FINISH

/CLEAR,NOSTART

/PREP7

ET,1,42 ! REGULAR STRUCTURAL ELEMENT

MP,EX,1,320e9

MP,PRXY,1,.263

MP,DENS,1,3270

KEYOPT,1,3,2

ET,2,29

MP,DENS,2,1000

MP,SONC,2,1500

MP,MU,2,0

KEYOPT,2,2,0

KEYOPT,2,3,0

ET,3,29

MP,DENS,3,1000

MP,SONC,3,1500

KEYOPT,3,2,1

KEYOPT,3,3,0

ET,4,129

MP,SONC,4,1500

KEYOPT,4,3,0

ET,5,42

MP,EX,5,145.98e9

MP,PRXY,5,.213

MP,DENS,5,2330

KEYOPT,5,3,2

ET,6,42

MP,EX,6,145.98e9

MP,PRXY,6,.213

MP,DENS,6,2330

MP,DAMP,6,4e-9

KEYOPT,6,3,2

SUB\_THK=200e-6

IDEAL=0.01

LOSS\_WID=0.005

SUB\_WID=IDEAL+2\*LOSS\_WID

BNDY=1.1e-6

WID=20e-6

MEMB\_HGT=1.1e-6

GAP\_HGT=1.1e-6

BASE\_WID=1.1e-6

!RAD=.2260/2

!DELTAY=-.1118

RAD=0.101000/2

DELTAY=-0.049300

PITCH=36.5E-6

ARR\_PIT=146E-6

XDUC\_PIT=7.5E-3

BLC5,0,SUB\_THK/2,IDEAL,SUB\_THK

BLC5,IDEAL/2+LOSS\_WID/2,SUB\_THK/2,LOSS\_WID,SUB\_THK

BLC5,-IDEAL/2-LOSS\_WID/2,SUB\_THK/2,LOSS\_WID,SUB\_THK

BLC5,0,SUB\_THK+BNDY/2,IDEAL,BNDY

BLC5,IDEAL/2+LOSS\_WID/2,SUB\_THK+BNDY/2,LOSS\_WID,BNDY

BLC5,-IDEAL/2-LOSS\_WID/2,SUB\_THK+BNDY/2,LOSS\_WID,BNDY

CYL4,0,BNDY+DELTAY,RAD,0,RAD,180

NUMSTR,AREA,20

K=-.5

\*DO,J,-4,5,1

\*DO,I,-1,0,1

BLC5, 0+I\*PITCH+J\*ARR\_PIT+K\*XDUC\_PIT,SUB\_THK+(GAP\_HGT+MEMB\_HGT/2), WID+2\*BASE\_WID, MEMB\_HGT

BLC5,WID/2+BASE\_WID/2+I\*PITCH+J\*ARR\_PIT+K\*XDUC\_PIT,SUB\_THK+(GAP\_HGT/2),BASE\_WID, GAP\_HGT

BLC5,-WID/2-BASE\_WID/2+I\*PITCH+J\*ARR\_PIT+K\*XDUC\_PIT,SUB\_THK+(GAP\_HGT/2),BASE\_WID, GAP\_HGT !LEFT BASE

BLC4,-WID/2-BASE\_WID-BNDY+I\*PITCH+J\*ARR\_PIT+K\*XDUC\_PIT, SUB\_THK,WID+2\*BASE\_WID+2\*BNDY,GAP\_HGT+MEMB\_HGT+BNDY !INTERFACE

