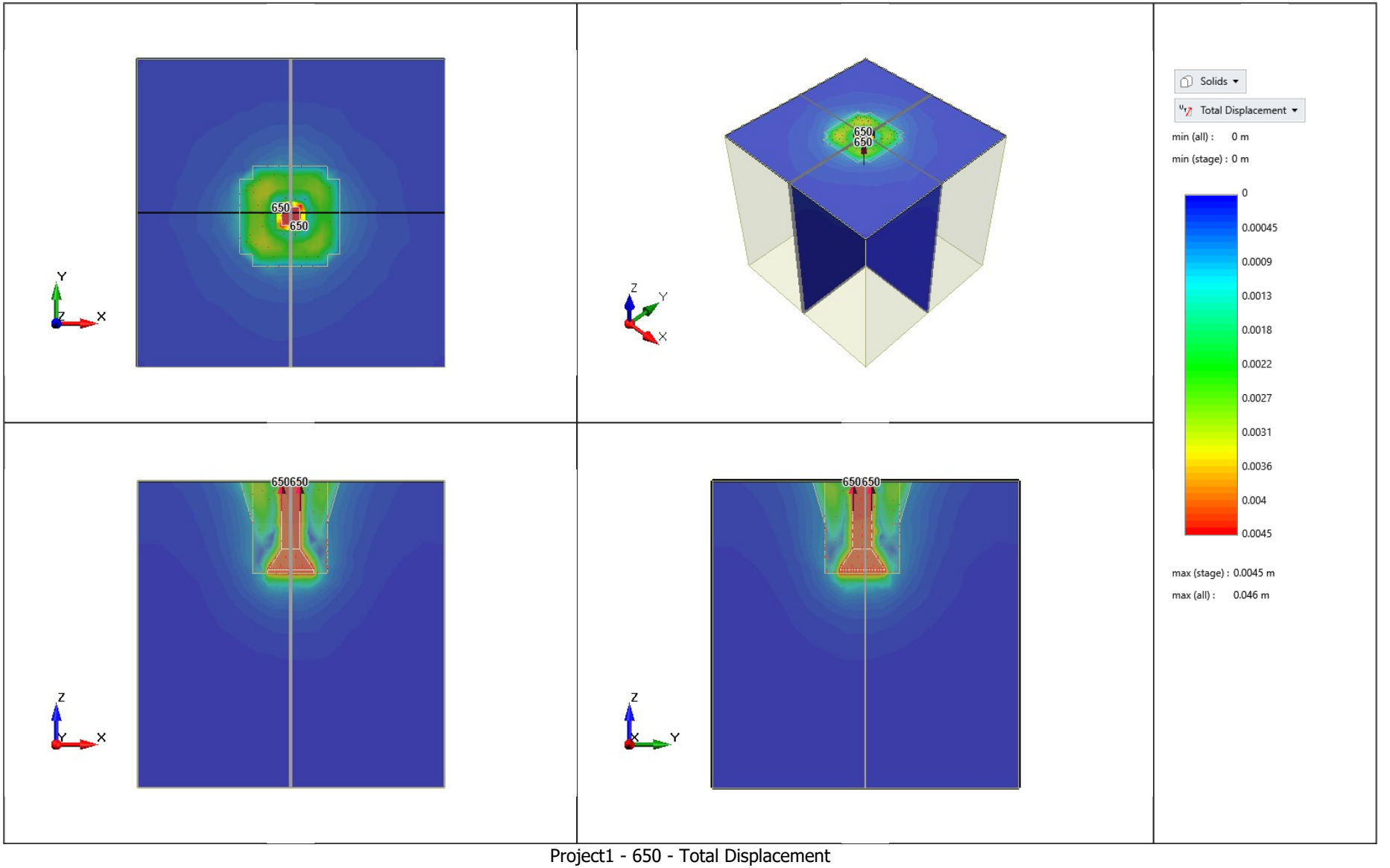
Project1 - Inicial - Total Displacement

Project1 - 600 - Total Displacement



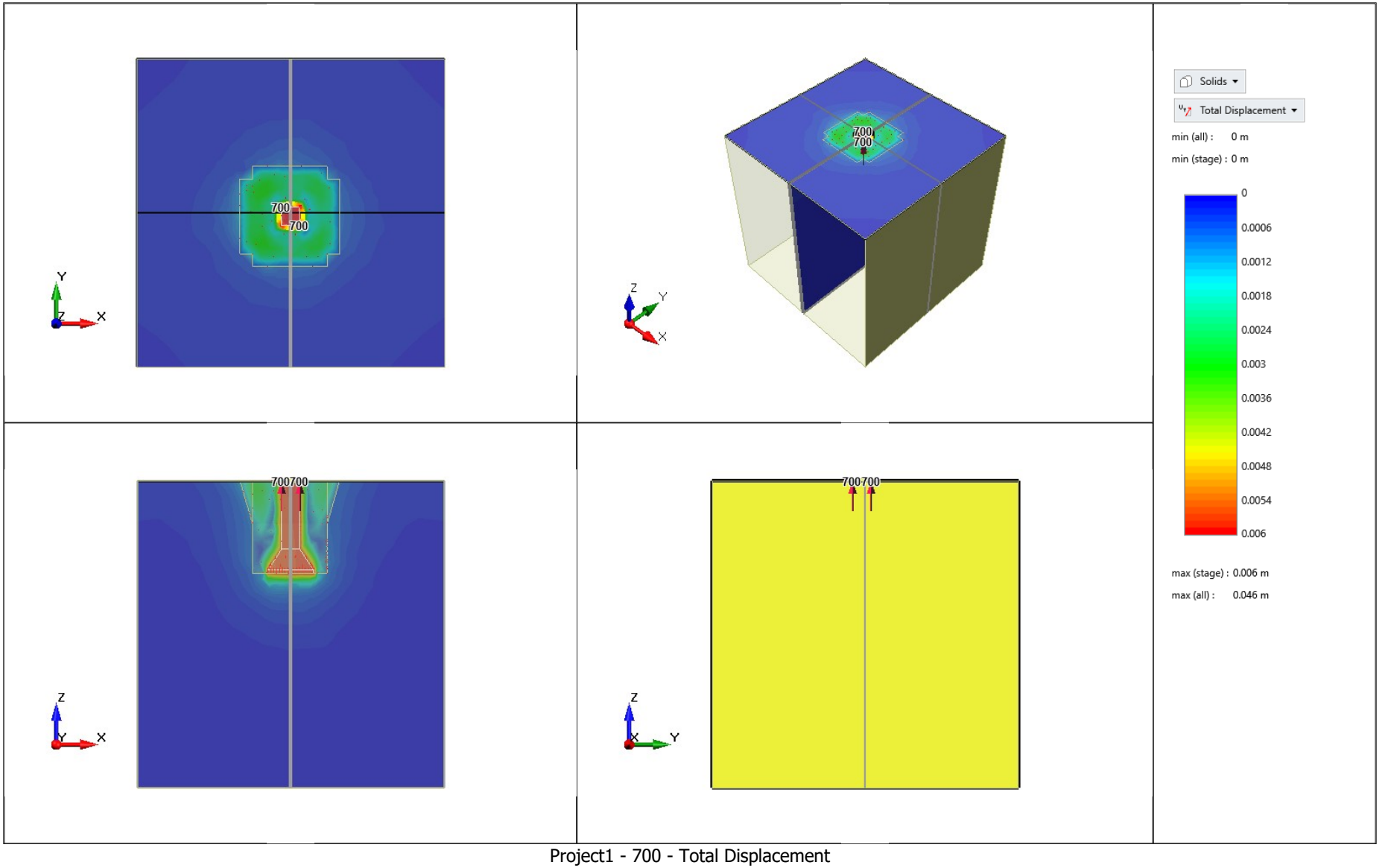
Project1 - 600 - Total Displacement

Project1 - 650 - Total Displacement



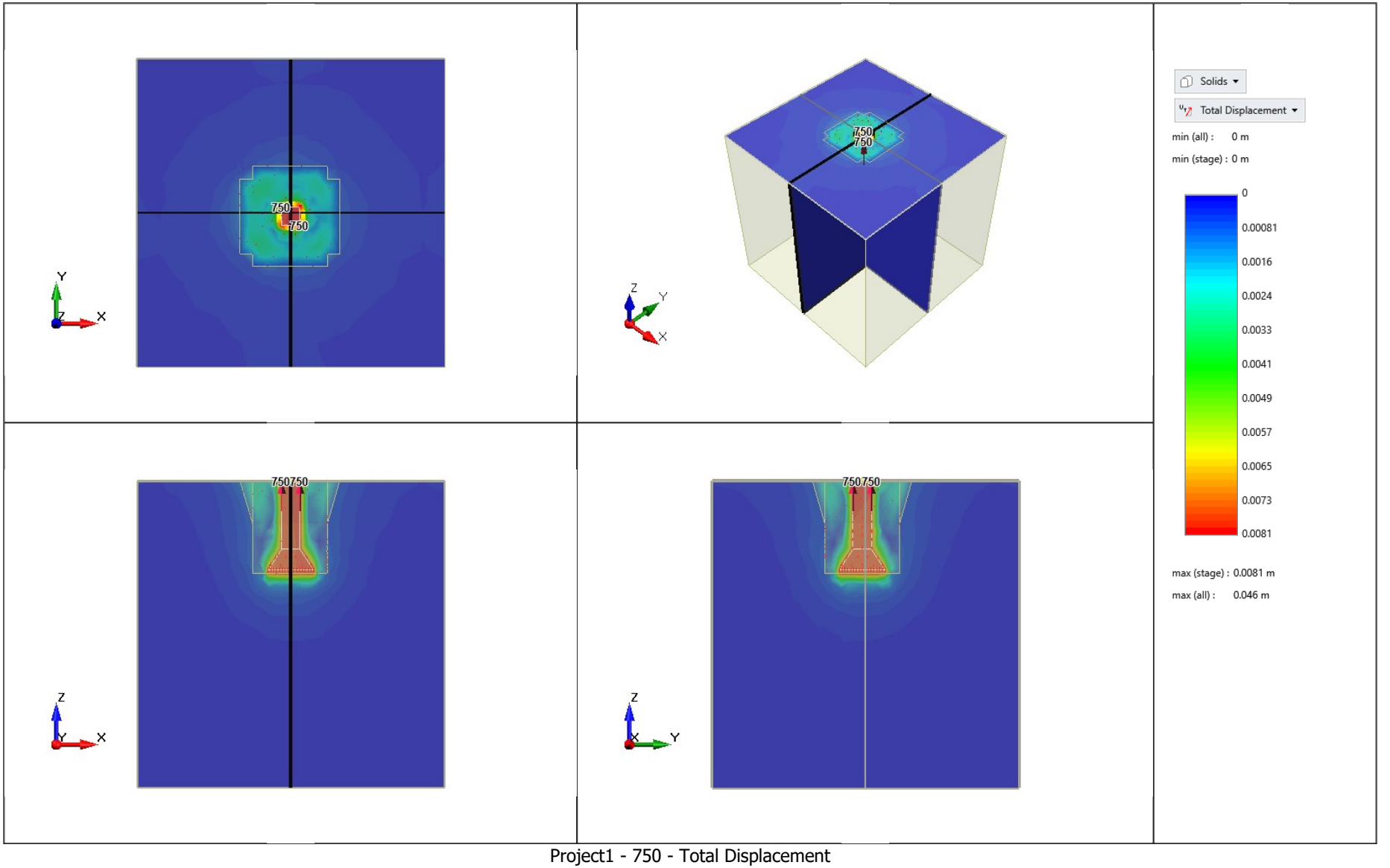
Project1 - 650 - Total Displacement

Project1 - 700 - Total Displacement

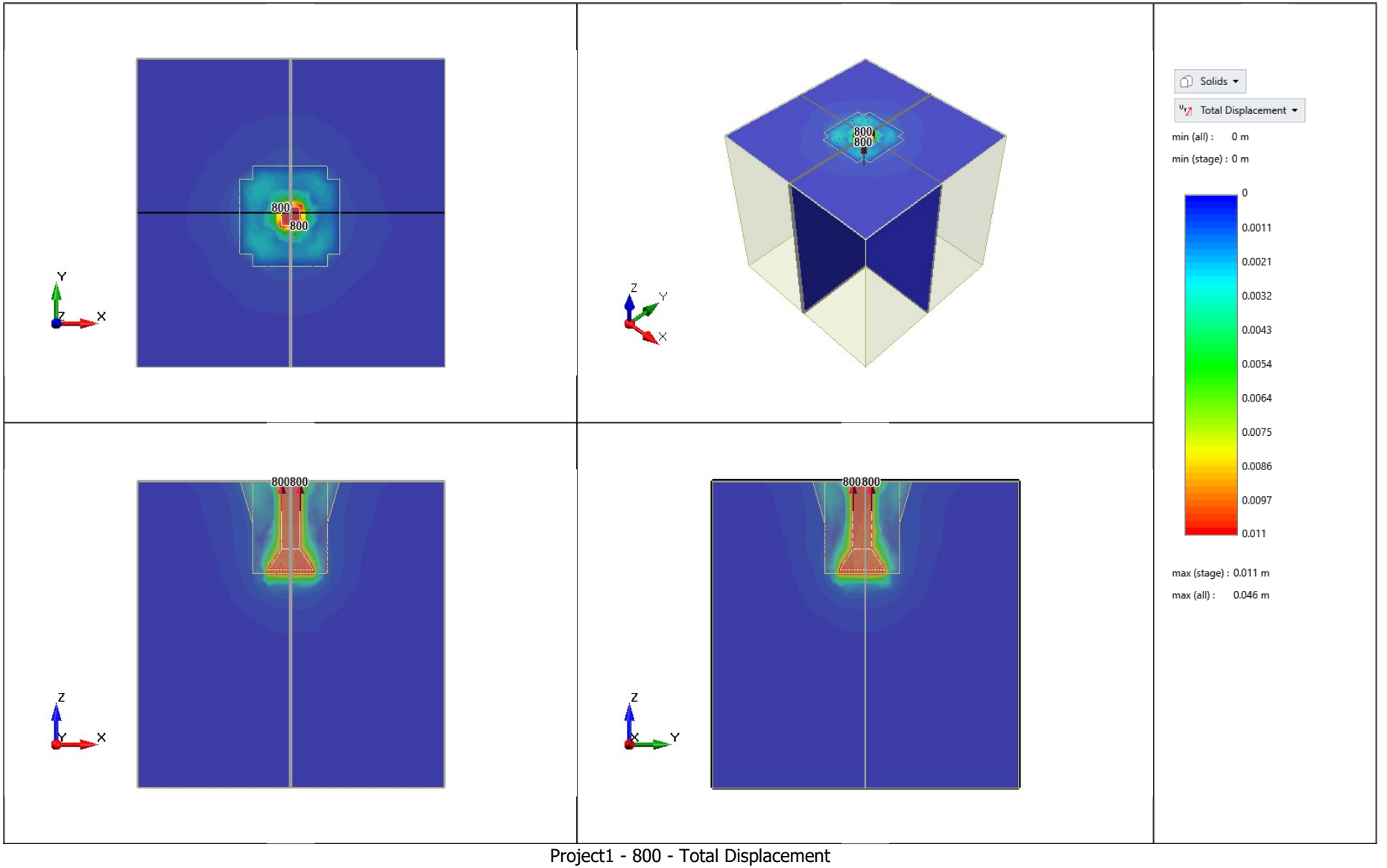


Project1 - 700 - Total Displacement

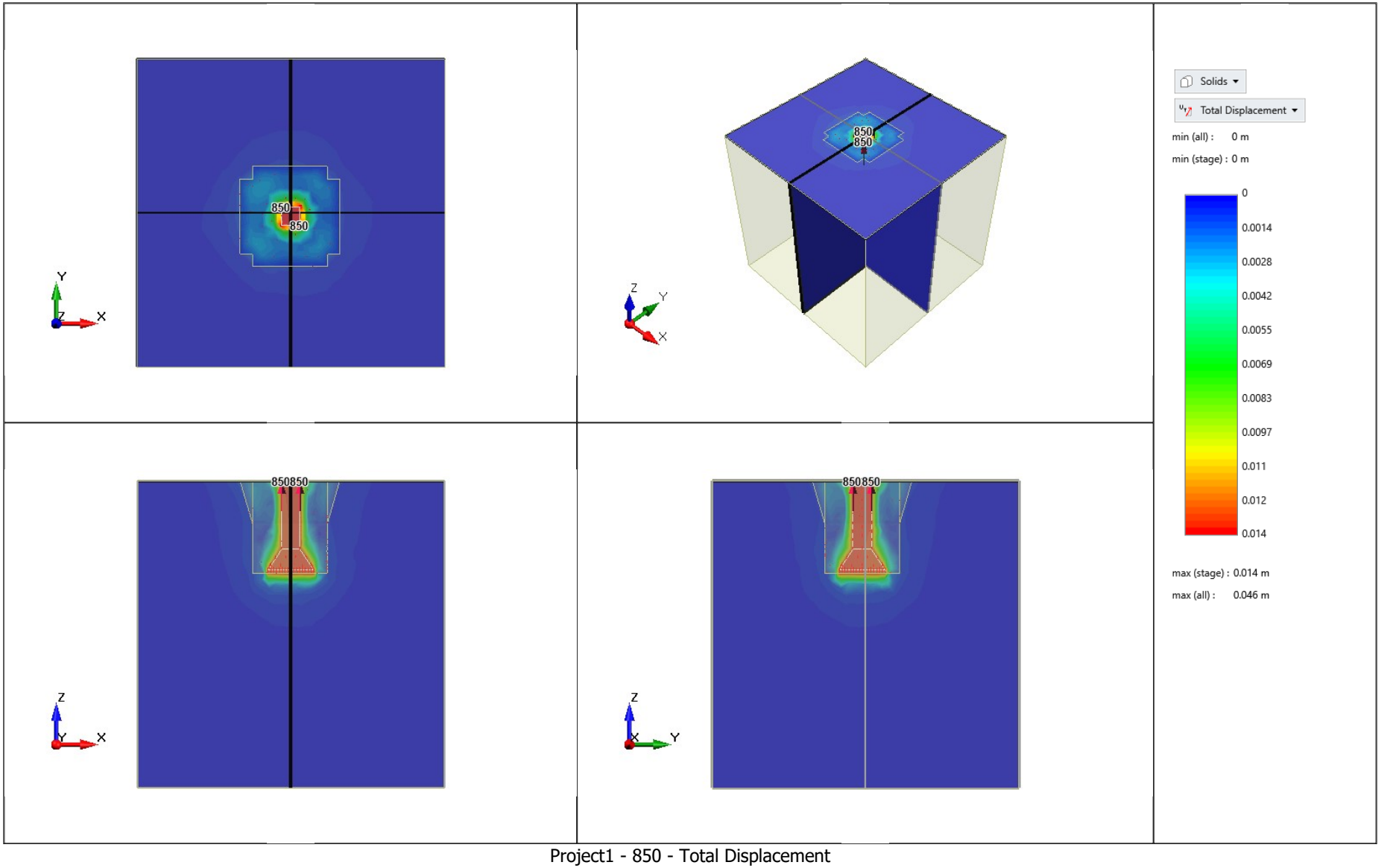
Project1 - 750 - Total Displacement



Project1 - 750 - Total Displacement

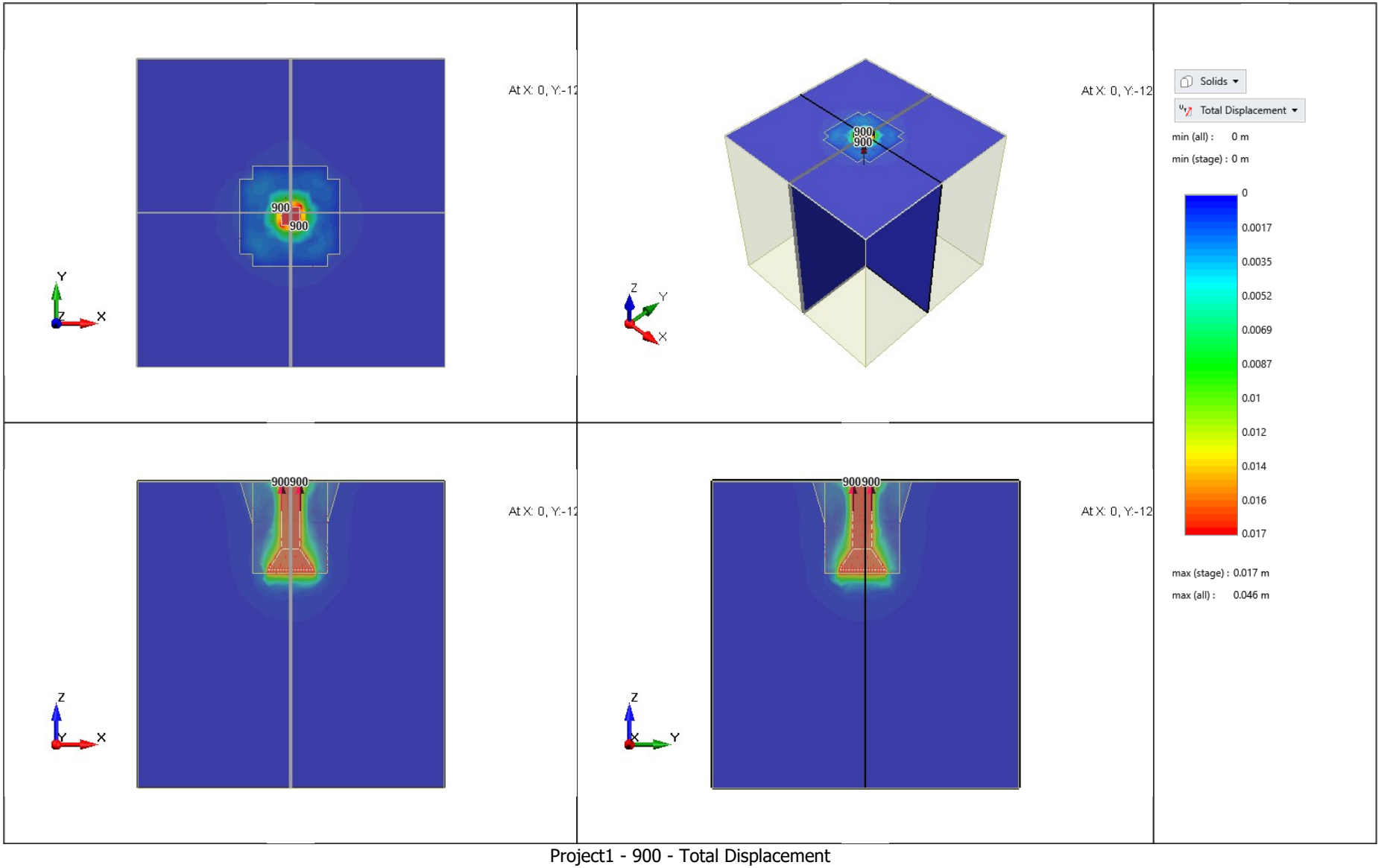

800
800
800800
800800
Solids
Total Displacement
min (all) : 0 m
min (stage) : 0 m
0
0.0011
0.0021
0.0032
0.0043
0.0054
0.0064
0.0075
0.0086
0.0097
0.011
max (stage) : 0.011 m
max (all) : 0.046 m

Project1 - 850 - Total Displacement

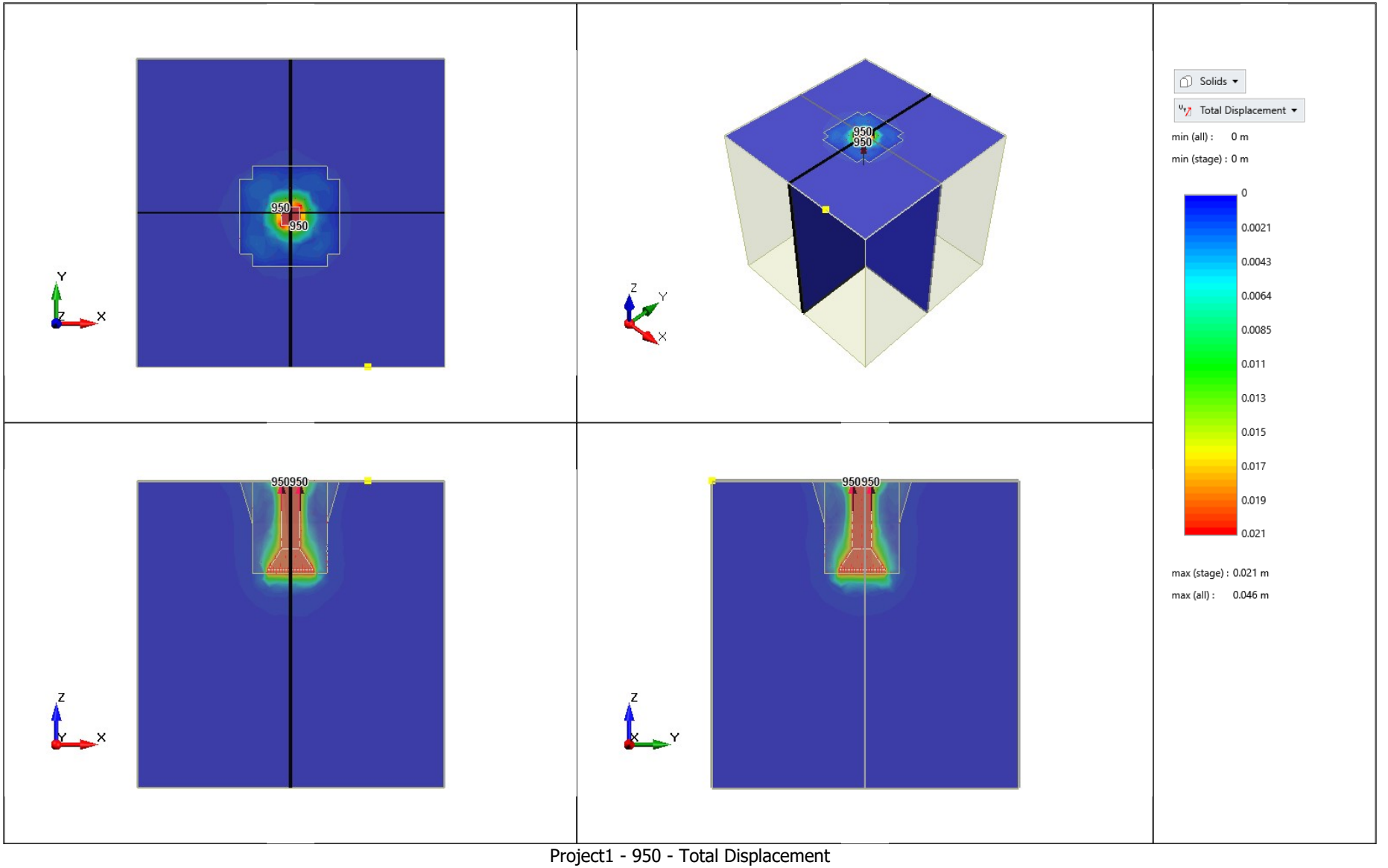


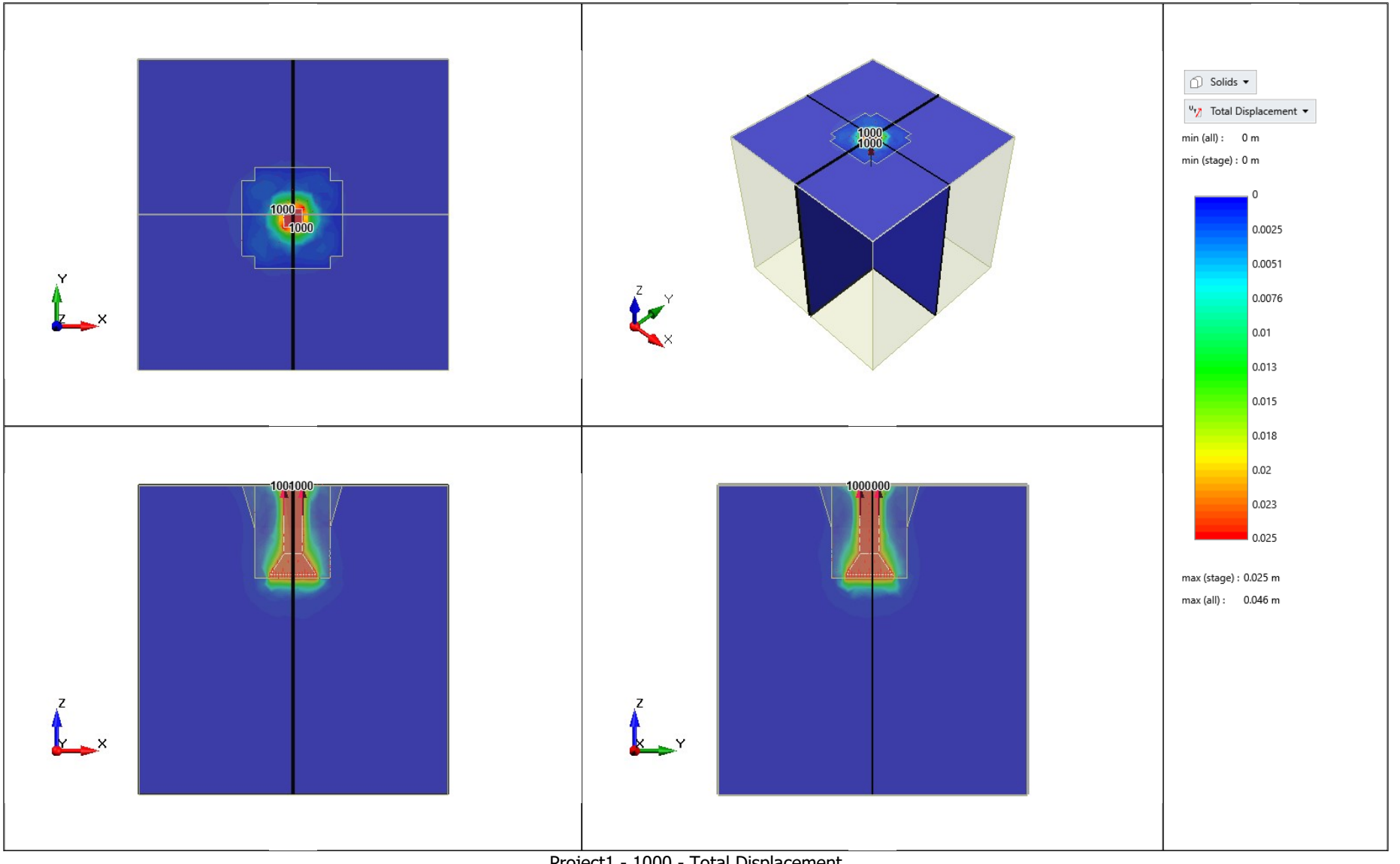
Project1 - 850 - Total Displacement

Project1 - 900 - Total Displacement

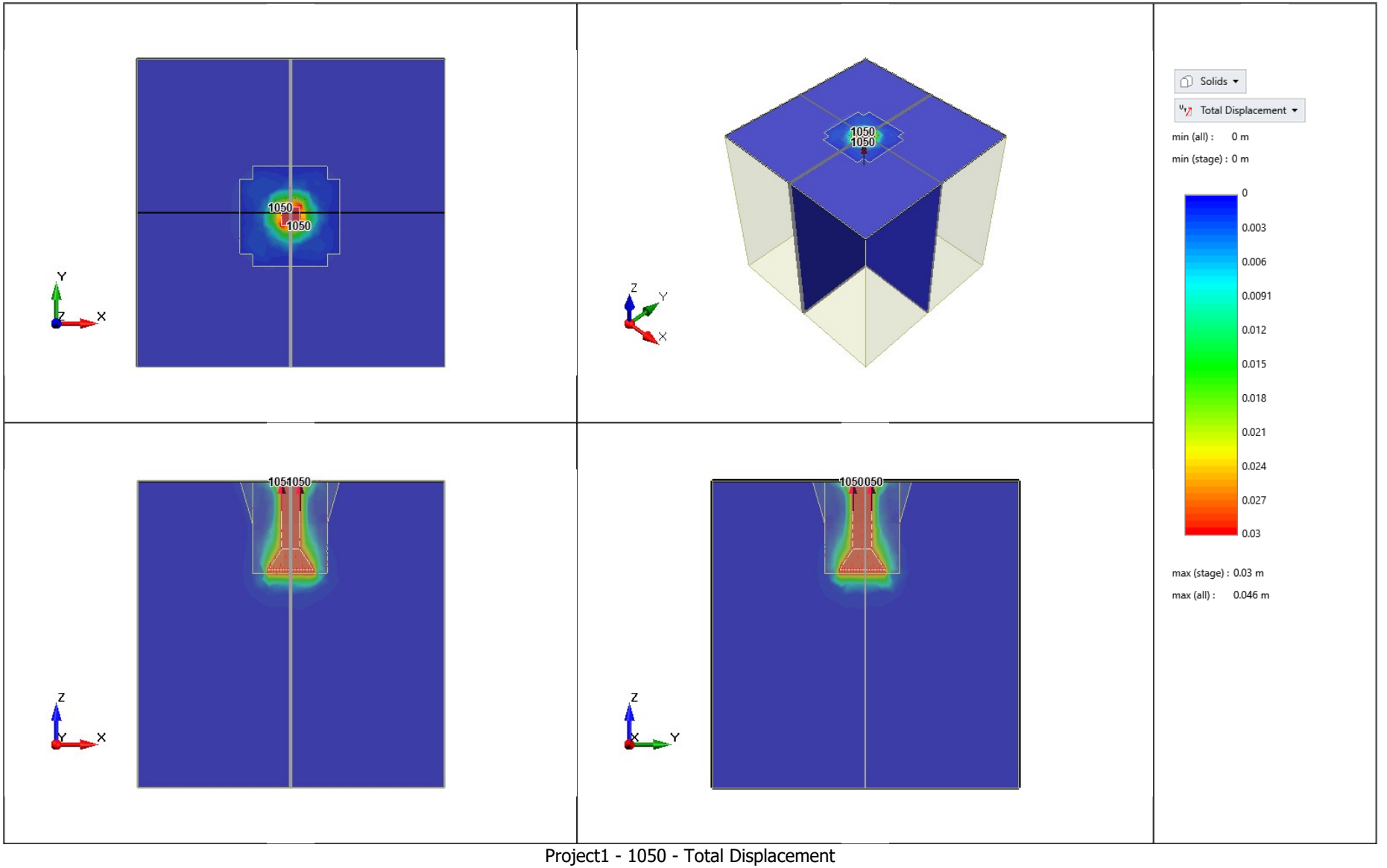


Project1 - 900 - Total Displacement

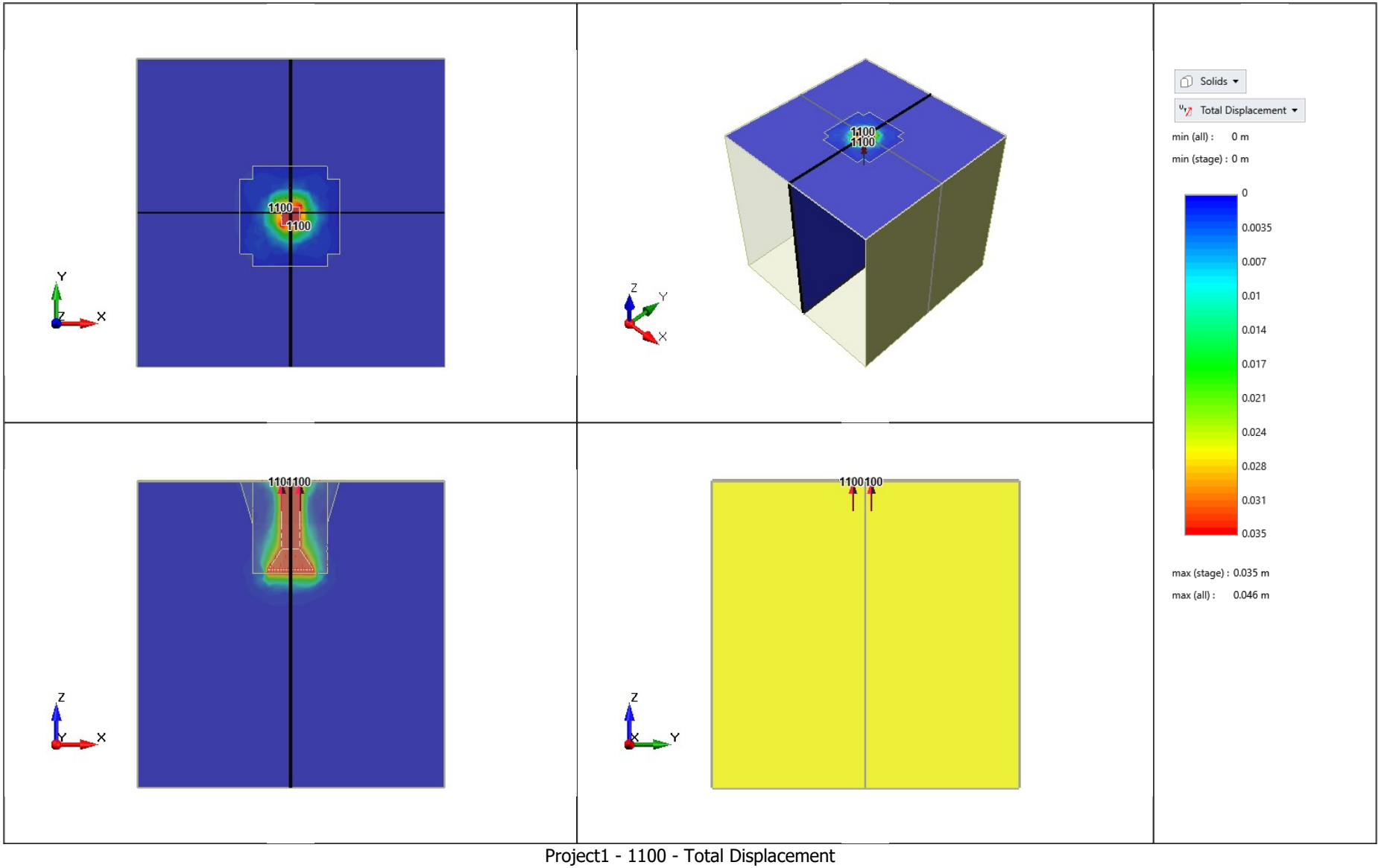

950
950
Y
Z
X
950
950
Z
Y
X
950950
Z
Y
X
950950
Z
X
Y
Solids
Total Displacement
min (all) : 0 m
min (stage) : 0 m
0
0.0021
0.0043
0.0064
0.0085
0.011
0.013
0.015
0.017
0.019
0.021
max (stage) : 0.021 m
max (all) : 0.046 m



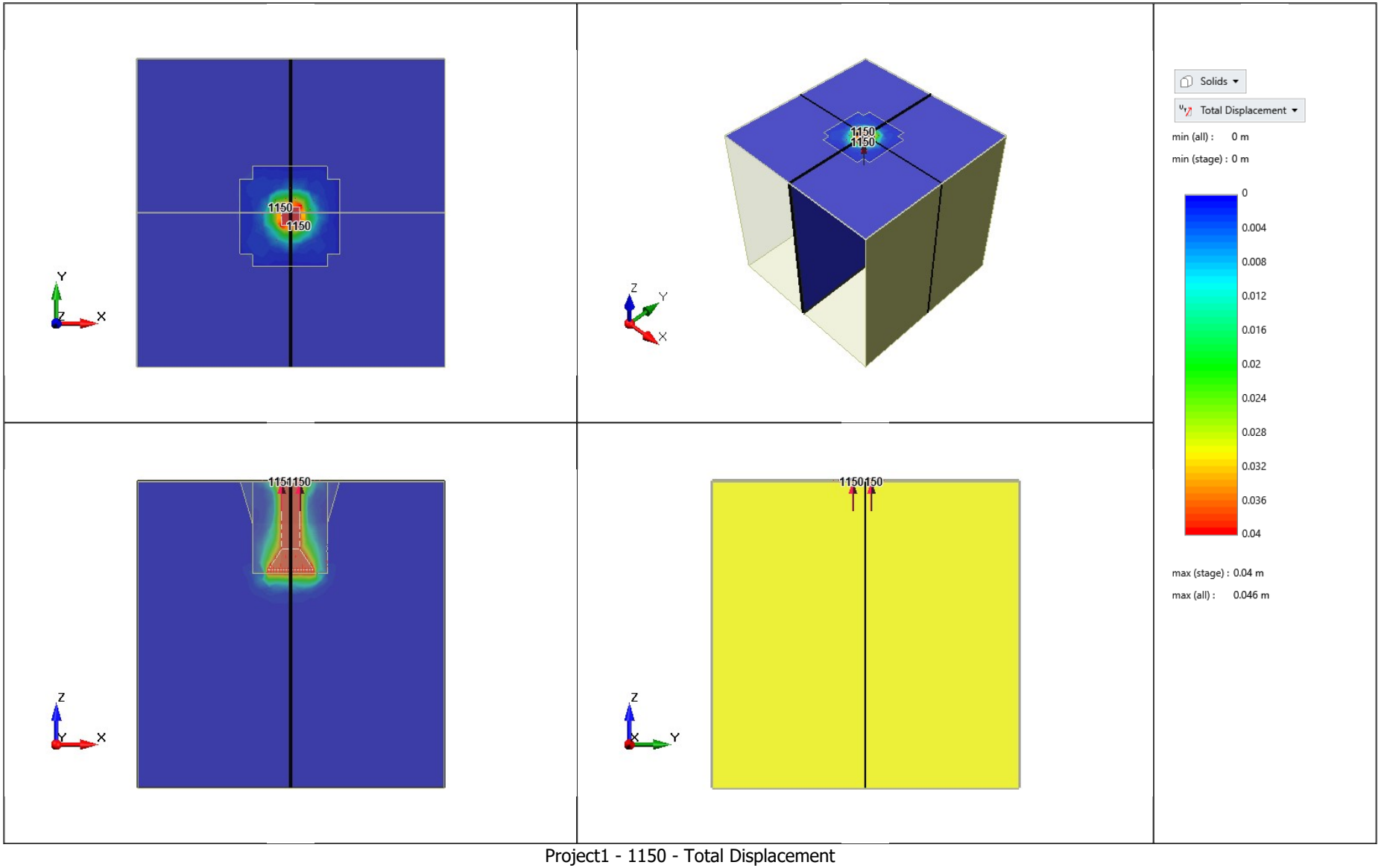
Project1 - 1000 - Total Displacement



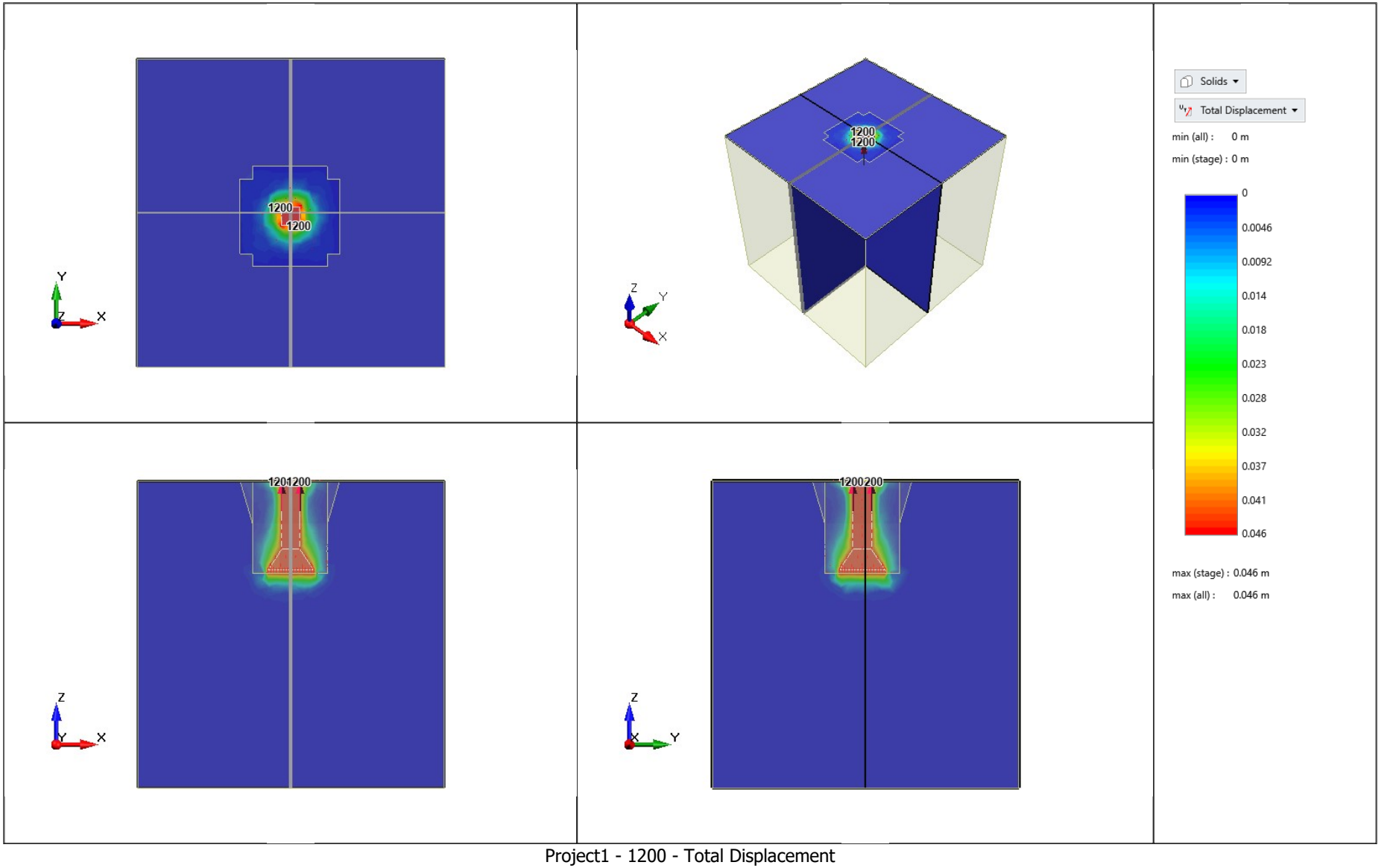
Project1 - 1050 - Total Displacement



Project1 - 1100 - Total Displacement



Project1 - 1150 - Total Displacement



Project1 - 1200 - Total Displacement

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P1Z1C15

RS3 Analysis Report

Created on 09/12/2021 10:43:20

Software Version: RS3 4.020

Project Settings

Units

Units:	Metric, stress as kPa
Time Units:	Days
Permeability Units:	Meters/second
Coordinate:	Cartesian x,y,z

Stage Information

Index	Name
1	Inicial
2	Sin carga
3	600
4	650
5	700
6	750
7	800
8	850
9	900
10	950
11	1000
12	1050
13	1100
14	1150
15	1200
16	Stage 16
17	Stage 17
18	Stage 18

Stress Analysis

Maximum Number of Iterations:	500
Tolerance:	0.001
Load Steps:	Automatic
Convergence Type:	Absolute Force & Energy
Accelerate Initial Stiffness:	Yes
Minimum Alpha:	0.1
Maximum Alpha:	10
Tensile Failure Reduces Hoek-Brown Tensile Strength to Zero:	No
Tensile Failure Reduces Shear Strength to Residual:	Yes
Abort Calculation When Non-Convergence Detected:	No

