CAD Manual

File starts with #C. Every line with # is instruction for parameters below and that line is neglected. Parameters that describes stent are below this line:

# Stent: MatID, Type, sName, IntInd, dIntStiff, IntIndOut, IntStiffOut, IntIndIn, IntStiffIn, bPrescr, bSupport, bDiscardCon

MatID – represent ID for material model that is used for stent

Type and sName – represents type of stent and name that is used for that stent. Possible values for these two parameters are given in table:

|  |  |  |  |
| --- | --- | --- | --- |
| Stent of interest | Type | sName | File that is loaded for generating appropriate stent |
| Synergy | 0 | Synergy | ./Stent/Synergy/Synergy.dat |
| Renuvia | 1 | Renuvia | ./Stent/Renuvia/Renuvia.dat |
| Other type of stent | 2 | Other |  |

IntInd – Indicator for contact for outer surface of stent

dIntStiff – Stiffness of contact for inner surface of stent

IntIndOut – Indicator for contact for inner surface of stent

IntStiffOut – Stiffness of contact for outer surface of stent

IntIndIn – Indicator that represents whether or not outer faces of stent should be generated (0 – no, 1 - yes)

IntStiffIn – Outer radius of stent for generating outer faces

bPrescr - Indicator that represents whether or not inner faces of stent should be generated (0 – no, 1 - yes)

bSupport - Inner radius of stent for generating inner faces

bDiscardCon – Indicator for prescribed values (0 – no, 1 – yes)

next – Indicator for generating additional element for supporting stent (0 – no, 1 - yes)

next – Indicator for discarding constraints that is prescribed (0 - no, 1 - yes)

Stent can be translated, rotated and scaled relative to initial configuration. Next parameters represent this kind of data manipulation:

# CenterX, CenterY, CenterZ, RotX, RotY, RotZ, ScaleX, ScaleY, ScaleZ, bPresc, nPrFunID

CenterX – x coordinate of center for stent (0 - default)

CenterY – y coordinate of center for stent (0 - default)

CenterZ – z coordinate of center for stent (0 - default)

RotX – rotation about x axis (0 - default)

RotY – rotation about y axis (0 - default)

RotZ – rotation about z axis (0 - default)

ScaleX – scale x component (1 - default)

ScaleY – scale y component (1 - default)

ScaleZ – scale z component (1 - default)

bPresc – Indicator for prescribed values (0 – no, 1 – yes)

nPrFunID – ID of function

After # 3D Domains, there are representation of parameters for each type of analysis.

ExampleType, nStentDomains

ExampleType – represent type of analysis for chosen stent, and nStentDomains represent number of domains that is necessary for that analysis.

Possible values for these two parameters are given in table:

|  |  |  |  |
| --- | --- | --- | --- |
| Test | ExampleType | nStentDomains | File that is loaded for generating appropriate test |
| Flex 1 | 0 | 1 | ./Stent/Flex1/F\_01.dat |
| Flex 2 | 1 | 1 | ./Stent/Flex2/F\_02.dat |
| Flex 3 | 2 | 1 | ./Stent/Flex3/F\_03.dat |
| S profile | 3 | 1 | ./Stent/SProfil/SProfil.dat |
| Kinking | 4 | 4 | 1 - ./Stent/Kinking/Cilindar1.dat  2 - ./Stent/Kinking/Cilindar2.dat  3 - ./Stent/Kinking/Cilindar3.dat  4 - ./Stent/Kinking/Kink.dat |
| Three-point bending | 5 | 3 | 1 - ./Stent/ThreePointBending/Cilindar1.dat  2 - ./Stent/ThreePointBending/Cilindar2.dat  3 - ./Stent/ThreePointBending/Cilindar3.dat |
| Local compression | 6 | 2 | 1 - ./Stent/LocalCompression /Ploca.dat  2 - ./Stent/LocalCompression /Klin.dat |
| Tensile | 7 | 0 | / |
| Crush test | 8 | 2 | 1 - ./Stent/CrushTest/Ploca1.dat  2 - ./Stent/CrushTest/Ploca2.dat |
| Radial compression | 9 | 2 | 1 - ./Stent/RadialCompression/CilindarSpolja.dat  2 -  ./Stent/RadialCompression/CilindarUnutra.dat |
| Inflation | 10 | 1 | ./Stent/RadialCompression/CilindarUnutra.dat |