\*ENDDO

\*ENDDO

ALLSEL

AOVLAP,ALL

ADELE,265

ASEL,S,AREA,,103,160,3

ADELE,ALL

ALLSEL

LSEL,S,LINE,,26,27

LSEL,A,LINE,,680,681

LDELE,ALL

ALLSEL

LSEL,S,LINE,,1

LESIZE,ALL,15E-6

ALLSEL

LSEL,S,LINE,,354,438,6

LSEL,A,LINE,,450,468,6

LSEL,A,LINE,,475,476

LSEL,A,LINE,,481,482

LSEL,A,LINE,,498

LSEL,A,LINE,,491

LSEL,A,LINE,,497

LSEL,A,LINE,,499

LSEL,A,LINE,,505

LSEL,A,LINE,,507

LSEL,A,LINE,,513

LSEL,A,LINE,,515

LSEL,A,LINE,,521

LSEL,A,LINE,,523

LSEL,A,LINE,,529

LSEL,A,LINE,,531

LSEL,A,LINE,,537

LSEL,A,LINE,,539

LSEL,A,LINE,,545

LSEL,A,LINE,,547

LSEL,A,LINE,,553

LSEL,A,LINE,,555

LSEL,A,LINE,,561

LSEL,A,LINE,,563

LSEL,A,LINE,,569

LSEL,A,LINE,,571

LSEL,A,LINE,,577

LSEL,A,LINE,,579

LSEL,A,LINE,,585

LSEL,A,LINE,,587

LSEL,A,LINE,,593

LSEL,A,LINE,,595

LSEL,A,LINE,,601

LSEL,A,LINE,,603

LSEL,A,LINE,,609

LSEL,A,LINE,,611

LSEL,A,LINE,,617

LSEL,A,LINE,,619

LSEL,A,LINE,,625

LSEL,A,LINE,,627

LSEL,A,LINE,,633

LSEL,A,LINE,,635

LESIZE,ALL,10E-6

ALLSEL

LSEL,S,LINE,,348,349

LSEL,A,LINE,,474

LESIZE,ALL,30e-6,,,10

ALLSEL

LSEL,S,LINE,,350,351

LSEL,A,LINE,,480

LESIZE,ALL,30e-6,,,10

ALLSEL

LSEL,S,LINE,,2,4,2

LESIZE,ALL,8e-6

ALLSEL

LSEL,S,LINE,,6,12,6

LESIZE,ALL,20e-6

ALLSEL

LSEL,S,LINE,,682

LESIZE,ALL,15E-6

ALLSEL

ASEL,S,AREA,,104,161,3

ASEL,A,AREA,,225,244

ASEL,A,AREA,,102,159,3

AATT,1,,1

LSLA,S

LESIZE,ALL,1.1E-3

CM,MEMB,AREA

SMRTSIZ,5

MSHAPE,0,2D

AMESH, ALL

ALLSEL

ASEL,S,AREA,,267

CM,SUB,AREA

AATT,5,,5

SMRTSIZ,4

MSHAPE,0,2D

AMESH,ALL

ALLSEL

ASEL,S,AREA,,100,101

CM,LOSS,AREA

AATT,6,,6

SMRTSIZ,4

MSHAPE,0,2D

AMESH,ALL

ALLSEL

ASEL,S,AREA,,166,223,3

ASEL,A,AREA,,245,264

ASEL,A,AREA,,167,224,3

LSLA,S

LESIZE,ALL,1.1E-6

ALLSEL

ASEL,S,AREA,,166,223,3

ASEL,A,AREA,,245,264

ASEL,A,AREA,,167,224,3

ASEL,A,AREA,,162,164,2

ASEL,A,AREA,,163

ASEL,A,AREA,,165,222

AATT,2,,2

CM,INT,AREA

SMRTSIZ,4

MSHAPE,0,2D

AMESH,ALL

ALLSEL

ASEL,S,AREA,,266

CM,FLUID,AREA

AATT,3,,3

SMRTSIZ,4

MSHAPE,0,2D

AMESH,ALL

ALLSEL

SAVE,TENFING,DB

FINISH

/CLEAR,NOSTART

RESUME,TENFING,DBB

/PREP7

CSYS,1

R,4,RAD,0,BNDY+DELTAY