Solver Options

Analysis Type:	Uncoupled
Solver Types:	Automatic

Groundwater

Method:	Phreatic Surfaces
Pore Fluid Unit Weight (kN/m3):	9.81

Shear Strength Reduction

Determine Shear Reduction Factor:	No

Material Properties

Clay (Relleno)	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	16.7
Failure Criterion:	Mohr Coulomb
Material Type:	Plastic
Peak Strength	
Peak Cohesion (kPa):	15
Peak Friction Angle (°):	23
Peak Tensile Strength (kPa):	0
Residual Strength	
Residual Cohesion (kPa):	12
Residual Friction Angle (°):	18.4
Residual Tensile Strength (kPa):	0
Dilation Angle (°):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.2
Young's Modulus (kPa):	2500
Use Residual Young's Modulus:	No
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3
Clay	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	19.4
Failure Criterion:	Mohr Coulomb
Material Type:	Plastic
Peak Strength	
Peak Cohesion (kPa):	16
Peak Friction Angle (°):	23
Peak Tensile Strength (kPa):	0
Residual Strength	
Residual Cohesion (kPa):	12.8
Residual Friction Angle (°):	18.4
Residual Tensile Strength (kPa):	0
Dilation Angle (°):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.35
Young's Modulus (kPa):	15000
Use Residual Young's Modulus:	No
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3

Concreto	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	24
Failure Criterion:	Mohr Coulomb
Material Type:	Elastic
Peak Strength	
Peak Cohesion (kPa):	10500
Peak Friction Angle (°):	0
Peak Tensile Strength (kPa):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.2
Young's Modulus (kPa):	21589300
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3

Results

Compute Time:	277.821	
Result Element Type : Solid		
Stage : Inicial		
Data Type	**Min (kPa)**	**Max (kPa)**
Sigma 1 Effective	1.687	189.958
Sigma 2 Effective	1.687	189.958
Sigma 3 Effective	1.687	189.958
Mean Stress Effective	1.687	189.958
Von Mises Stress Effective	0	0
Sigma 1 Total	1.687	189.958
X Displacement	0	0
Y Displacement	0	0
Z Displacement	0	0
Total Displacement	0	0
SigmaXX Effective	1.687	189.958
SigmaYY Effective	1.687	189.958
SigmaZZ Effective	1.687	189.958
SigmaXY Effective	0	0
SigmaXZ Effective	0	0
SigmaYZ Effective	0	0
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0
Stage : Sin carga		
Data Type	**Min (kPa)**	**Max (kPa)**
Sigma 1 Effective	2.165	1824.227
Sigma 2 Effective	-0.584	473.694
Sigma 3 Effective	-118.219	274.672
Mean Stress Effective	1.201	794.155
Von Mises Stress Effective	0.106	1581.436
Sigma 1 Total	2.165	1824.227
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	-0.002	0.001
Total Displacement	0	0.003
SigmaXX Effective	-30.349	524.117
SigmaYY Effective	-1.204	1535.472
SigmaZZ Effective	0.26	743.631
SigmaXY Effective	-189.798	546.795
SigmaXZ Effective	-357.676	262.708
SigmaYZ Effective	-399.279	461.89
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0
Stage : 600		
Data Type	**Min (kPa)**	**Max (kPa)**
Sigma 1 Effective	-12.201	3260.488
Sigma 2 Effective	-67.383	621.493
Sigma 3 Effective	-1286.64	188.42
Mean Stress Effective	-196.07	816.049

Von Mises Stress Effective	0.156	3971.154
Sigma 1 Total	-12.201	3260.488
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	-0.001	0.004
Total Displacement	0	0.004
SigmaXX Effective	-244.965	1130.496
SigmaYY Effective	-128.358	2418.185
SigmaZZ Effective	-1100.533	188.42
SigmaXY Effective	-280.28	1245.119
SigmaXZ Effective	-397.345	669.41
SigmaYZ Effective	-377.282	480.631
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 650

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-15.221	3374.143
Sigma 2 Effective	-71.416	641.712
Sigma 3 Effective	-1367.785	188.321
Mean Stress Effective	-212.951	828.136
Von Mises Stress Effective	0.128	4140.068
Sigma 1 Total	-15.221	3374.143
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	-0.001	0.005
Total Displacement	0	0.005
SigmaXX Effective	-255.333	1222.257
SigmaYY Effective	-141.74	2447.122
SigmaZZ Effective	-1184.972	188.321
SigmaXY Effective	-290.06	1303.538
SigmaXZ Effective	-423.391	688.06
SigmaYZ Effective	-406.586	536.963
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 700

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-17.915	3512.996
Sigma 2 Effective	-61.911	683.221
Sigma 3 Effective	-1466.497	188.219
Mean Stress Effective	-229.875	841.267
Von Mises Stress Effective	0.088	4346.788
Sigma 1 Total	-17.915	3512.996
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	-0.001	0.005
Total Displacement	0	0.005
SigmaXX Effective	-266.489	1382.795
SigmaYY Effective	-150.045	2434.637
SigmaZZ Effective	-1293.63	188.219
SigmaXY Effective	-293.73	1386.769
SigmaXZ Effective	-444.823	694.658
SigmaYZ Effective	-427.923	562.672
Excess Pore Water Pressure	0	0

Total Pore Water Pressure	0	0

Stage : 750

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-20.034	3694.479
Sigma 2 Effective	-65.748	706.728
Sigma 3 Effective	-1589.28	188.121
Mean Stress Effective	-246.802	858.797
Von Mises Stress Effective	0.063	4612.658
Sigma 1 Total	-20.034	3694.479
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	-0.001	0.006
Total Displacement	0	0.006
SigmaXX Effective	-273.388	1565.066
SigmaYY Effective	-147.262	2429.951
SigmaZZ Effective	-1418.627	188.121
SigmaXY Effective	-316.841	1491.325
SigmaXZ Effective	-470.391	704.558
SigmaYZ Effective	-447.934	547.101
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 800

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-22.373	3975.786
Sigma 2 Effective	-65.8	698.968
Sigma 3 Effective	-1774.43	188.019
Mean Stress Effective	-263.739	890.176
Von Mises Stress Effective	0.071	5019.714
Sigma 1 Total	-22.373	3975.786
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	-0.001	0.006
Total Displacement	0	0.006
SigmaXX Effective	-282.849	1827.44
SigmaYY Effective	-161.911	2436.691
SigmaZZ Effective	-1593.601	188.019
SigmaXY Effective	-352.254	1641.274
SigmaXZ Effective	-505.153	724.359
SigmaYZ Effective	-487.085	678.998
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 850

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-25.217	4399.398
Sigma 2 Effective	-66.766	673.557
Sigma 3 Effective	-2043.695	187.913
Mean Stress Effective	-280.747	945.143
Von Mises Stress Effective	0.09	5623.386
Sigma 1 Total	-25.217	4399.398
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	0	0.007
Total Displacement	0	0.007

SigmaXX Effective	-294.506	2214.953
SigmaYY Effective	-174.115	2452.185
SigmaZZ Effective	-1831.708	187.913
SigmaXY Effective	-353.716	1850.827
SigmaXZ Effective	-546.809	751.493
SigmaYZ Effective	-531.322	867.912
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 900

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-27.567	3288.315
Sigma 2 Effective	-62.645	586.774
Sigma 3 Effective	-1502.521	187.799
Mean Stress Effective	-297.909	721.655
Von Mises Stress Effective	0.001	4180.669
Sigma 1 Total	-27.567	3288.315
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	0	0.008
Total Displacement	0	0.008
SigmaXX Effective	-237.998	1735.643
SigmaYY Effective	-186.686	1731.111
SigmaZZ Effective	-1301.788	187.799
SigmaXY Effective	-327.805	1362.469
SigmaXZ Effective	-485.413	573.787
SigmaYZ Effective	-476.946	754.784
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 950

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-30.195	3633.202
Sigma 2 Effective	-63.976	509.238
Sigma 3 Effective	-1653.477	187.684
Mean Stress Effective	-315.025	797.442
Von Mises Stress Effective	0	4614.647
Sigma 1 Total	-30.195	3633.202
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	0	0.01
Total Displacement	0	0.01
SigmaXX Effective	-234.035	1914.924
SigmaYY Effective	-211.306	1902.843
SigmaZZ Effective	-1425.442	187.684
SigmaXY Effective	-340.502	1506.346
SigmaXZ Effective	-534.857	638.302
SigmaYZ Effective	-525.46	846.091
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 1000

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-32.694	3952.903
Sigma 2 Effective	-69.361	449.094
Sigma 3 Effective	-1792.046	187.571

Mean Stress Effective	-332.164	869.984
Von Mises Stress Effective	0	5015.168
Sigma 1 Total	-32.694	3952.903
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	0	0.011
Total Displacement	0	0.011
SigmaXX Effective	-240.303	2092.147
SigmaYY Effective	-240.883	2089.683
SigmaZZ Effective	-1571.879	187.571
SigmaXY Effective	-365.971	1652.253
SigmaXZ Effective	-581.133	649.766
SigmaYZ Effective	-570.419	871.673
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 1050

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-34.697	4314.574
Sigma 2 Effective	-74.343	498.184
Sigma 3 Effective	-1883.982	187.459
Mean Stress Effective	-349.361	976.258
Von Mises Stress Effective	0	5415.794
Sigma 1 Total	-34.697	4314.574
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	0	0.012
Total Displacement	0	0.012
SigmaXX Effective	-242.893	2293.673
SigmaYY Effective	-248.209	2299.428
SigmaZZ Effective	-1664.326	187.459
SigmaXY Effective	-440.015	1808.543
SigmaXZ Effective	-589.273	677.17
SigmaYZ Effective	-578.596	904.45
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 1100

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-35.807	4792.603
Sigma 2 Effective	-89.327	561.863
Sigma 3 Effective	-2039.337	187.345
Mean Stress Effective	-366.645	1105.043
Von Mises Stress Effective	0	5972.471
Sigma 1 Total	-35.807	4792.603
X Displacement	-0.003	0.002
Y Displacement	-0.003	0.003
Z Displacement	0	0.014
Total Displacement	0	0.014
SigmaXX Effective	-269.527	2465.537
SigmaYY Effective	-262.17	2664.902
SigmaZZ Effective	-1815.312	187.345
SigmaXY Effective	-514.465	2003.888
SigmaXZ Effective	-635.059	767.118
SigmaYZ Effective	-623.502	937.981

Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 1150

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-36.389	5153.965
Sigma 2 Effective	-81.372	602.463
Sigma 3 Effective	-2209.654	187.23
Mean Stress Effective	-383.975	1182.258
Von Mises Stress Effective	0	6436.111
Sigma 1 Total	-36.389	5153.965
X Displacement	-0.003	0.003
Y Displacement	-0.003	0.003
Z Displacement	0	0.016
Total Displacement	0	0.016
SigmaXX Effective	-295.832	2653.424
SigmaYY Effective	-267.952	2861.554
SigmaZZ Effective	-1968.204	187.23
SigmaXY Effective	-481.013	2155.867
SigmaXZ Effective	-678.489	826.043
SigmaYZ Effective	-669.398	1011.357
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 1200

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-36.646	5330.288
Sigma 2 Effective	-75.07	633.942
Sigma 3 Effective	-2241.024	187.111
Mean Stress Effective	-401.343	1241.069
Von Mises Stress Effective	0	6619.889
Sigma 1 Total	-36.646	5330.288
X Displacement	-0.004	0.003
Y Displacement	-0.003	0.004
Z Displacement	0	0.018
Total Displacement	0	0.018
SigmaXX Effective	-301.814	2753.058
SigmaYY Effective	-288.502	2950.368
SigmaZZ Effective	-1980.219	187.111
SigmaXY Effective	-464.059	2219.975
SigmaXZ Effective	-732.926	862.712
SigmaYZ Effective	-722.922	1069.03
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : Stage 16

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-63.493	15988.161
Sigma 2 Effective	-294.695	1840.394
Sigma 3 Effective	-5693.474	197.957
Mean Stress Effective	-884.085	4045.027
Von Mises Stress Effective	0	19065.83
Sigma 1 Total	-63.493	15988.161
X Displacement	-0.014	0.012
Y Displacement	-0.011	0.014
Z Displacement	0	0.089

Total Displacement	0	0.089
SigmaXX Effective	-1033.836	8289.359
SigmaYY Effective	-735.442	8837.191
SigmaZZ Effective	-4991.468	424.223
SigmaXY Effective	-985.385	6737.714
SigmaXZ Effective	-2128.999	2328.913
SigmaYZ Effective	-1983.872	3004.876
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

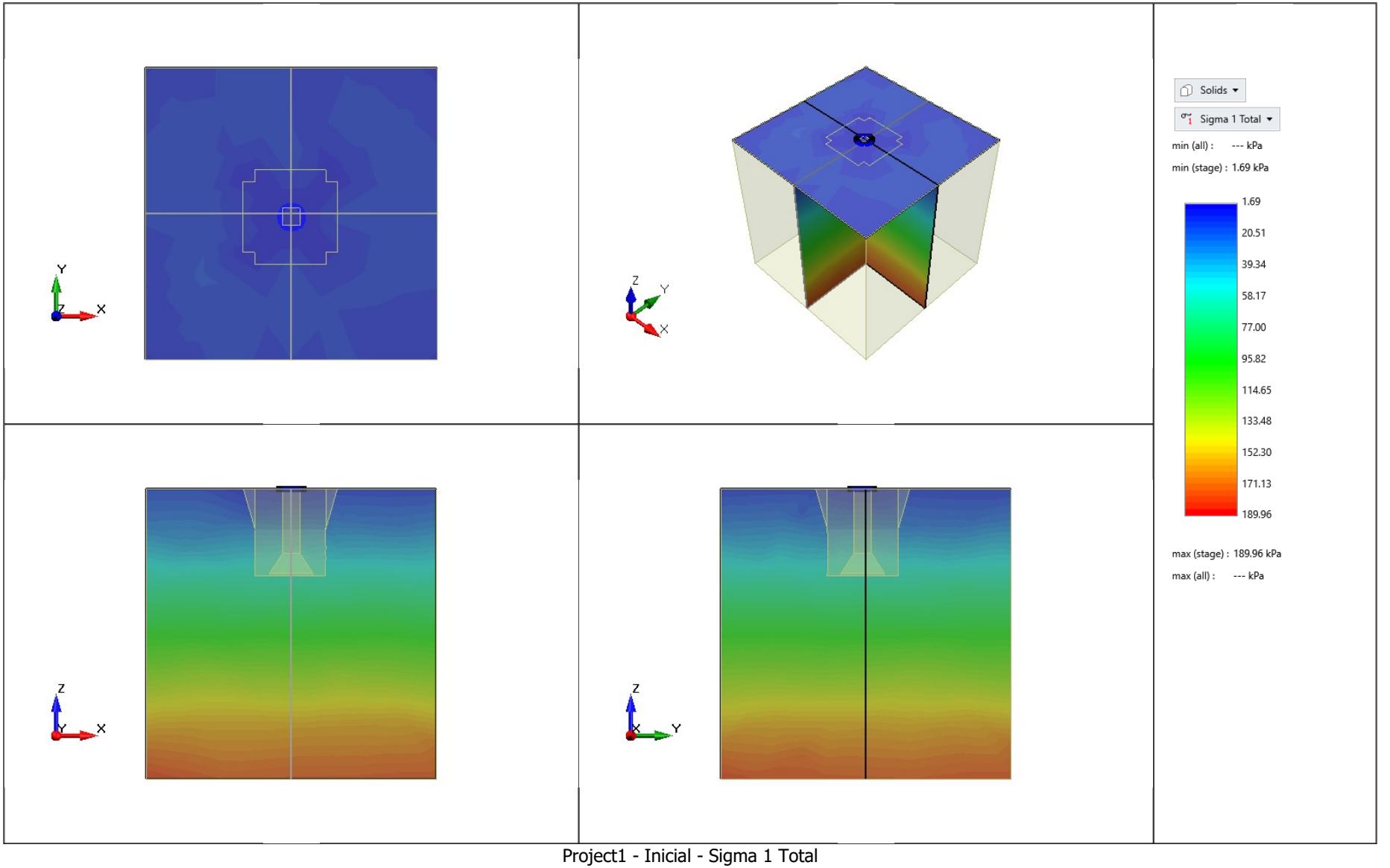
Stage : Stage 17

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-133.655	31260.624
Sigma 2 Effective	-815.923	3675.484
Sigma 3 Effective	-10525.489	454.739
Mean Stress Effective	-1771.668	8136.873
Von Mises Stress Effective	0.016	36801.405
Sigma 1 Total	-133.655	31260.624
X Displacement	-0.045	0.041
Y Displacement	-0.04	0.05
Z Displacement	-0.015	0.311
Total Displacement	0	0.312
SigmaXX Effective	-2303.965	16451.858
SigmaYY Effective	-1486.117	17077.401
SigmaZZ Effective	-9118.64	982.102
SigmaXY Effective	-1626.505	13183.331
SigmaXZ Effective	-4173.856	4214.871
SigmaYZ Effective	-3702.813	6039.046
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : Stage 18

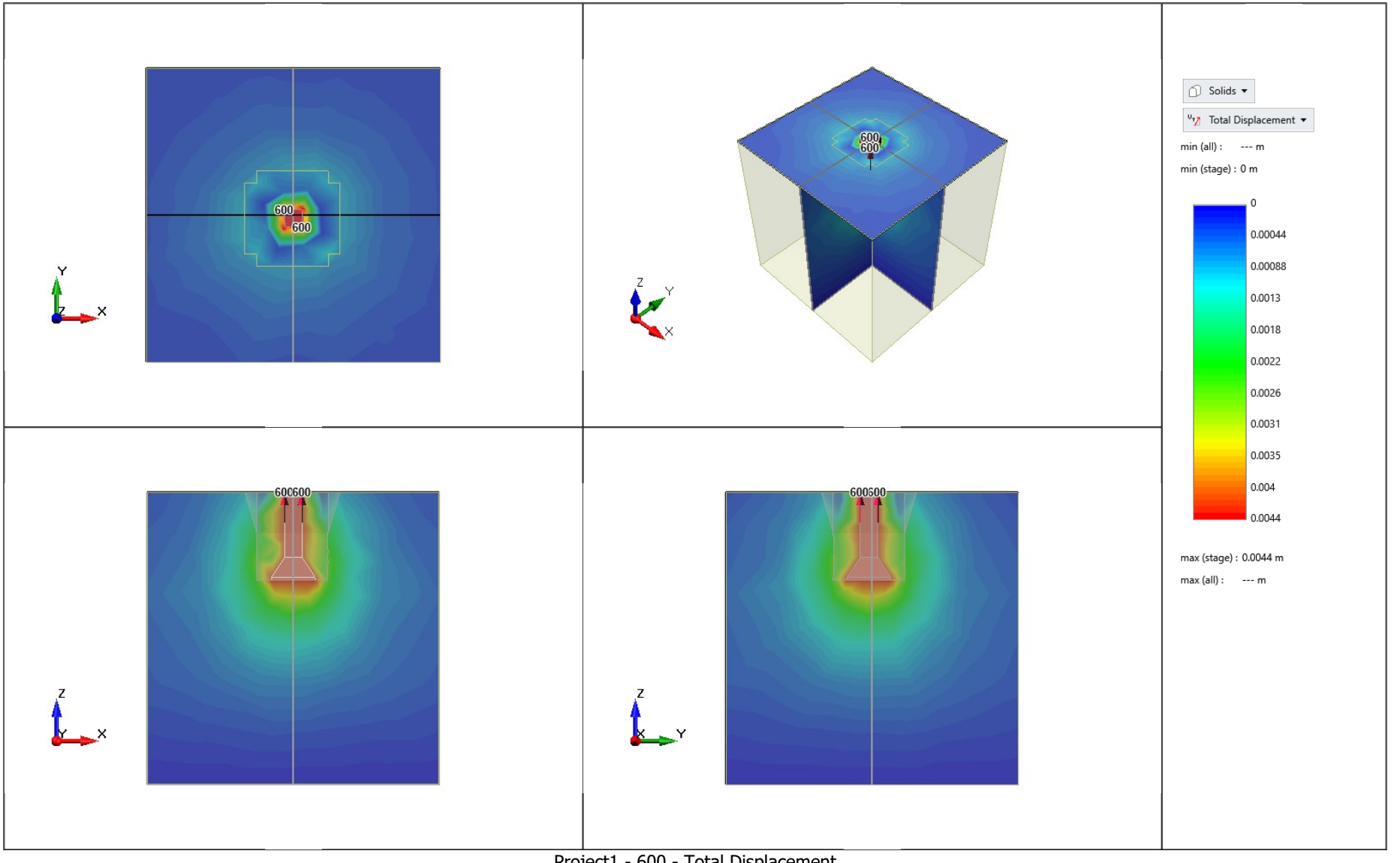
Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-206.478	25545.562
Sigma 2 Effective	-2081.401	3300.43
Sigma 3 Effective	-11900.705	558.628
Mean Stress Effective	-2895.251	6457.848
Von Mises Stress Effective	0.348	30694.082
Sigma 1 Total	-206.478	25545.562
X Displacement	-0.268	0.299
Y Displacement	-0.245	0.349
Z Displacement	-0.213	1.593
Total Displacement	0	1.596
SigmaXX Effective	-5012.343	14806.616
SigmaYY Effective	-2233.199	12628.114
SigmaZZ Effective	-8061.185	2001.633
SigmaXY Effective	-1284.609	10763.957
SigmaXZ Effective	-6678.529	3200.678
SigmaYZ Effective	-6272.428	5584.449
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Project1 - Inicial - Sigma 1 Total



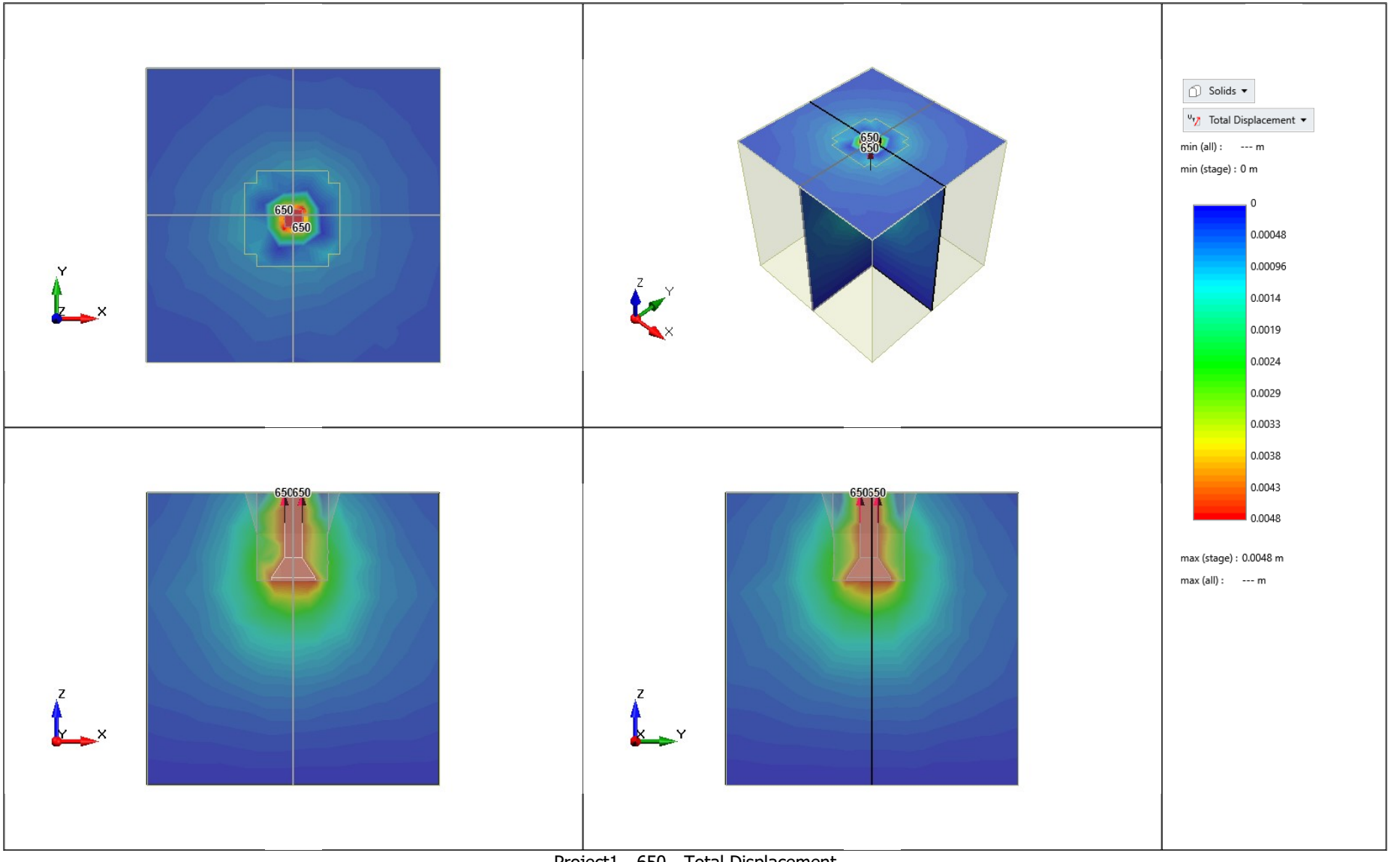
Project1 - Inicial - Sigma 1 Total

Project1 - 600 - Total Displacement

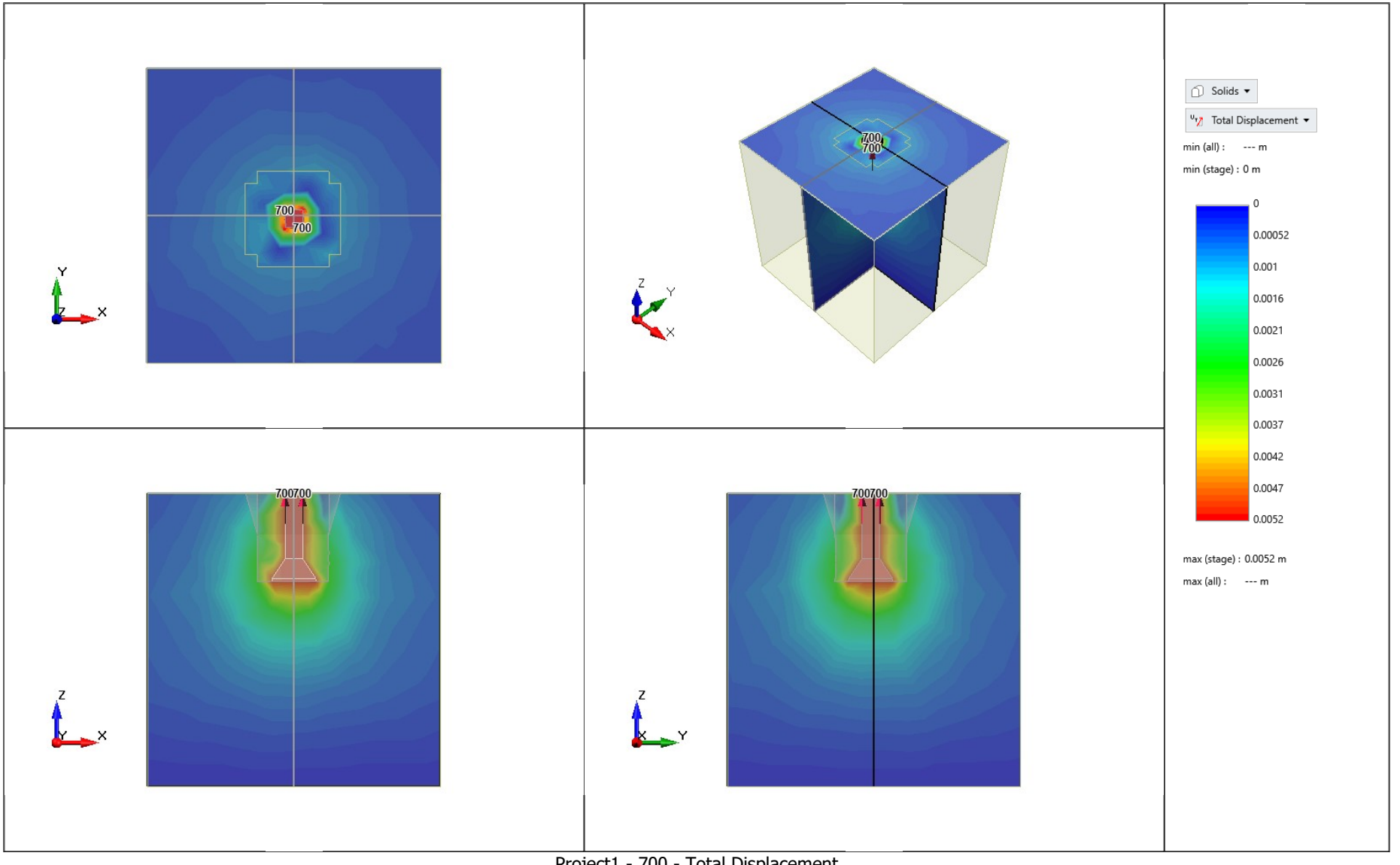


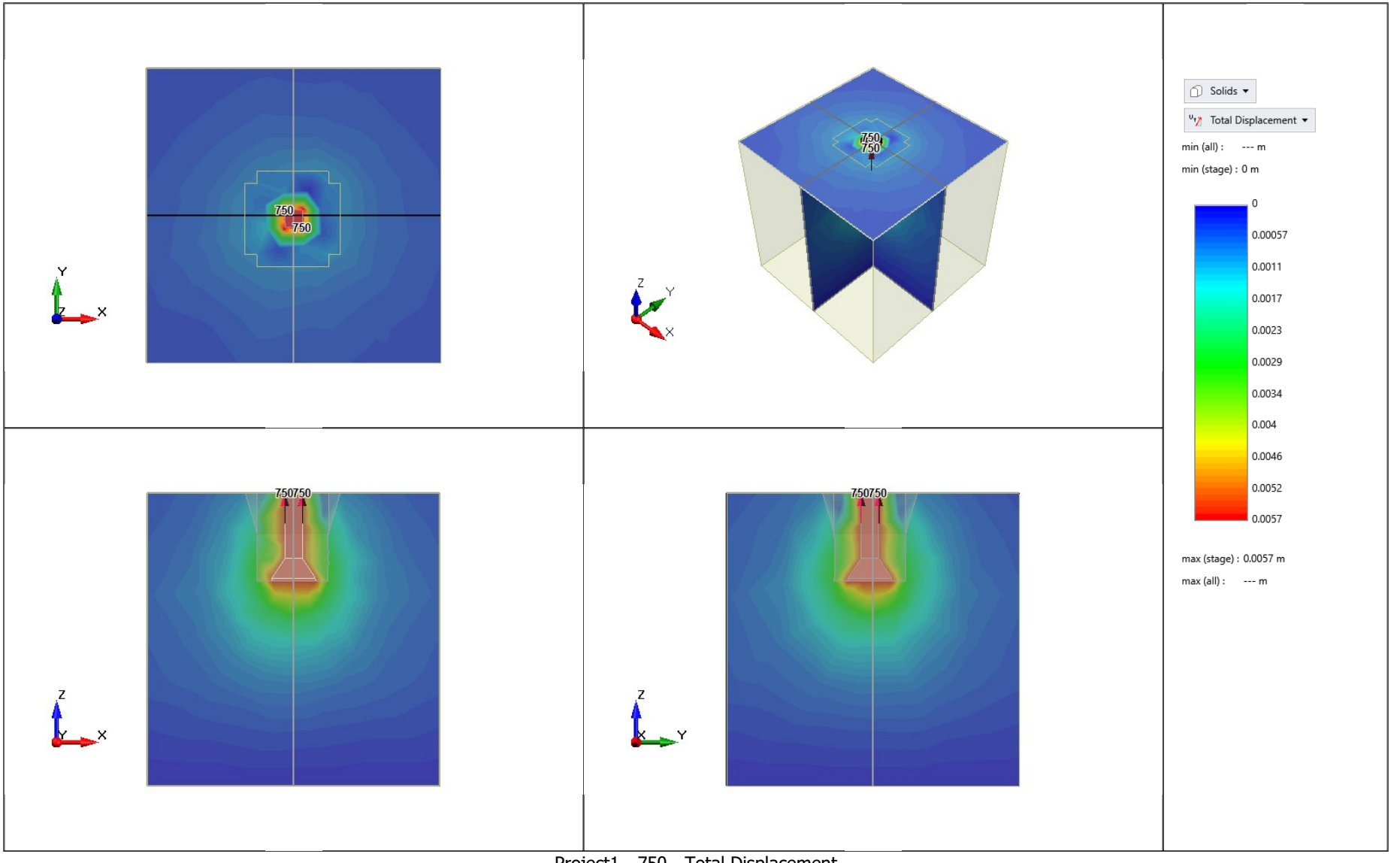
Project1 - 600 - Total Displacement

Project1 - 650 - Total Displacement



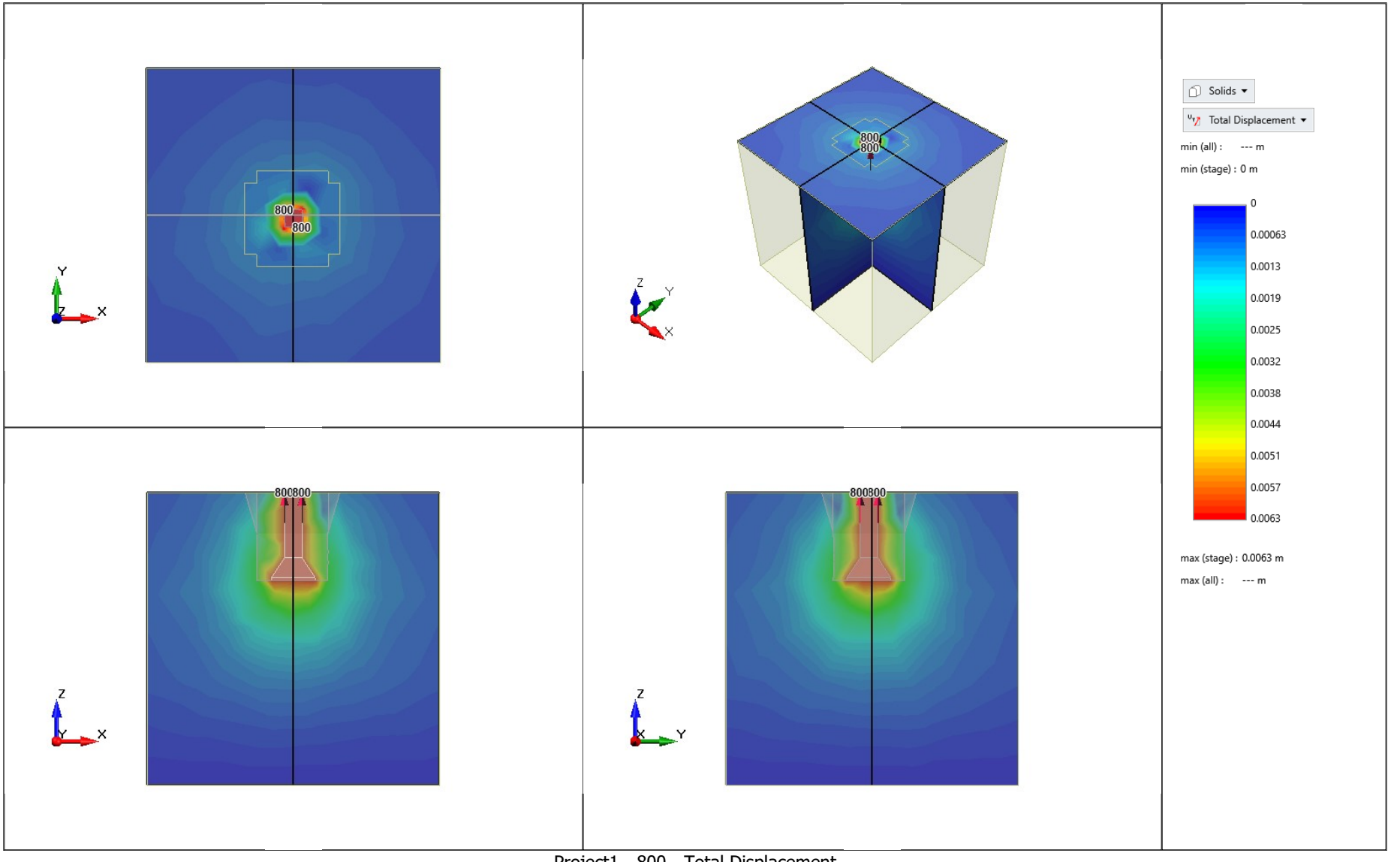
Project1 - 650 - Total Displacement


700
700
Y
Z
X
700
700
Z
Y
X
700700
Z
Y
X
700700
Z
X
Y
Solids
Total Displacement
min (all) : --- m
min (stage) : 0 m
0
0.00052
0.001
0.0016
0.0021
0.0026
0.0031
0.0037
0.0042
0.0047
0.0052
max (stage) : 0.0052 m
max (all) : --- m

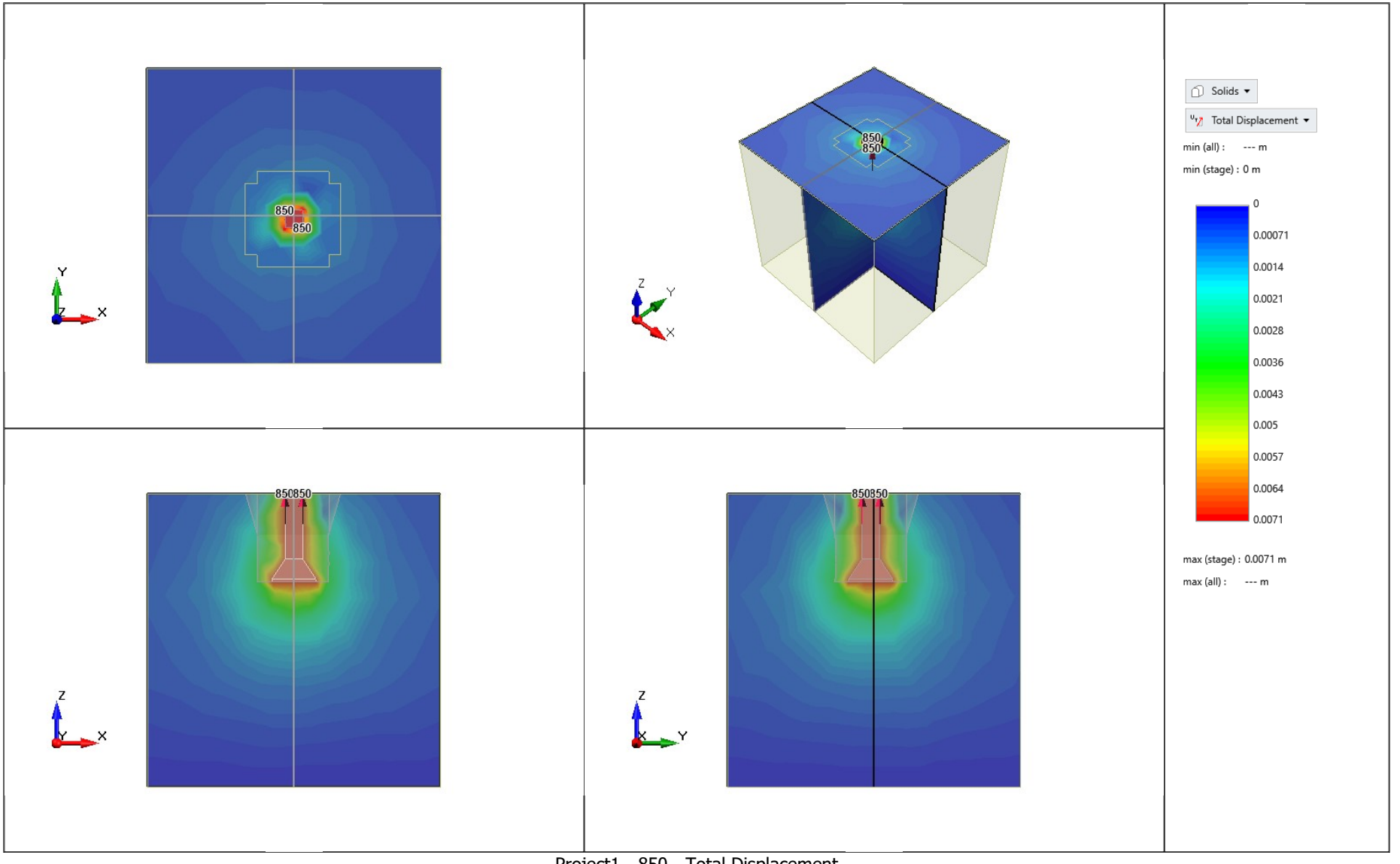


Project1 - 750 - Total Displacement

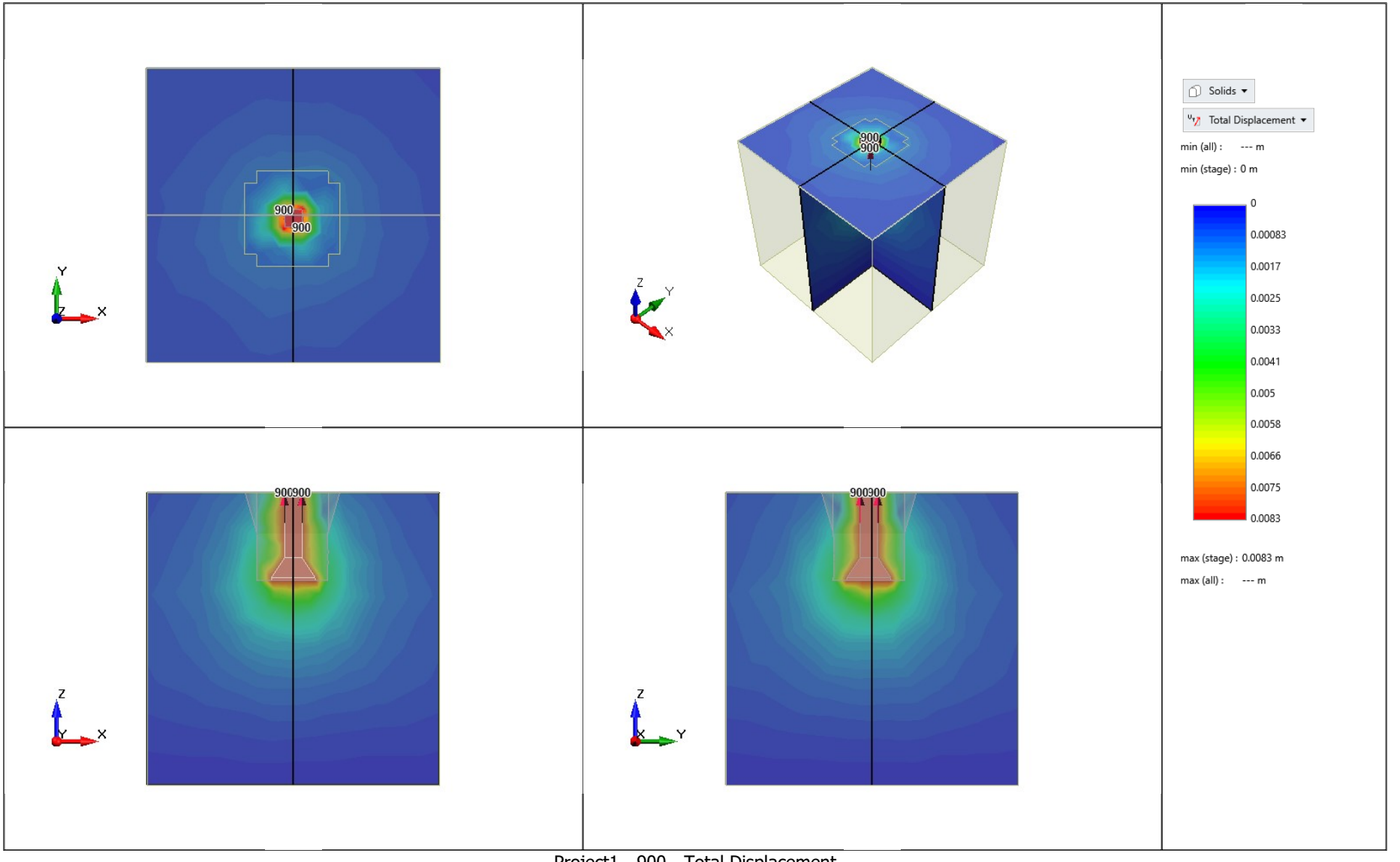
Project1 - 800 - Total Displacement



Project1 - 800 - Total Displacement

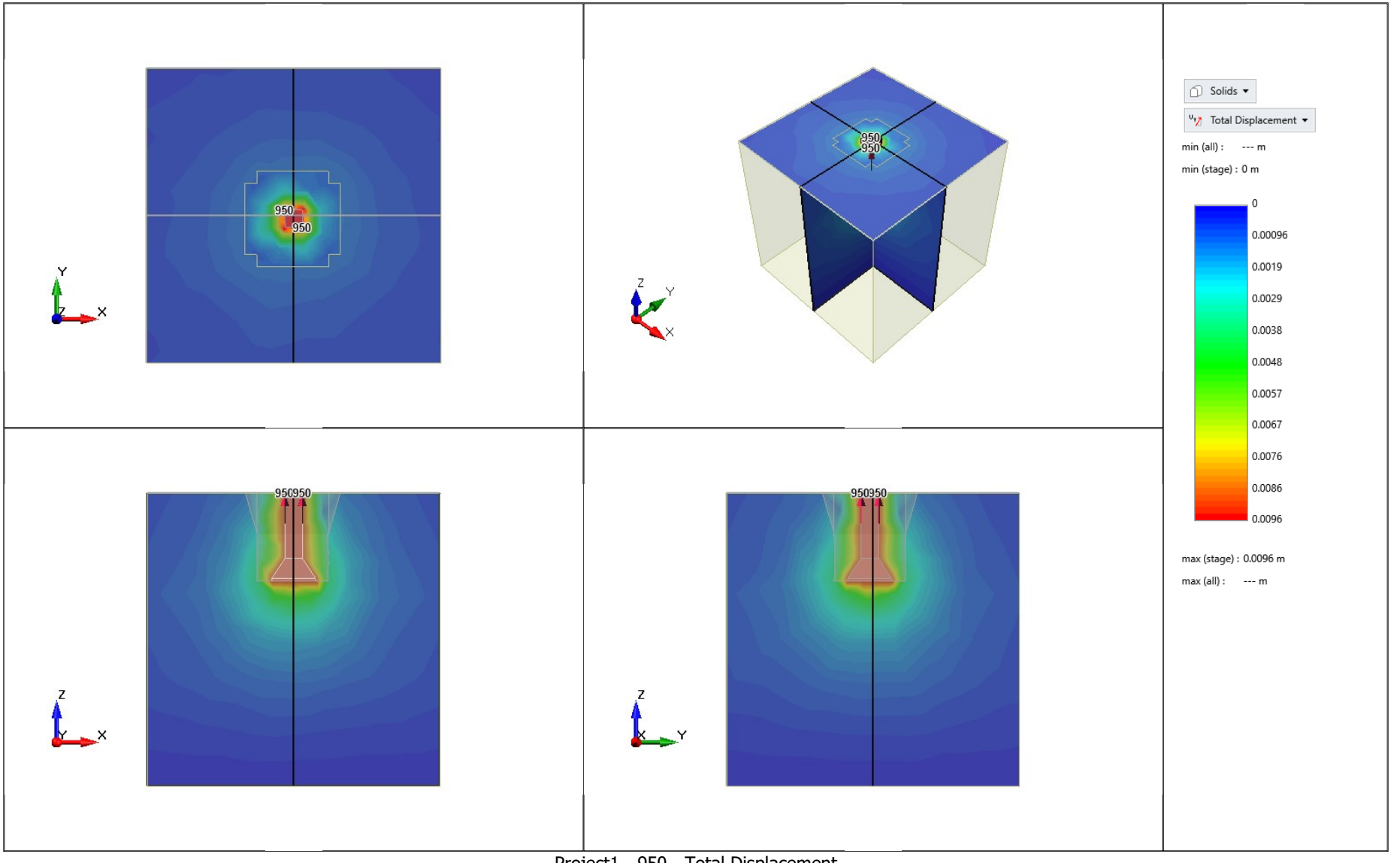

850
850
850
850
850850
850350
Solids
Total Displacement
min (all) : --- m
min (stage) : 0 m
0
0.00071
0.0014
0.0021
0.0028
0.0036
0.0043
0.005
0.0057
0.0064
0.0071
max (stage) : 0.0071 m
max (all) : --- m

Project1 - 900 - Total Displacement



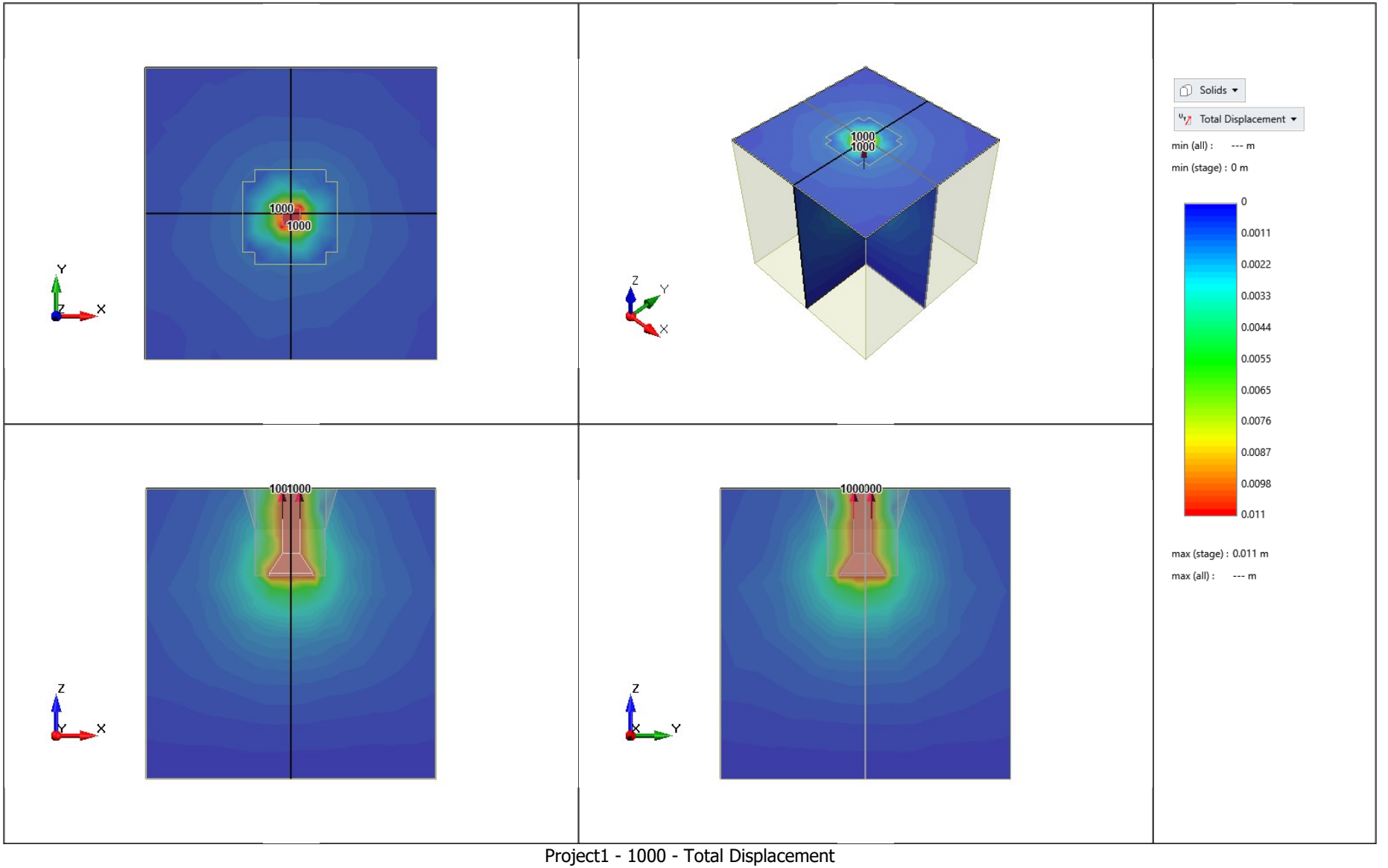
Project1 - 900 - Total Displacement

Project1 - 950 - Total Displacement

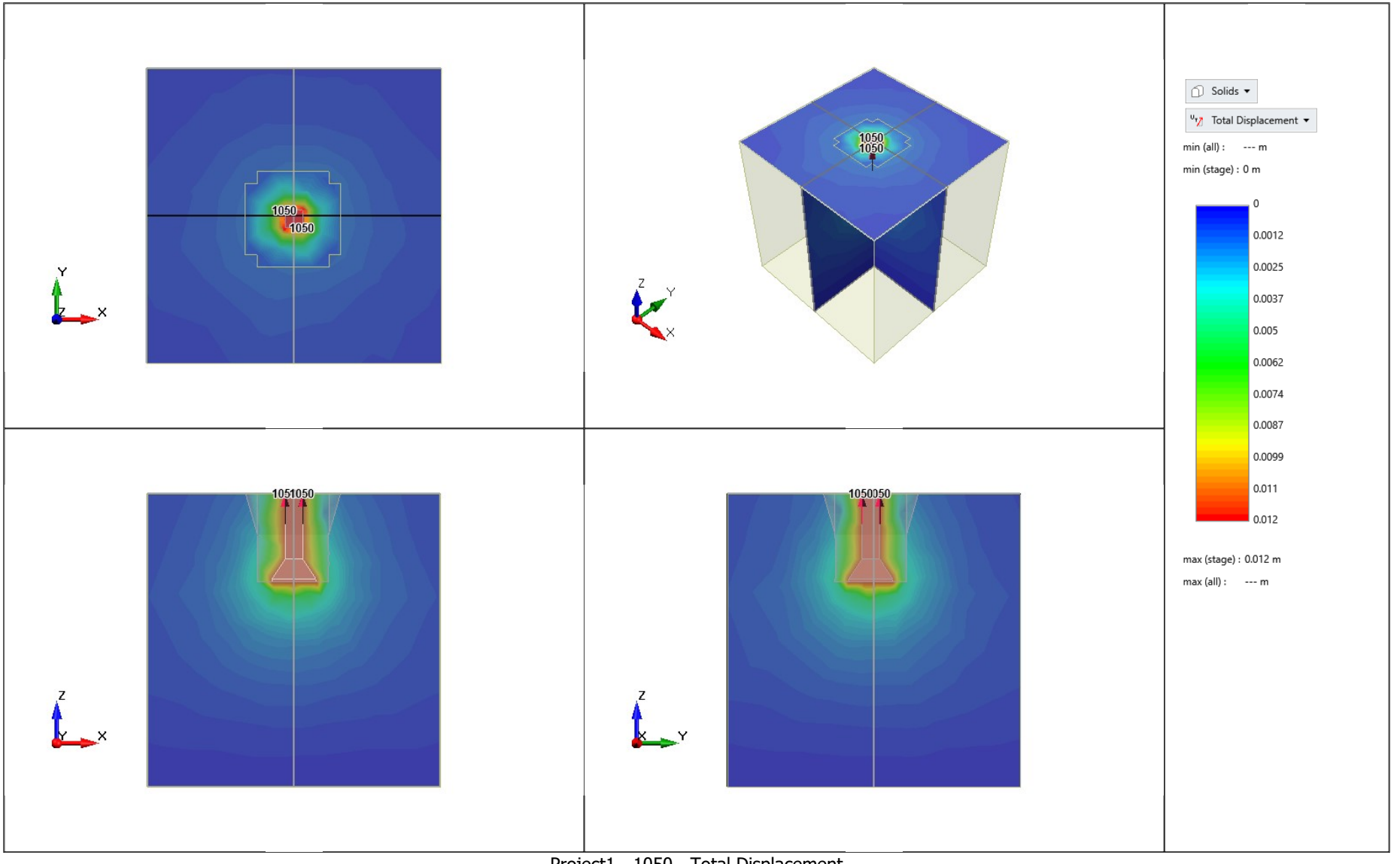


Project1 - 950 - Total Displacement

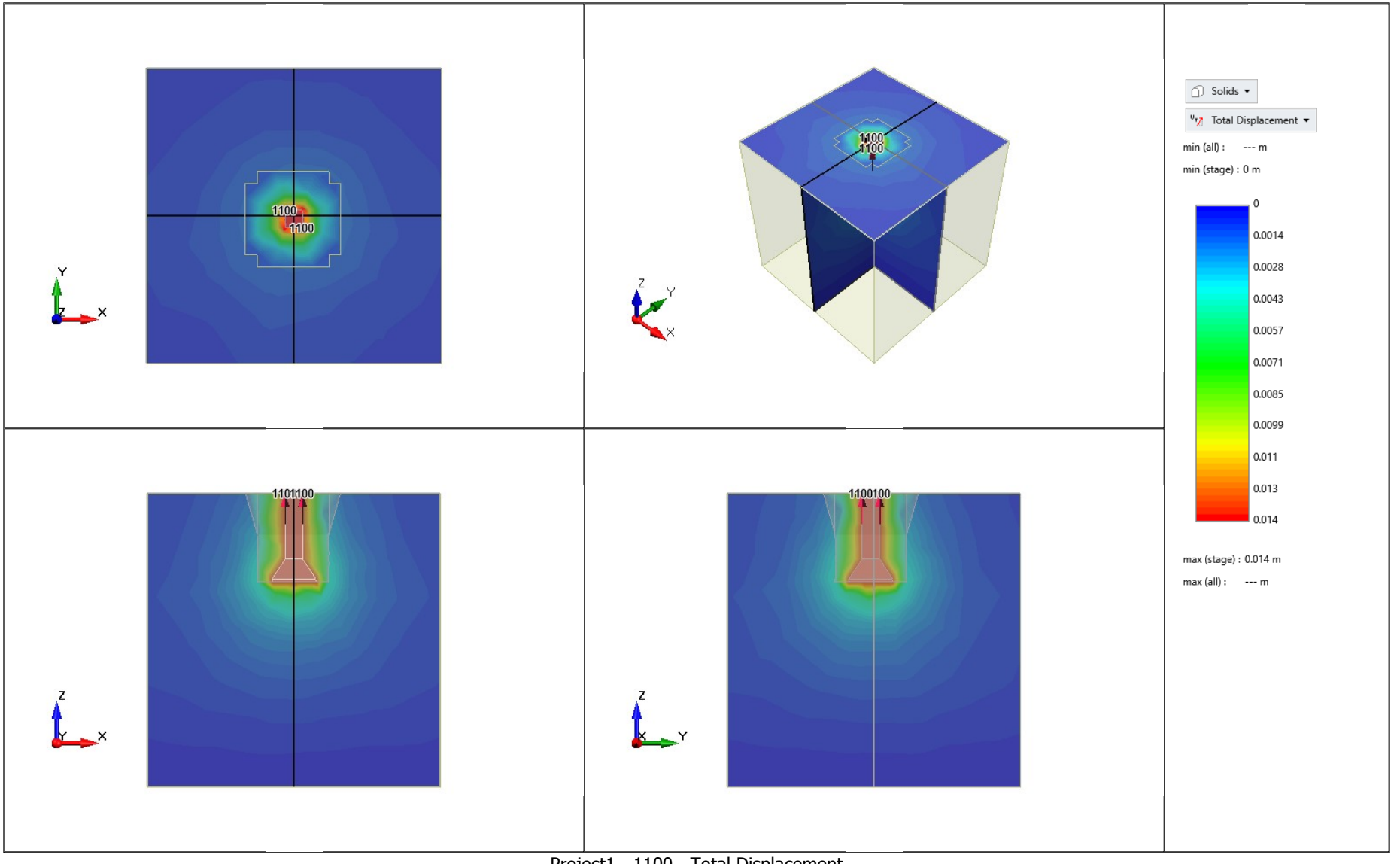
Project1 - 1000 - Total Displacement



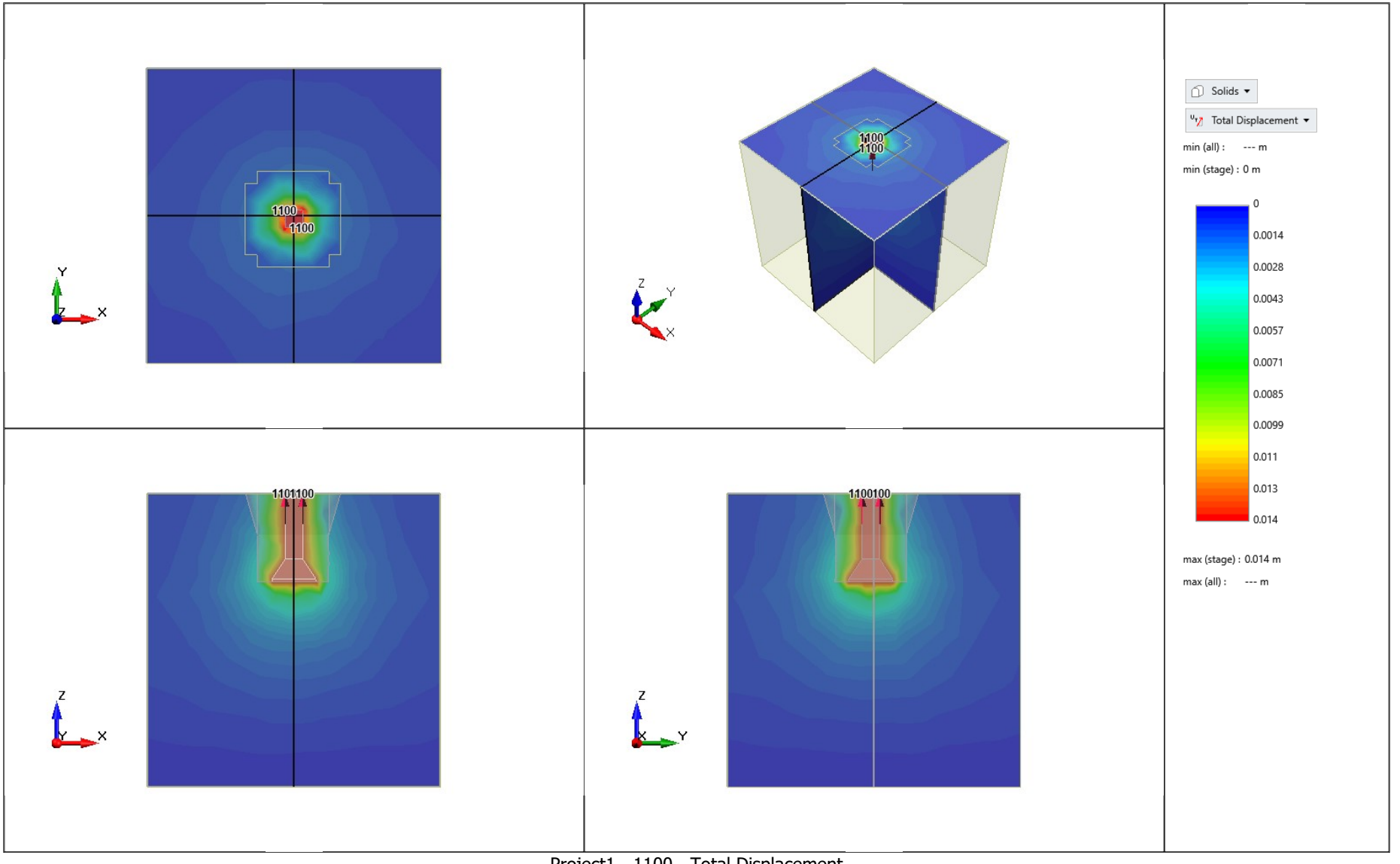
Project1 - 1000 - Total Displacement



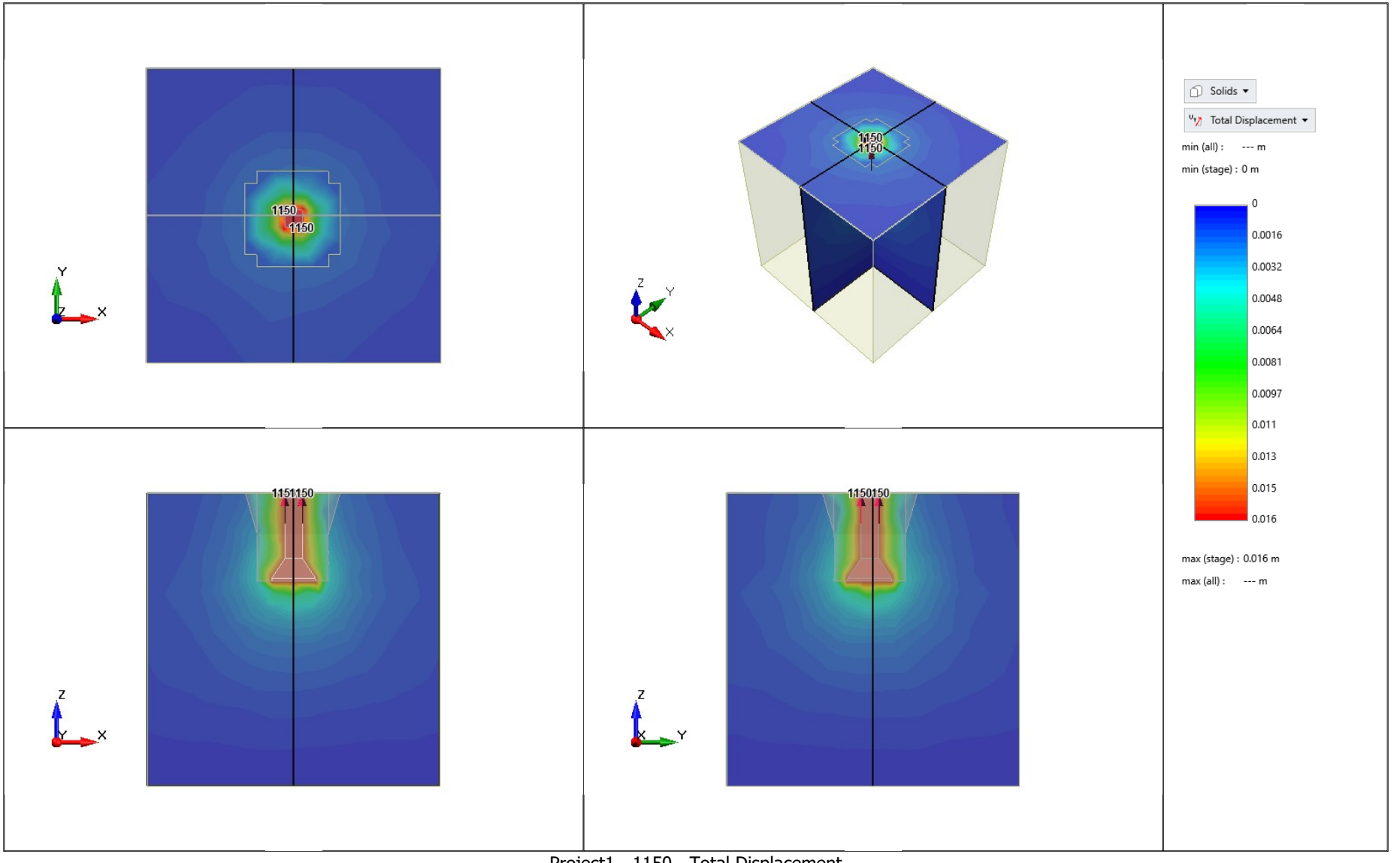
Project1 - 1050 - Total Displacement

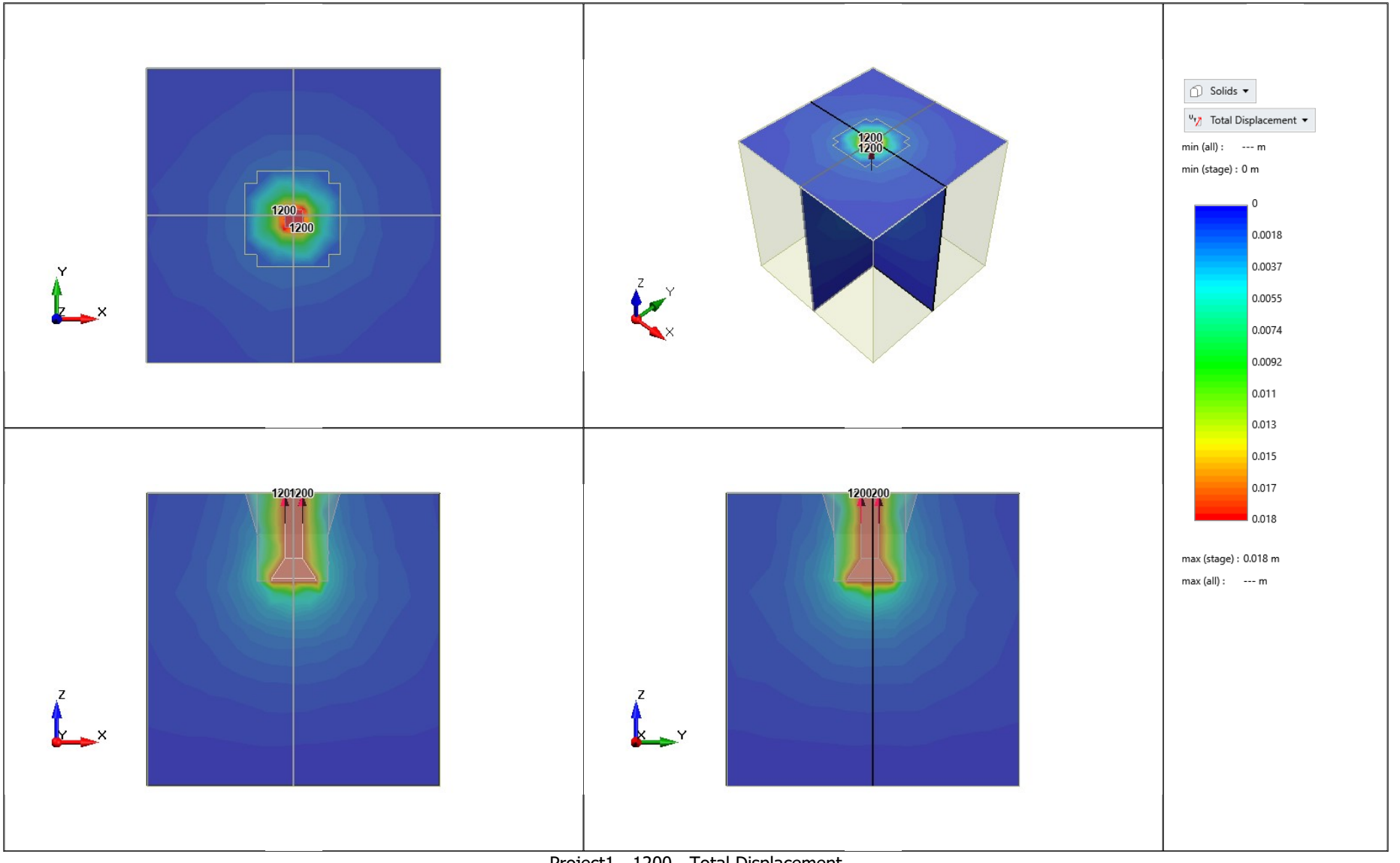


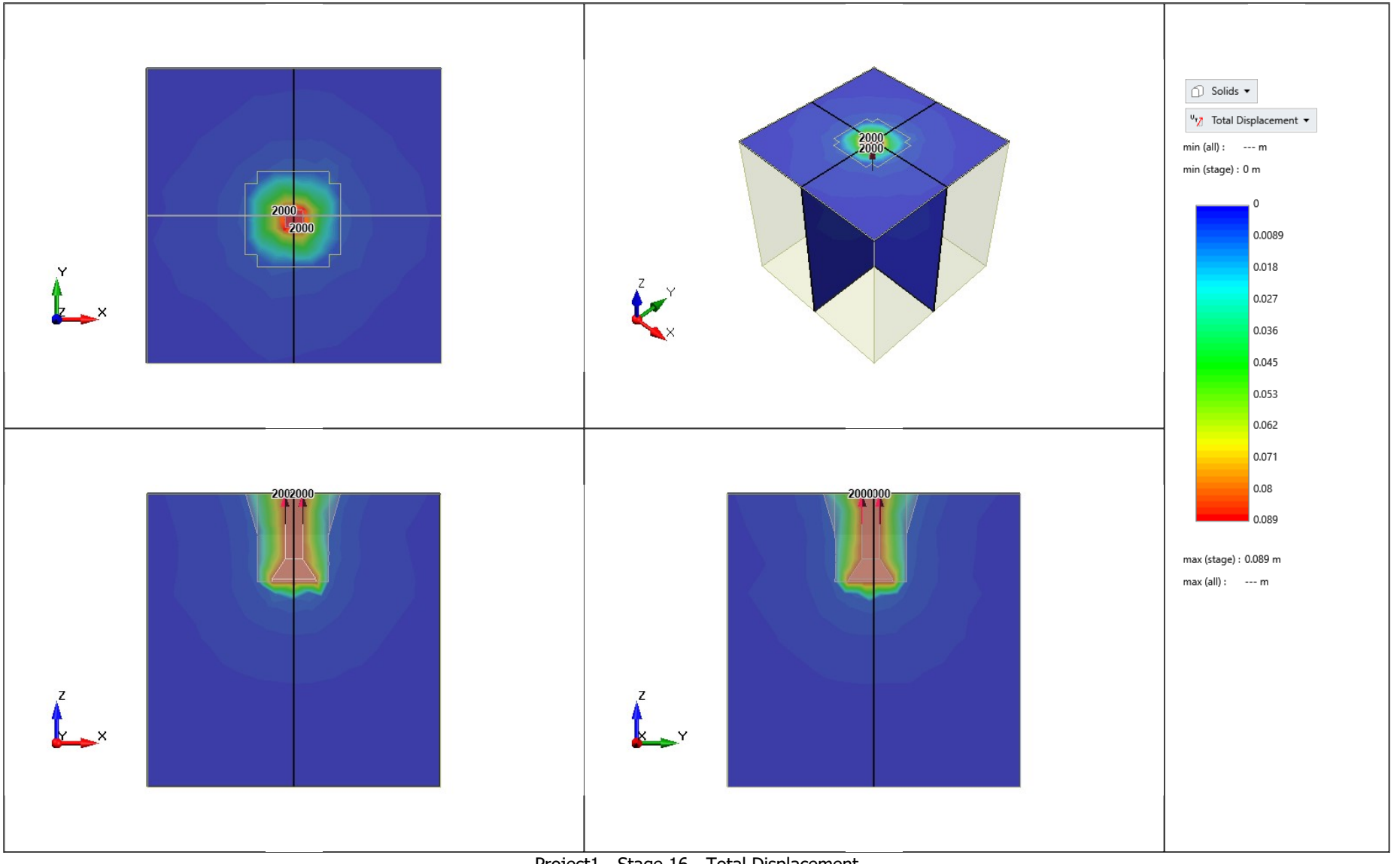
Project1 - 1100 - Total Displacement



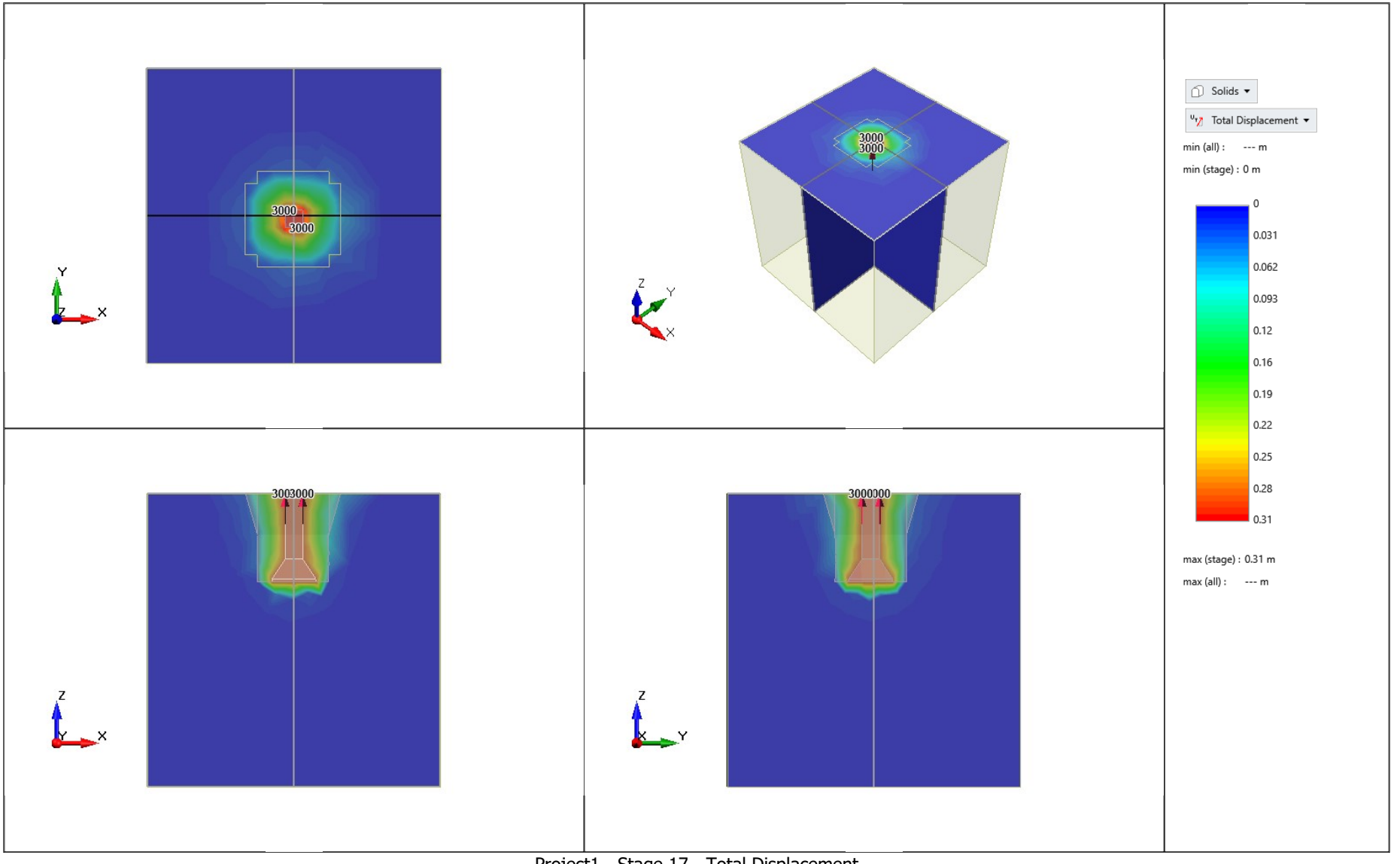
Project1 - 1100 - Total Displacement

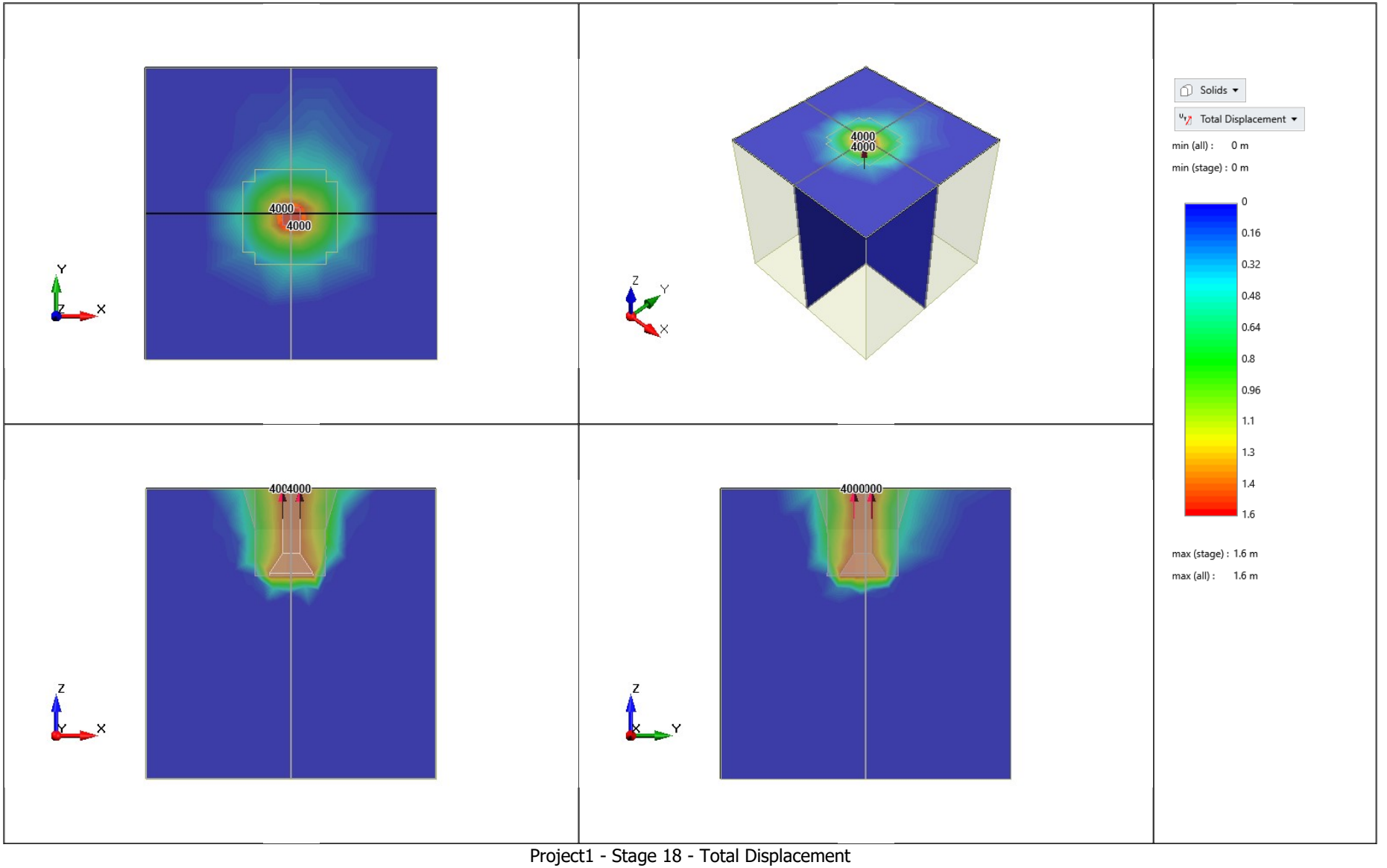

1150
1150
Y
Z
X
1150
1150
Z
Y
X
1151150
Z
Y
X
1150150
Z
X
Y
Solids
Total Displacement
min (all) : --- m
min (stage) : 0 m
0
0.0016
0.0032
0.0048
0.0064
0.0081
0.0097
0.011
0.013
0.015
0.016
max (stage) : 0.016 m
max (all) : --- m


1200
1200
Y
Z
X
1200
1200
Z
Y
X
1201200
Z
Y
X
1200200
Z
X
Y
Solids
Total Displacement
min (all) : --- m
min (stage) : 0 m
0
0.0018
0.0037
0.0055
0.0074
0.0092
0.011
0.013
0.015
0.017
0.018
max (stage) : 0.018 m
max (all) : --- m

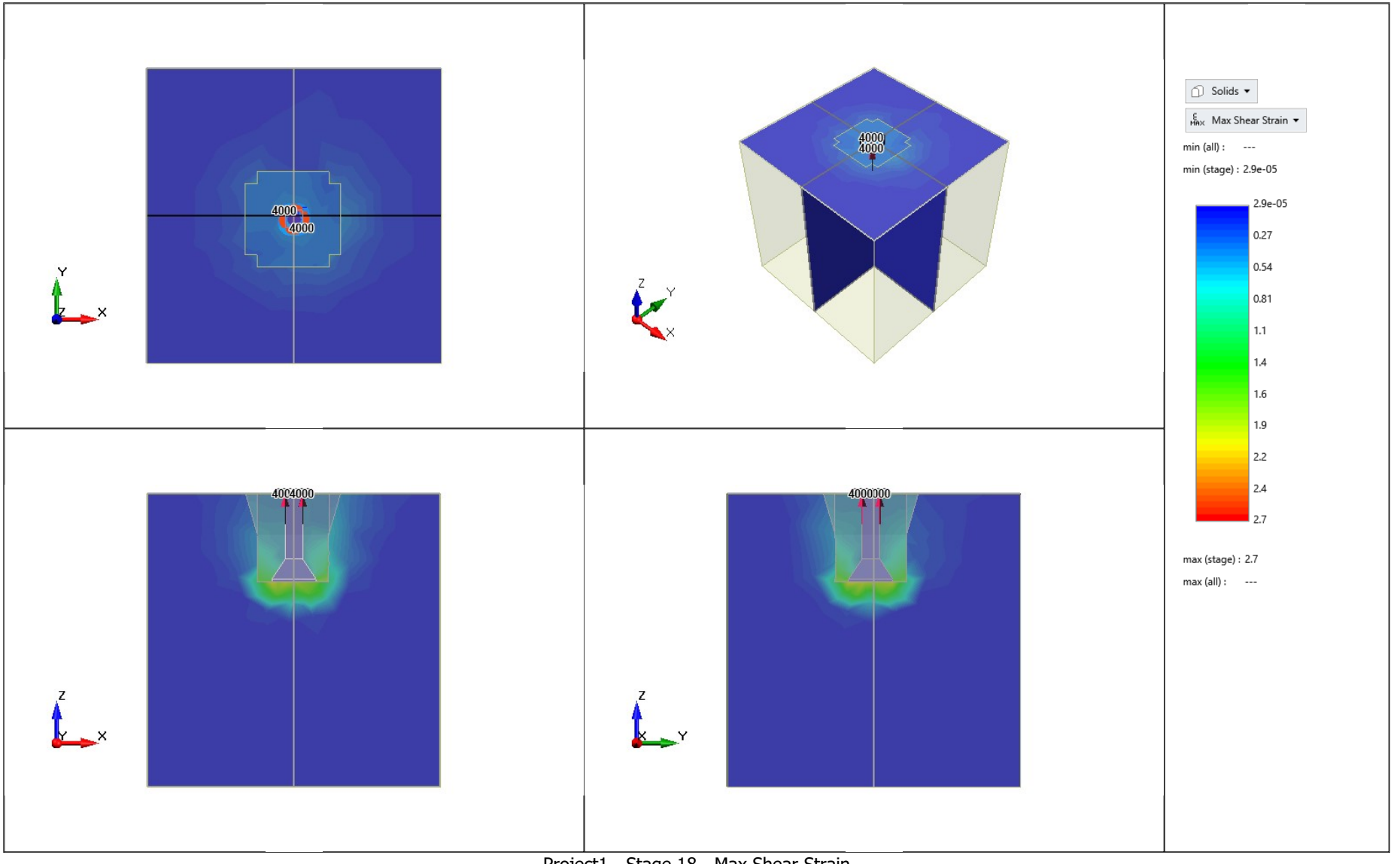


Project1 - Stage 16 - Total Displacement


3000
3000
Y
Z
X
3000
3000
Z
Y
X
3003000
Z
Y
X
3000000
Z
X
Y
Solids
Total Displacement
min (all) : --- m
min (stage) : 0 m
0
0.031
0.062
0.093
0.12
0.16
0.19
0.22
0.25
0.28
0.31
max (stage) : 0.31 m
max (all) : --- m



Project1 - Stage 18 - Total Displacement


Solids
Max Shear Strain
min (all) : ---
min (stage) : 2.9e-05
2.9e-05
0.27
0.54
0.81
1.1
1.4
1.6
1.9
2.2
2.4
2.7
max (stage) : 2.7
max (all) : ---
4000
4000
Y
X
Z
4004000
4000000

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VF

RS3 Analysis Report

Created on 10/21/2021 17:29:33

Software Version: RS3 4.020

Project Settings

Units

Units:	Metric, stress as kPa
Time Units:	Days
Permeability Units:	Meters/second
Coordinate:	Cartesian x,y,z

Stage Information

Index	Name
1	Inicial
2	Z+R
3	550
4	600
5	650
6	700
7	750
8	800
9	850
10	900
11	950
12	1000

Stress Analysis

Maximum Number of Iterations:	1000
Tolerance:	0.001
Load Steps:	Automatic
Convergence Type:	Absolute Force & Energy
Accelerate Initial Stiffness:	Yes
Minimum Alpha:	0.1
Maximum Alpha:	10
Tensile Failure Reduces Hoek-Brown Tensile Strength to Zero:	No
Tensile Failure Reduces Shear Strength to Residual:	Yes
Abort Calculation When Non-Convergence Detected:	No

Solver Options

Analysis Type:	Uncoupled
Solver Types:	Automatic

Groundwater

Method:	Phreatic Surfaces
Pore Fluid Unit Weight (kN/m3):	9.81

Shear Strength Reduction

Determine Shear Reduction Factor:	No

Material Properties

Clay	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	19.4
Failure Criterion:	Mohr Coulomb
Material Type:	Plastic
Peak Strength	
Peak Cohesion (kPa):	16
Peak Friction Angle (°):	23
Peak Tensile Strength (kPa):	0
Residual Strength	
Residual Cohesion (kPa):	12.8
Residual Friction Angle (°):	18.4
Residual Tensile Strength (kPa):	0
Dilation Angle (°):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.49
Young's Modulus (kPa):	121000
Use Residual Young's Modulus:	No
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3
Relleno (Clay)	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	16.7
Failure Criterion:	Mohr Coulomb
Material Type:	Plastic
Peak Strength	
Peak Cohesion (kPa):	10
Peak Friction Angle (°):	23
Peak Tensile Strength (kPa):	0
Residual Strength	
Residual Cohesion (kPa):	8
Residual Friction Angle (°):	18.4
Residual Tensile Strength (kPa):	0
Dilation Angle (°):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.2
Young's Modulus (kPa):	2500
Use Residual Young's Modulus:	No
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3

Concreto	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	24
Failure Criterion:	Mohr Coulomb
Material Type:	Elastic
Peak Strength	
Peak Cohesion (kPa):	10500
Peak Friction Angle (°):	0
Peak Tensile Strength (kPa):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.2
Young's Modulus (kPa):	21589300
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3

Results

Compute Time:	39659.7	
Result Element Type : Solid		
Stage : Inicial		
Data Type	**Min (kPa)**	**Max (kPa)**
Sigma 1 Effective	0.312	190.226
Sigma 2 Effective	0.19	116.038
Sigma 3 Effective	0.19	116.038
Mean Stress Effective	0.231	140.768
Von Mises Stress Effective	0.122	74.188
Sigma 1 Total	0.312	190.226
X Displacement	0	0
Y Displacement	0	0
Z Displacement	0	0
Total Displacement	0	0
SigmaXX Effective	0.19	116.038
SigmaYY Effective	0.19	116.038
SigmaZZ Effective	0.312	190.226
SigmaXY Effective	0	0
SigmaXZ Effective	0	0
SigmaYZ Effective	0	0
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0
Stage : Z+R		
Data Type	**Min (kPa)**	**Max (kPa)**
Sigma 1 Effective	-1.533	275.621
Sigma 2 Effective	-55.527	118.697
Sigma 3 Effective	-63.693	118.697
Mean Stress Effective	-23.838	143.43
Von Mises Stress Effective	0.031	278.964
Sigma 1 Total	-1.533	275.621
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	-0.005	0
Total Displacement	0	0.005
SigmaXX Effective	-63.662	118.697
SigmaYY Effective	-62.689	118.697
SigmaZZ Effective	-5.522	259.319
SigmaXY Effective	-27.605	26.673
SigmaXZ Effective	-71.334	80.751
SigmaYZ Effective	-76.596	73.375
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0
Stage : 550		
Data Type	**Min (kPa)**	**Max (kPa)**
Sigma 1 Effective	-48.718	201.742
Sigma 2 Effective	-71.444	132.265
Sigma 3 Effective	-556.595	127.196
Mean Stress Effective	-187.991	152.045

Von Mises Stress Effective	0.081	556.671
Sigma 1 Total	-48.718	201.742
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	-0.004	0.003
Total Displacement	0	0.004
SigmaXX Effective	-71.45	142.861
SigmaYY Effective	-71.089	142.749
SigmaZZ Effective	-556.584	201.742
SigmaXY Effective	-44.337	41.276
SigmaXZ Effective	-105.937	107.193
SigmaYZ Effective	-103.268	112.939
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 600

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-53.754	202.375
Sigma 2 Effective	-79.868	152.764
Sigma 3 Effective	-606.618	127.804
Mean Stress Effective	-204.901	152.661
Von Mises Stress Effective	0.001	607.848
Sigma 1 Total	-53.754	202.375
X Displacement	-0.004	0.005
Y Displacement	-0.004	0.004
Z Displacement	-0.004	0.005
Total Displacement	0	0.006
SigmaXX Effective	-79.869	161.688
SigmaYY Effective	-78.65	163.912
SigmaZZ Effective	-606.606	202.375
SigmaXY Effective	-48.285	45.797
SigmaXZ Effective	-120.953	119.387
SigmaYZ Effective	-118.237	125.772
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 650

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-59.681	203.035
Sigma 2 Effective	-89.571	177.279
Sigma 3 Effective	-657.176	128.438
Mean Stress Effective	-222.11	153.304
Von Mises Stress Effective	0.004	658.663
Sigma 1 Total	-59.681	203.035
X Displacement	-0.007	0.008
Y Displacement	-0.007	0.007
Z Displacement	-0.004	0.008
Total Displacement	0	0.009
SigmaXX Effective	-89.578	185.866
SigmaYY Effective	-88.5	192.034
SigmaZZ Effective	-657.167	203.035
SigmaXY Effective	-54.646	52.321
SigmaXZ Effective	-138.971	135.315
SigmaYZ Effective	-136.129	142.815
Excess Pore Water Pressure	0	0

Total Pore Water Pressure	0	0

Stage : 700

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-65.418	214.636
Sigma 2 Effective	-98.399	199.954
Sigma 3 Effective	-707.927	129.079
Mean Stress Effective	-239.312	153.954
Von Mises Stress Effective	0.004	708.825
Sigma 1 Total	-65.418	214.636
X Displacement	-0.01	0.011
Y Displacement	-0.01	0.01
Z Displacement	-0.004	0.011
Total Displacement	0	0.013
SigmaXX Effective	-98.409	211.418
SigmaYY Effective	-97.122	214.374
SigmaZZ Effective	-707.905	203.702
SigmaXY Effective	-61.158	58.93
SigmaXZ Effective	-154.439	151.408
SigmaYZ Effective	-151.234	160.045
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 750

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-70.621	240.46
Sigma 2 Effective	-106.864	223.404
Sigma 3 Effective	-759.064	129.695
Mean Stress Effective	-256.705	154.578
Von Mises Stress Effective	0.001	759.048
Sigma 1 Total	-70.621	240.46
X Displacement	-0.014	0.015
Y Displacement	-0.014	0.013
Z Displacement	-0.006	0.015
Total Displacement	0	0.018
SigmaXX Effective	-106.879	238.394
SigmaYY Effective	-105.629	240.06
SigmaZZ Effective	-759.054	204.343
SigmaXY Effective	-67.846	65.253
SigmaXZ Effective	-170.385	166.782
SigmaYZ Effective	-167.161	176.856
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 800

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-75.404	262.938
Sigma 2 Effective	-114.871	244.606
Sigma 3 Effective	-809.24	130.296
Mean Stress Effective	-279.712	162.045
Von Mises Stress Effective	0.024	808.738
Sigma 1 Total	-75.404	262.938
X Displacement	-0.019	0.02
Y Displacement	-0.019	0.016
Z Displacement	-0.008	0.02
Total Displacement	0	0.023

SigmaXX Effective	-114.896	257.843
SigmaYY Effective	-113.44	262.553
SigmaZZ Effective	-809.231	204.968
SigmaXY Effective	-73.473	71.378
SigmaXZ Effective	-186.098	180.875
SigmaYZ Effective	-182.638	192.236
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 850