CONSTANT

LSEL,S,LINE,,682

NSLL,S,1

TYPE,4

REAL,4

MAT,4

ESURF

ALLSEL

ESEL,S,MAT,,1

ESEL,A,MAT,,5,6

NSLE,S

ESEL,S,MAT,,2

NSLE,R

SF,ALL,FSI

ALLSEL

FINISH

/SOLU

ANTYPE,HARMIC,NEW

HROPT,FULL

HROUT,ON

ESEL,S,MAT,,3

NSLE,S

ESEL,S,MAT,,2

NSLE,R

D,ALL,UX,0

D,ALL,UY,0

ALLSEL

!IMAGINARY THEN REAL = FORWARD

!REAL THEN IMAGINARY = BACKWARD

!APPLY LOADING TO LEFT FINGERS

LSEL,S,LINE,,355,463,12

NSLL,S,1

F,ALL,FY,,1E-6

ALLSEL

LSEL,S,LINE,,361,469,12

NSLL,S,1

F,ALL,FY,1E-6

ALLSEL

HARFRQ,,10E6

ASSOPT,,FRONT

SOLVE

FINISH

/POST1

ALLSEL

CSYS,0

!REAL PART

SET,1,1

PATH,SUBR,2,30,3000

PPATH,1,,-0.300780000000E-02,200E-6,0,

PPATH,2,,5E-3,200E-6,0,

AVPRIN,0,0,

PDEF,UX,U,X,AVG

PDEF,UY,U,Y,AVG

/OUTPUT,sub\_real,TXT, C:\Users\Im\Desktop\ansys\_results

PRPATH,XG,UX,YG,UY

/OUTPUT

PATH,MEMB100A,2,30,200

PPATH,1,,0.004,200E-6,0

PPATH,2,,0.004,0.1001E-02,0

PDEF,PGY,PG,Y,AVG

PDEF,PGX,PG,X,AVG

PDEF,PRESS,PRES,,AVG

AVPRIN,0,0,

/OUTPUT,POWER\_RIGHT\_REAL,TXT, C:\Users\Im\Desktop\ansys\_results

PRPATH,YG,PRESS,PGX,PGY

/OUTPUT

PATH,MEMB10A,2,30,1000

PPATH,1,,-0.43816E-2,0.2022E-3,0

PPATH,2,,-0.31549E-2,0.2022E-3,0

PDEF,UY,U,Y,AVG

PDEF,PRESS,PRES,,AVG

AVPRIN,0,0,

/OUTPUT,POWER\_MEMB\_REAL,TXT,C:\Users\Im\Desktop\ansys\_results

PRPATH,XG,YG,PRESS,UY

/OUTPUT

!IMAGINARY PART

SET,1,1,,1 !READ IN THE REAL PARTS OF THE RESULTS FILE

PATH,SUBI,2,30,3000

PPATH,1,,-0.300780000000E-02,200E-6,0,

PPATH,2,,5E-3,200E-6,0,

AVPRIN,0,0,

PDEF,UX,U,X,AVG

PDEF,UY,U,Y,AVG

/OUTPUT,sub\_imag,TXT, C:\Users\Im\Desktop\ansys\_results

PRPATH,XG,UX,YG,UY

/OUTPUT

PATH,MEMB100A,2,30,200

PPATH,1,,0.004,200E-6,0

PPATH,2,,0.004,0.1001E-02,0

PDEF,PGY,PG,Y,AVG

PDEF,PGX,PG,X,AVG

PDEF,PRESS,PRES,,AVG

AVPRIN,0,0,

/OUTPUT,POWER\_RIGHT\_IMAG,TXT, C:\Users\Im\Desktop\ansys\_results

PRPATH,YG,PRESS,PGX,PGY

/OUTPUT

PATH,MEMB10A,2,30,1000

PPATH,1,,-0.43816E-2,0.2022E-3,0

PPATH,2,,-0.31549E-2,0.2022E-3,0

PDEF,UY,U,Y,AVG

PDEF,PRESS,PRES,,AVG

AVPRIN,0,0,

/OUTPUT,POWER\_MEMB\_IMAG,TXT, C:\Users\Im\Desktop\ansys\_results

PRPATH,XG,YG,PRESS,UY

/OUTPUT

FINISH