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-79.726	284.667
Sigma 2 Effective	-122.022	263.391
Sigma 3 Effective	-860.262	130.921
Mean Stress Effective	-302.108	175.589
Von Mises Stress Effective	0.001	859.144
Sigma 1 Total	-79.726	284.667
X Displacement	-0.024	0.025
Y Displacement	-0.024	0.02
Z Displacement	-0.01	0.025
Total Displacement	0	0.029
SigmaXX Effective	-122.045	278.465
SigmaYY Effective	-120.963	284.055
SigmaZZ Effective	-860.255	205.619
SigmaXY Effective	-79.506	76.771
SigmaXZ Effective	-201.627	195.775
SigmaYZ Effective	-197.928	208.369
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 900

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-84.238	306.89
Sigma 2 Effective	-129.605	284.526
Sigma 3 Effective	-909.956	131.499
Mean Stress Effective	-324.078	189.418
Von Mises Stress Effective	0.011	909.369
Sigma 1 Total	-84.238	306.89
X Displacement	-0.03	0.031
Y Displacement	-0.031	0.025
Z Displacement	-0.013	0.031
Total Displacement	0	0.036
SigmaXX Effective	-129.635	300.402
SigmaYY Effective	-128.76	306.195
SigmaZZ Effective	-909.948	206.22
SigmaXY Effective	-85.355	82.823
SigmaXZ Effective	-217.199	210.296
SigmaYZ Effective	-213.483	224.186
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

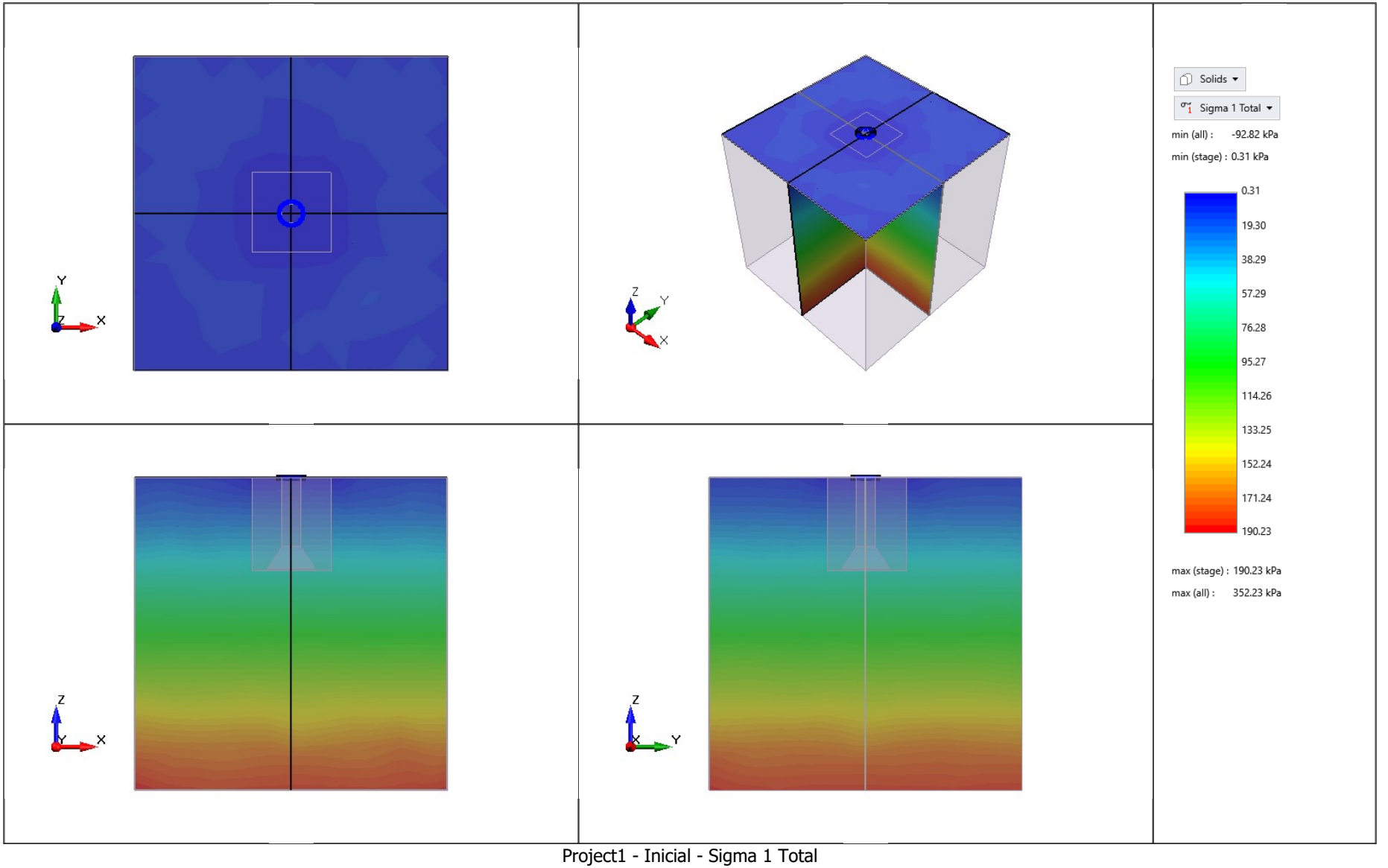
Stage : 950

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-88.64	329.941
Sigma 2 Effective	-136.968	304.584
Sigma 3 Effective	-960.386	132.073

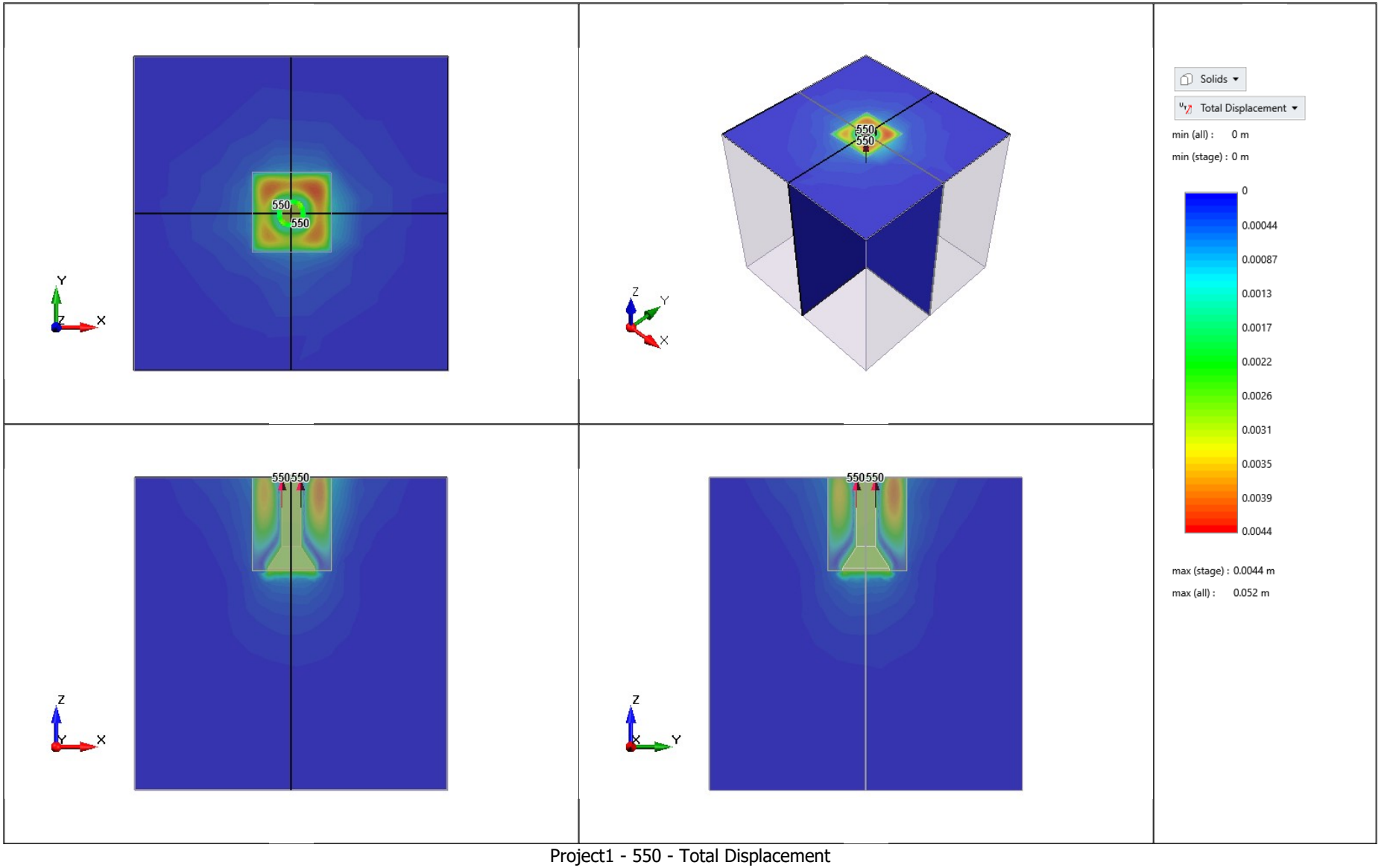
Mean Stress Effective	-346.62	203.574
Von Mises Stress Effective	0.027	959.764
Sigma 1 Total	-88.64	329.941
X Displacement	-0.037	0.036
Y Displacement	-0.038	0.03
Z Displacement	-0.016	0.038
Total Displacement	0	0.043
SigmaXX Effective	-137.003	323.324
SigmaYY Effective	-136.357	329.093
SigmaZZ Effective	-960.376	206.817
SigmaXY Effective	-91.06	88.789
SigmaXZ Effective	-232.604	225.048
SigmaYZ Effective	-228.481	239.939
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 1000

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-92.819	352.225
Sigma 2 Effective	-144.399	325.53
Sigma 3 Effective	-1009.959	132.624
Mean Stress Effective	-368.531	216.777
Von Mises Stress Effective	0.01	1009.469
Sigma 1 Total	-92.819	352.225
X Displacement	-0.044	0.043
Y Displacement	-0.046	0.036
Z Displacement	-0.019	0.045
Total Displacement	0	0.052
SigmaXX Effective	-144.442	343.456
SigmaYY Effective	-143.584	351.168
SigmaZZ Effective	-1009.95	207.392
SigmaXY Effective	-97.208	95.311
SigmaXZ Effective	-248.236	239.855
SigmaYZ Effective	-243.601	255.812
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

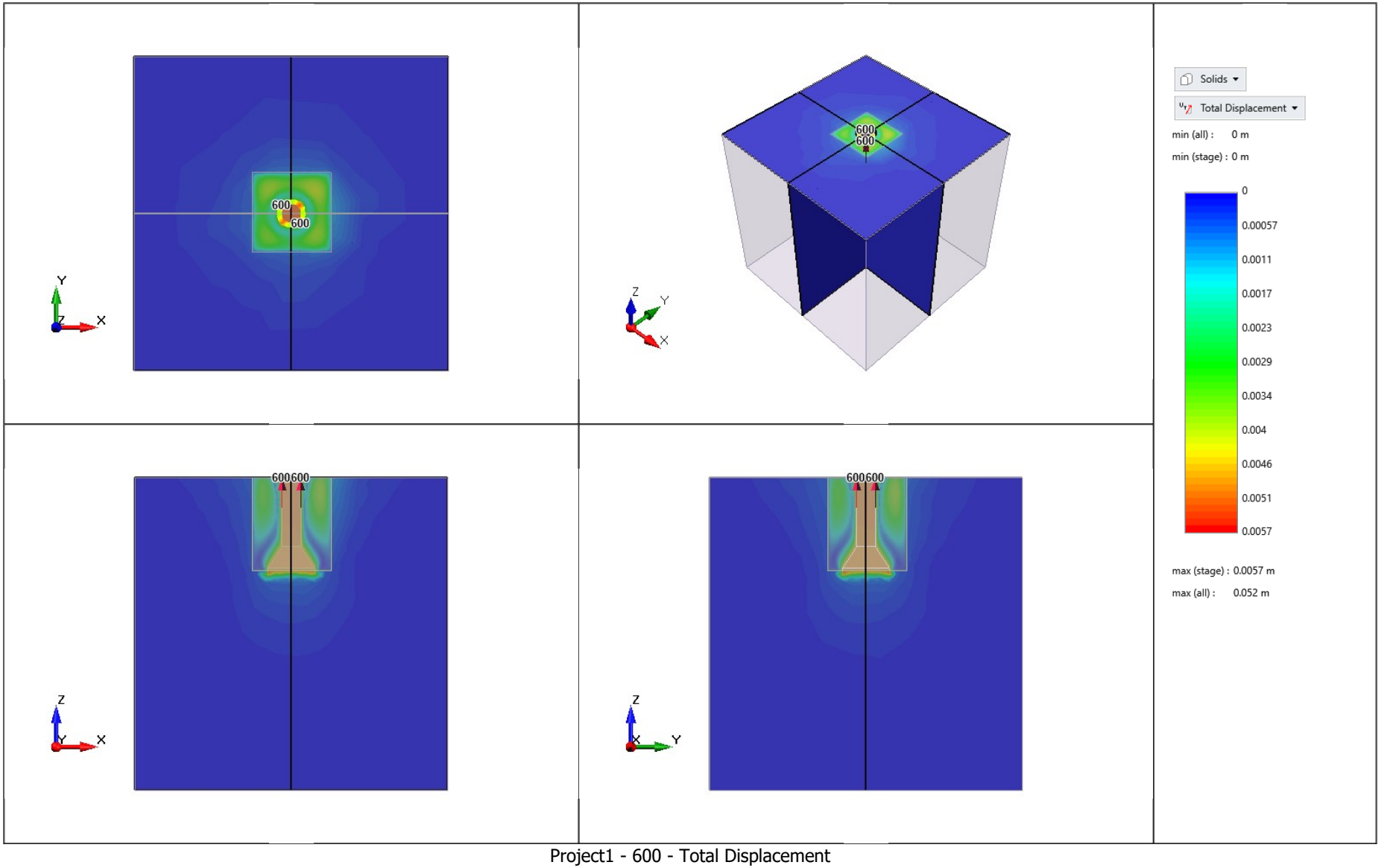

Solids
Sigma 1 Total
min (all) : -92.82 kPa
min (stage) : 0.31 kPa
0.31
19.30
38.29
57.29
76.28
95.27
114.26
133.25
152.24
171.24
190.23
max (stage) : 190.23 kPa
max (all) : 352.23 kPa

Project1 - 550 - Total Displacement



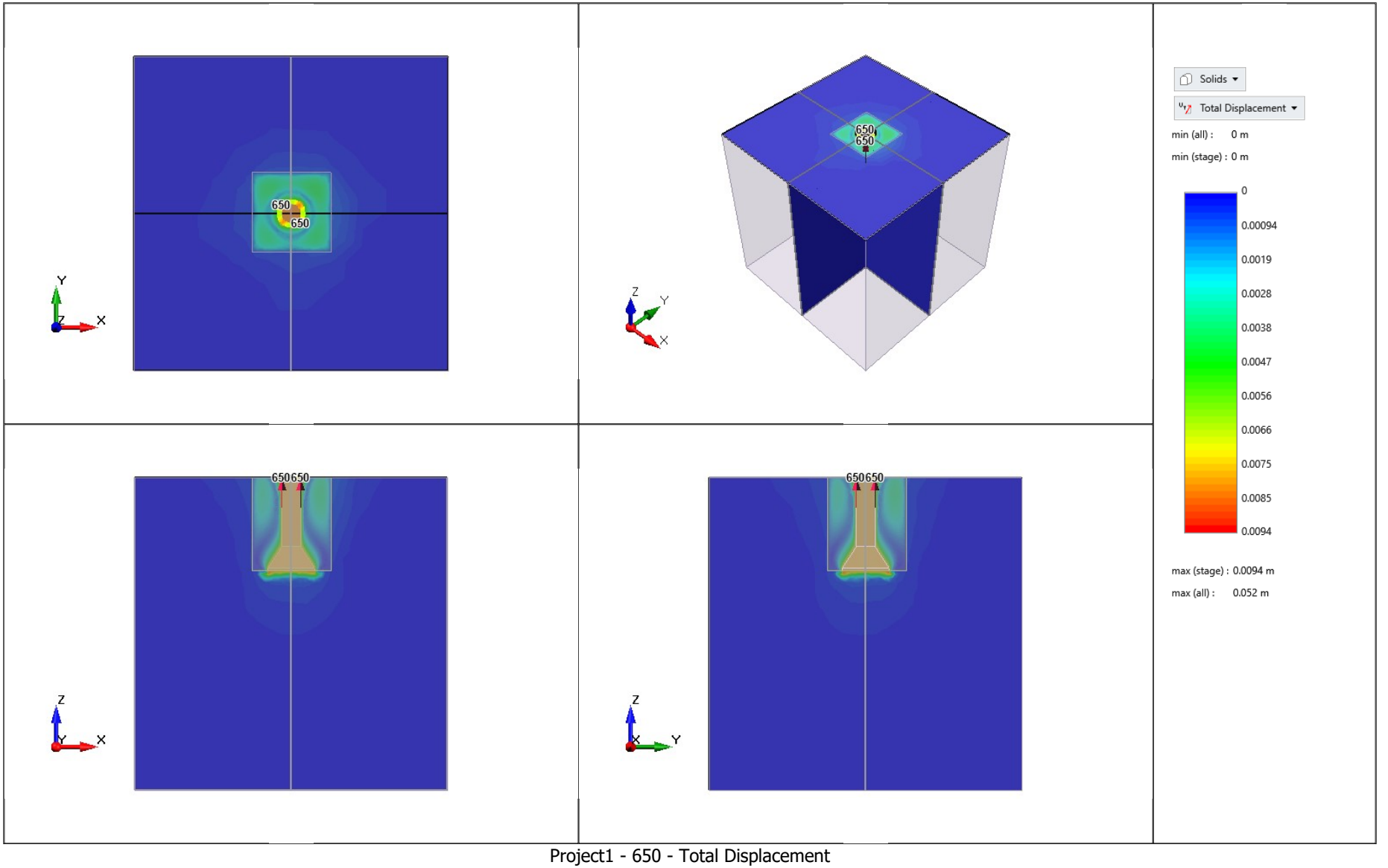
Project1 - 550 - Total Displacement

Project1 - 600 - Total Displacement



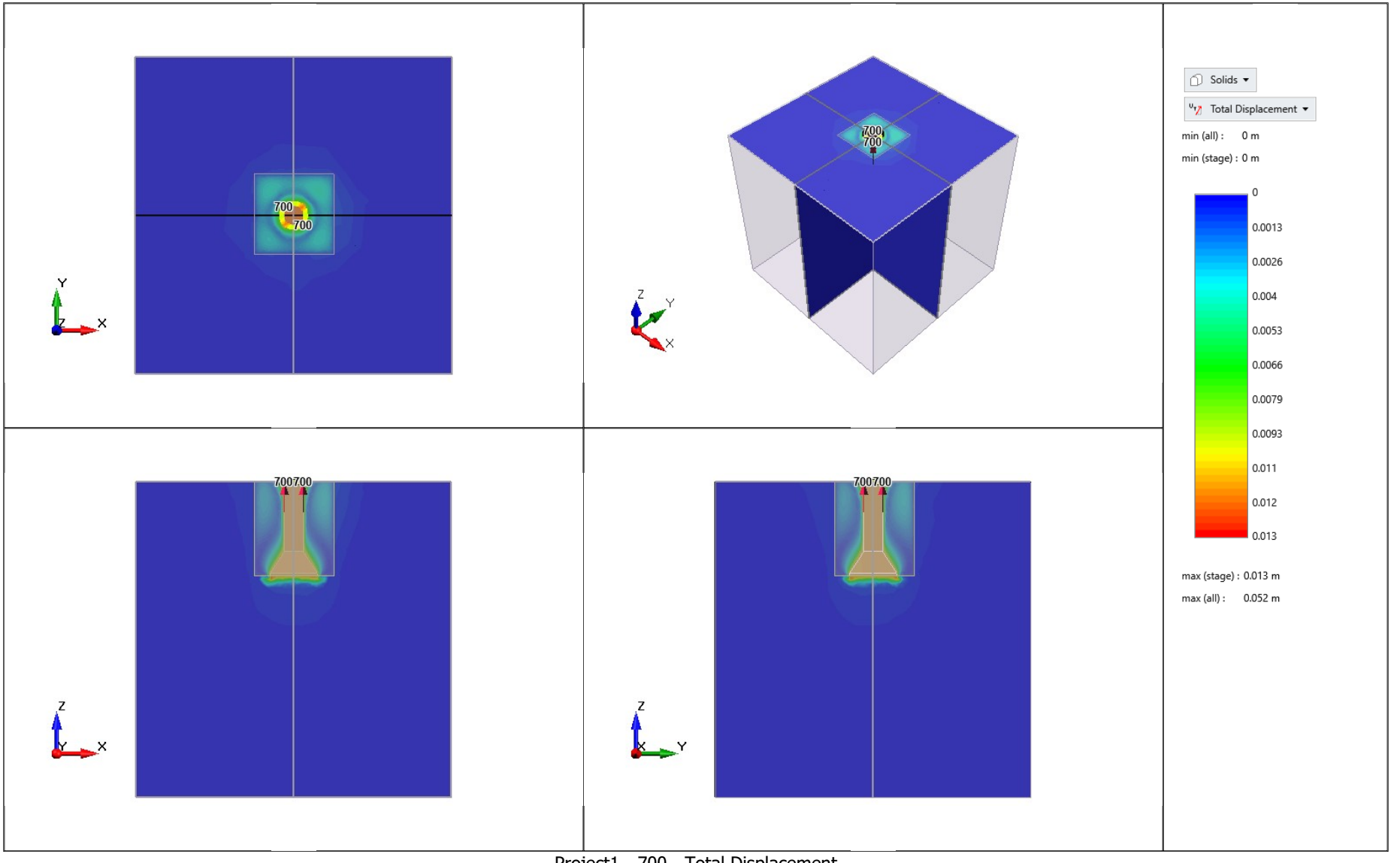
Project1 - 600 - Total Displacement

Project1 - 650 - Total Displacement



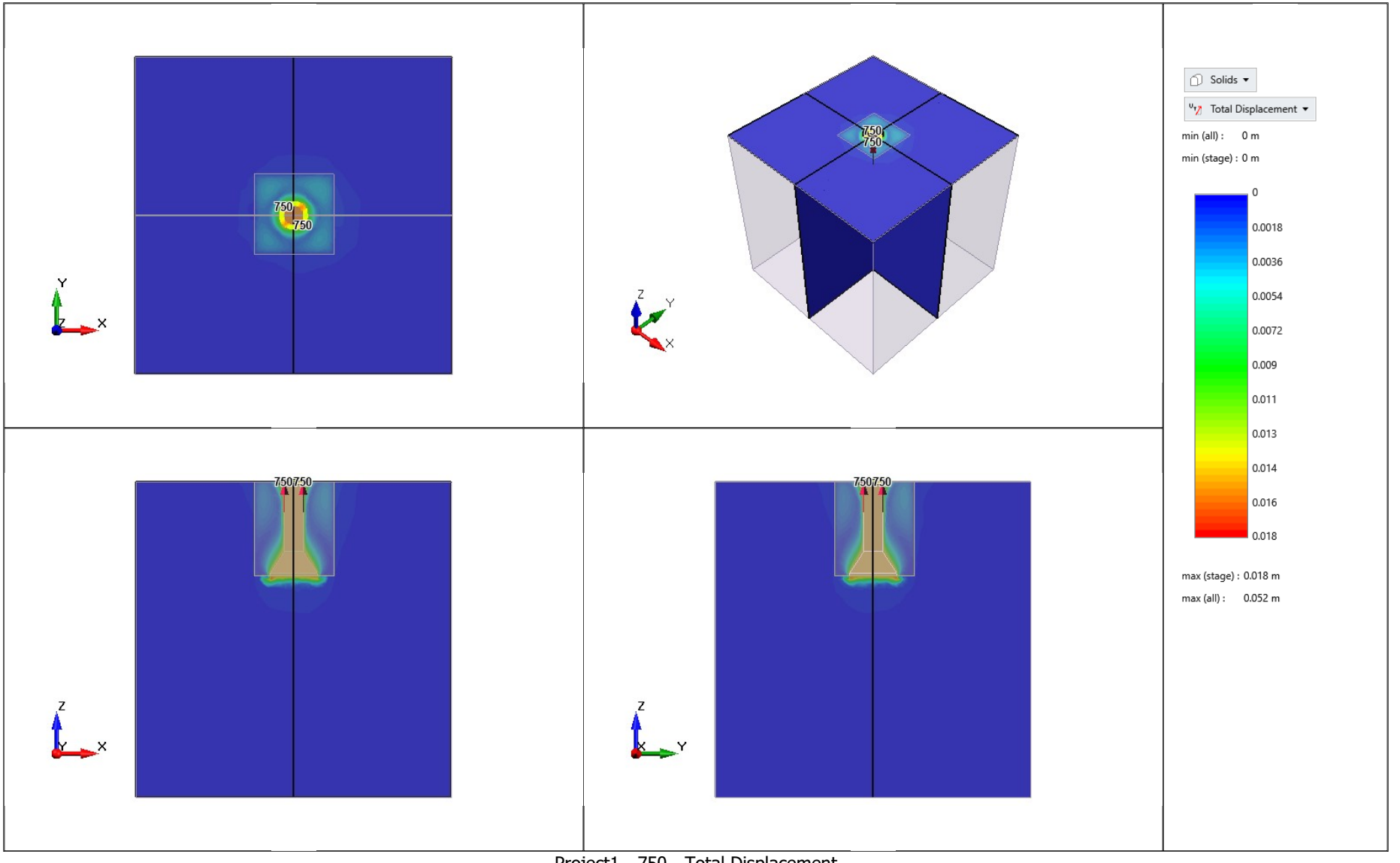
Project1 - 650 - Total Displacement

Project1 - 700 - Total Displacement

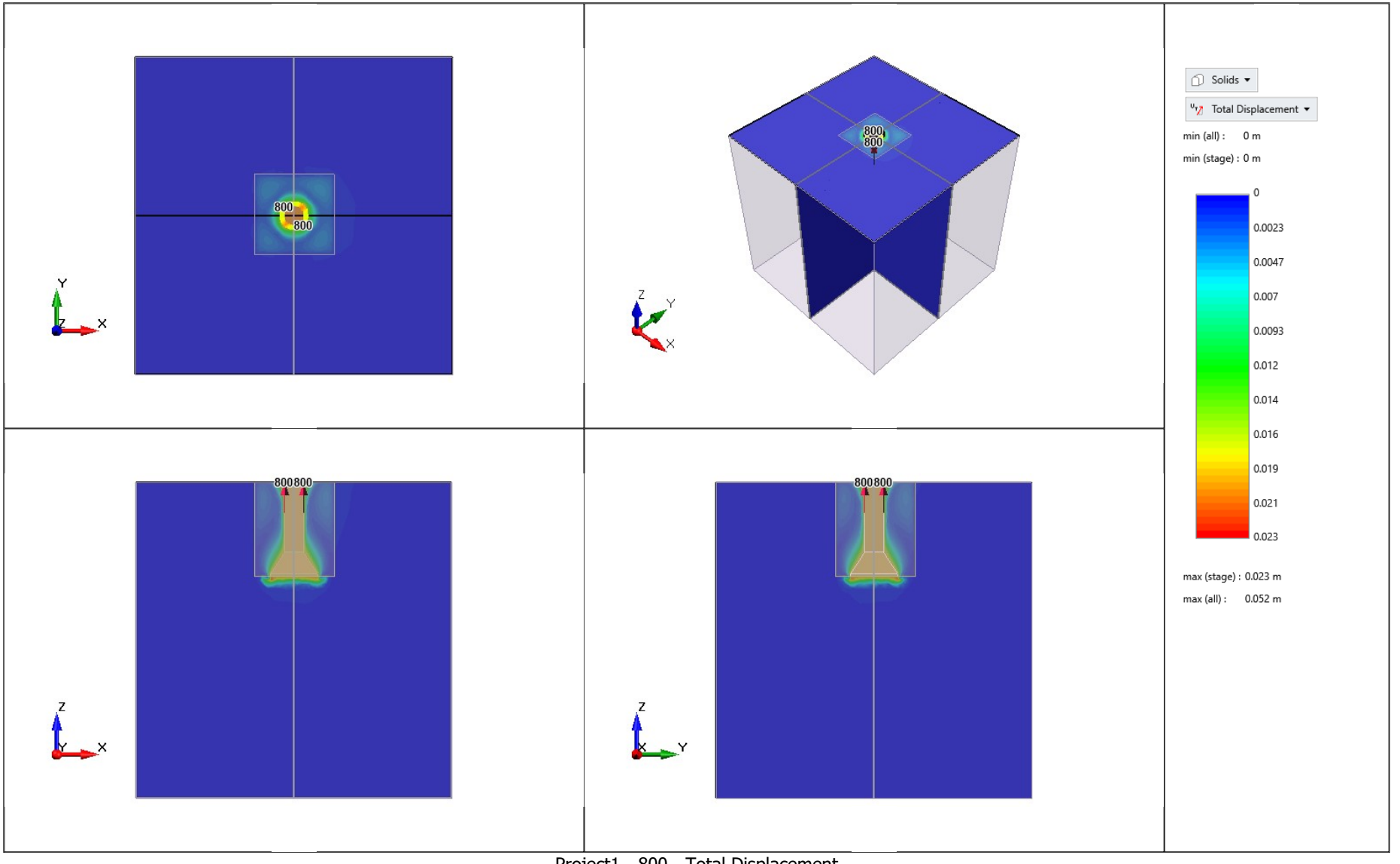


Project1 - 700 - Total Displacement

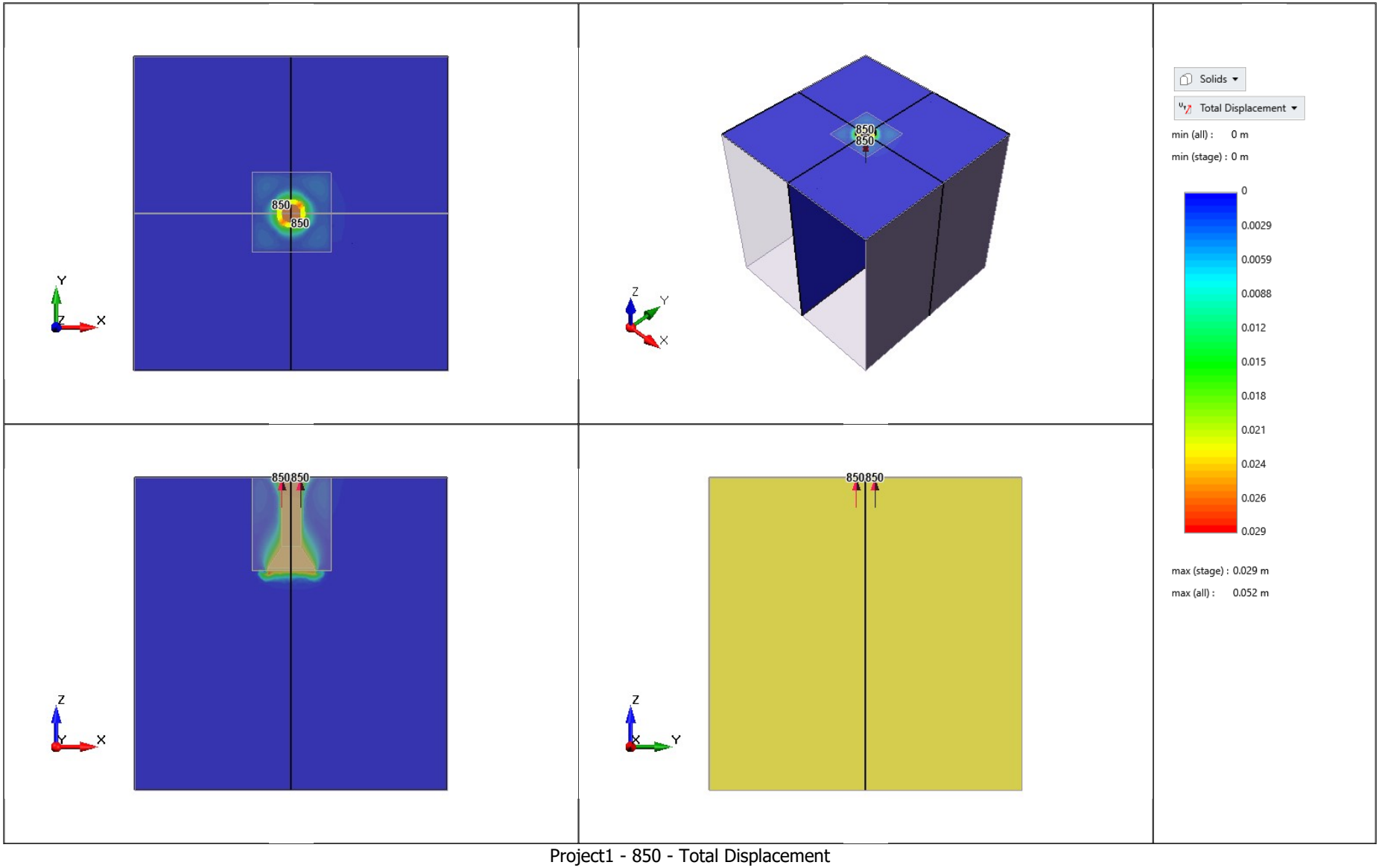
Project1 - 750 - Total Displacement



Project1 - 750 - Total Displacement

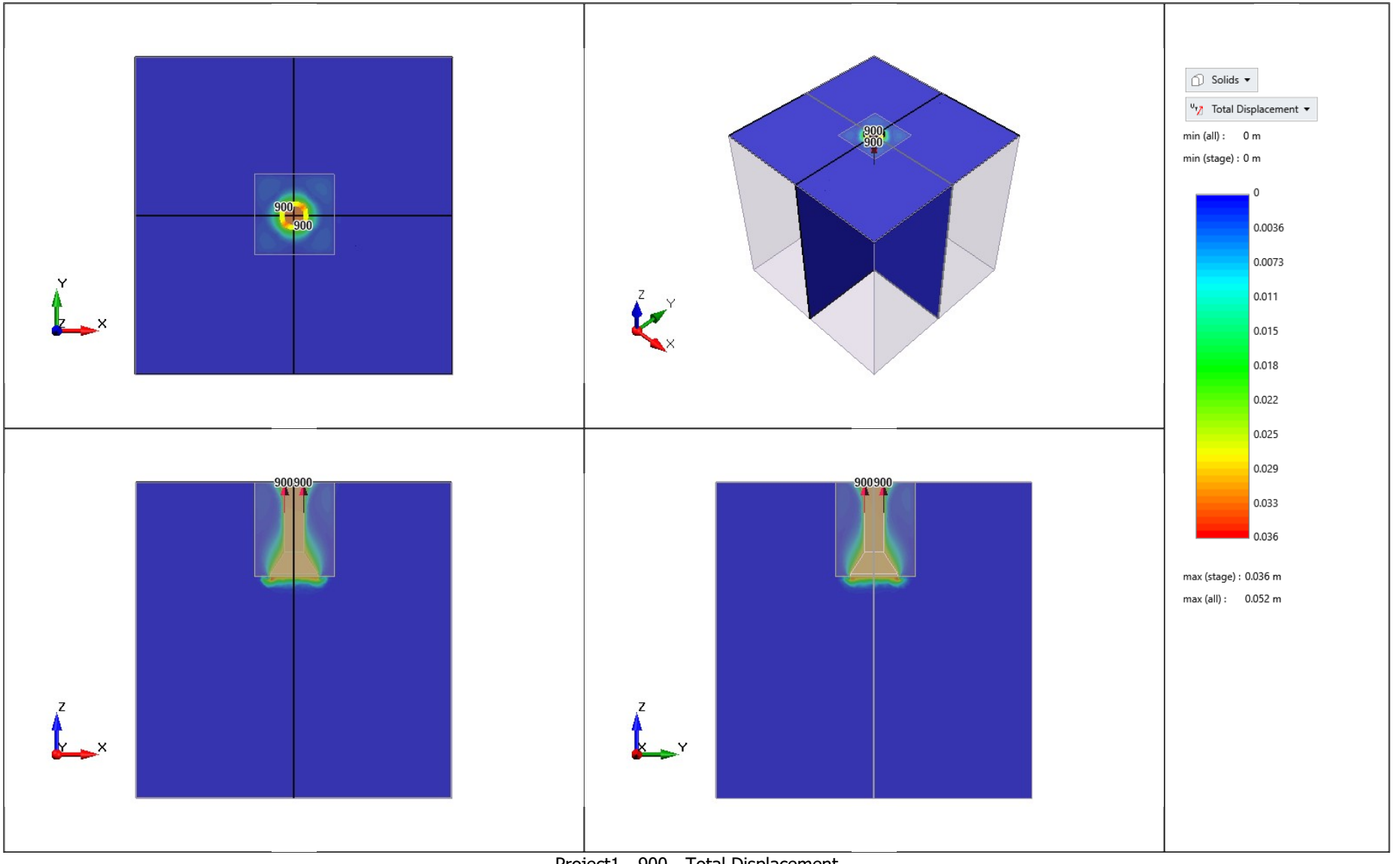

800
800
800
800
800
800
800
800
Solids
Total Displacement
min (all) : 0 m
min (stage) : 0 m
0
0.0023
0.0047
0.007
0.0093
0.012
0.014
0.016
0.019
0.021
0.023
max (stage) : 0.023 m
max (all) : 0.052 m

Project1 - 850 - Total Displacement



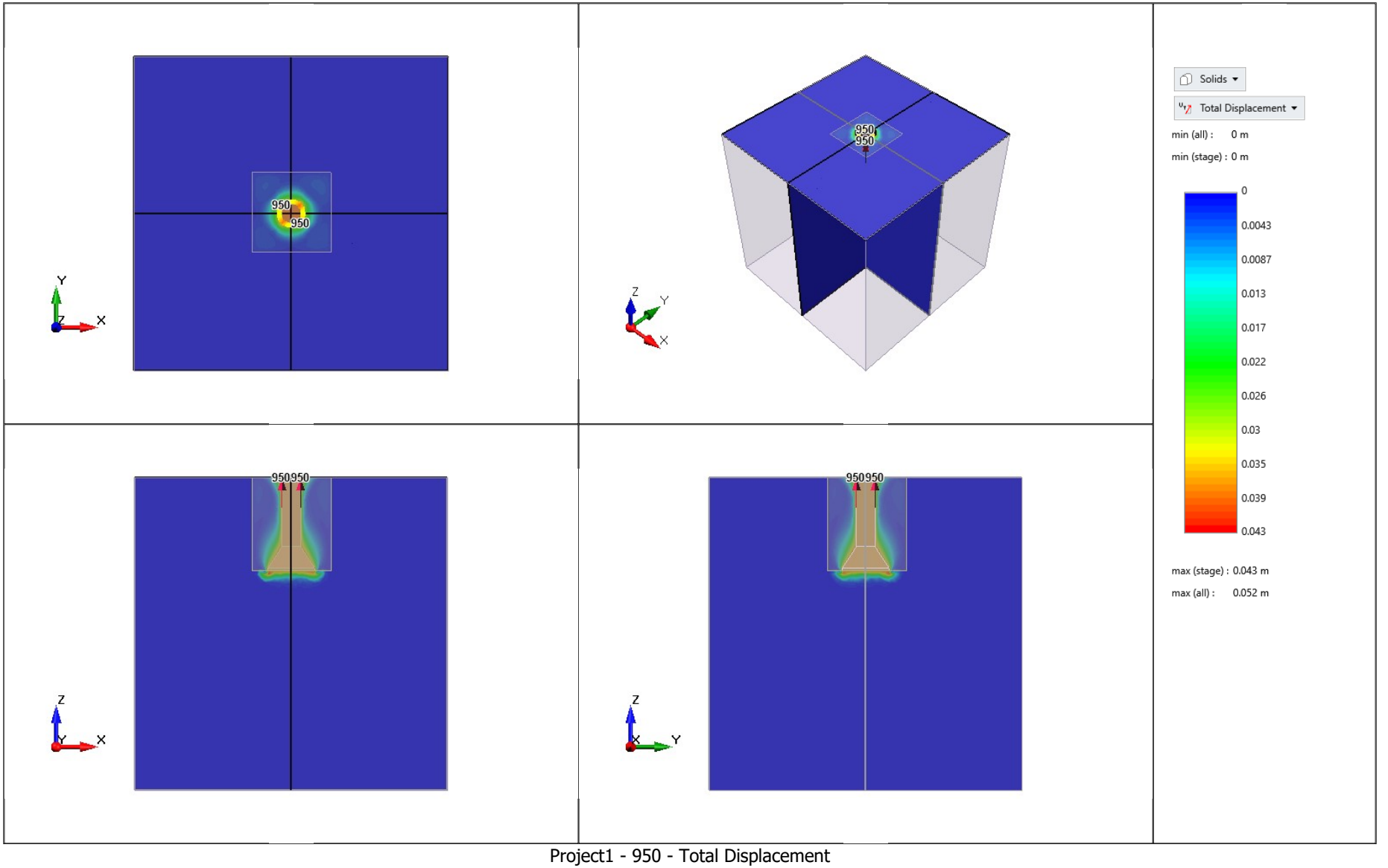
Project1 - 850 - Total Displacement

Project1 - 900 - Total Displacement

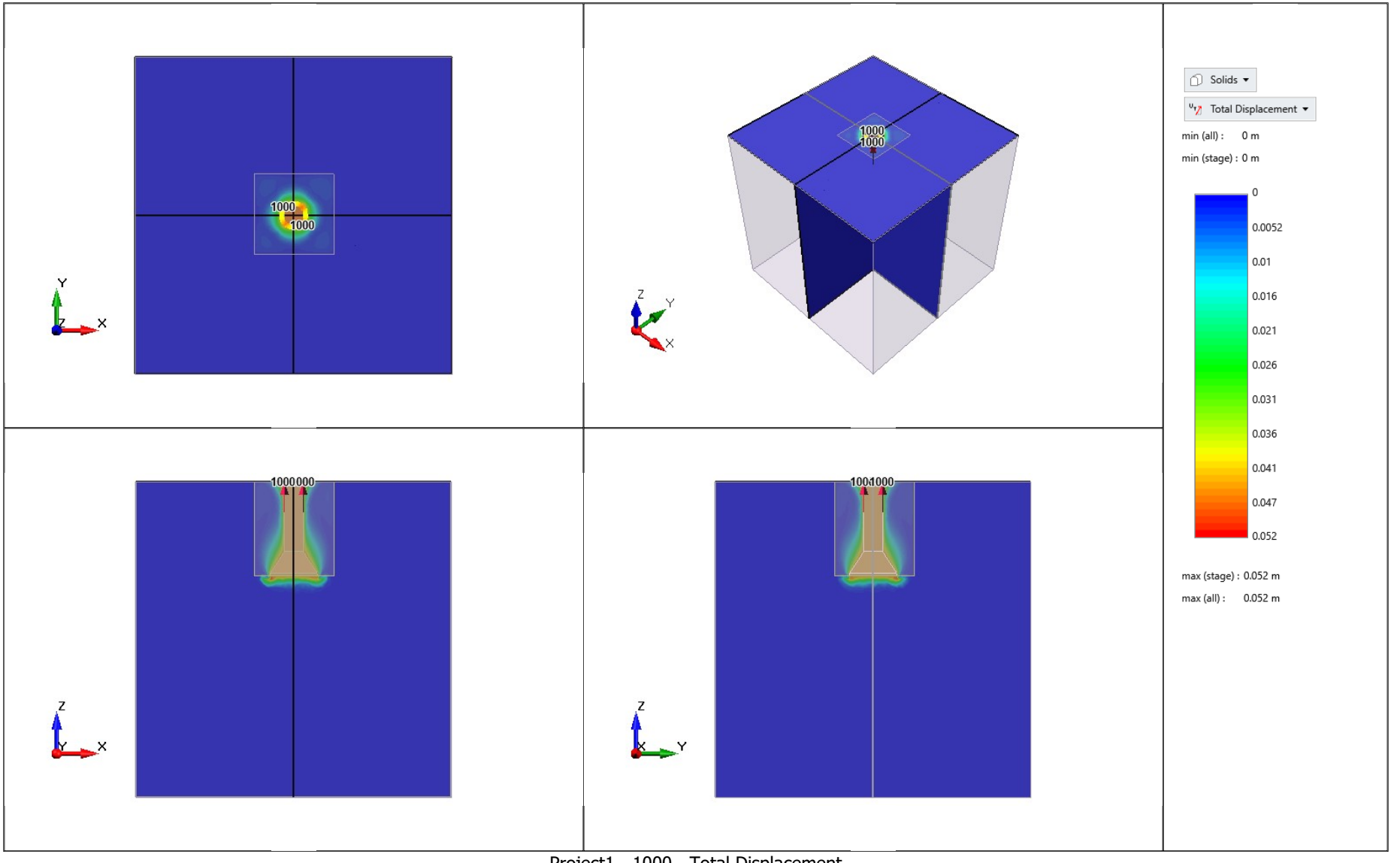


Project1 - 900 - Total Displacement

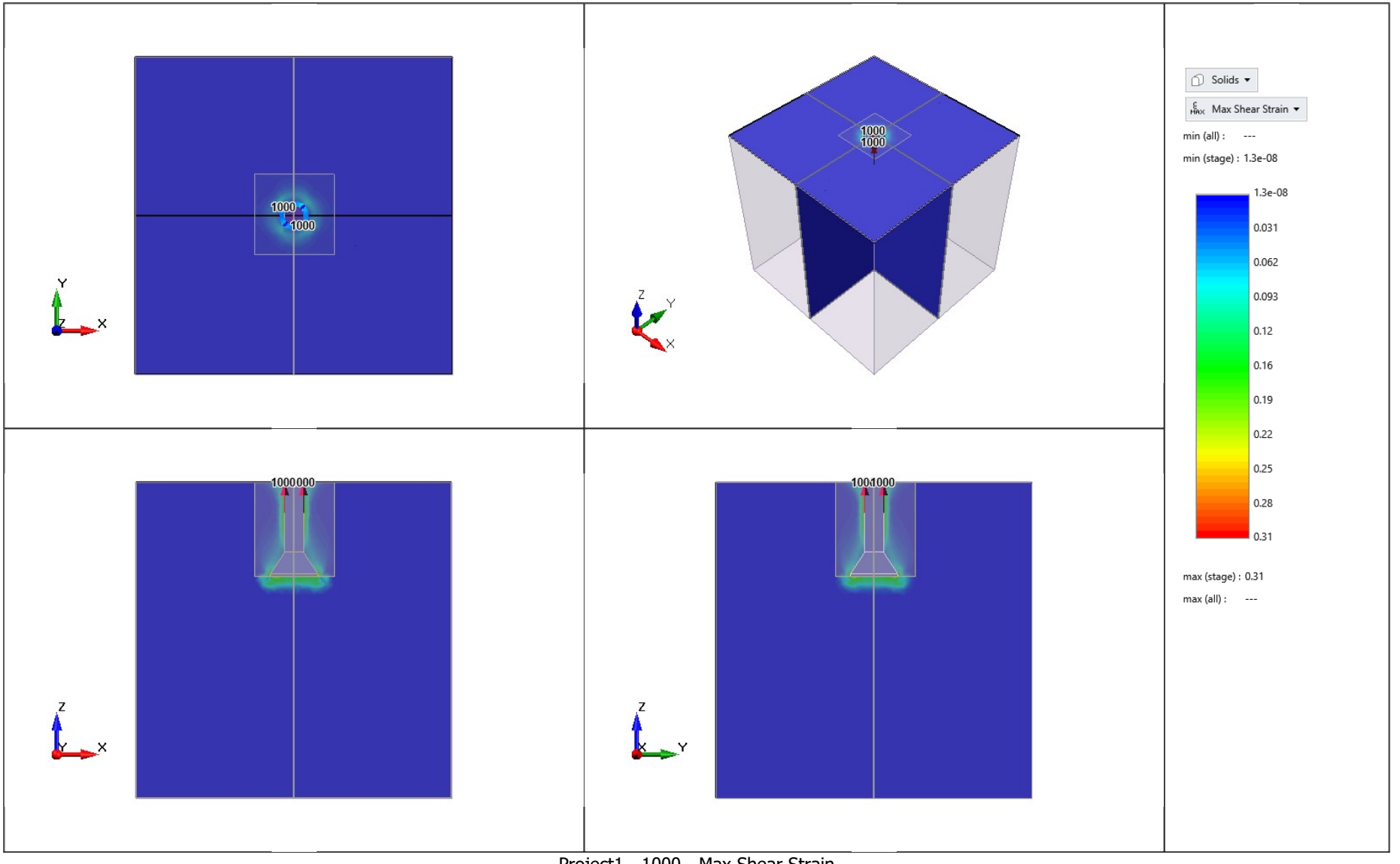
Project1 - 950 - Total Displacement



Project1 - 950 - Total Displacement



Project1 - 1000 - Total Displacement


1000
1000
1000
1000
1000000
1001000
Y
X
Z
Solids
Max Shear Strain
min (all) : ---
min (stage) : 1.3e-08
1.3e-08
0.031
0.062
0.093
0.12
0.16
0.19
0.22
0.25
0.28
0.31
max (stage) : 0.31
max (all) : ---

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VFP59000
RS3 Analysis Report
Created on 10/21/2021 17:29:33
Software Version: RS3 4.020

Project Settings

Units

Units:	Metric, stress as kPa
Time Units:	Days
Permeability Units:	Meters/second
Coordinate:	Cartesian x,y,z

Stage Information

Index	Name
1	Inicial
2	Z+R
3	550
4	600
5	650
6	700
7	750
8	800
9	850
10	900
11	950
12	1000

Stress Analysis

Maximum Number of Iterations:	500
Tolerance:	0.001
Load Steps:	Automatic
Convergence Type:	Absolute Force & Energy
Accelerate Initial Stiffness:	Yes
Minimum Alpha:	0.1
Maximum Alpha:	10
Tensile Failure Reduces Hoek-Brown Tensile Strength to Zero:	No
Tensile Failure Reduces Shear Strength to Residual:	Yes
Abort Calculation When Non-Convergence Detected:	No

Solver Options

Analysis Type:	Uncoupled
Solver Types:	Automatic

Groundwater

Method:	Phreatic Surfaces
Pore Fluid Unit Weight (kN/m3):	9.81

Shear Strength Reduction

Determine Shear Reduction Factor:	No

Material Properties

Clay	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	19.4
Failure Criterion:	Mohr Coulomb
Material Type:	Plastic
Peak Strength	
Peak Cohesion (kPa):	16
Peak Friction Angle (°):	23
Peak Tensile Strength (kPa):	0
Residual Strength	
Residual Cohesion (kPa):	12.8
Residual Friction Angle (°):	18.4
Residual Tensile Strength (kPa):	0
Dilation Angle (°):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.35
Young's Modulus (kPa):	15000
Use Residual Young's Modulus:	No
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3
Relleno (Clay)	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	16.7
Failure Criterion:	Mohr Coulomb
Material Type:	Plastic
Peak Strength	
Peak Cohesion (kPa):	10
Peak Friction Angle (°):	23
Peak Tensile Strength (kPa):	0
Residual Strength	
Residual Cohesion (kPa):	8
Residual Friction Angle (°):	18.4
Residual Tensile Strength (kPa):	0
Dilation Angle (°):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.2
Young's Modulus (kPa):	9000
Use Residual Young's Modulus:	No
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3

Concreto	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	24
Failure Criterion:	Mohr Coulomb
Material Type:	Elastic
Peak Strength	
Peak Cohesion (kPa):	10500
Peak Friction Angle (°):	0
Peak Tensile Strength (kPa):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.2
Young's Modulus (kPa):	21589300
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3

Results

Compute Time:	27.1167	
Result Element Type : Solid		
Stage : Inicial		
Data Type	**Min (kPa)**	**Max (kPa)**
Sigma 1 Effective	2.094	190.476
Sigma 2 Effective	1.277	116.19
Sigma 3 Effective	1.277	116.19
Mean Stress Effective	1.549	140.952
Von Mises Stress Effective	0.816	74.286
Sigma 1 Total	2.094	190.476
X Displacement	0	0
Y Displacement	0	0
Z Displacement	0	0
SigmaXX Effective	1.277	116.19
SigmaYY Effective	1.277	116.19
SigmaZZ Effective	2.094	190.476
SigmaXY Effective	0	0
SigmaXZ Effective	0	0
SigmaYZ Effective	0	0
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0
Stage : 550		
Data Type	**Min (kPa)**	**Max (kPa)**
Sigma 1 Effective	-11.242	855.266
Sigma 2 Effective	-13.116	156.416
Sigma 3 Effective	-585.528	115.169
Mean Stress Effective	-185.112	245.206
Von Mises Stress Effective	0.44	1126.421
Sigma 1 Total	-11.242	855.266
X Displacement	-0.001	0.001
Y Displacement	-0.001	0.001
Z Displacement	0	0.003
Total Displacement	0	0.003
SigmaXX Effective	-22.219	644.085
SigmaYY Effective	-17.511	380.798
SigmaZZ Effective	-545.719	188.579
SigmaXY Effective	-184.318	181.332
SigmaXZ Effective	-352.154	359.134
SigmaYZ Effective	-299.012	291.163
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0
Stage : 600		
Data Type	**Min (kPa)**	**Max (kPa)**
Sigma 1 Effective	-16.915	912.513
Sigma 2 Effective	-18.892	162.386
Sigma 3 Effective	-706.468	115.092
Mean Stress Effective	-202.085	252.242
Von Mises Stress Effective	0.547	1290.488

Sigma 1 Total	-16.915	912.513
X Displacement	-0.001	0.001
Y Displacement	-0.001	0.001
Z Displacement	0	0.004
Total Displacement	0	0.004
SigmaXX Effective	-33.922	676.493
SigmaYY Effective	-24.258	393.786
SigmaZZ Effective	-596.214	188.435
SigmaXY Effective	-191.3	186.986
SigmaXZ Effective	-410.03	427.253
SigmaYZ Effective	-356.045	331.633
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 650

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-22.301	984.304
Sigma 2 Effective	-24.704	168.781
Sigma 3 Effective	-809.034	115.015
Mean Stress Effective	-219.048	261.034
Von Mises Stress Effective	0.805	1460.635
Sigma 1 Total	-22.301	984.304
X Displacement	-0.001	0.001
Y Displacement	-0.001	0.001
Z Displacement	0	0.004
Total Displacement	0	0.004
SigmaXX Effective	-48.313	707.297
SigmaYY Effective	-30.9	403.675
SigmaZZ Effective	-646.662	188.294
SigmaXY Effective	-201.751	198.1
SigmaXZ Effective	-477.422	481.803
SigmaYZ Effective	-405.223	381.666
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 700

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-27.691	1046.693
Sigma 2 Effective	-30.357	175.663
Sigma 3 Effective	-889.081	114.939
Mean Stress Effective	-236.067	269.852
Von Mises Stress Effective	1.111	1606.829
Sigma 1 Total	-27.691	1046.693
X Displacement	-0.001	0.001
Y Displacement	-0.001	0.001
Z Displacement	0	0.004
Total Displacement	0	0.004
SigmaXX Effective	-65.508	732.804
SigmaYY Effective	-37.186	426.037
SigmaZZ Effective	-697.118	188.159
SigmaXY Effective	-214.774	220.744
SigmaXZ Effective	-534.754	525.653
SigmaYZ Effective	-463.514	422.258
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 750

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-32.818	1102.259
Sigma 2 Effective	-36.029	182.713
Sigma 3 Effective	-979.092	114.863
Mean Stress Effective	-253.07	278.516
Von Mises Stress Effective	1.141	1740.192
Sigma 1 Total	-32.818	1102.259
X Displacement	-0.001	0.001
Y Displacement	-0.001	0.001
Z Displacement	0	0.005
Total Displacement	0	0.005
SigmaXX Effective	-81.15	750.45
SigmaYY Effective	-43.577	459.009
SigmaZZ Effective	-747.527	188.049
SigmaXY Effective	-229.843	242.097
SigmaXZ Effective	-588.159	576.302
SigmaYZ Effective	-517.986	458.071
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 800

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-37.803	1164.338
Sigma 2 Effective	-41.277	189.894
Sigma 3 Effective	-1069.25	114.788
Mean Stress Effective	-270.029	288.939
Von Mises Stress Effective	0.998	1876.889
Sigma 1 Total	-37.803	1164.338
X Displacement	-0.001	0.001
Y Displacement	-0.001	0.001
Z Displacement	0	0.005
Total Displacement	0	0.005
SigmaXX Effective	-98.221	769.738
SigmaYY Effective	-49.827	483.639
SigmaZZ Effective	-797.642	187.941
SigmaXY Effective	-248.116	264.411
SigmaXZ Effective	-643.449	606.76
SigmaYZ Effective	-561.611	492.301
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 850

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-42.697	1131.27
Sigma 2 Effective	-46.388	194.421
Sigma 3 Effective	-1108.886	114.732
Mean Stress Effective	-287.041	278.568
Von Mises Stress Effective	0.505	1857.707
Sigma 1 Total	-42.697	1131.27
X Displacement	-0.001	0.001
Y Displacement	-0.001	0.001
Z Displacement	0	0.005
Total Displacement	0	0.005
SigmaXX Effective	-103.24	722.654

SigmaYY Effective	-55.674	519.799
SigmaZZ Effective	-848.254	187.836
SigmaXY Effective	-268.686	268.112
SigmaXZ Effective	-645.571	635.199
SigmaYZ Effective	-588.867	486.521
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 900

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-47.329	1156.803
Sigma 2 Effective	-50.808	198.929
Sigma 3 Effective	-1147.121	114.676
Mean Stress Effective	-304.037	282.357
Von Mises Stress Effective	0.617	1929.09
Sigma 1 Total	-47.329	1156.803
X Displacement	-0.001	0.001
Y Displacement	-0.001	0.001
Z Displacement	0	0.006
Total Displacement	0	0.006
SigmaXX Effective	-106.905	744.016
SigmaYY Effective	-60.779	541.806
SigmaZZ Effective	-898.902	187.732
SigmaXY Effective	-278.312	276.689
SigmaXZ Effective	-647.935	654.313
SigmaYZ Effective	-603.732	499.421
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 950

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-51.307	1191.514
Sigma 2 Effective	-55.234	209.869
Sigma 3 Effective	-1181.528	114.618
Mean Stress Effective	-321.057	293.028
Von Mises Stress Effective	0.458	2002.092
Sigma 1 Total	-51.307	1191.514
X Displacement	-0.001	0.001
Y Displacement	-0.001	0.001
Z Displacement	0	0.006
Total Displacement	0	0.006
SigmaXX Effective	-110.837	774.953
SigmaYY Effective	-65.843	526.555
SigmaZZ Effective	-949.516	187.626
SigmaXY Effective	-293.575	291.978
SigmaXZ Effective	-641.198	677.049
SigmaYZ Effective	-612.614	506.175
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 1000

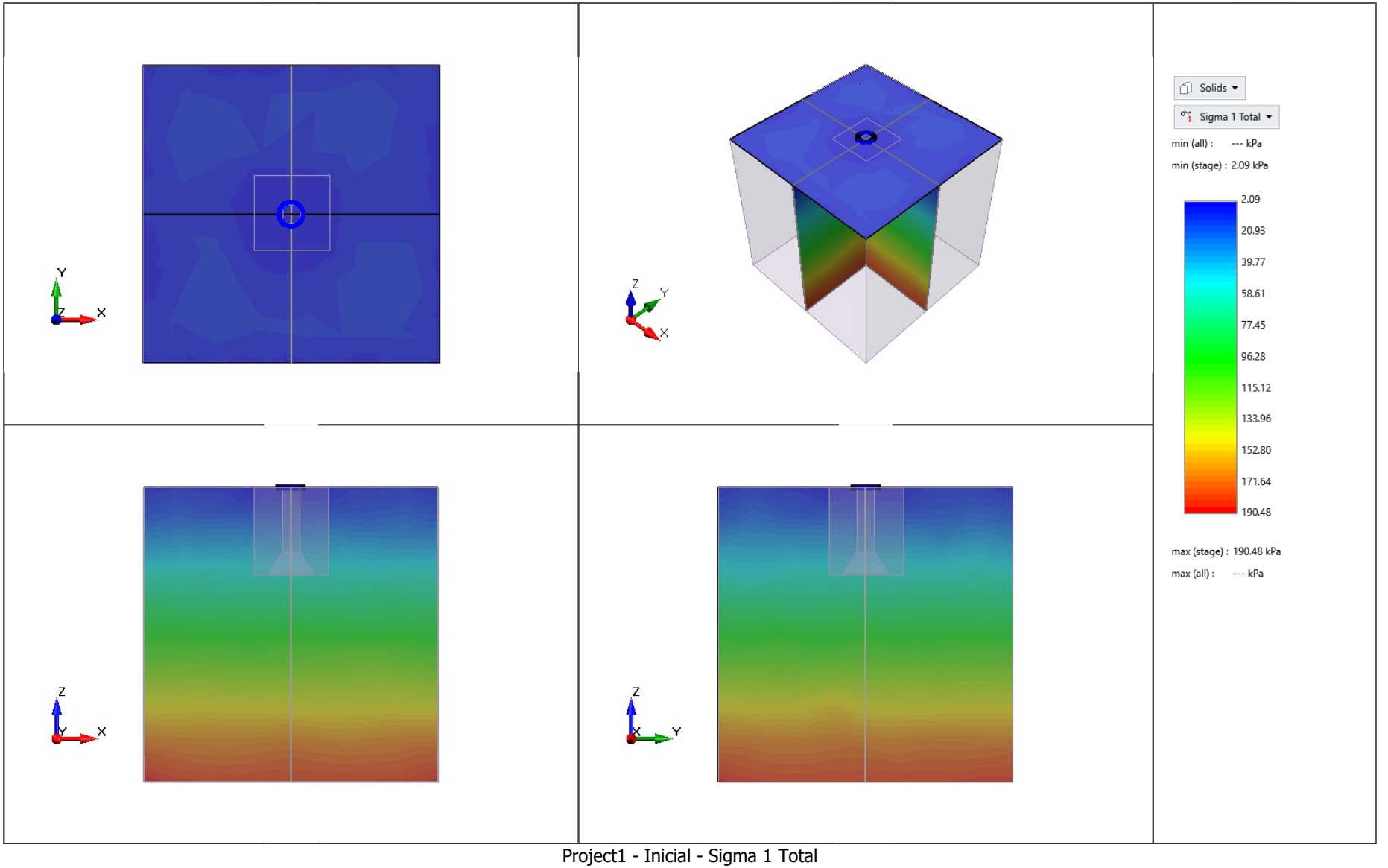
Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-55.021	1238.145
Sigma 2 Effective	-59.274	218.101
Sigma 3 Effective	-1227.714	114.563
Mean Stress Effective	-337.92	307.889

Von Mises Stress Effective	0.375	2064.093
Sigma 1 Total	-55.021	1238.145
X Displacement	-0.001	0.001
Y Displacement	-0.001	0.001
Z Displacement	0	0.006
Total Displacement	0	0.006
Volumetric Strain	-0.005	0.006
Max Shear Strain	0	0.006
SigmaXX Effective	-116.588	786.236
SigmaYY Effective	-70.254	570.492
SigmaZZ Effective	-999.87	187.522
SigmaXY Effective	-311.588	308.282
SigmaXZ Effective	-662.678	701.225
SigmaYZ Effective	-641.043	520.269
Major Principal Strain	0	0.007
Mean Principal Strain	-0.001	0.001
Minor Principal Strain	-0.005	0
StrainXX	-0.002	0.002
StrainYY	-0.002	0.002
StrainZZ	-0.005	0.006
StrainXY	-0.001	0.001
StrainXZ	-0.004	0.004
StrainYZ	-0.005	0.004
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

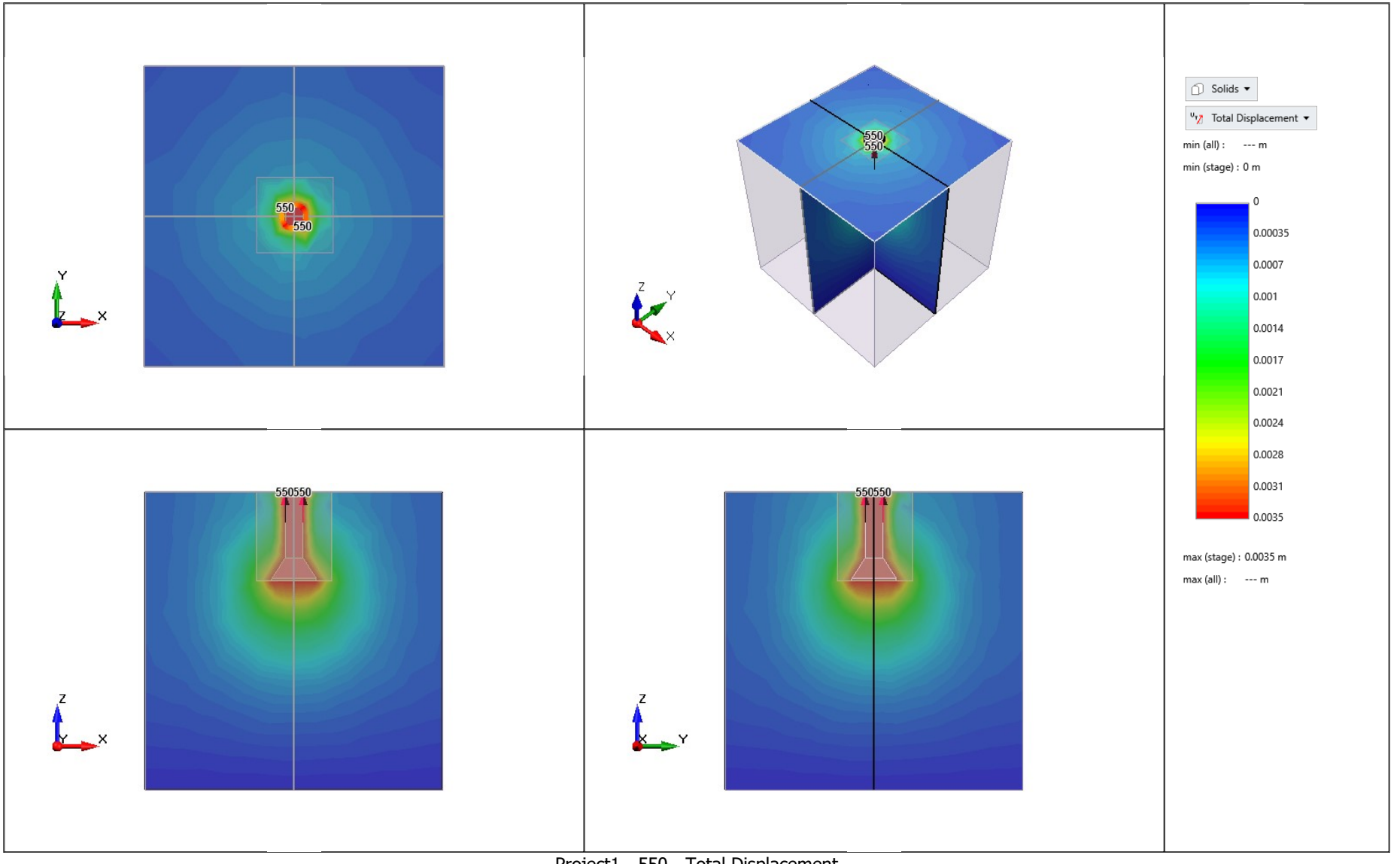
Stage : Z+R

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	3.595	1251.081
Sigma 2 Effective	-11.189	156.89
Sigma 3 Effective	-190.292	116.023
Mean Stress Effective	2.254	428.558
Von Mises Stress Effective	1.547	1257.253
Sigma 1 Total	3.595	1251.081
X Displacement	-0.001	0.001
Y Displacement	-0.001	0.001
Z Displacement	-0.001	0.001
SigmaXX Effective	-98.144	277.343
SigmaYY Effective	-40.19	293.213
SigmaZZ Effective	0.632	864.591
SigmaXY Effective	-103.252	113.708
SigmaXZ Effective	-482.327	317.144
SigmaYZ Effective	-363.176	497.057
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

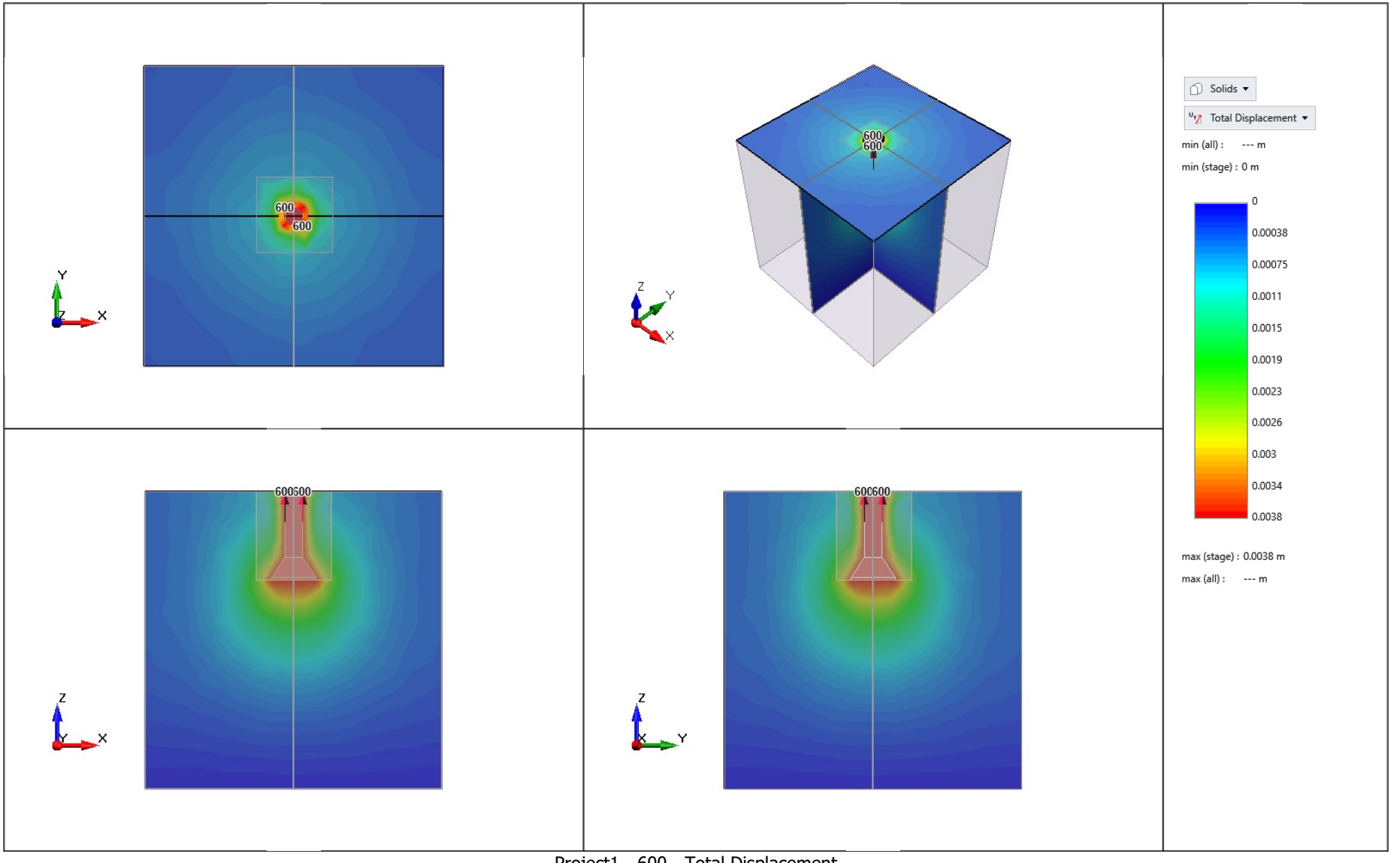
Project1 - Inicial - Sigma 1 Total



Project1 - Inicial - Sigma 1 Total

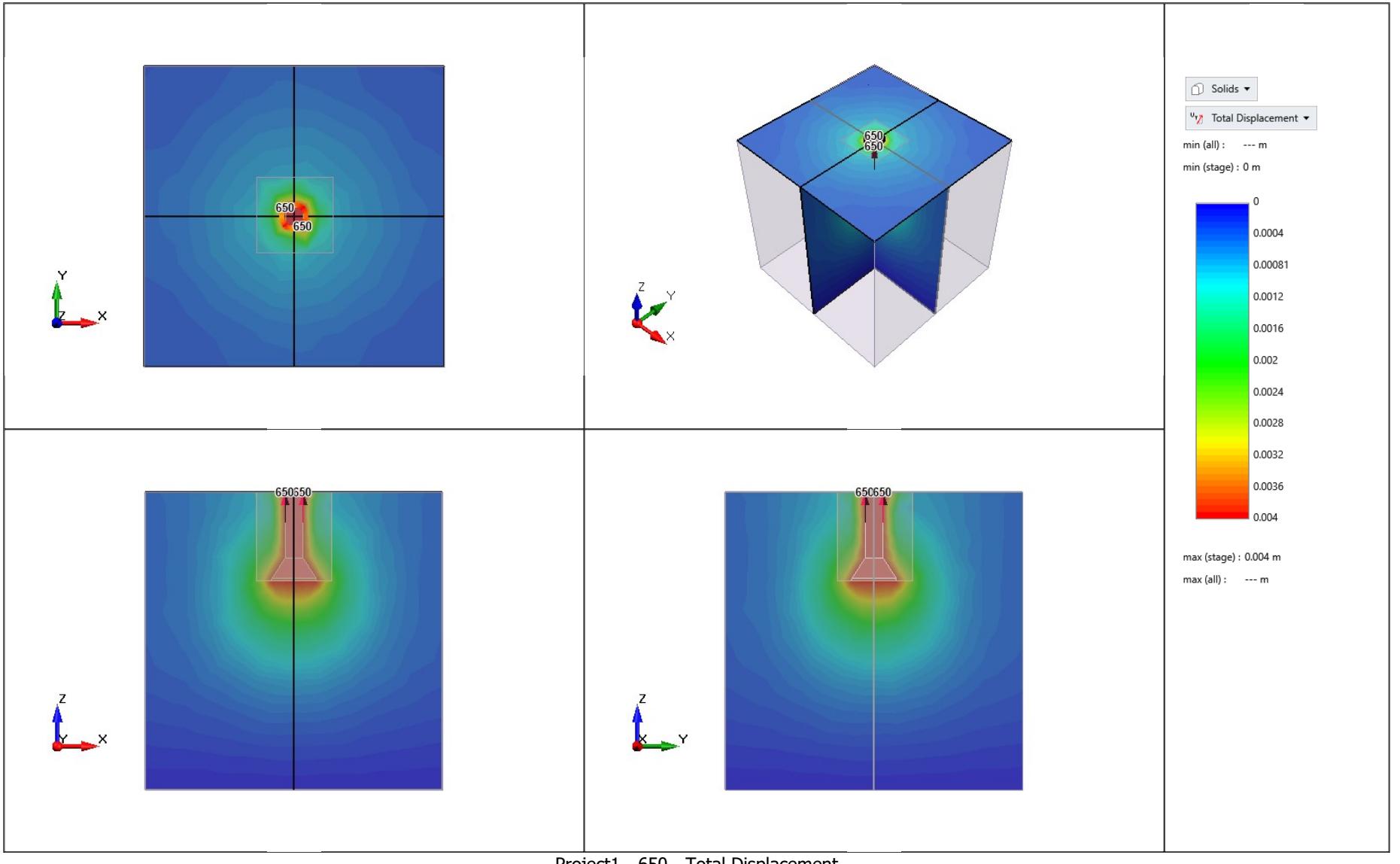

550
550
550
550
550550
550550
Solids
Total Displacement
min (all) : --- m
min (stage) : 0 m
0
0.00035
0.0007
0.001
0.0014
0.0017
0.0021
0.0024
0.0028
0.0031
0.0035
max (stage) : 0.0035 m
max (all) : --- m

Project1 - 600 - Total Displacement



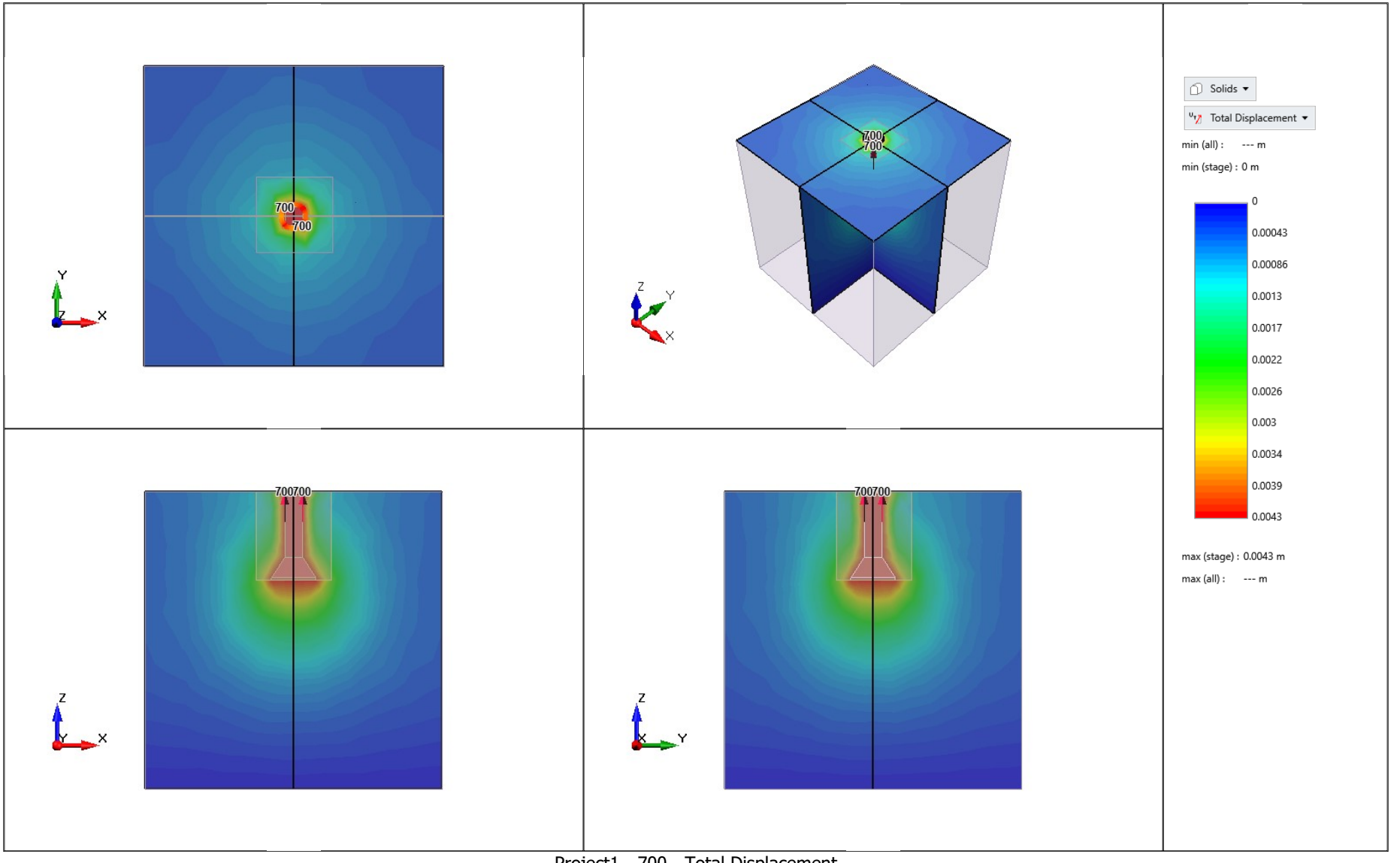
Project1 - 600 - Total Displacement

Project1 - 650 - Total Displacement



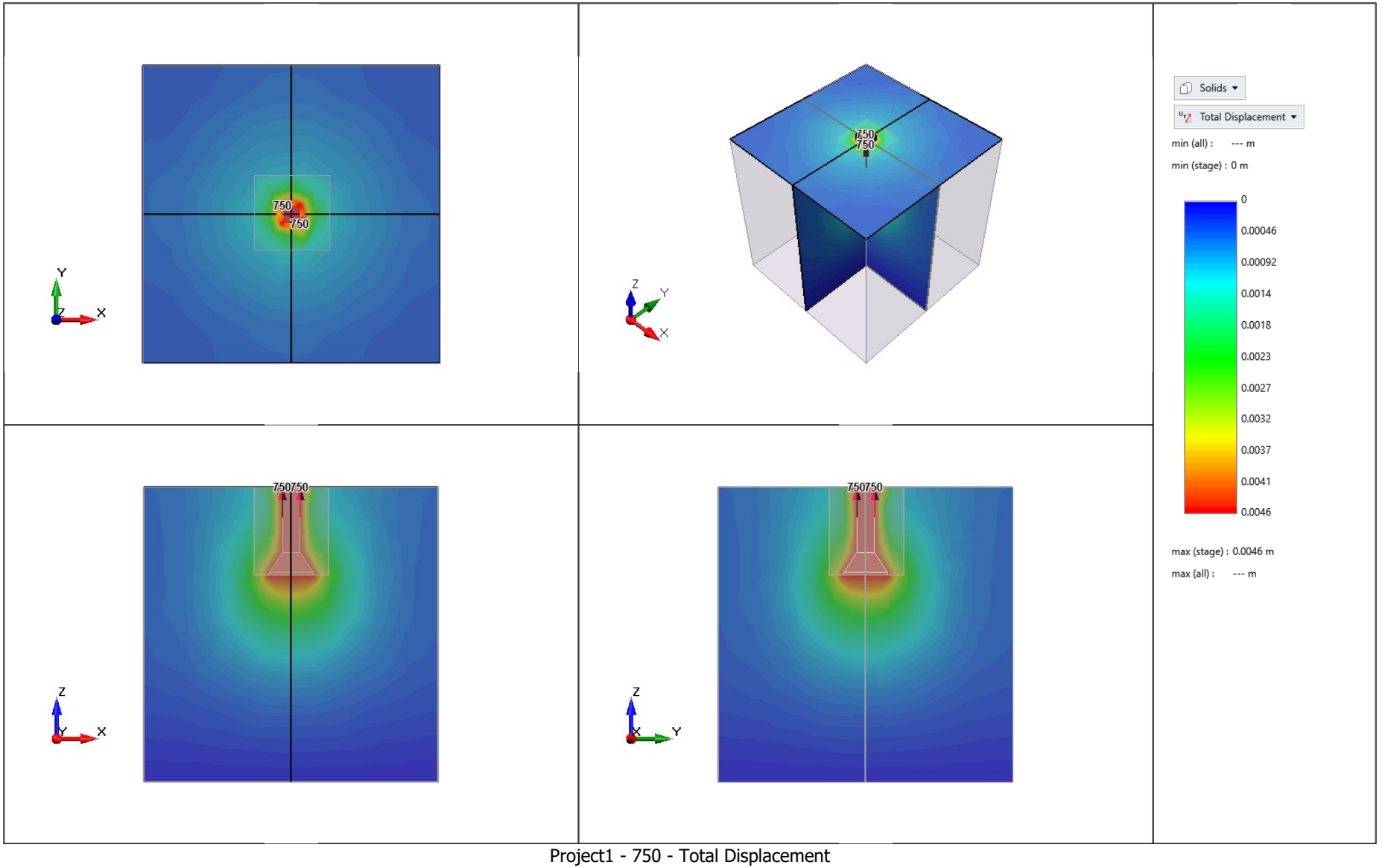
Project1 - 650 - Total Displacement

Project1 - 700 - Total Displacement



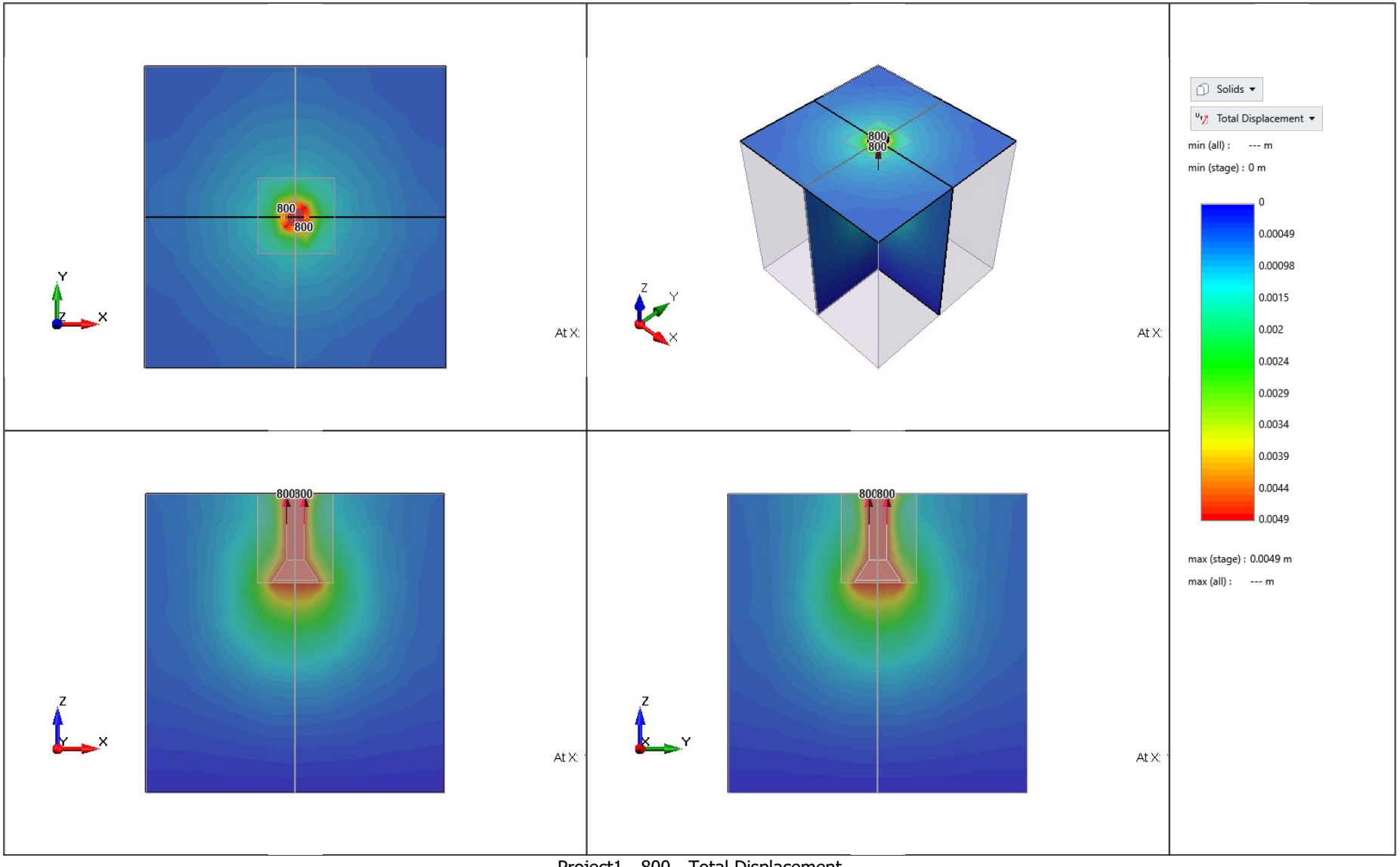
Project1 - 700 - Total Displacement

Project1 - 750 - Total Displacement



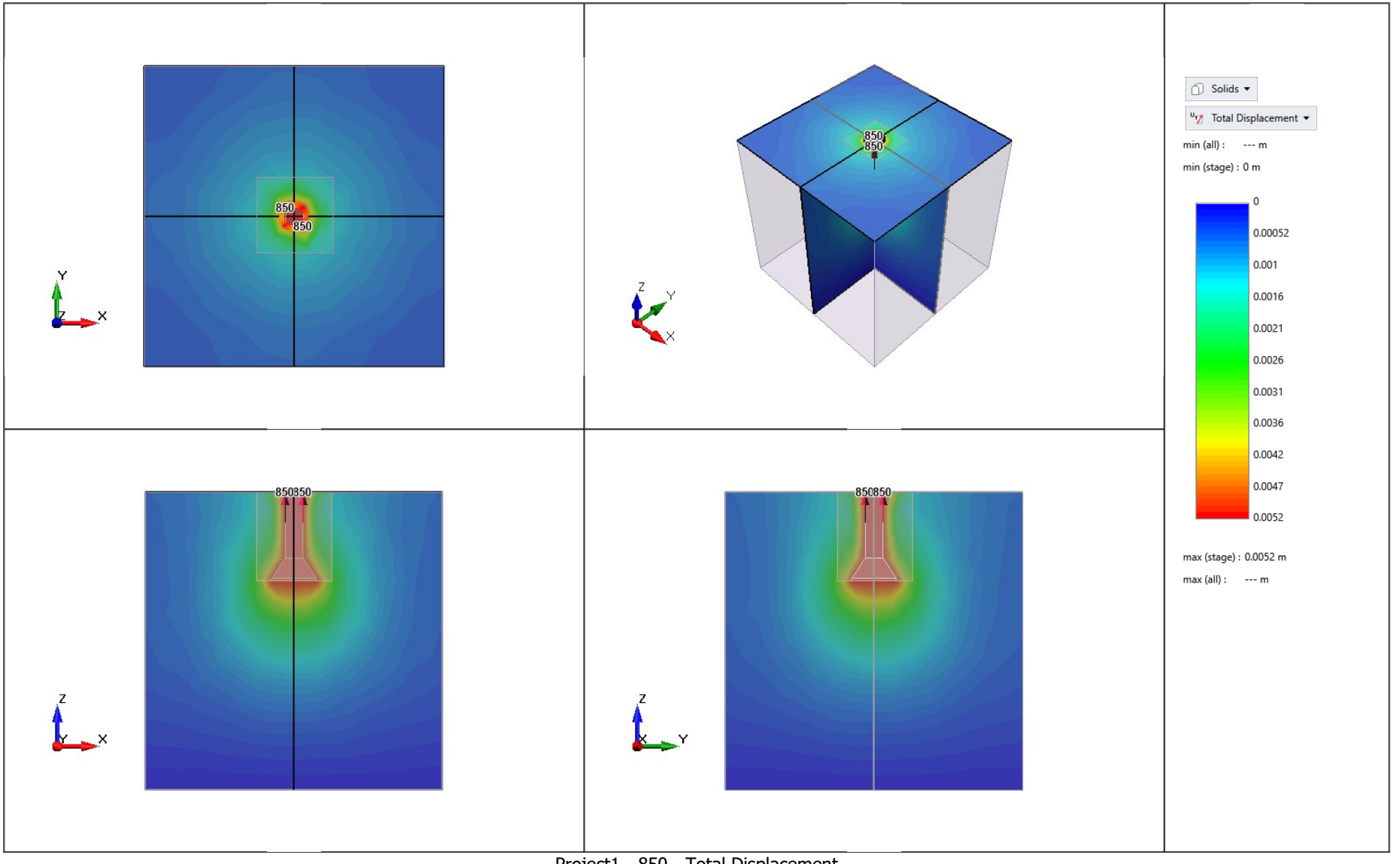
Project1 - 750 - Total Displacement

Project1 - 800 - Total Displacement



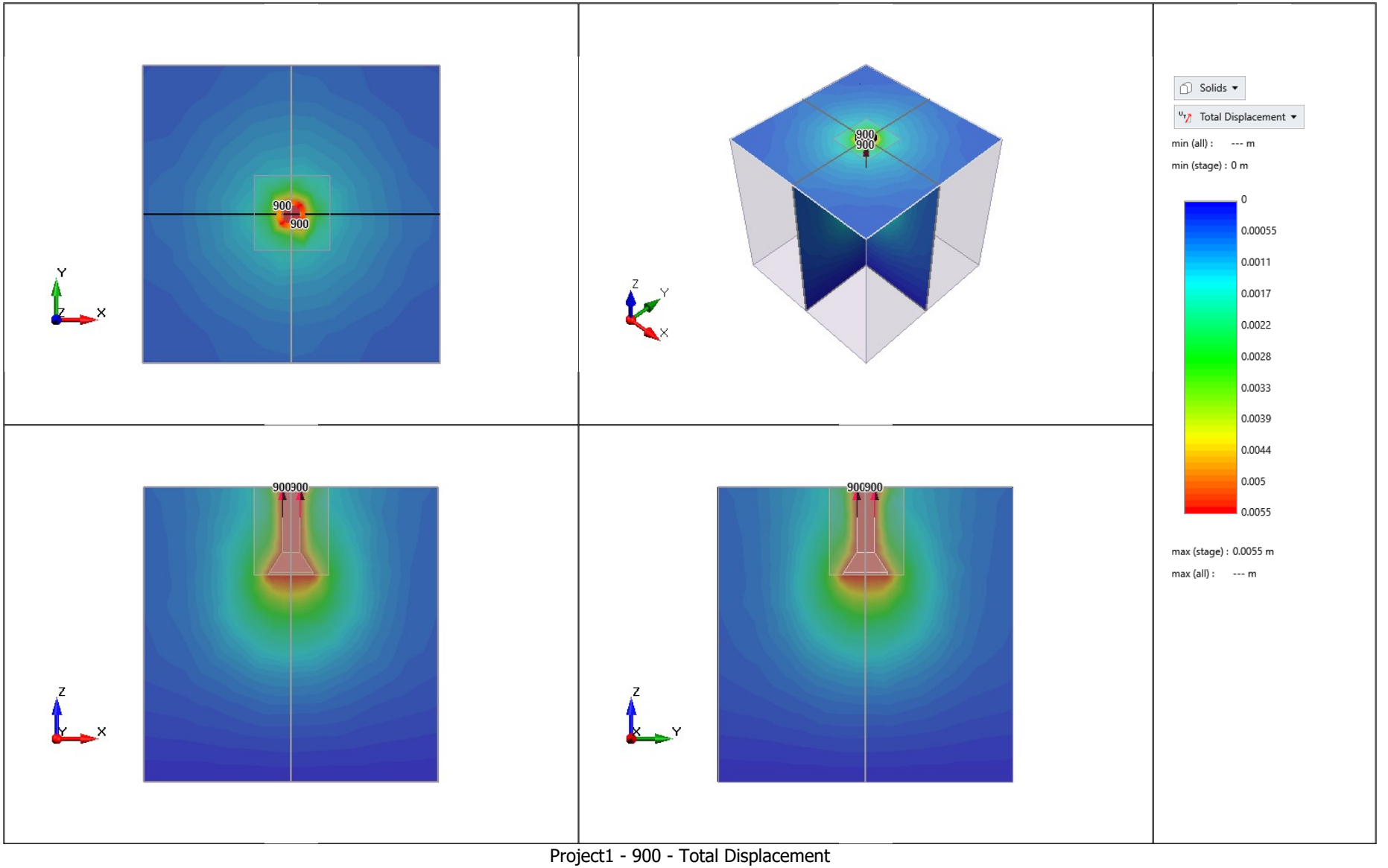
Project1 - 800 - Total Displacement

Project1 - 850 - Total Displacement



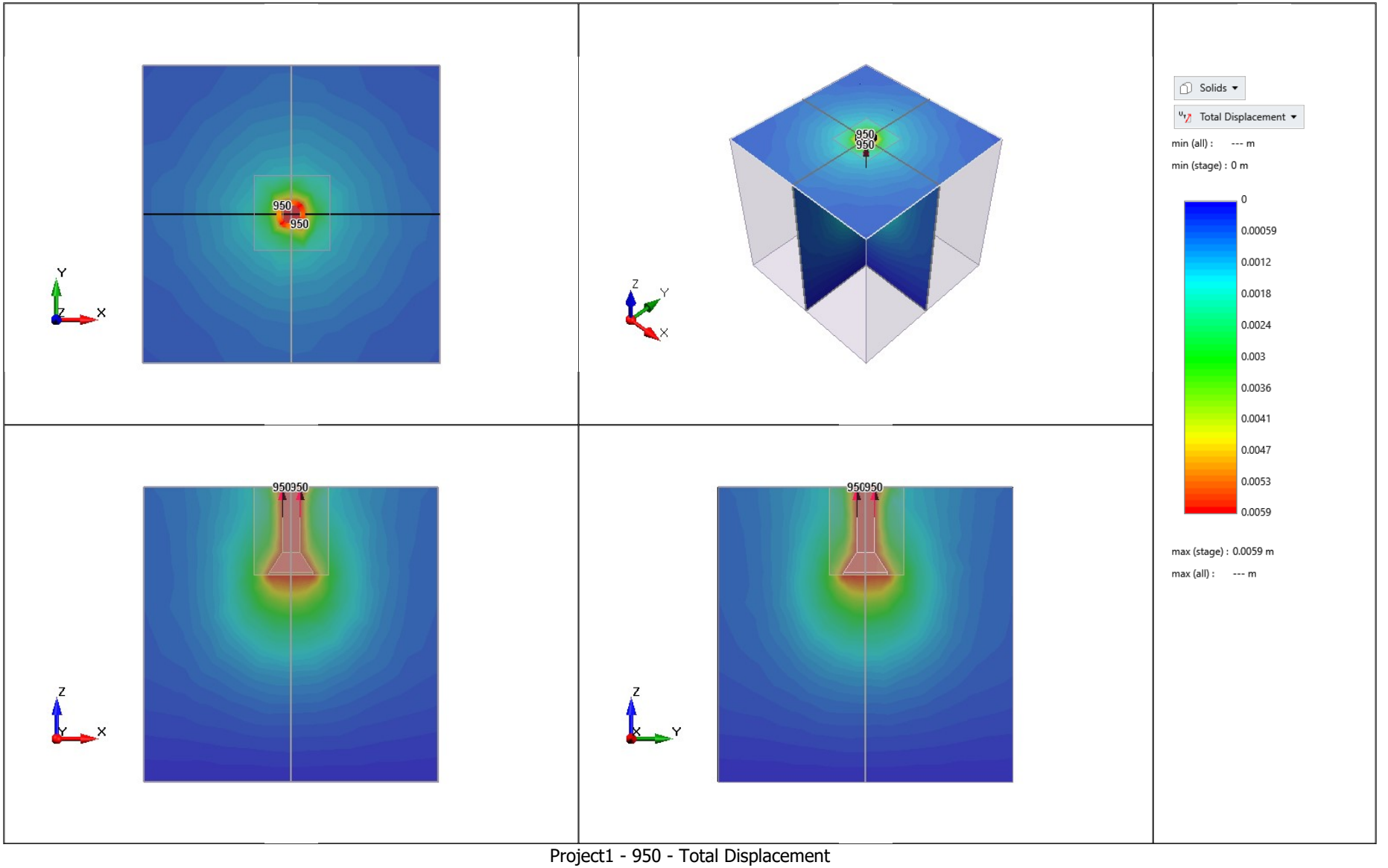
Project1 - 850 - Total Displacement

Project1 - 900 - Total Displacement



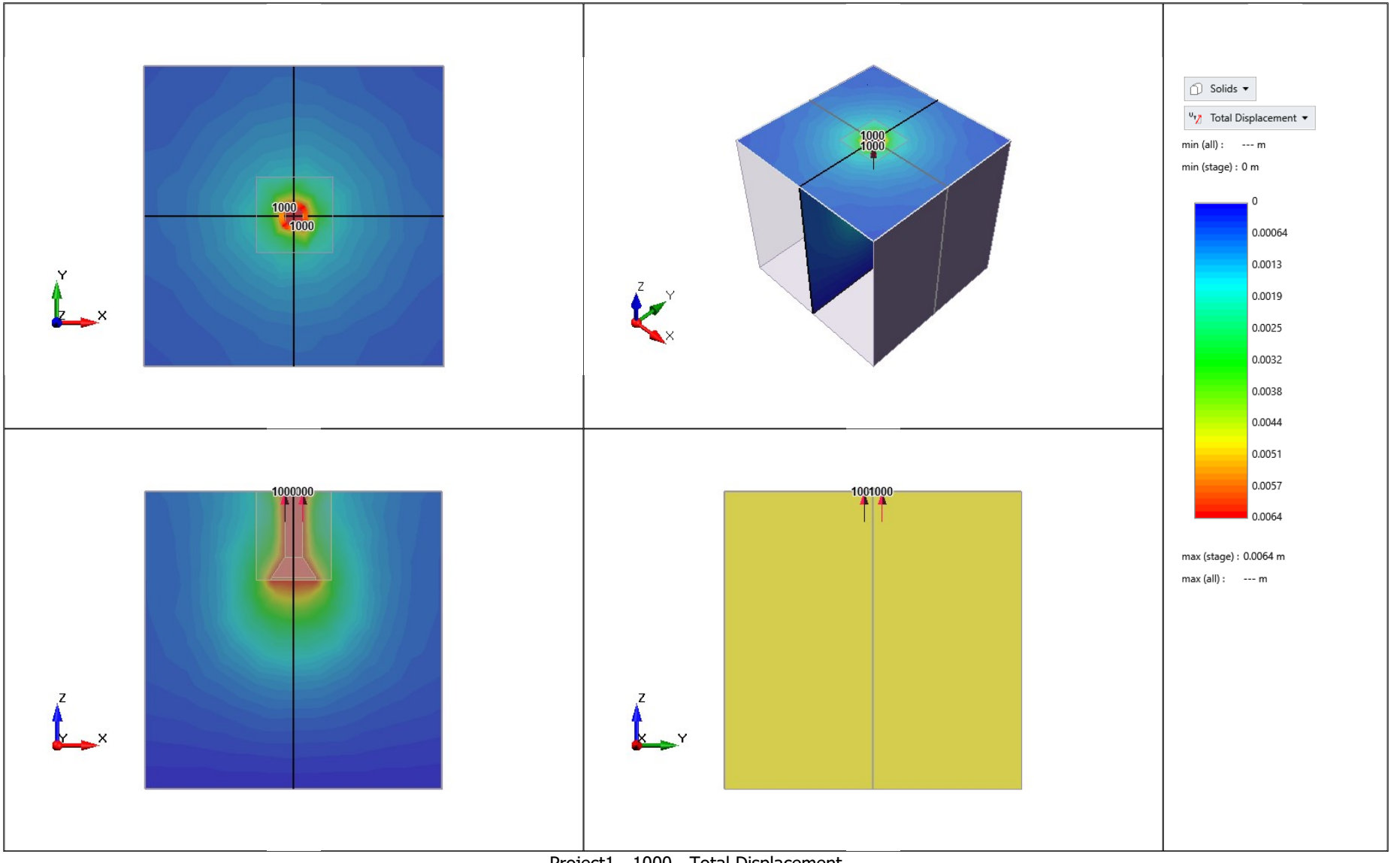
Project1 - 900 - Total Displacement

Project1 - 950 - Total Displacement

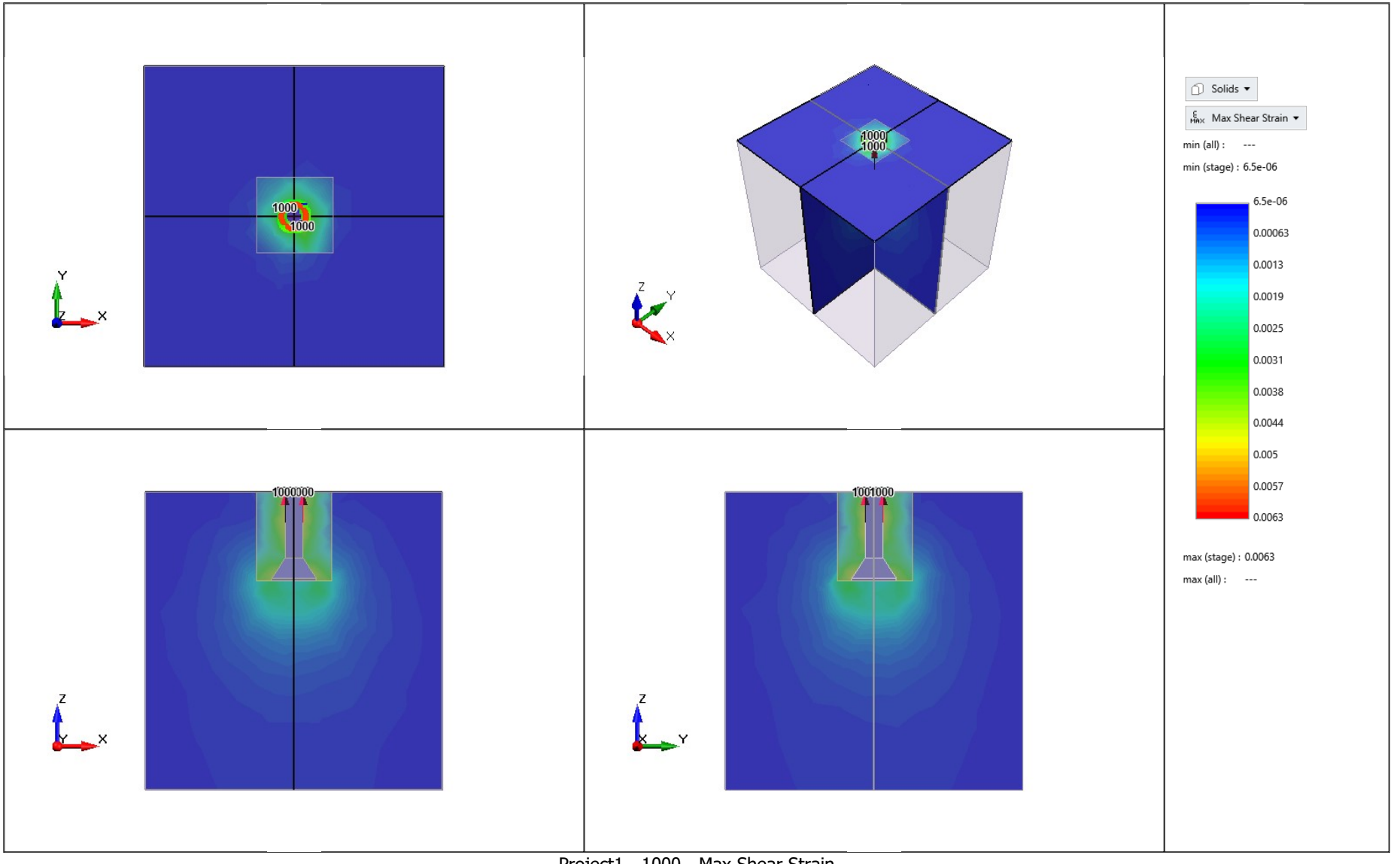


Project1 - 950 - Total Displacement

Project1 - 1000 - Total Displacement



Project1 - 1000 - Total Displacement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1000
1000
1000
1000000
1001000
Solids
Max Shear Strain
min (all) : ---
min (stage) : 6.5e-06
6.5e-06
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0.0013
0.0019
0.0025
0.0031
0.0038
0.0044
0.005
0.0057
0.0063
max (stage) : 0.0063
max (all) : ---

rocscience

P1Z5

RS3 Analysis Report

Created on 09/12/2021 14:26:06

Software Version: RS3 4.020

Project Settings

Units

Units:	Metric, stress as kPa
Time Units:	Days
Permeability Units:	Meters/second
Coordinate:	Cartesian x,y,z

Stage Information

Index	Name
1	Inicial
2	Sin carga
3	600
4	650
5	700
6	750
7	800
8	850
9	900
10	950
11	1000
12	1050
13	1100
14	1150

Stress Analysis

Maximum Number of Iterations:	500
Tolerance:	0.001
Load Steps:	Automatic
Convergence Type:	Absolute Force & Energy
Accelerate Initial Stiffness:	Yes
Minimum Alpha:	0.1
Maximum Alpha:	10
Tensile Failure Reduces Hoek-Brown Tensile Strength to Zero:	No
Tensile Failure Reduces Shear Strength to Residual:	Yes
Abort Calculation When Non-Convergence Detected:	No

Solver Options

Analysis Type:	Uncoupled
Solver Types:	Automatic

Groundwater

Method:	Phreatic Surfaces
Pore Fluid Unit Weight (kN/m3):	9.81

Shear Strength Reduction

Determine Shear Reduction Factor:	No

Material Properties

Clay	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	19.4
Failure Criterion:	Mohr Coulomb
Material Type:	Plastic
Peak Strength	
Peak Cohesion (kPa):	16
Peak Friction Angle (°):	23
Peak Tensile Strength (kPa):	0
Residual Strength	
Residual Cohesion (kPa):	12.8
Residual Friction Angle (°):	18.4
Residual Tensile Strength (kPa):	0
Dilation Angle (°):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.49
Young's Modulus (kPa):	164000
Use Residual Young's Modulus:	No
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3
Relleno tipo 2	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	16
Failure Criterion:	Mohr Coulomb
Material Type:	Plastic
Peak Strength	
Peak Cohesion (kPa):	1
Peak Friction Angle (°):	35
Peak Tensile Strength (kPa):	0
Residual Strength	
Residual Cohesion (kPa):	1
Residual Friction Angle (°):	28
Residual Tensile Strength (kPa):	0
Dilation Angle (°):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.2
Young's Modulus (kPa):	7000
Use Residual Young's Modulus:	No
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3

Concreto	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	24
Failure Criterion:	Mohr Coulomb
Material Type:	Elastic
Peak Strength	
Peak Cohesion (kPa):	10500
Peak Friction Angle (°):	0
Peak Tensile Strength (kPa):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.2
Young's Modulus (kPa):	21589300
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3

Results

Compute Time:	25940.5	
Result Element Type : Solid		
Stage : Inicial		
Data Type	**Min (kPa)**	**Max (kPa)**
Sigma 1 Effective	0.402	190.296
Sigma 2 Effective	0.402	190.296
Sigma 3 Effective	0.402	190.296
Mean Stress Effective	0.402	190.296
Von Mises Stress Effective	0	0.156
Sigma 1 Total	0.402	190.296
X Displacement	0	0
Y Displacement	0	0
Z Displacement	0	0
Total Displacement	0	0
SigmaXX Effective	0.402	190.296
SigmaYY Effective	0.402	190.296
SigmaZZ Effective	0.402	190.296
SigmaXY Effective	-0.059	0.044
SigmaXZ Effective	-0.033	0.055
SigmaYZ Effective	-0.063	0.043
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0
Stage : 600		
Data Type	**Min (kPa)**	**Max (kPa)**
Sigma 1 Effective	-63.92	214.445
Sigma 2 Effective	-93.009	204.349
Sigma 3 Effective	-600.915	201.763
Mean Stress Effective	-229.549	201.924
Von Mises Stress Effective	0.014	600.24
Sigma 1 Total	-63.92	214.445
X Displacement	-0.003	0.003
Y Displacement	-0.003	0.003
Z Displacement	-0.004	0.004
Total Displacement	0	0.004
SigmaXX Effective	-92.367	208.907
SigmaYY Effective	-94.176	213.741
SigmaZZ Effective	-600.906	202.245
SigmaXY Effective	-59.409	57.3
SigmaXZ Effective	-149.462	153.221
SigmaYZ Effective	-152.469	153.823
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0
Stage : 650		
Data Type	**Min (kPa)**	**Max (kPa)**
Sigma 1 Effective	-67.004	231.136
Sigma 2 Effective	-98.285	217.453
Sigma 3 Effective	-650.995	202.389
Mean Stress Effective	-249.475	202.558

Von Mises Stress Effective	0.013	650.376
Sigma 1 Total	-67.004	231.136
X Displacement	-0.005	0.005
Y Displacement	-0.005	0.005
Z Displacement	-0.004	0.006
Total Displacement	0	0.007
SigmaXX Effective	-98.1	226.04
SigmaYY Effective	-99.557	231.005
SigmaZZ Effective	-650.986	202.896
SigmaXY Effective	-63.438	62.304
SigmaXZ Effective	-163.371	168.453
SigmaYZ Effective	-167.41	168.324
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 700

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-70.772	248.546
Sigma 2 Effective	-104.493	233.685
Sigma 3 Effective	-702.05	202.895
Mean Stress Effective	-269.672	203.071
Von Mises Stress Effective	0.014	700.442
Sigma 1 Total	-70.772	248.546
X Displacement	-0.007	0.006
Y Displacement	-0.007	0.007
Z Displacement	-0.004	0.008
Total Displacement	0	0.01
SigmaXX Effective	-104.448	244.142
SigmaYY Effective	-105.613	248.16
SigmaZZ Effective	-701.035	203.423
SigmaXY Effective	-67.748	67.004
SigmaXZ Effective	-177.712	183.721
SigmaYZ Effective	-182.411	183.096
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 750

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-75.11	268.268
Sigma 2 Effective	-111.216	251.54
Sigma 3 Effective	-759.165	203.404
Mean Stress Effective	-290.402	203.587
Von Mises Stress Effective	0.014	750.52
Sigma 1 Total	-75.11	268.268
X Displacement	-0.009	0.008
Y Displacement	-0.01	0.01
Z Displacement	-0.004	0.01
Total Displacement	0	0.012
SigmaXX Effective	-111.17	264.302
SigmaYY Effective	-112.456	267.788
SigmaZZ Effective	-751.093	203.953
SigmaXY Effective	-72.754	72.351
SigmaXZ Effective	-192.36	198.791
SigmaYZ Effective	-197.857	197.974
Excess Pore Water Pressure	0	0

Total Pore Water Pressure	0	0

Stage : 800

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-79.232	293.619
Sigma 2 Effective	-118.137	269.883
Sigma 3 Effective	-813.388	203.893
Mean Stress Effective	-309.647	204.082
Von Mises Stress Effective	0.015	800.71
Sigma 1 Total	-79.232	293.619
X Displacement	-0.011	0.01
Y Displacement	-0.012	0.012
Z Displacement	-0.006	0.013
Total Displacement	0	0.016
SigmaXX Effective	-118.1	287.506
SigmaYY Effective	-118.805	292.508
SigmaZZ Effective	-801.149	204.462
SigmaXY Effective	-79.249	78.306
SigmaXZ Effective	-207.736	214.095
SigmaYZ Effective	-212.736	213.217
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 850

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-84.107	315.003
Sigma 2 Effective	-125.65	291.573
Sigma 3 Effective	-872.38	204.415
Mean Stress Effective	-331.242	204.612
Von Mises Stress Effective	0.016	855.422
Sigma 1 Total	-84.107	315.003
X Displacement	-0.014	0.012
Y Displacement	-0.014	0.015
Z Displacement	-0.007	0.015
Total Displacement	0	0.019
SigmaXX Effective	-125.622	308.173
SigmaYY Effective	-126.848	314.988
SigmaZZ Effective	-851.155	205.005
SigmaXY Effective	-84.577	86.017
SigmaXZ Effective	-222.61	230.665
SigmaYZ Effective	-228.622	228.992
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 900

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-87.229	326.302
Sigma 2 Effective	-131.252	304.42
Sigma 3 Effective	-921.453	204.937
Mean Stress Effective	-348.25	205.141
Von Mises Stress Effective	0.016	910.236
Sigma 1 Total	-87.229	326.302
X Displacement	-0.016	0.014
Y Displacement	-0.017	0.018
Z Displacement	-0.008	0.018
Total Displacement	0	0.022

SigmaXX Effective	-131.202	322.908
SigmaYY Effective	-131.737	324.976
SigmaZZ Effective	-901.209	205.549
SigmaXY Effective	-89.402	89.021
SigmaXZ Effective	-236.475	243.697
SigmaYZ Effective	-241.905	242.626
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 950

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-90.946	344.569
Sigma 2 Effective	-137.19	322.324
Sigma 3 Effective	-976.475	205.431
Mean Stress Effective	-367.728	213.324
Von Mises Stress Effective	0.017	967.386
Sigma 1 Total	-90.946	344.569
X Displacement	-0.019	0.017
Y Displacement	-0.02	0.021
Z Displacement	-0.01	0.021
Total Displacement	0	0.026
SigmaXX Effective	-137.143	341.677
SigmaYY Effective	-137.916	343.457
SigmaZZ Effective	-951.276	206.063
SigmaXY Effective	-95.089	94.787
SigmaXZ Effective	-250.501	258.698
SigmaYZ Effective	-256.963	257.149
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 1000

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-94.498	363.441
Sigma 2 Effective	-143.796	336.31
Sigma 3 Effective	-1027.993	205.924
Mean Stress Effective	-385.887	224.374
Von Mises Stress Effective	0.017	1023.961
Sigma 1 Total	-94.498	363.441
X Displacement	-0.022	0.019
Y Displacement	-0.023	0.024
Z Displacement	-0.012	0.024
Total Displacement	0	0.03
SigmaXX Effective	-143.749	358.873
SigmaYY Effective	-143.749	362.024
SigmaZZ Effective	-1001.33	206.576
SigmaXY Effective	-100.847	100.817
SigmaXZ Effective	-265.397	273.153
SigmaYZ Effective	-270.889	272.051
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 1050

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-98.167	384.614
Sigma 2 Effective	-149.474	355.003
Sigma 3 Effective	-1087.355	206.425

Mean Stress Effective	-407.264	236.291
Von Mises Stress Effective	0.018	1077.706
Sigma 1 Total	-98.167	384.614
X Displacement	-0.024	0.022
Y Displacement	-0.026	0.027
Z Displacement	-0.013	0.027
Total Displacement	0	0.034
SigmaXX Effective	-149.427	376.297
SigmaYY Effective	-150.29	383.538
SigmaZZ Effective	-1051.392	207.098
SigmaXY Effective	-106.191	106.143
SigmaXZ Effective	-278.754	289.023
SigmaYZ Effective	-286.833	285.511
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 1100

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-100.93	402.793
Sigma 2 Effective	-154.806	369.126
Sigma 3 Effective	-1136.415	206.996
Mean Stress Effective	-423.881	246.81
Von Mises Stress Effective	0.017	1133.86
Sigma 1 Total	-100.93	402.793
X Displacement	-0.028	0.025
Y Displacement	-0.029	0.031
Z Displacement	-0.015	0.031
Total Displacement	0	0.039
SigmaXX Effective	-154.749	397.266
SigmaYY Effective	-154.979	401.274
SigmaZZ Effective	-1101.446	207.692
SigmaXY Effective	-111.922	110.862
SigmaXZ Effective	-292.816	303.03
SigmaYZ Effective	-300.294	299.7
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 1150

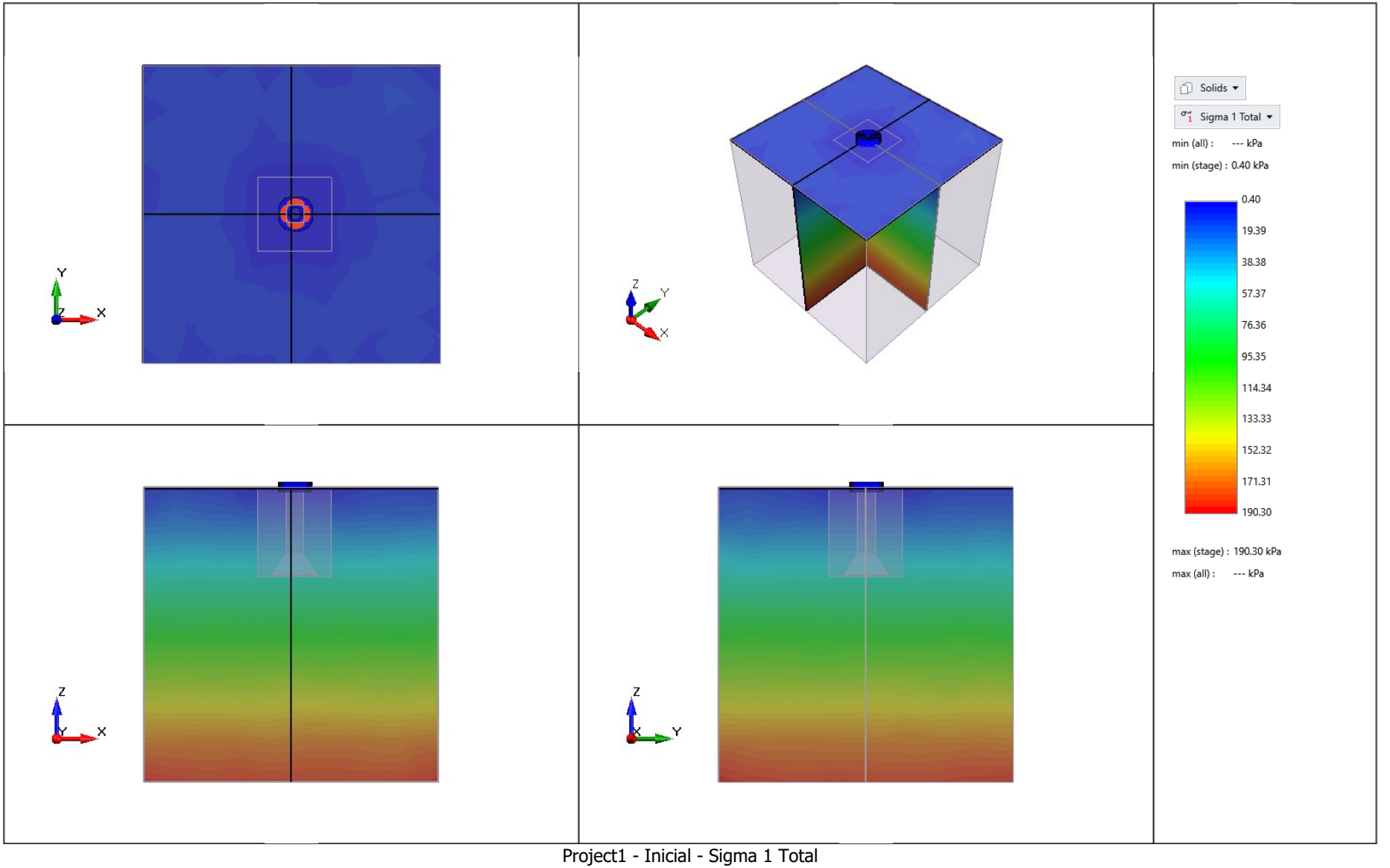
Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-104.577	421.766
Sigma 2 Effective	-160.702	386.657
Sigma 3 Effective	-1195.311	207.515
Mean Stress Effective	-445.004	257.837
Von Mises Stress Effective	0.015	1188.788
Sigma 1 Total	-104.577	421.766
X Displacement	-0.031	0.028
Y Displacement	-0.033	0.035
Z Displacement	-0.017	0.035
Total Displacement	0	0.044
Volumetric Strain	-0.171	0.027
Max Shear Strain	0	0.315
SigmaXX Effective	-160.646	417.117
SigmaYY Effective	-161.348	420.081
SigmaZZ Effective	-1151.464	208.232
SigmaXY Effective	-117.636	116.907

SigmaXZ Effective	-306.465	318.853
SigmaYZ Effective	-315.905	313.189
Major Principal Strain	-0.002	0.274
Mean Principal Strain	-0.065	0.042
Minor Principal Strain	-0.271	0.001
StrainXX	-0.093	0.067
StrainYY	-0.085	0.065
StrainZZ	-0.191	0.105
StrainXY	-0.064	0.058
StrainXZ	-0.215	0.272
StrainYZ	-0.227	0.233
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : Sin carga

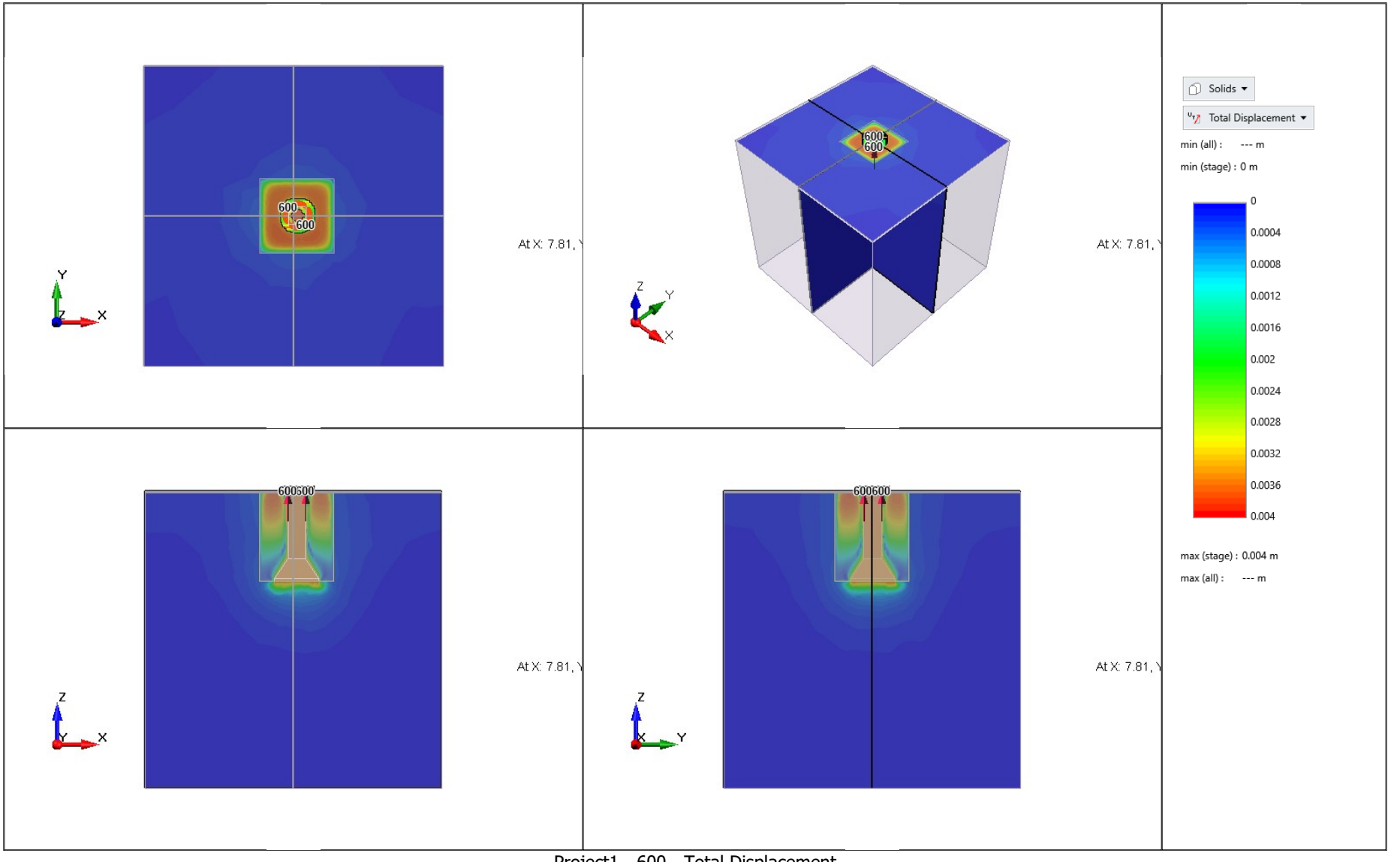
Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	0.05	402.091
Sigma 2 Effective	-17.212	192.56
Sigma 3 Effective	-22.749	192.56
Mean Stress Effective	-1.964	195.046
Von Mises Stress Effective	0.005	310.775
Sigma 1 Total	0.05	402.091
X Displacement	-0.001	0.001
Y Displacement	-0.001	0.001
Z Displacement	-0.004	0
Total Displacement	0	0.004
SigmaXX Effective	-21.572	192.56
SigmaYY Effective	-21.925	192.56
SigmaZZ Effective	-0.547	272.306
SigmaXY Effective	-87.652	68.014
SigmaXZ Effective	-103.967	114.659
SigmaYZ Effective	-69.485	99.708
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Project1 - Inicial - Sigma 1 Total



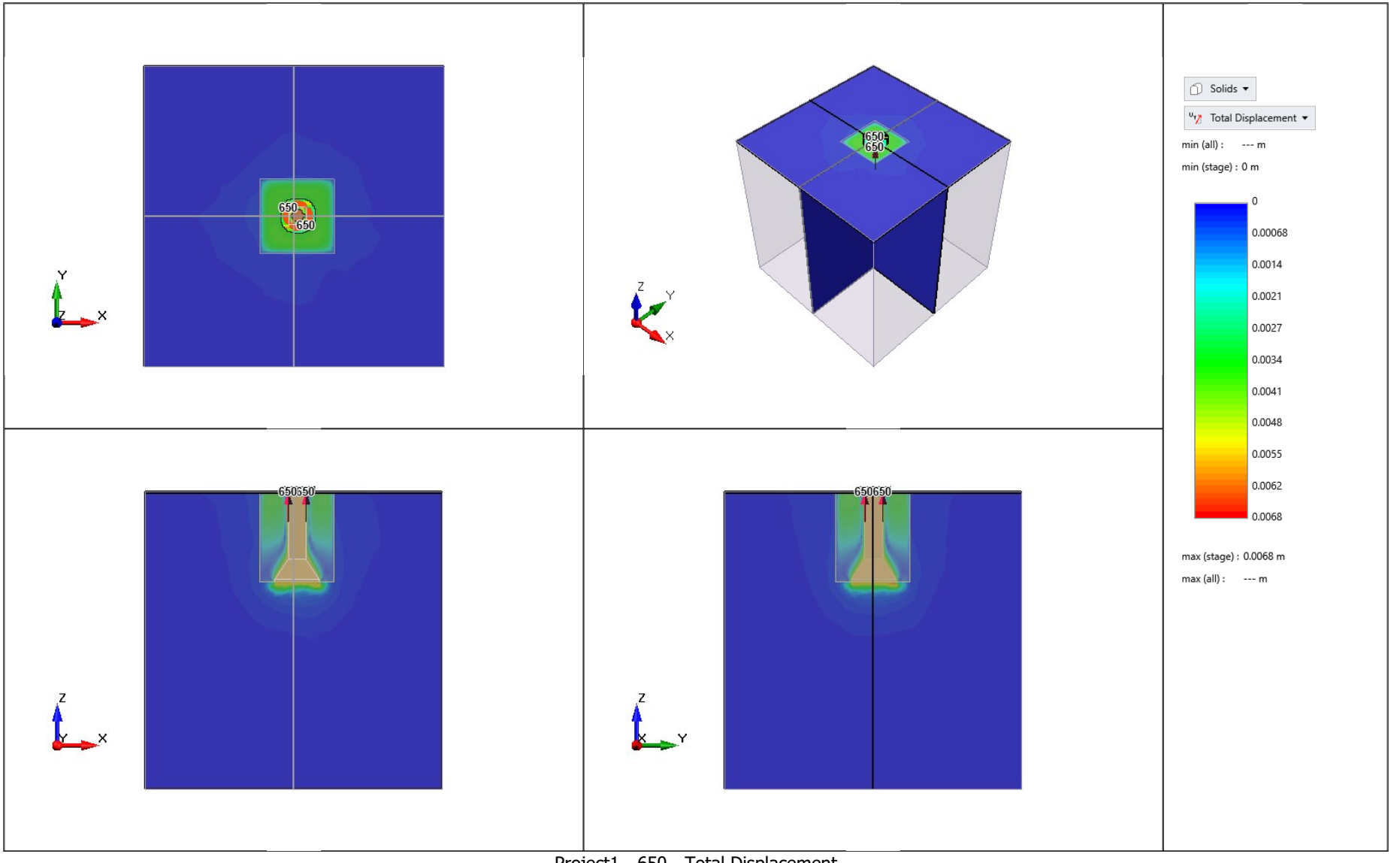
Project1 - Inicial - Sigma 1 Total

Project1 - 600 - Total Displacement



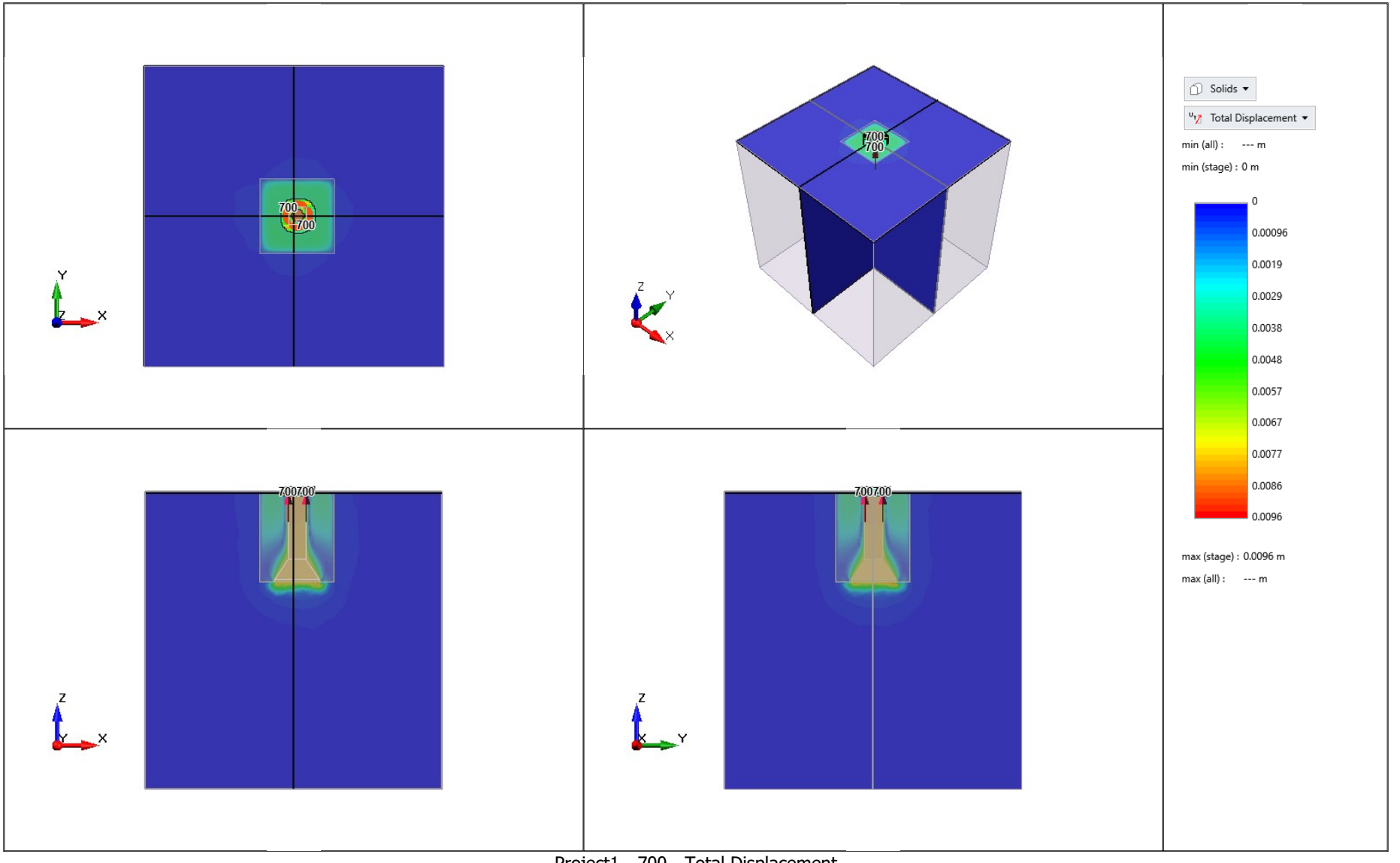
Project1 - 600 - Total Displacement

Project1 - 650 - Total Displacement

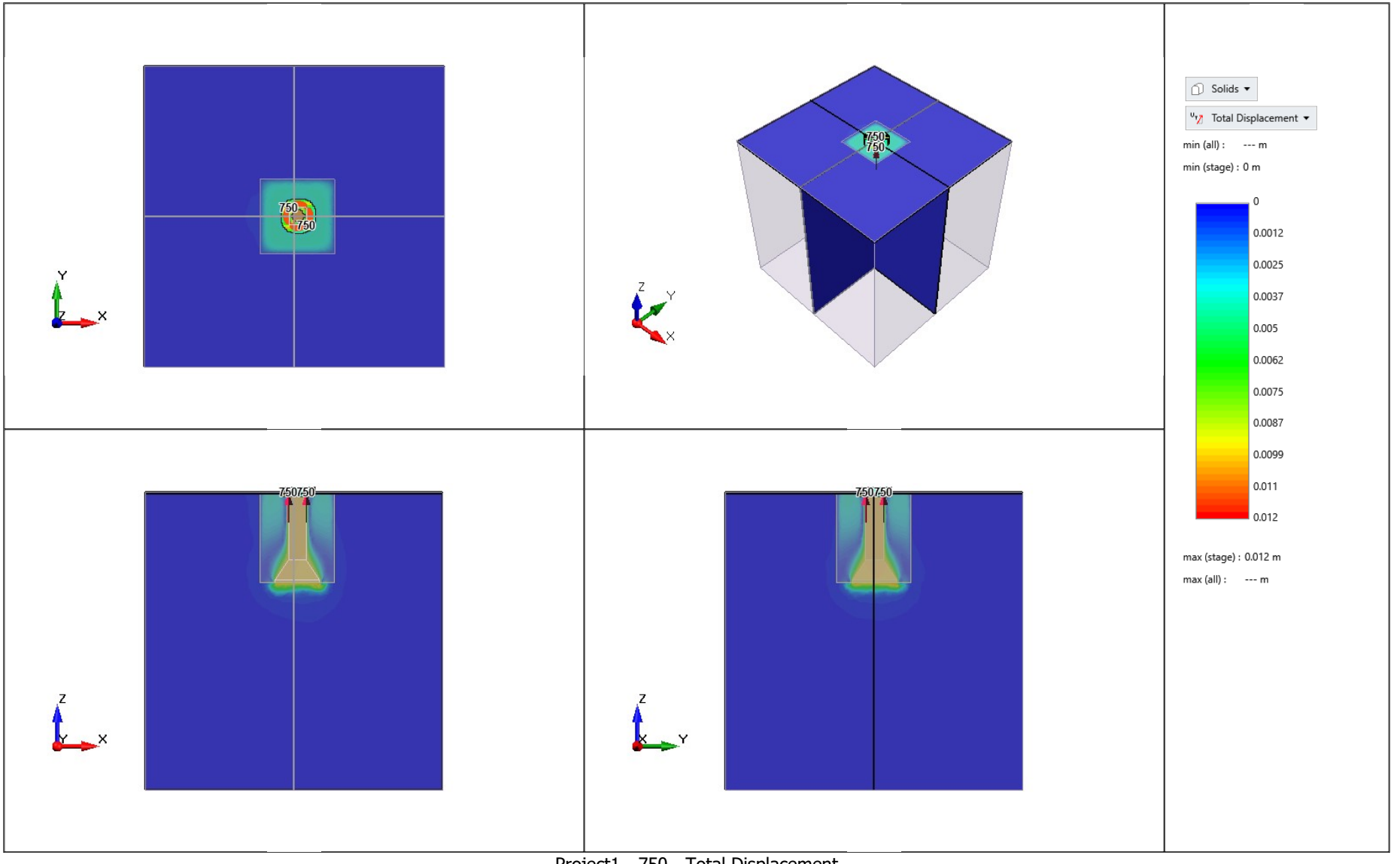


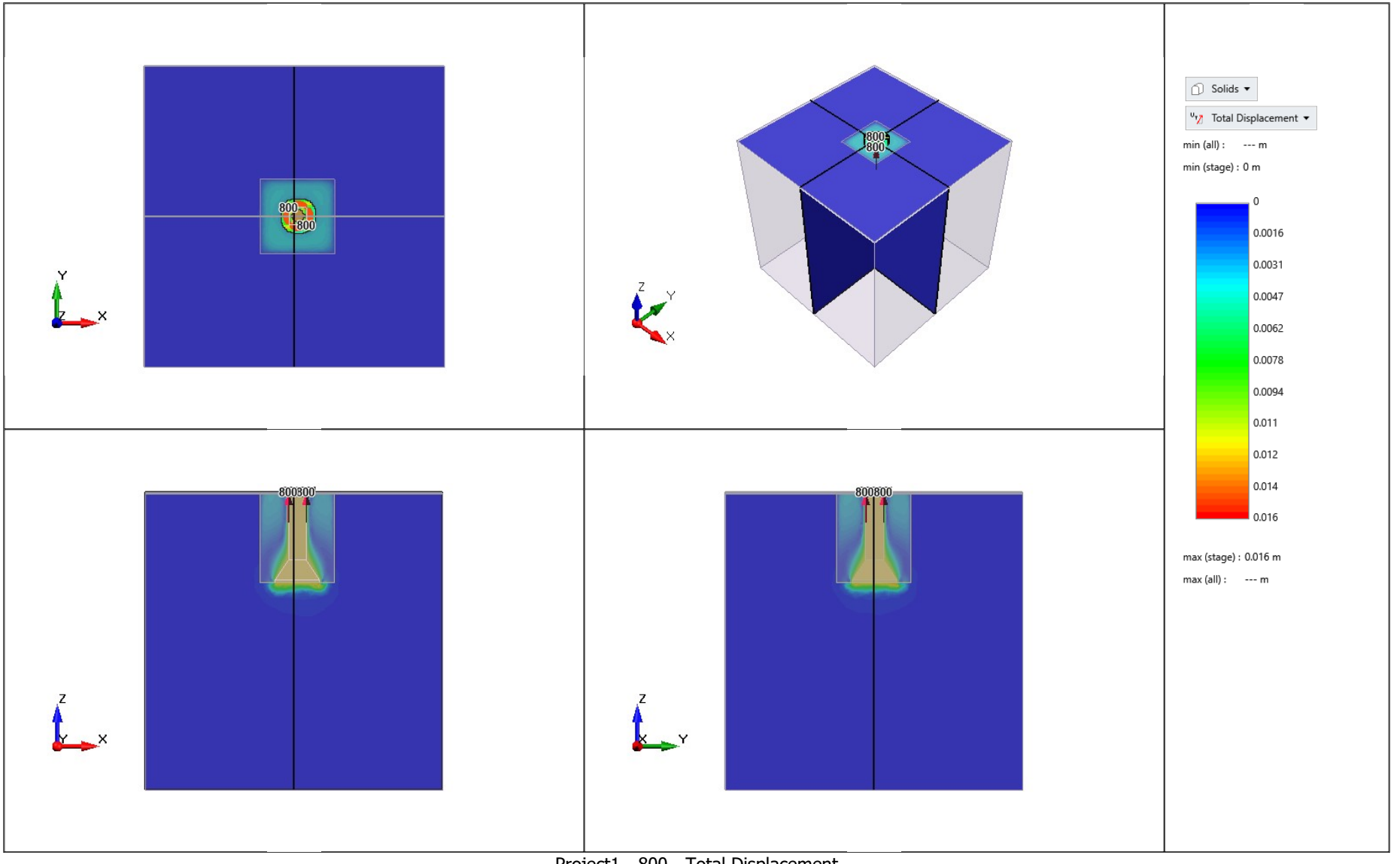
Project1 - 650 - Total Displacement

Project1 - 700 - Total Displacement

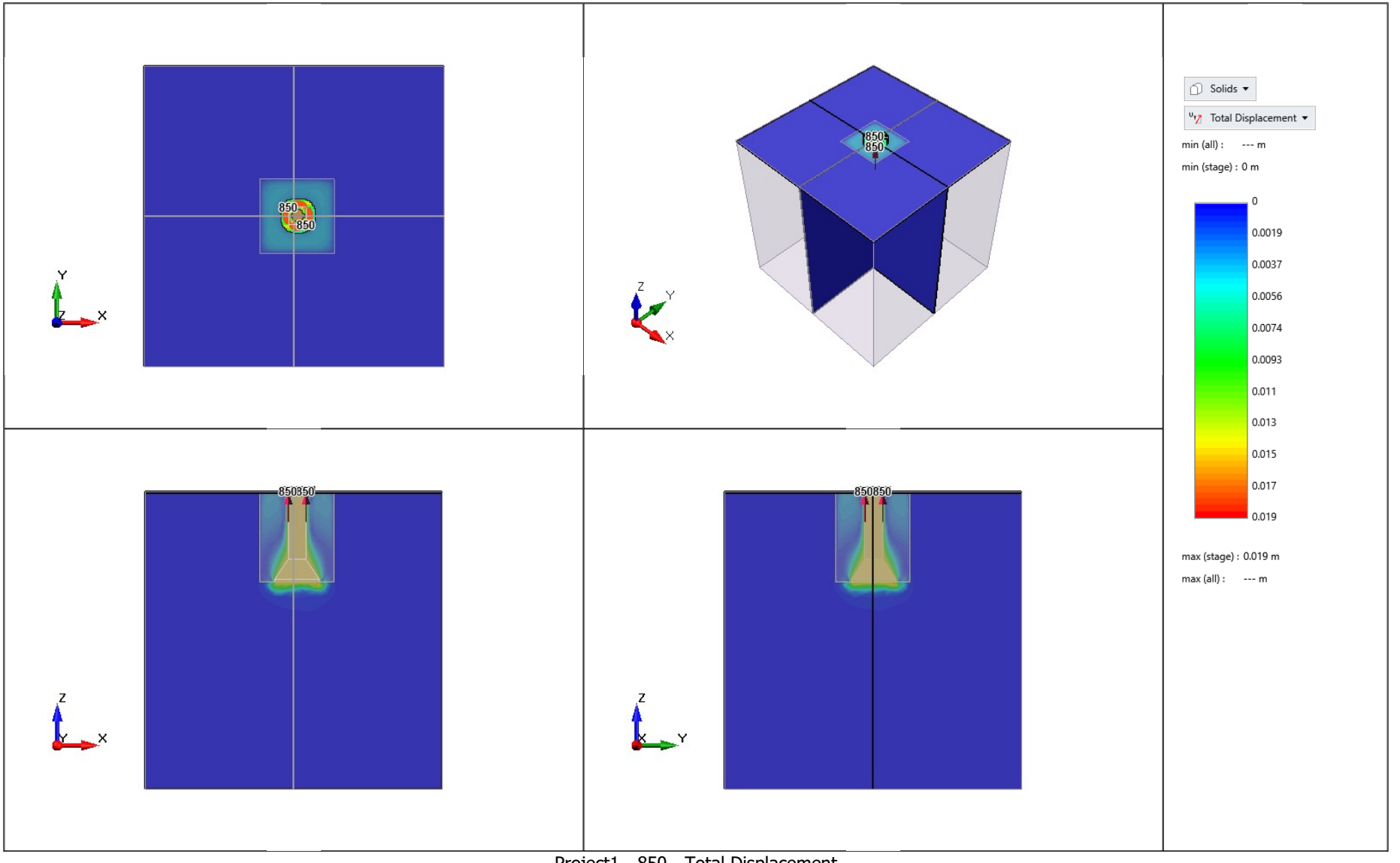


Project1 - 700 - Total Displacement


750
750
750
750
750750
750750
Solids
Total Displacement
min (all) : --- m
min (stage) : 0 m
0
0.0012
0.0025
0.0037
0.005
0.0062
0.0075
0.0087
0.0099
0.011
0.012
max (stage) : 0.012 m
max (all) : --- m

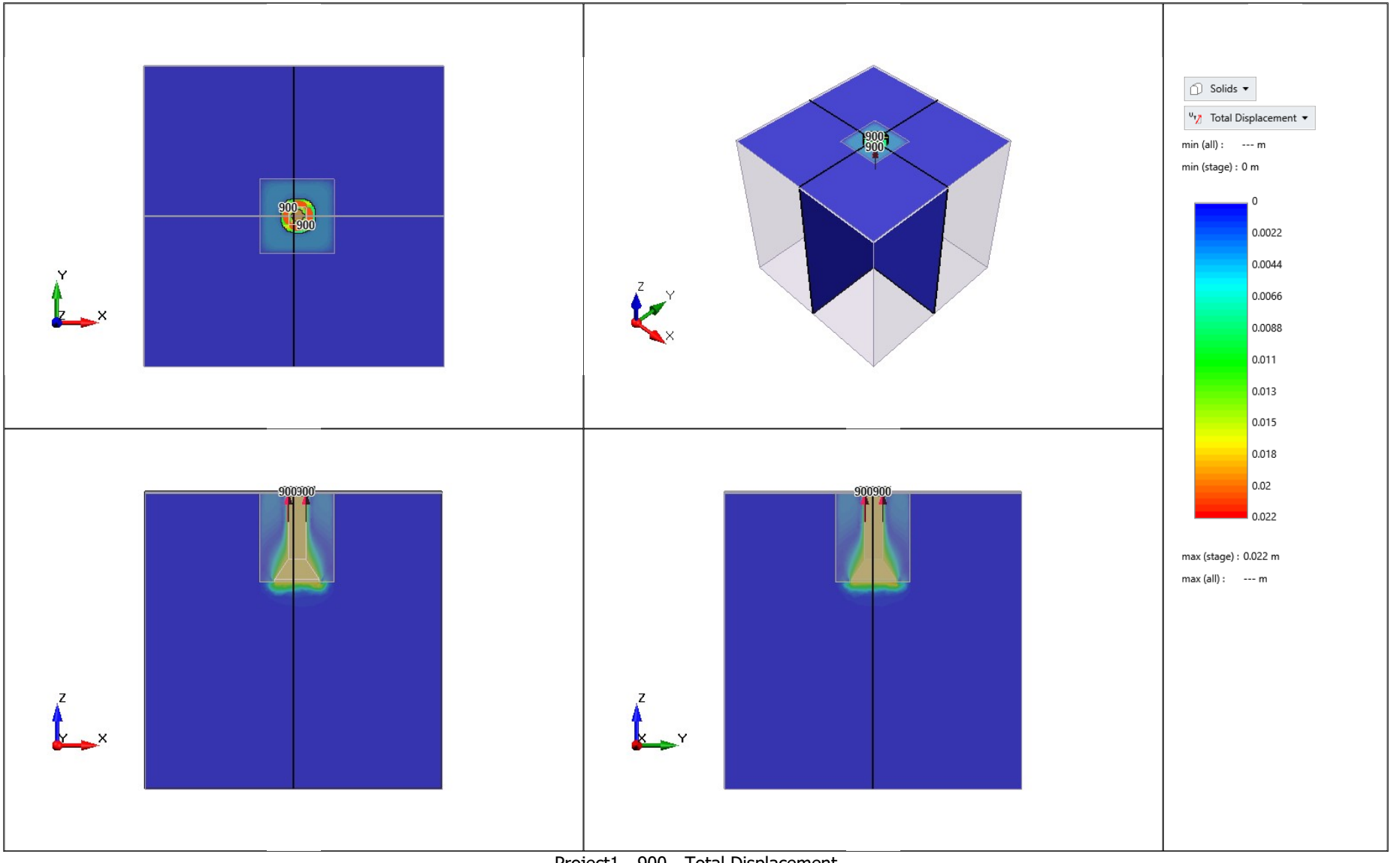

800
800
800
800
800300
800800
Y
X
Z
Solids
Total Displacement
min (all) : --- m
min (stage) : 0 m
0
0.0016
0.0031
0.0047
0.0062
0.0078
0.0094
0.011
0.012
0.014
0.016
max (stage) : 0.016 m
max (all) : --- m

Project1 - 850 - Total Displacement



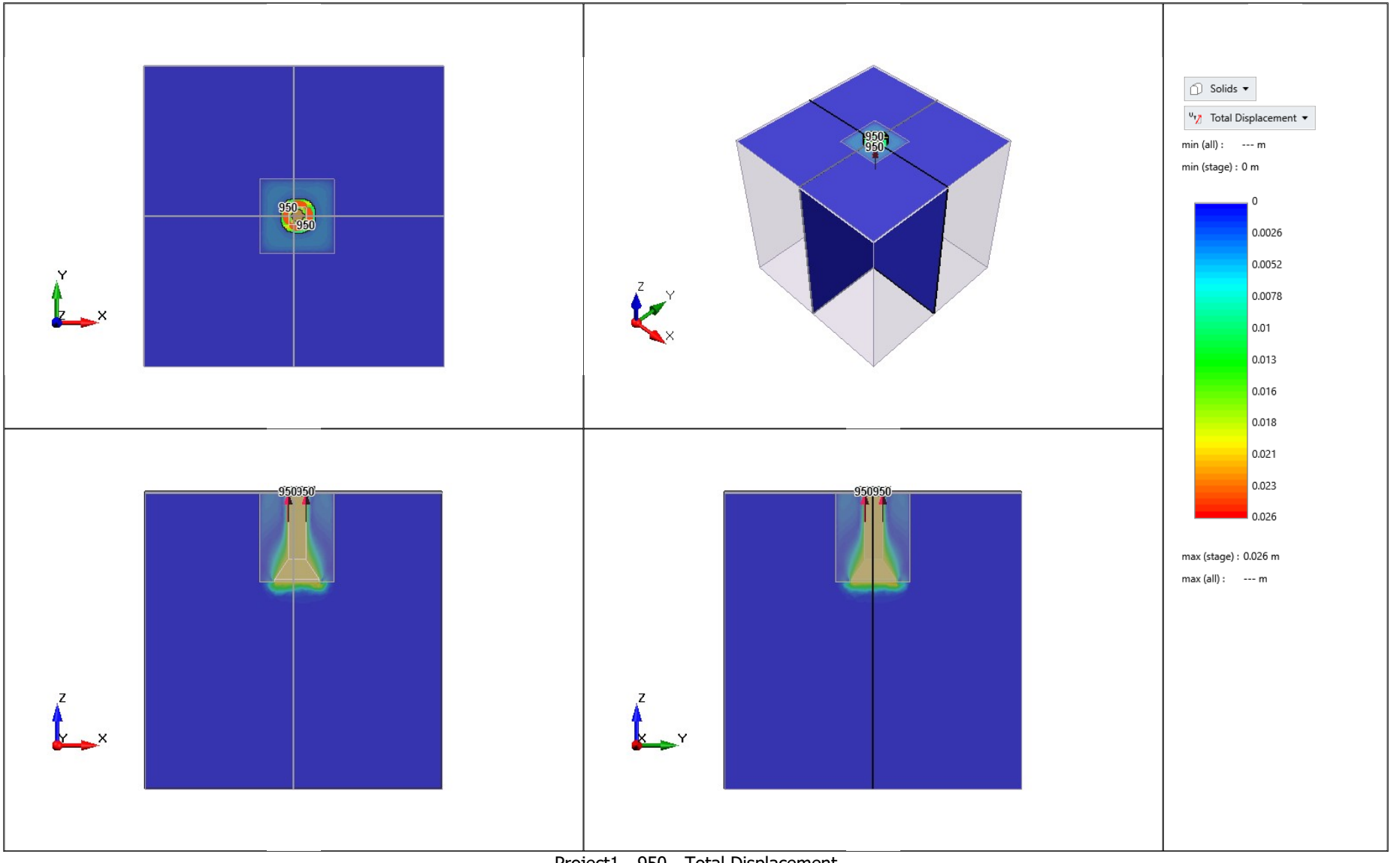
Project1 - 850 - Total Displacement

Project1 - 900 - Total Displacement



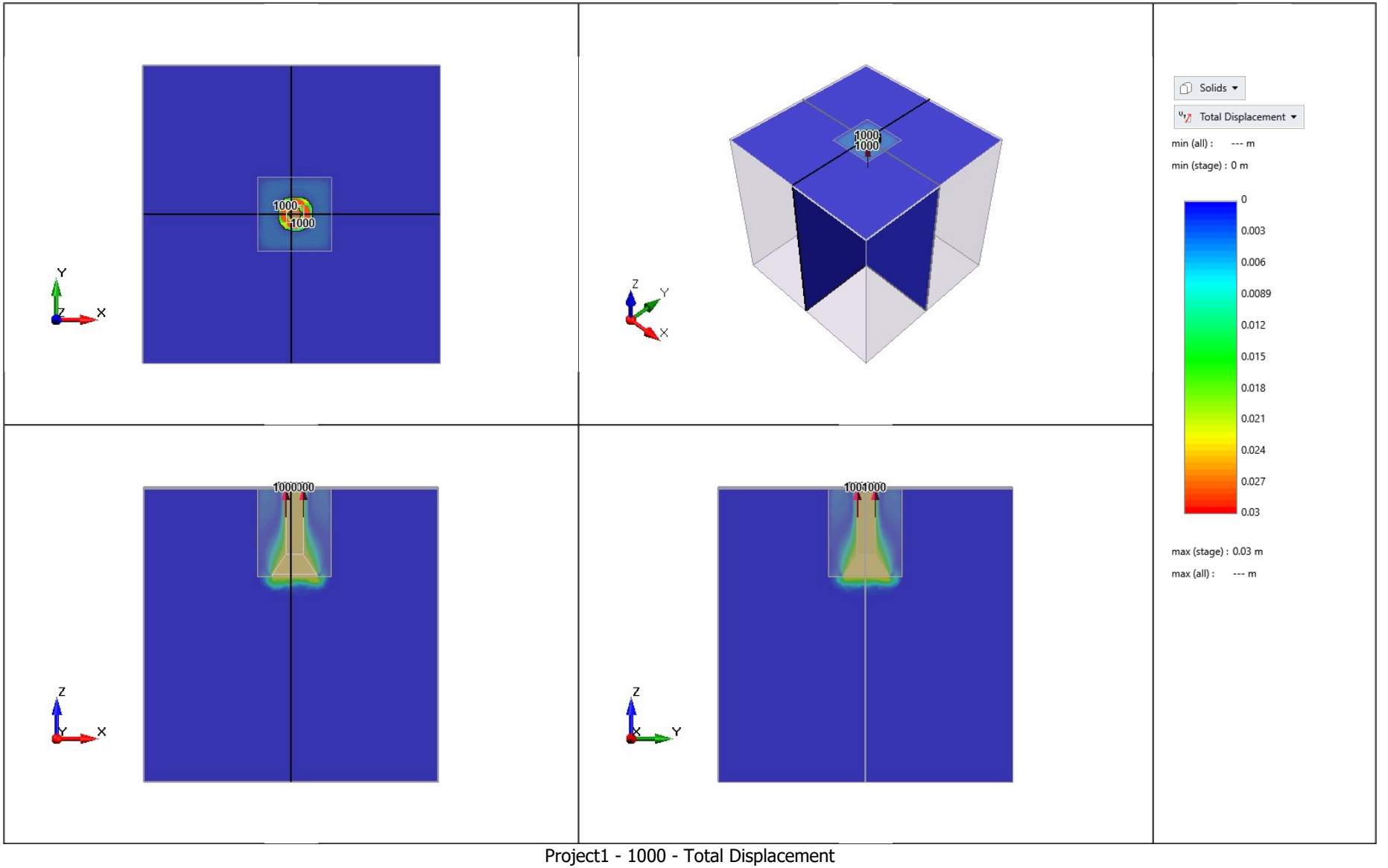
Project1 - 900 - Total Displacement

Project1 - 950 - Total Displacement



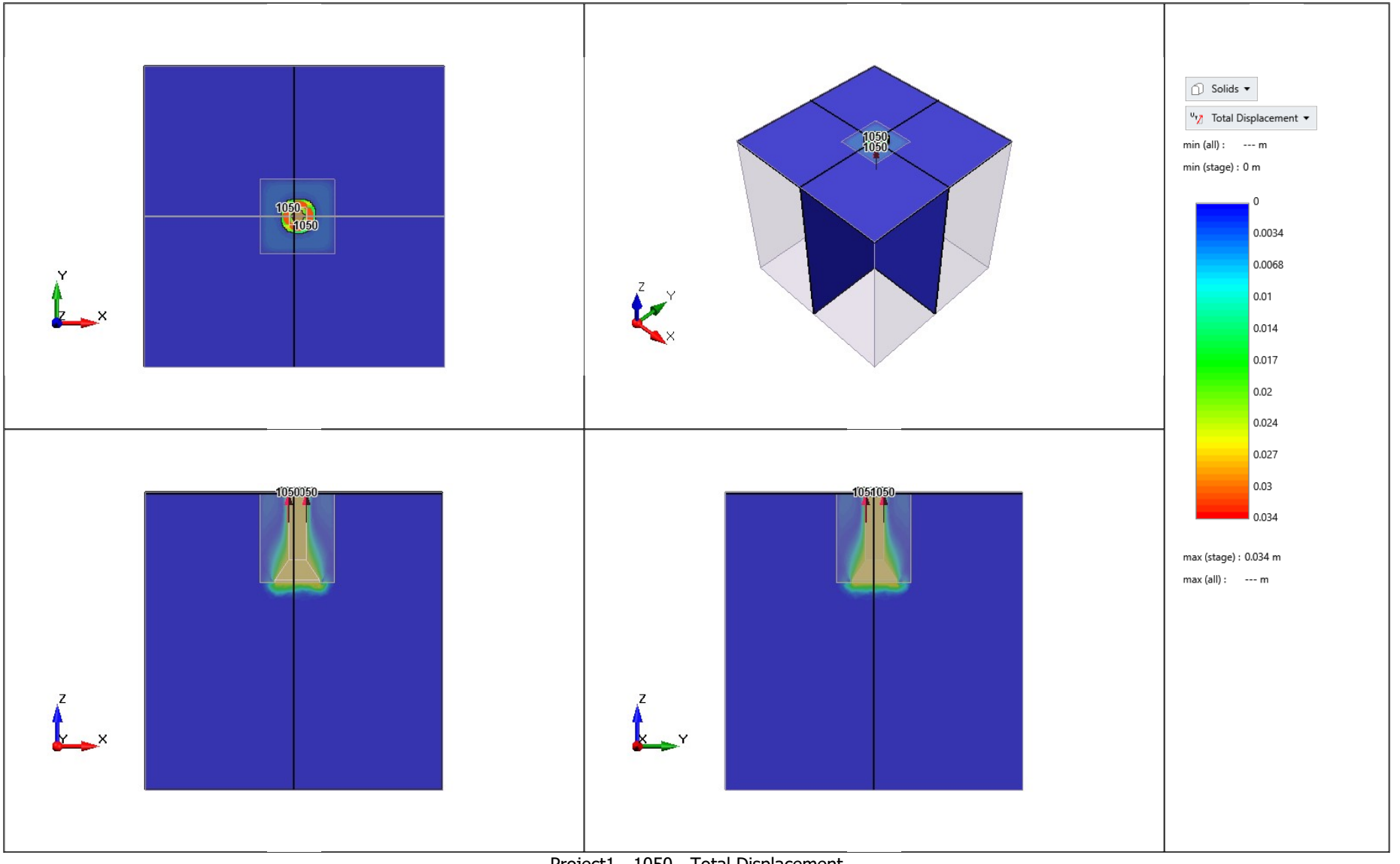
Project1 - 950 - Total Displacement

Project1 - 1000 - Total Displacement

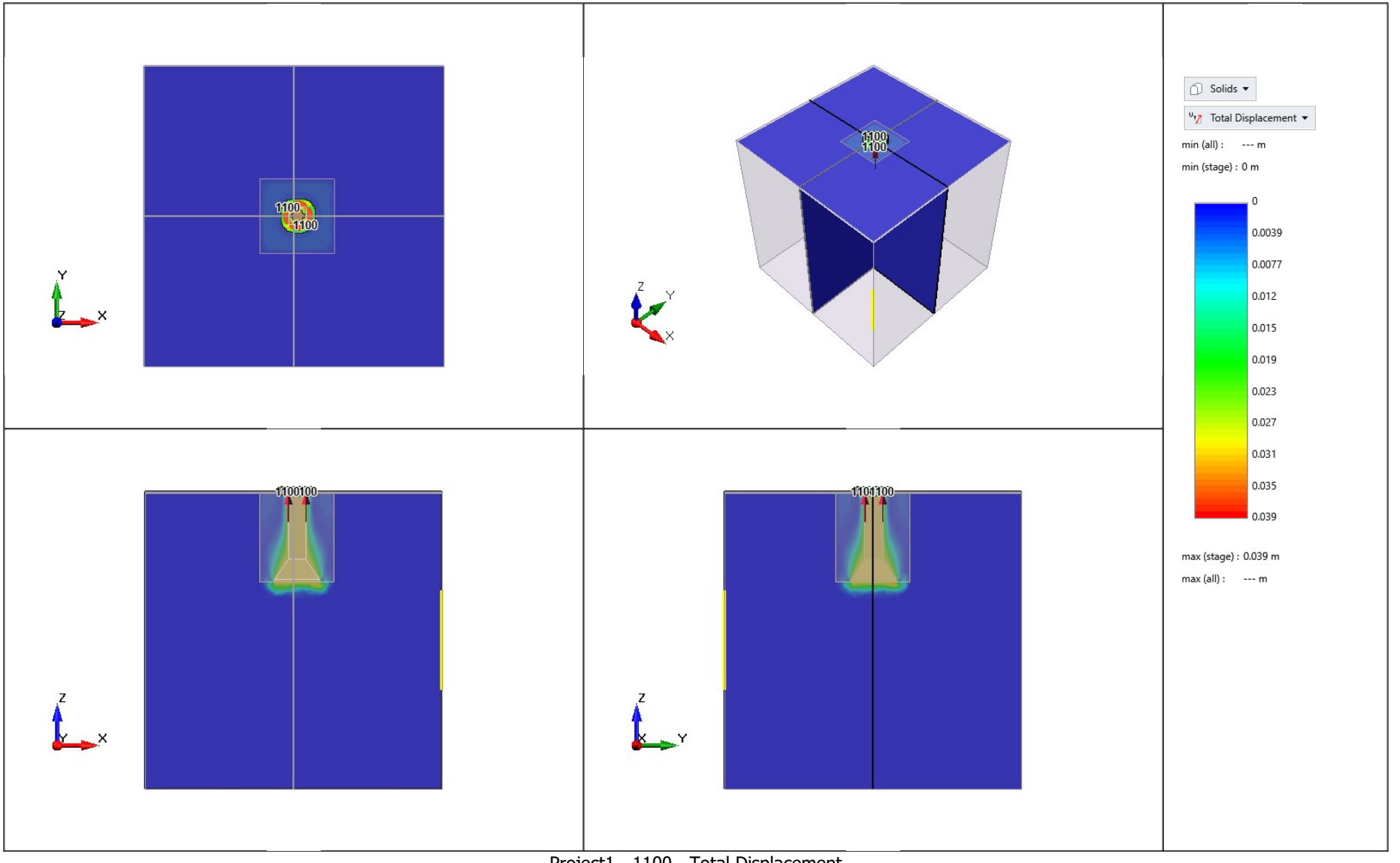


Project1 - 1000 - Total Displacement

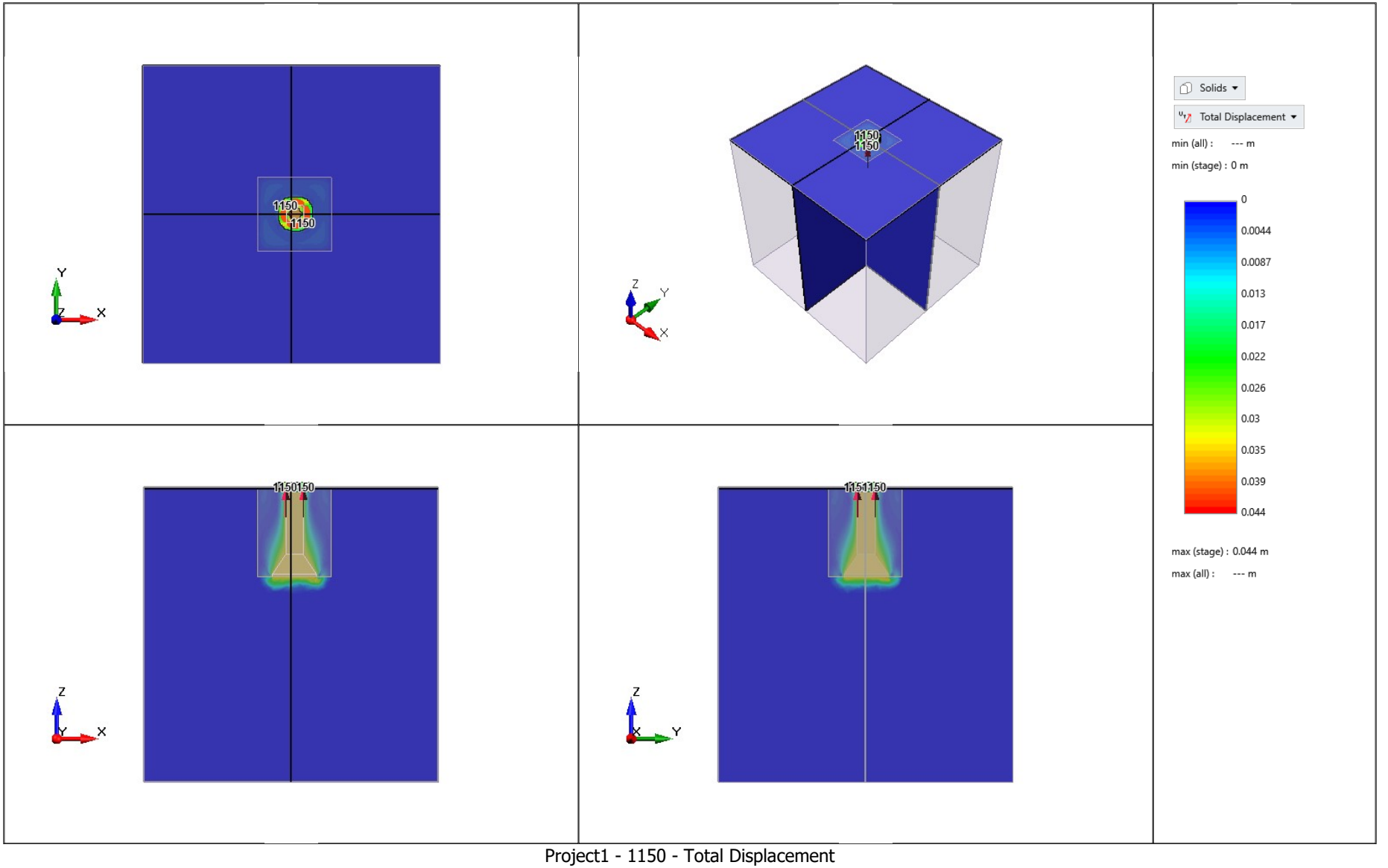
Project1 - 1050 - Total Displacement



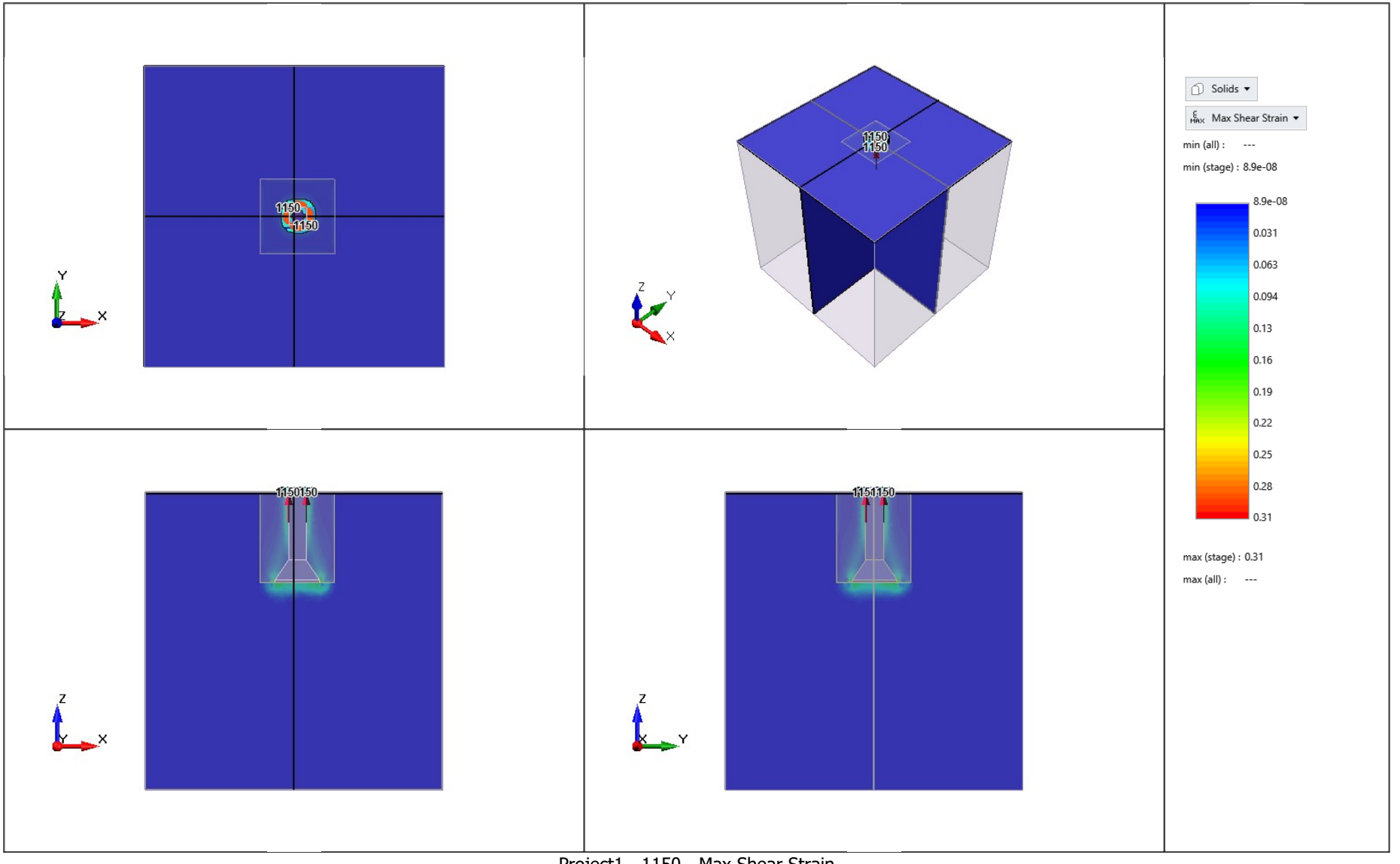
Project1 - 1050 - Total Displacement



Project1 - 1100 - Total Displacement



Project1 - 1150 - Total Displacement



Project1 - 1150 - Max Shear Strain

rocscience

P1Z5FI27

RS3 Analysis Report

Created on 09/12/2021 14:26:06

Software Version: RS3 4.020

Project Settings

Units

Units:	Metric, stress as kPa
Time Units:	Days
Permeability Units:	Meters/second
Coordinate:	Cartesian x,y,z

Stage Information

Index	Name
1	Inicial
2	Sin carga
3	600
4	650
5	700
6	750
7	800
8	850
9	900
10	950
11	1000
12	1050
13	1100
14	1150

Stress Analysis

Maximum Number of Iterations:	500
Tolerance:	0.001
Load Steps:	Automatic
Convergence Type:	Absolute Force & Energy
Accelerate Initial Stiffness:	Yes
Minimum Alpha:	0.1
Maximum Alpha:	10
Tensile Failure Reduces Hoek-Brown Tensile Strength to Zero:	No
Tensile Failure Reduces Shear Strength to Residual:	Yes
Abort Calculation When Non-Convergence Detected:	No

Solver Options

Analysis Type:	Uncoupled
Solver Types:	Automatic

Groundwater

Method:	Phreatic Surfaces
Pore Fluid Unit Weight (kN/m3):	9.81

Shear Strength Reduction

Determine Shear Reduction Factor:	No

Material Properties

Clay	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	19.4
Failure Criterion:	Mohr Coulomb
Material Type:	Plastic
Peak Strength	
Peak Cohesion (kPa):	16
Peak Friction Angle (°):	23
Peak Tensile Strength (kPa):	0
Residual Strength	
Residual Cohesion (kPa):	12.8
Residual Friction Angle (°):	18.4
Residual Tensile Strength (kPa):	0
Dilation Angle (°):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.35
Young's Modulus (kPa):	15000
Use Residual Young's Modulus:	No
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3
Relleno tipo 2	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	16
Failure Criterion:	Mohr Coulomb
Material Type:	Plastic
Peak Strength	
Peak Cohesion (kPa):	1
Peak Friction Angle (°):	40
Peak Tensile Strength (kPa):	0
Residual Strength	
Residual Cohesion (kPa):	1
Residual Friction Angle (°):	32
Residual Tensile Strength (kPa):	0
Dilation Angle (°):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.2
Young's Modulus (kPa):	7000
Use Residual Young's Modulus:	No
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3

Concreto	
Colour:	
Initial Element Loading:	Field Stress & Body Force
Unit Weight (kN/m3):	24
Failure Criterion:	Mohr Coulomb
Material Type:	Elastic
Peak Strength	
Peak Cohesion (kPa):	10500
Peak Friction Angle (°):	0
Peak Tensile Strength (kPa):	0
Elastic Type:	Linear Isotropic
Use Unloading Condition:	No
Poisson's Ratio:	0.2
Young's Modulus (kPa):	21589300
Material Behavior	
Material Behavior Type:	Drained
Porosity Type:	Porosity
Porosity:	0.3

Results

Compute Time:	1985.91

Result Element Type : Solid

Stage : Inicial

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	0.8	190.349
Sigma 2 Effective	0.8	190.349
Sigma 3 Effective	0.8	190.349
Mean Stress Effective	0.8	190.349
Von Mises Stress Effective	0	0
Sigma 1 Total	0.8	190.349
X Displacement	0	0
Y Displacement	0	0
Z Displacement	0	0
Total Displacement	0	0
SigmaXX Effective	0.8	190.349
SigmaYY Effective	0.8	190.349
SigmaZZ Effective	0.8	190.349
SigmaXY Effective	0	0
SigmaXZ Effective	0	0
SigmaYZ Effective	0	0
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 600

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-45.395	455.068
Sigma 2 Effective	-63.687	216.101
Sigma 3 Effective	-597.724	188.488
Mean Stress Effective	-200.908	189.061
Von Mises Stress Effective	0.085	596.519
Sigma 1 Total	-45.395	455.068
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	0	0.005
Total Displacement	0	0.005
SigmaXX Effective	-62.084	267.532
SigmaYY Effective	-64.147	238.966
SigmaZZ Effective	-597.703	188.488
SigmaXY Effective	-74.312	115.74
SigmaXZ Effective	-149.327	159.966
SigmaYZ Effective	-148.602	167.643
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 650

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-51.767	457.183
Sigma 2 Effective	-72.351	226.278
Sigma 3 Effective	-647.86	188.369
Mean Stress Effective	-217.647	188.978

Von Mises Stress Effective	0.072	646.481
Sigma 1 Total	-51.767	457.183
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	0	0.005
Total Displacement	0	0.005
SigmaXX Effective	-70.249	256.752
SigmaYY Effective	-72.4	249.196
SigmaZZ Effective	-647.841	188.369
SigmaXY Effective	-76.209	114.053
SigmaXZ Effective	-162.714	170.307
SigmaYZ Effective	-162.827	178.408
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 700

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-56.66	452.923
Sigma 2 Effective	-78.493	232.286
Sigma 3 Effective	-697.996	188.249
Mean Stress Effective	-234.369	188.895
Von Mises Stress Effective	0.058	696.519
Sigma 1 Total	-56.66	452.923
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	0	0.006
Total Displacement	0	0.006
SigmaXX Effective	-76.43	247.459
SigmaYY Effective	-78.547	256.261
SigmaZZ Effective	-697.978	188.249
SigmaXY Effective	-79.341	111.992
SigmaXZ Effective	-176.122	175.335
SigmaYZ Effective	-179.152	184.198
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 750

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-61.194	460.418
Sigma 2 Effective	-84.397	237.056
Sigma 3 Effective	-748.092	188.124
Mean Stress Effective	-251.065	188.808
Von Mises Stress Effective	0	746.562
Sigma 1 Total	-61.194	460.418
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	0	0.006
Total Displacement	0	0.006
SigmaXX Effective	-82.447	259.321
SigmaYY Effective	-84.472	262.088
SigmaZZ Effective	-748.076	188.124
SigmaXY Effective	-81.434	109.359
SigmaXZ Effective	-193.72	187.414
SigmaYZ Effective	-198.97	199.146
Excess Pore Water Pressure	0	0

Total Pore Water Pressure	0	0

Stage : 800

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-66.887	427.359
Sigma 2 Effective	-92.371	262.271
Sigma 3 Effective	-798.239	187.986
Mean Stress Effective	-267.78	188.713
Von Mises Stress Effective	0	796.631
Sigma 1 Total	-66.887	427.359
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	0	0.008
Total Displacement	0	0.008
SigmaXX Effective	-89.71	281.479
SigmaYY Effective	-93.024	290.355
SigmaZZ Effective	-798.223	187.986
SigmaXY Effective	-87.091	88.392
SigmaXZ Effective	-236.966	207.688
SigmaYZ Effective	-248.619	233.146
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 850

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-71.478	467.672
Sigma 2 Effective	-98.941	278.039
Sigma 3 Effective	-848.332	187.853
Mean Stress Effective	-284.489	188.621
Von Mises Stress Effective	0	846.641
Sigma 1 Total	-71.478	467.672
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	0	0.01
Total Displacement	0	0.01
SigmaXX Effective	-96.4	296.569
SigmaYY Effective	-99.029	305.364
SigmaZZ Effective	-848.316	187.853
SigmaXY Effective	-93.35	88.578
SigmaXZ Effective	-282.6	261.26
SigmaYZ Effective	-298.859	282.032
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 900

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-75.876	530.14
Sigma 2 Effective	-105.755	294.845
Sigma 3 Effective	-898.45	187.721
Mean Stress Effective	-301.199	197.246
Von Mises Stress Effective	0	896.652
Sigma 1 Total	-75.876	530.14
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	0	0.012
Total Displacement	0	0.012

SigmaXX Effective	-102.624	314.386
SigmaYY Effective	-105.89	322.825
SigmaZZ Effective	-898.435	187.721
SigmaXY Effective	-104.944	93.635
SigmaXZ Effective	-337.135	313.43
SigmaYZ Effective	-345.116	335.728
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 950

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-80.504	611.443
Sigma 2 Effective	-112.13	312.103
Sigma 3 Effective	-948.485	187.589
Mean Stress Effective	-317.907	208.886
Von Mises Stress Effective	0	960.02
Sigma 1 Total	-80.504	611.443
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	0	0.014
Total Displacement	0	0.014
SigmaXX Effective	-109.038	332.735
SigmaYY Effective	-114.162	341.662
SigmaZZ Effective	-948.47	187.589
SigmaXY Effective	-115.038	99.739
SigmaXZ Effective	-389.786	363.01
SigmaYZ Effective	-401.572	386.862
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 1000

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-85.215	686.662
Sigma 2 Effective	-118.58	330.726
Sigma 3 Effective	-998.503	187.456
Mean Stress Effective	-334.596	221.176
Von Mises Stress Effective	0	1085.096
Sigma 1 Total	-85.215	686.662
X Displacement	-0.002	0.003
Y Displacement	-0.002	0.002
Z Displacement	0	0.017
Total Displacement	0	0.017
SigmaXX Effective	-116.223	352.239
SigmaYY Effective	-122.328	361.197
SigmaZZ Effective	-998.489	187.456
SigmaXY Effective	-123.053	104.463
SigmaXZ Effective	-445.693	415.455
SigmaYZ Effective	-456.966	433.35
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 1050

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-89.953	767.258
Sigma 2 Effective	-125.269	349.504
Sigma 3 Effective	-1048.494	187.325

Mean Stress Effective	-351.301	233.799
Von Mises Stress Effective	0	1217.235
Sigma 1 Total	-89.953	767.258
X Displacement	-0.003	0.003
Y Displacement	-0.003	0.003
Z Displacement	0	0.02
Total Displacement	0	0.02
SigmaXX Effective	-123.323	373.086
SigmaYY Effective	-130.618	385.98
SigmaZZ Effective	-1048.481	233.554
SigmaXY Effective	-132.422	107.901
SigmaXZ Effective	-504.523	465.993
SigmaYZ Effective	-514.045	482.486
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : 1100

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-94.468	845.374
Sigma 2 Effective	-131.573	368.458
Sigma 3 Effective	-1098.474	187.195
Mean Stress Effective	-367.997	255.164
Von Mises Stress Effective	0	1352.092
Sigma 1 Total	-94.468	845.374
X Displacement	-0.003	0.004
Y Displacement	-0.004	0.003
Z Displacement	0	0.023
Total Displacement	0	0.023
SigmaXX Effective	-130.727	394.447
SigmaYY Effective	-138.775	410.088
SigmaZZ Effective	-1098.461	285.975
SigmaXY Effective	-145.383	111.368
SigmaXZ Effective	-561.953	517.888
SigmaYZ Effective	-567.009	535.271
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

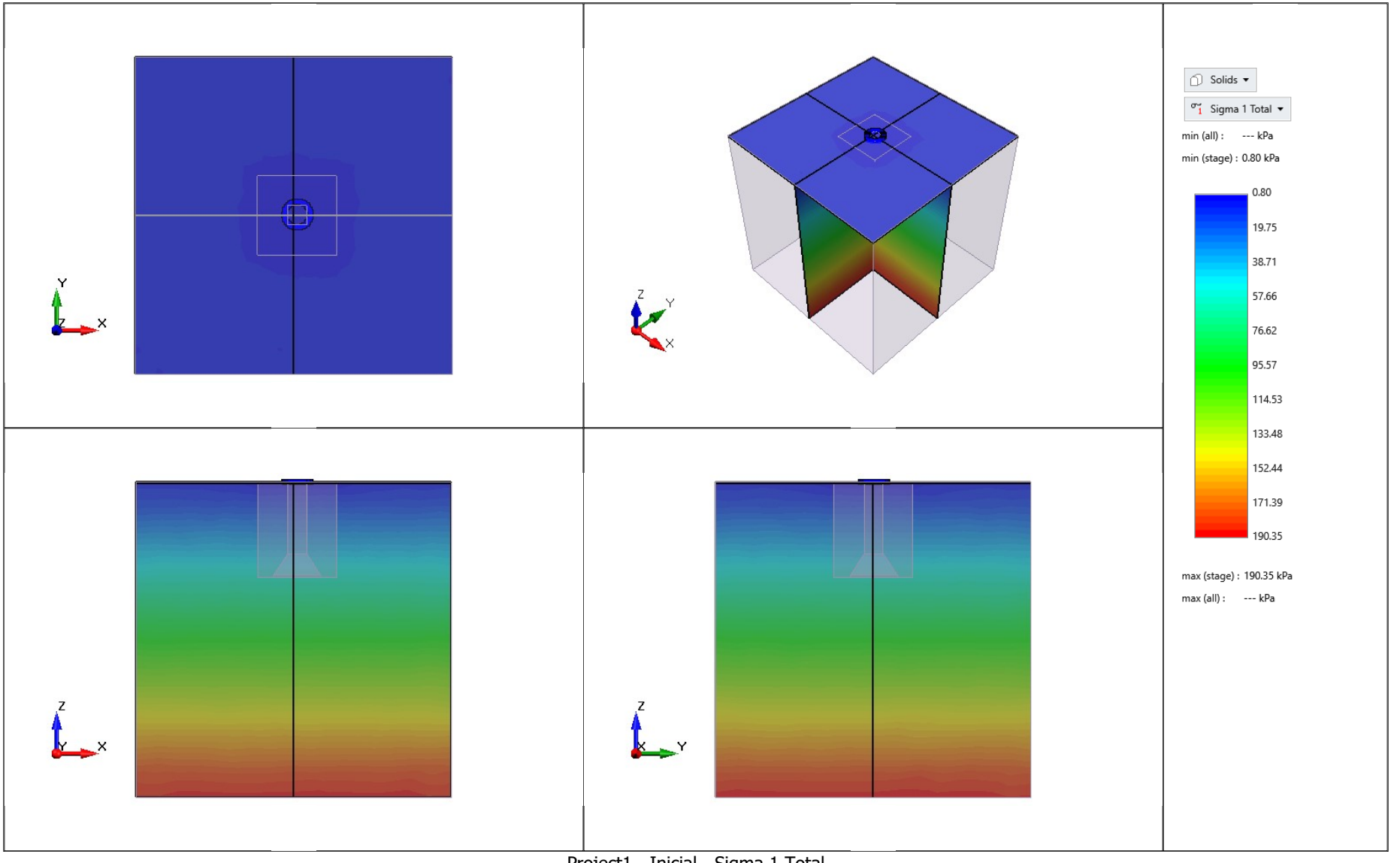
Stage : 1150

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	-98.807	926.249
Sigma 2 Effective	-138.037	387.658
Sigma 3 Effective	-1148.463	187.065
Mean Stress Effective	-384.691	282.678
Von Mises Stress Effective	0	1490.936
Sigma 1 Total	-98.807	926.249
X Displacement	-0.004	0.004
Y Displacement	-0.004	0.004
Z Displacement	0	0.026
Total Displacement	0	0.026
SigmaXX Effective	-137.812	417.036
SigmaYY Effective	-146.712	435.726
SigmaZZ Effective	-1148.451	339.584
SigmaXY Effective	-158.37	119.864
SigmaXZ Effective	-620.643	571.869
SigmaYZ Effective	-622.265	589.918

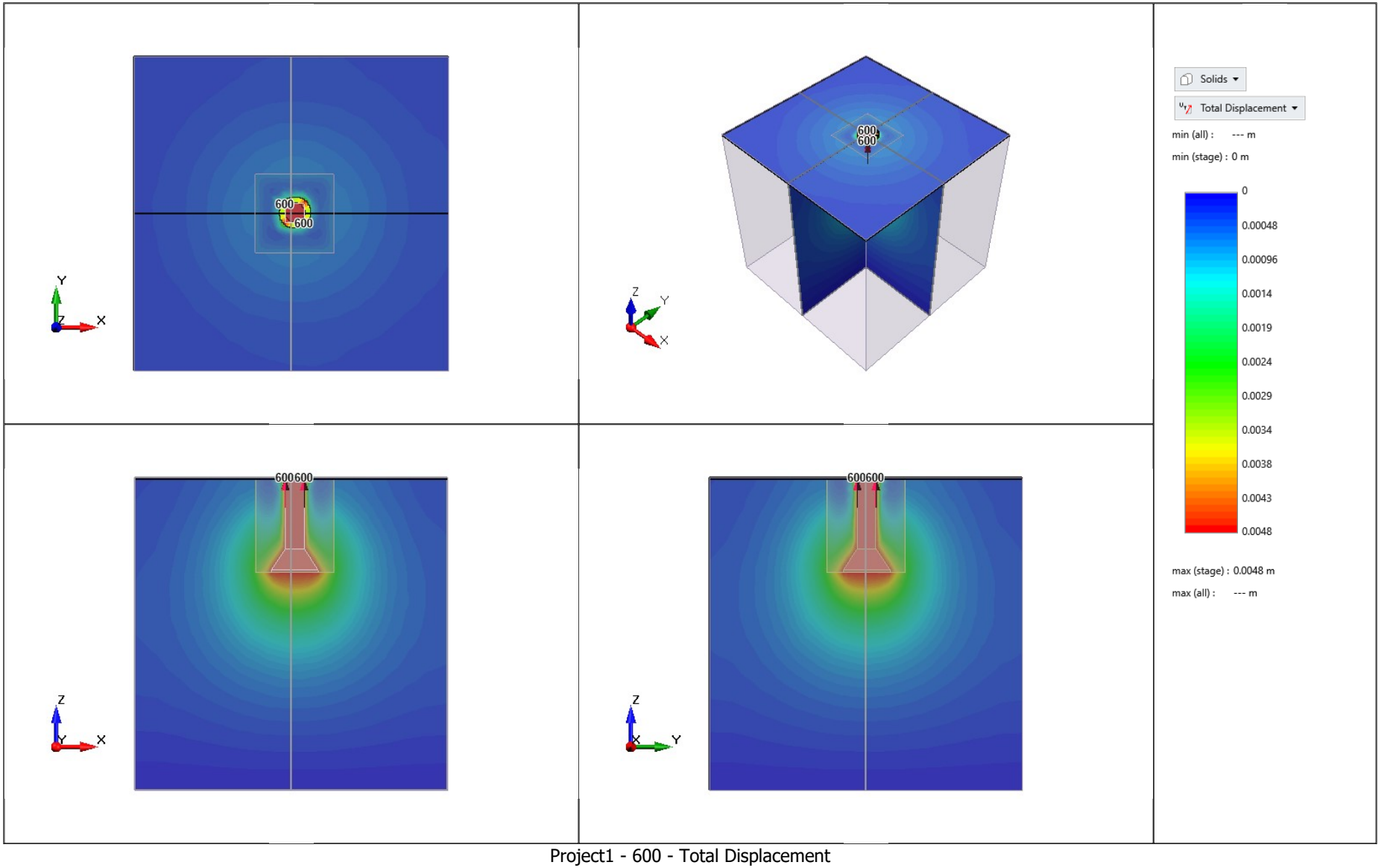
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

Stage : Sin carga

Data Type	Min (kPa)	Max (kPa)
Sigma 1 Effective	3.176	462.301
Sigma 2 Effective	-5.834	190.122
Sigma 3 Effective	-11.88	189.927
Mean Stress Effective	-0.16	206.136
Von Mises Stress Effective	0.078	387.347
Sigma 1 Total	3.176	462.301
X Displacement	-0.002	0.002
Y Displacement	-0.002	0.002
Z Displacement	-0.001	0.001
Total Displacement	0	0.002
SigmaXX Effective	-5.908	190.122
SigmaYY Effective	-11.778	190.122
SigmaZZ Effective	0.598	297.68
SigmaXY Effective	-83.821	89.074
SigmaXZ Effective	-140.092	133.615
SigmaYZ Effective	-127.452	128.284
Excess Pore Water Pressure	0	0
Total Pore Water Pressure	0	0

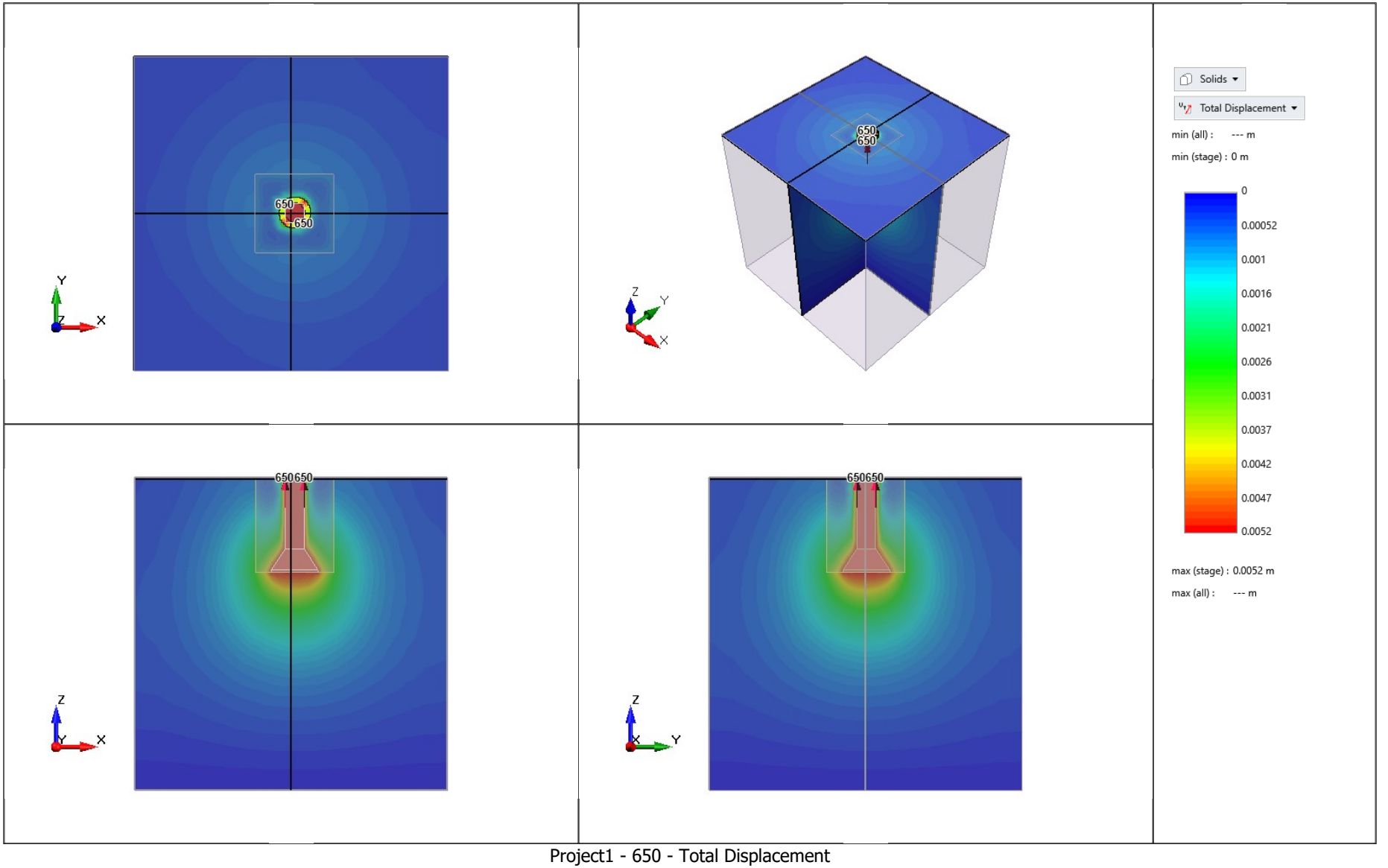

Solids
Sigma 1 Total
min (all) : --- kPa
min (stage) : 0.80 kPa
0.80
19.75
38.71
57.66
76.62
95.57
114.53
133.48
152.44
171.39
190.35
max (stage) : 190.35 kPa
max (all) : --- kPa

Project1 - 600 - Total Displacement



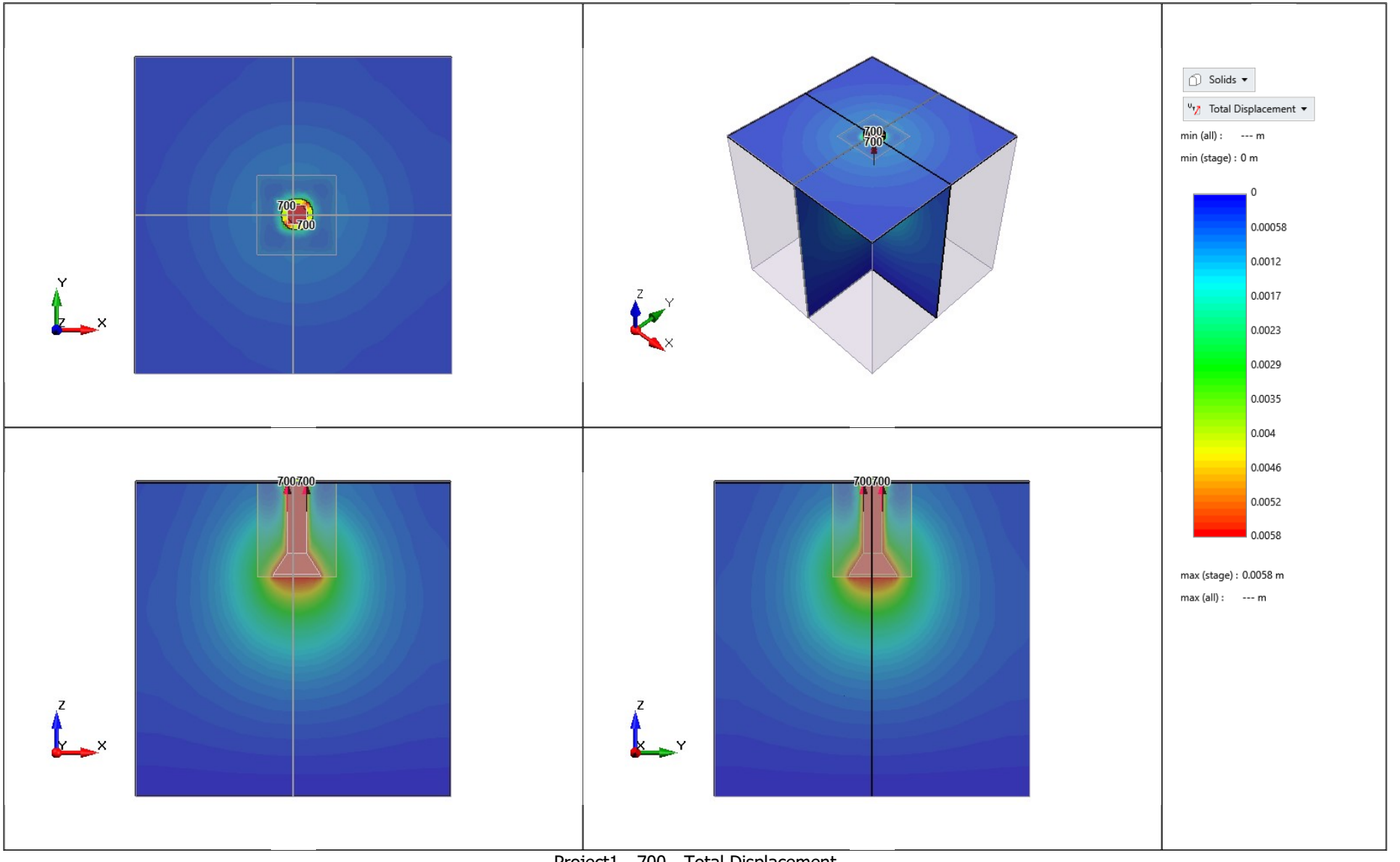
Project1 - 600 - Total Displacement

Project1 - 650 - Total Displacement



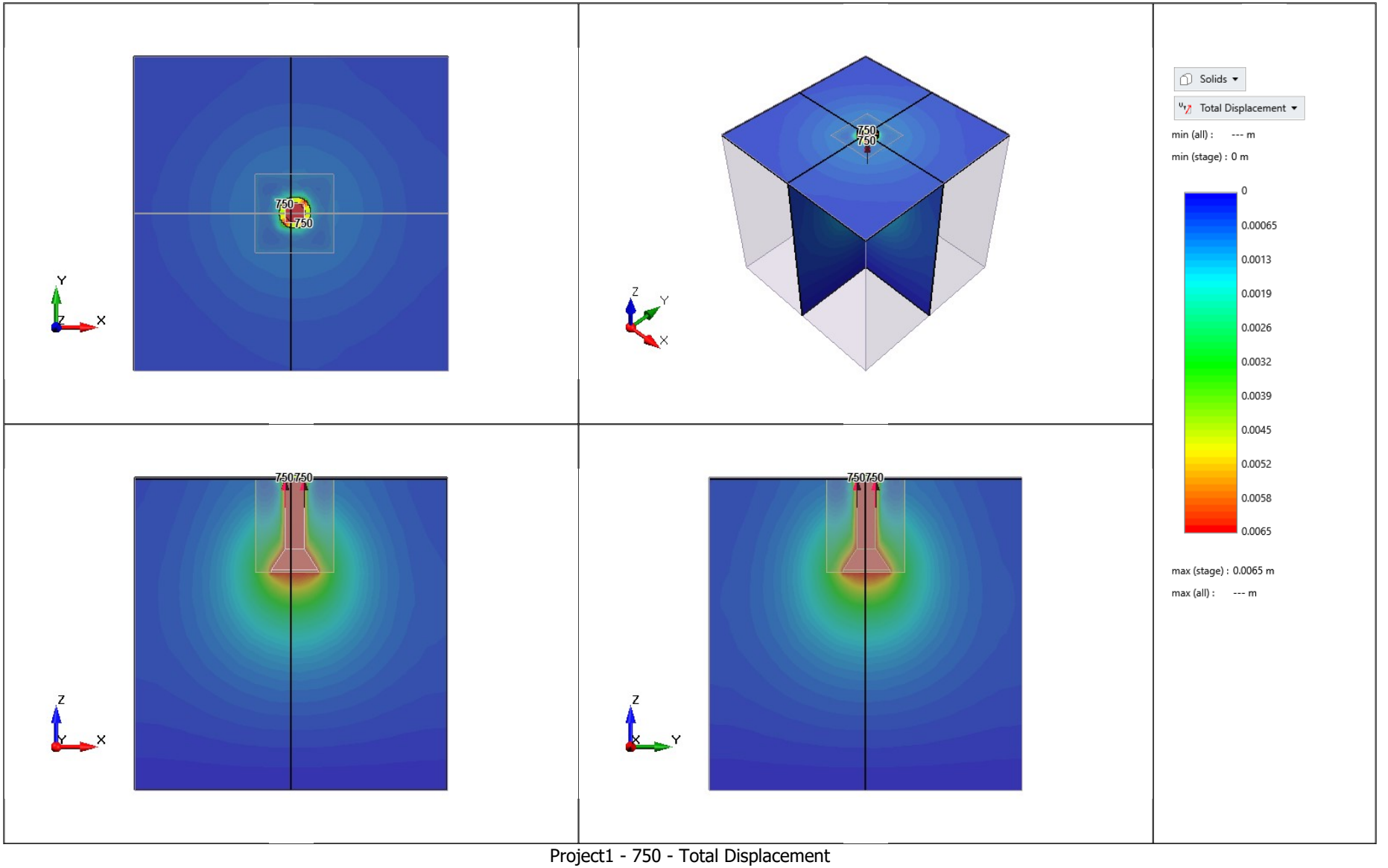
Project1 - 650 - Total Displacement

Project1 - 700 - Total Displacement



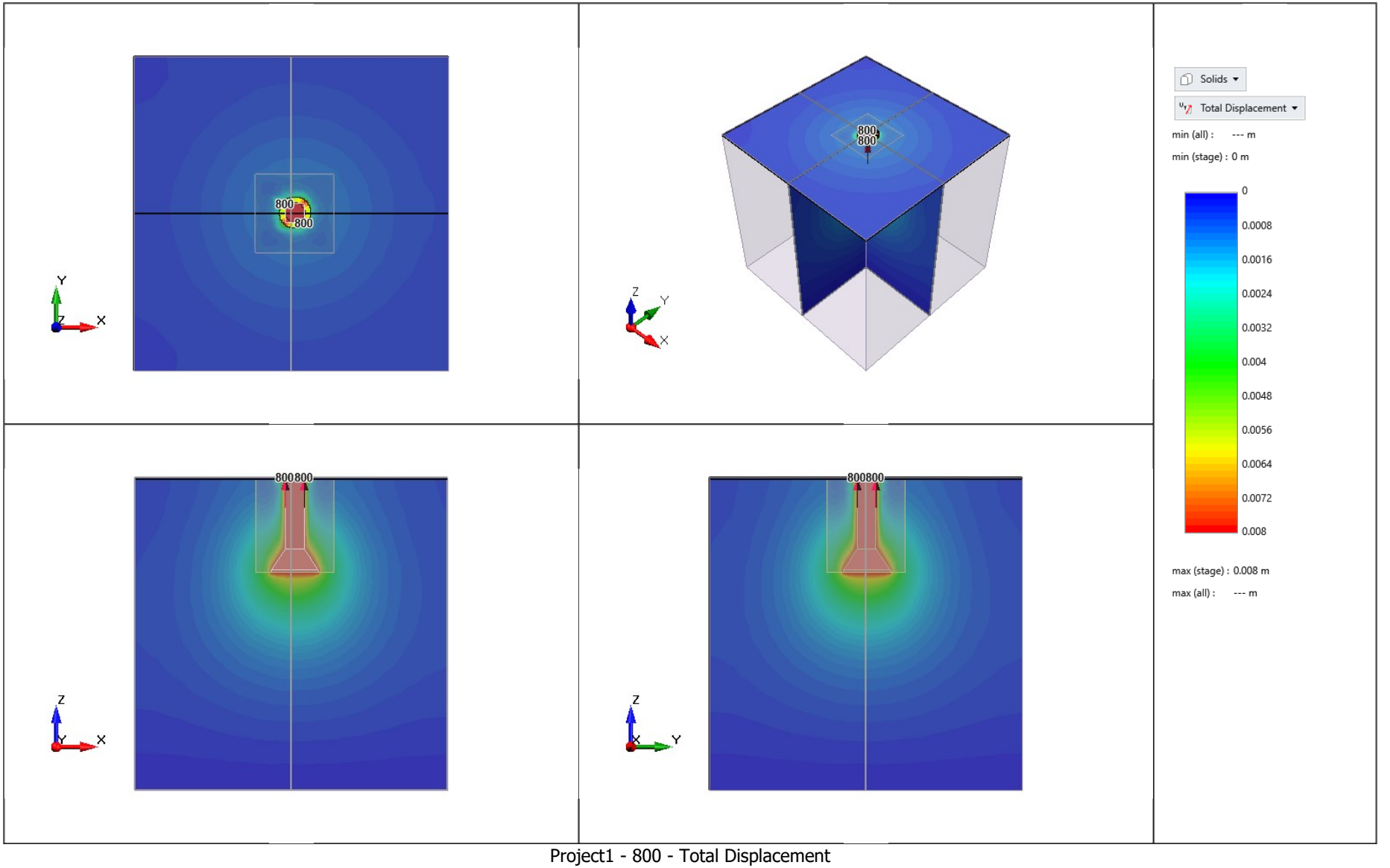
Project1 - 700 - Total Displacement

Project1 - 750 - Total Displacement



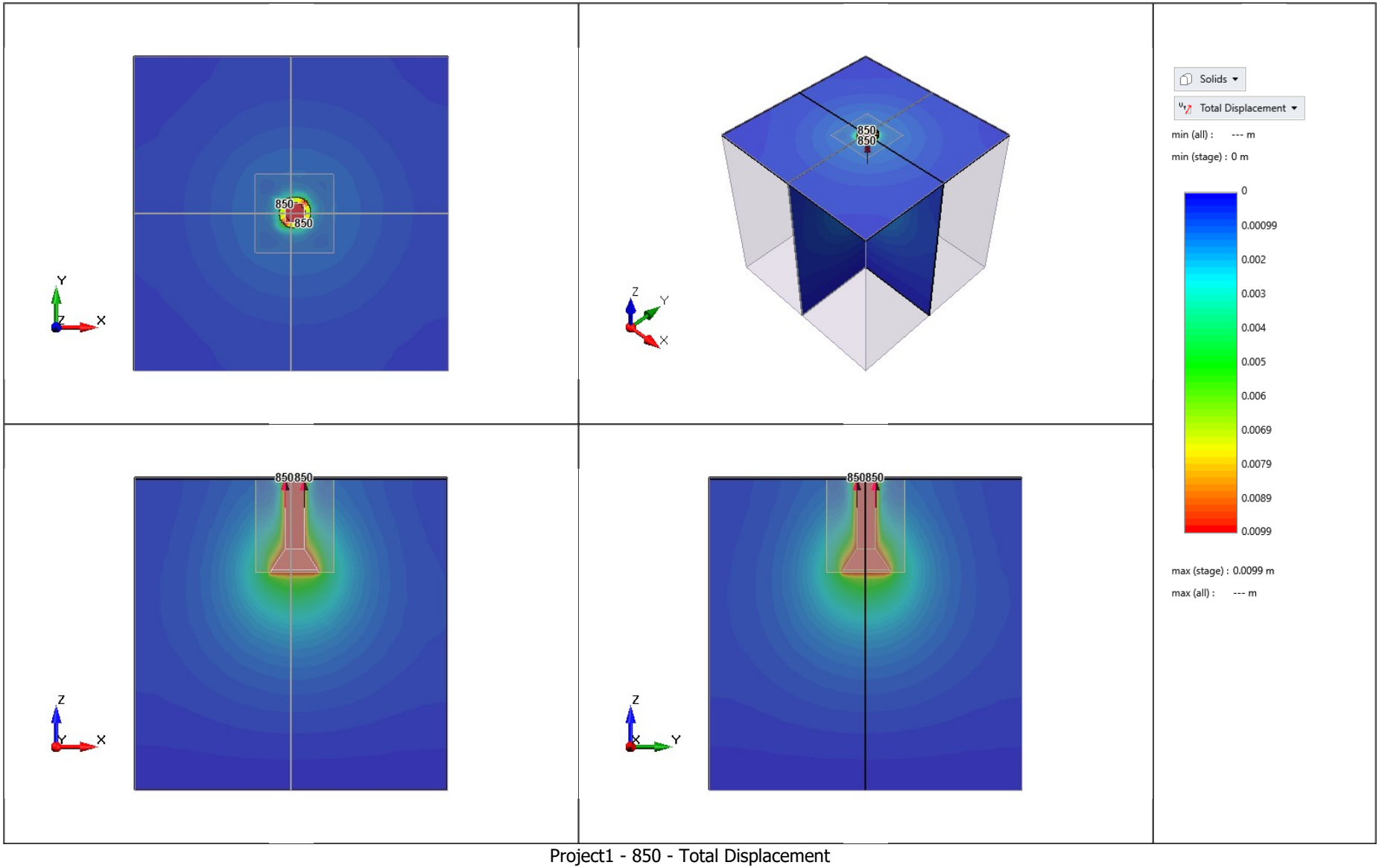
Project1 - 750 - Total Displacement

Project1 - 800 - Total Displacement

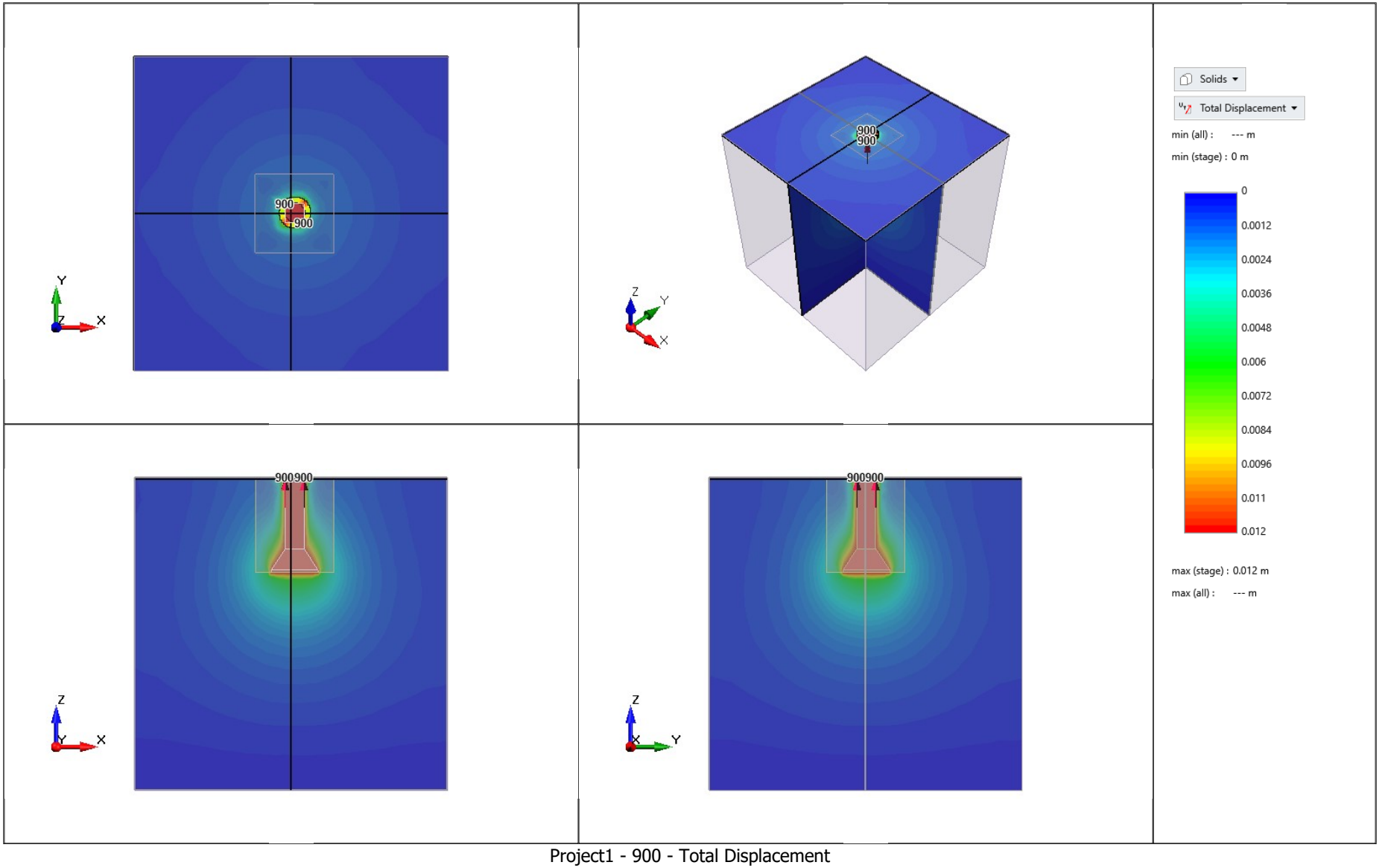


Project1 - 800 - Total Displacement

Project1 - 850 - Total Displacement

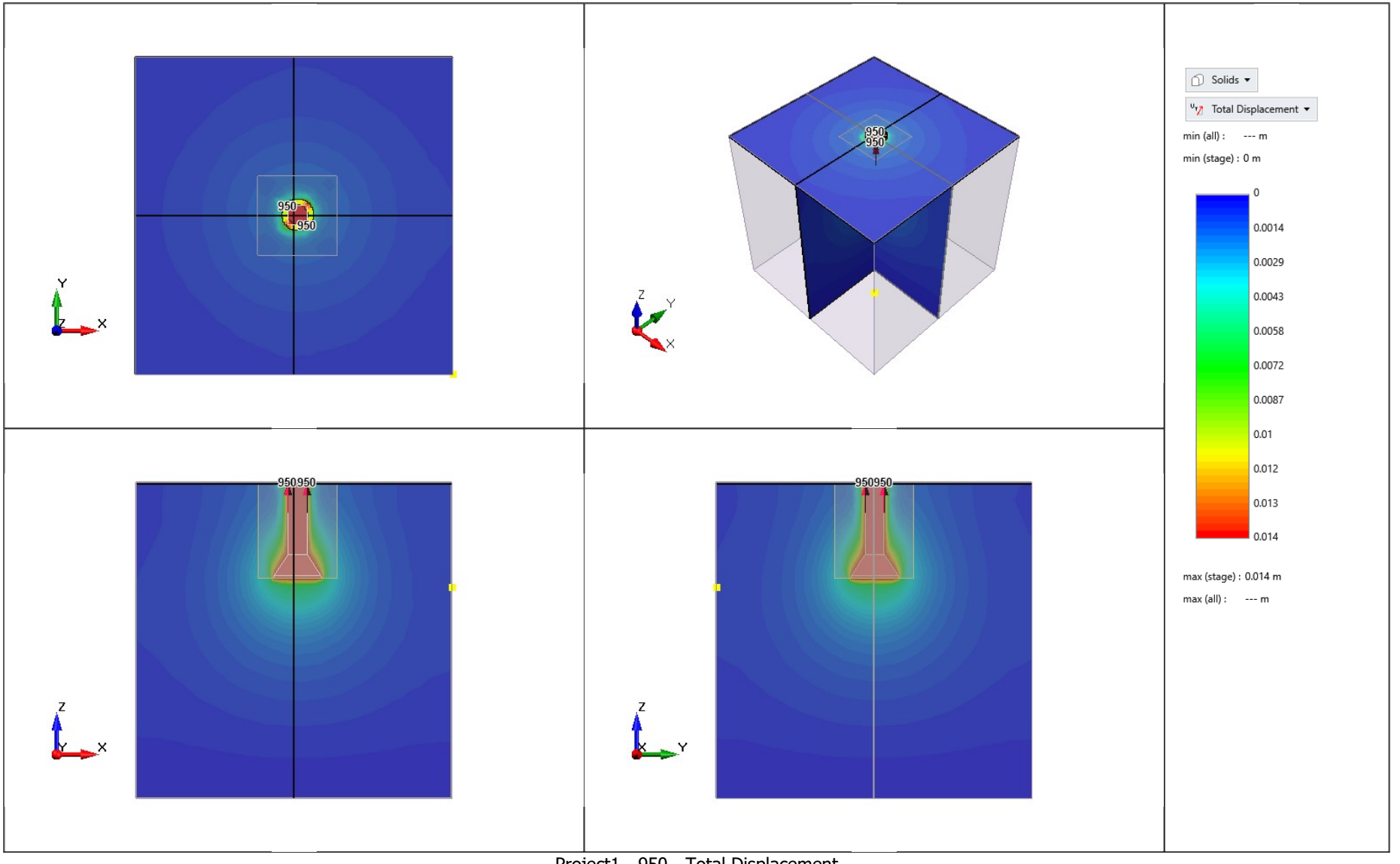


Project1 - 850 - Total Displacement



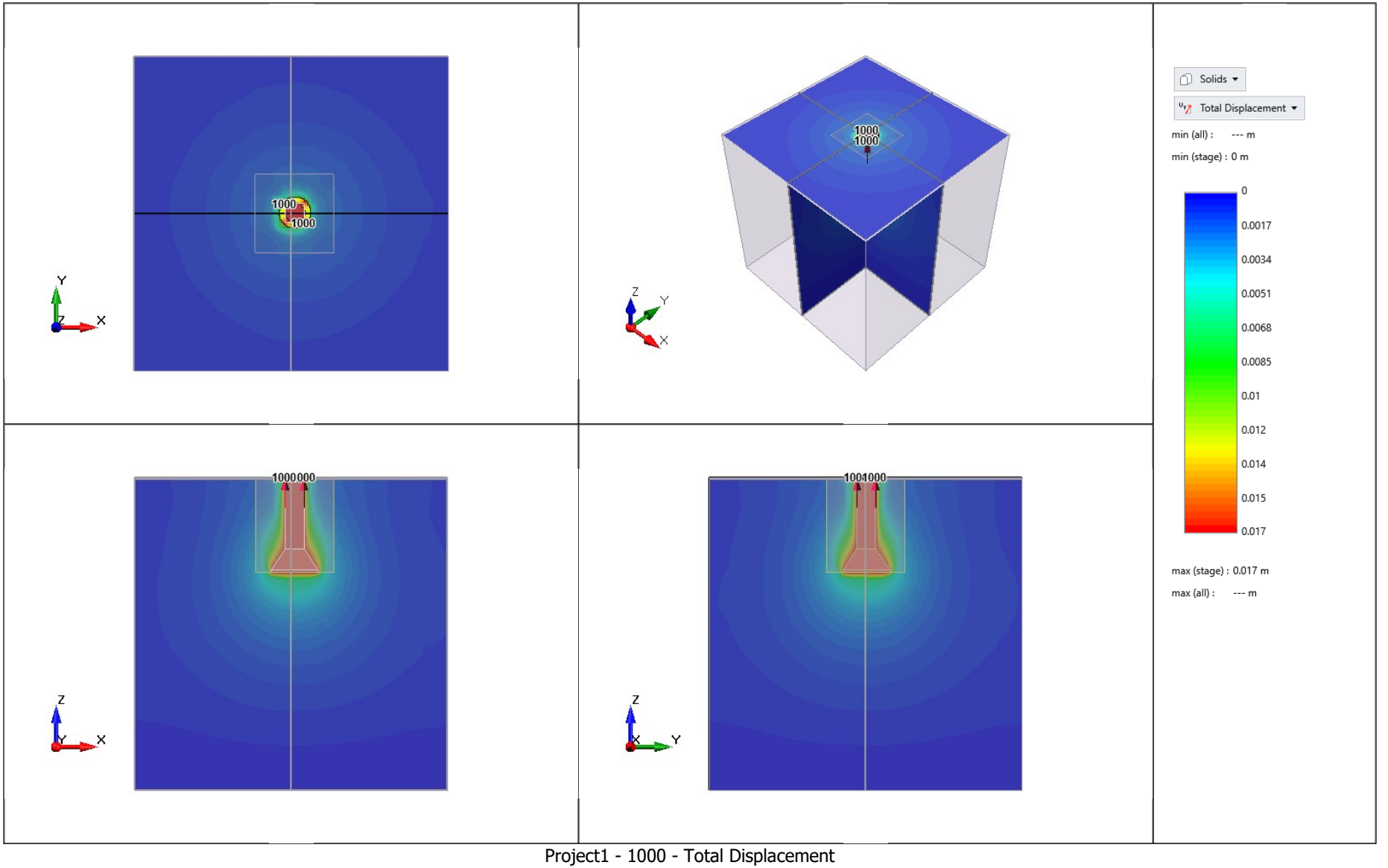
Project1 - 900 - Total Displacement

Project1 - 950 - Total Displacement



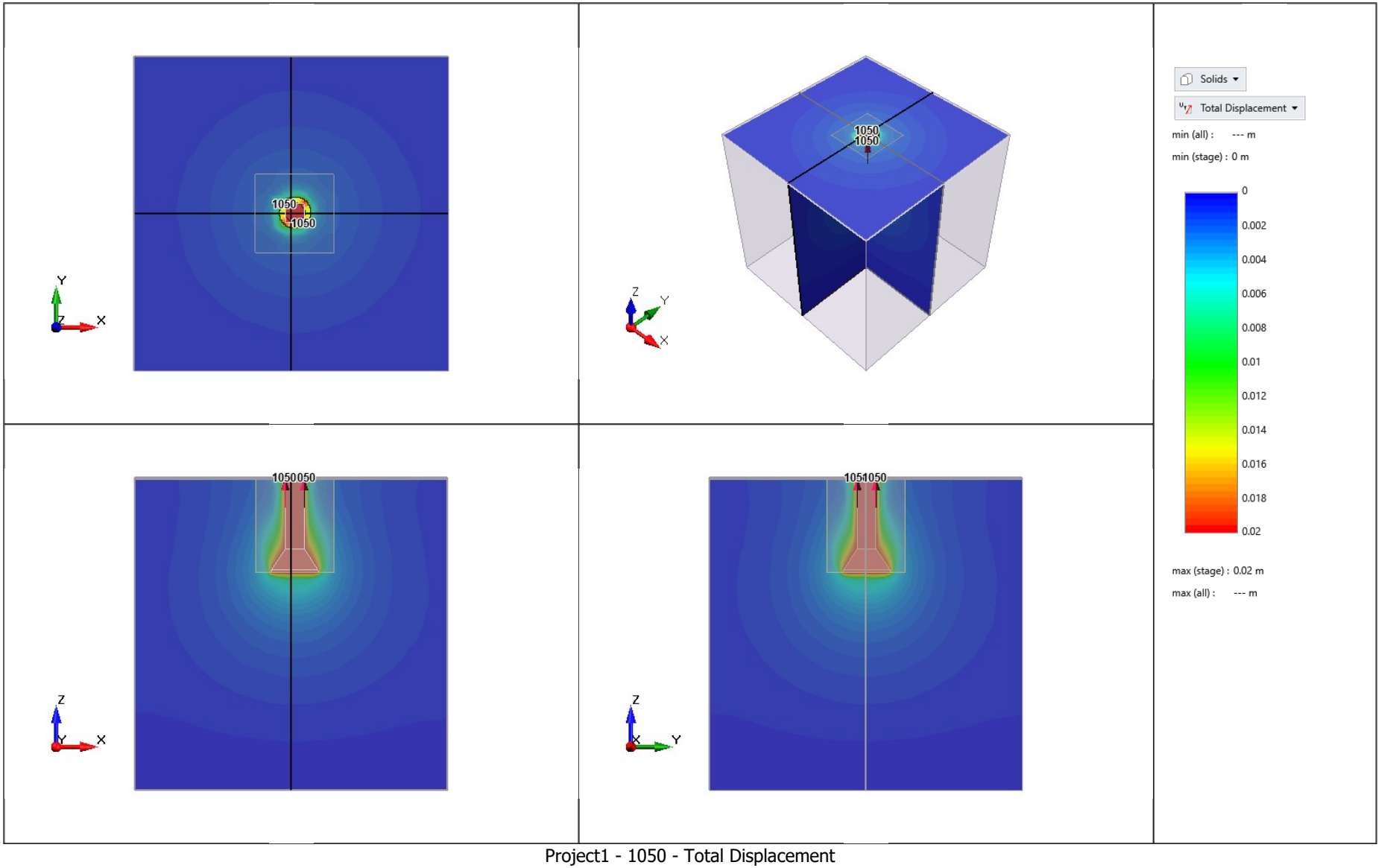
Project1 - 950 - Total Displacement

Project1 - 1000 - Total Displacement

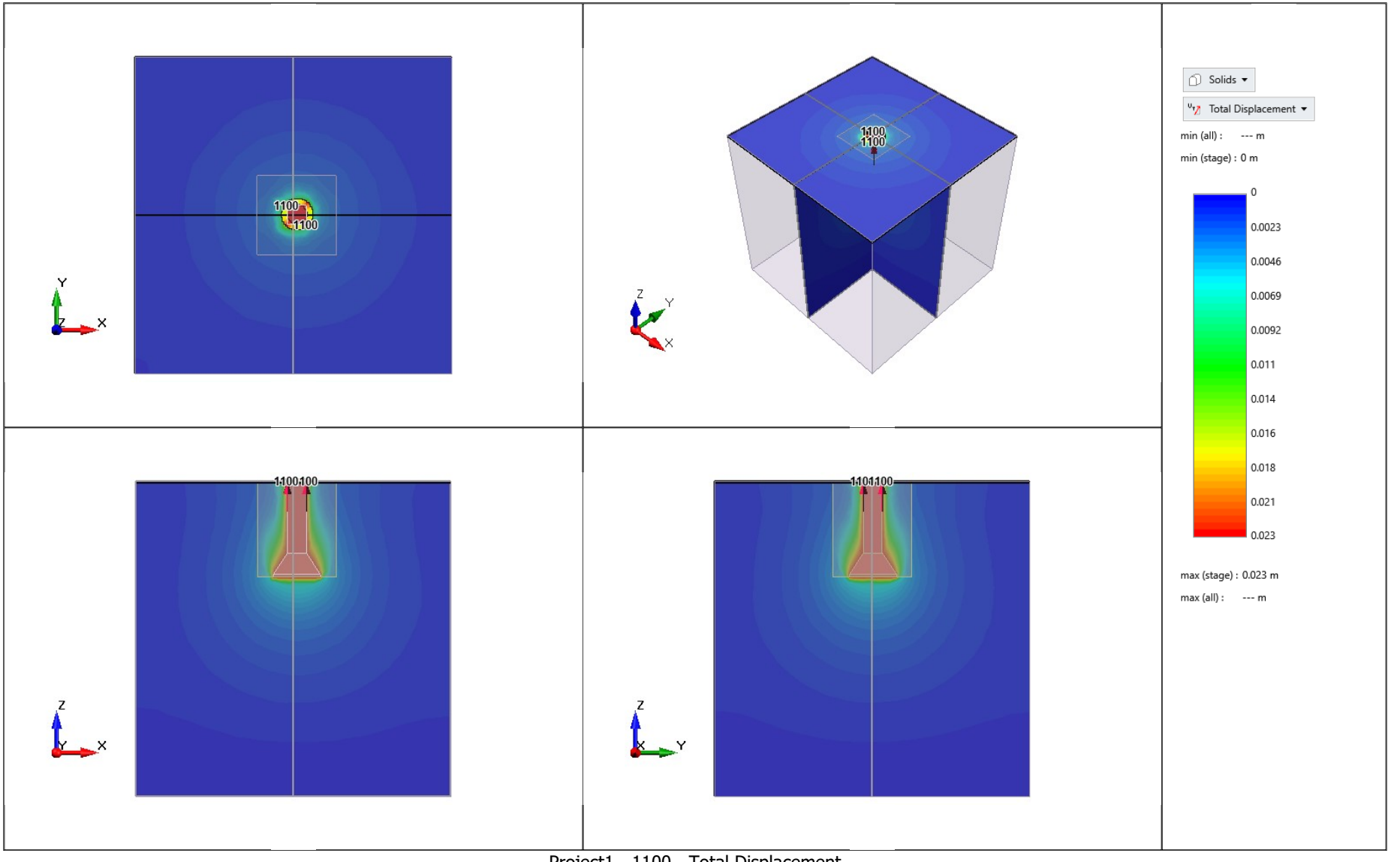


Project1 - 1000 - Total Displacement

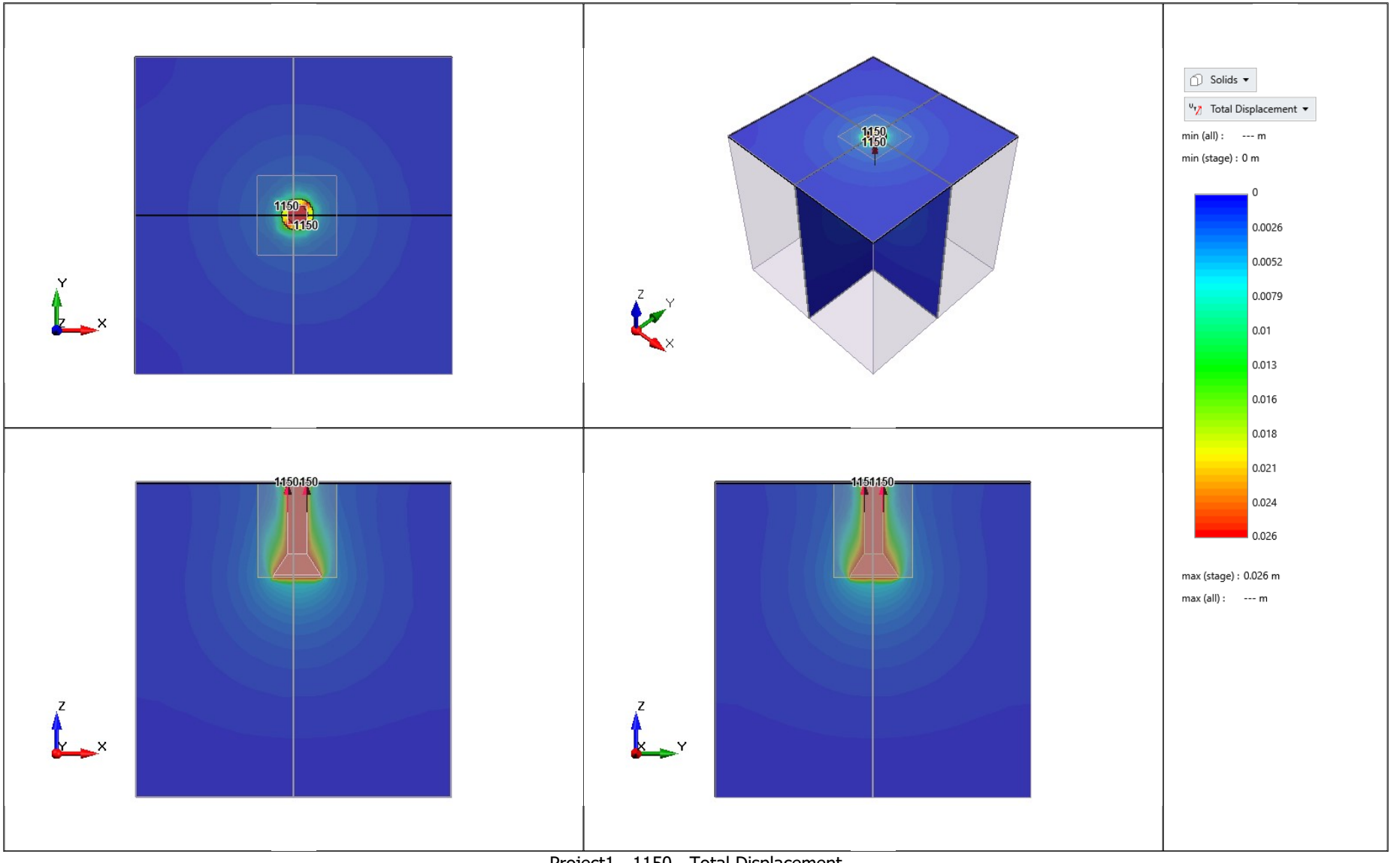
Project1 - 1050 - Total Displacement



Project1 - 1050 - Total Displacement

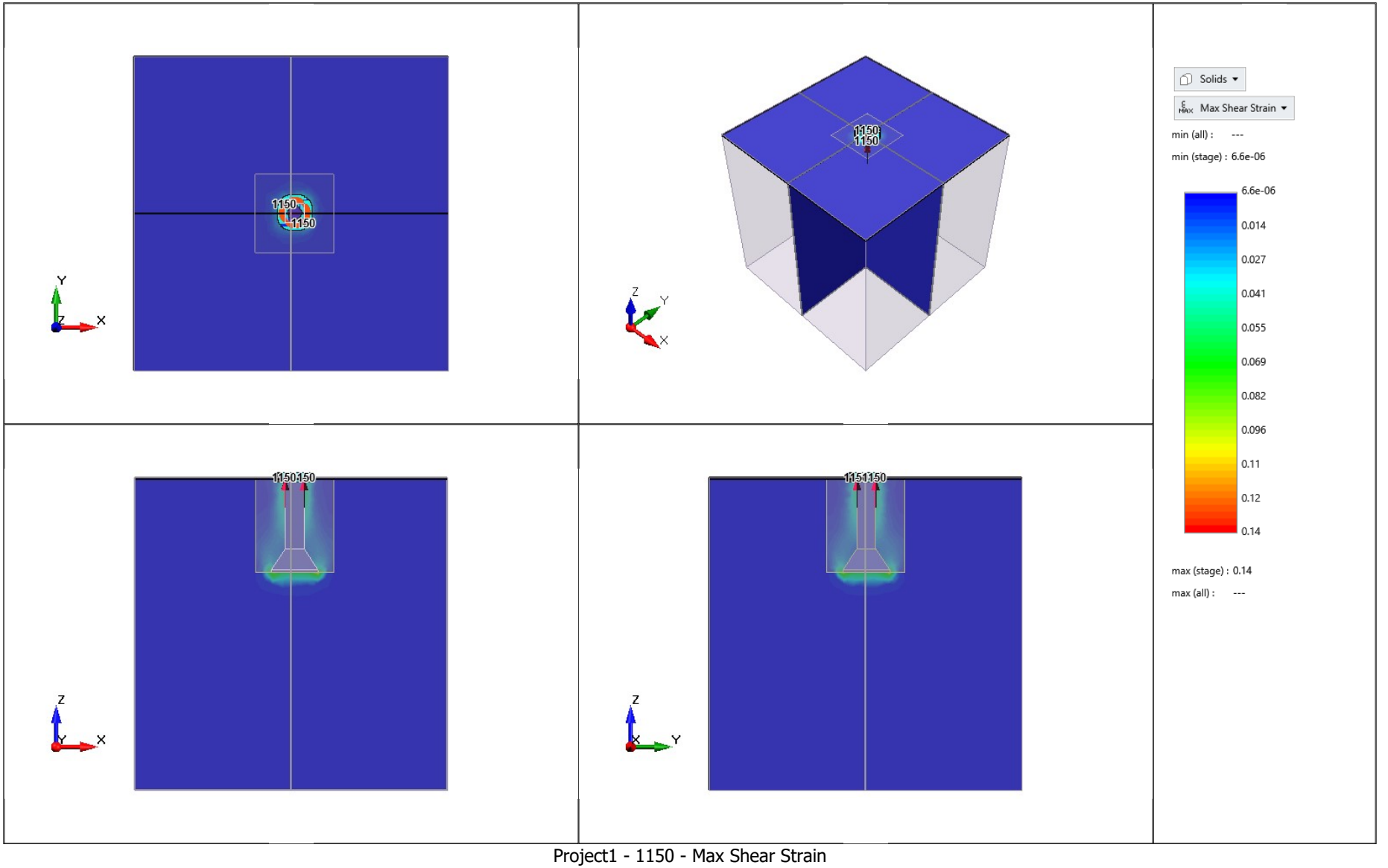


Project1 - 1100 - Total Displacement



Project1 - 1150 - Total Displacement

Project1 - 1150 - Max Shear Strain



Project1 - 1150 - Max Shear Strain