

```

C      Viscous incompressible flows:-----
C
      WRITE(ITT,450)
      READ(IN,*)VISCSITY,PENALTY
      WRITE(ITT,460) VISCSITY,PENALTY
      ELSE
      IF(ITYPE.EQ.2) THEN
C
C      Plane elasticity problems:-----
C
      READ(IN,*) LNSTRS
      WRITE(ITT,470)
      READ(IN,*) E1,E2,ANU12,G12,THKNS
      WRITE(ITT,520) THKNS,E1,E2,ANU12,G12
C
C      Compute the material coefficient matrix, CMAT(I,J), I,J=1,2,3.
C
      ANU21=ANU12*E2/E1
      DENOM=1.0-ANU12*ANU21
      CMAT(3,3)=G12*THKNS
      IF(LNSTRS.EQ.0) THEN
C
C      Plane strain (ANU23 = ANU12)
C
      WRITE(ITT,490)
      SO=(1.0-ANU12-2.0*ANU12*ANU21)
      CMAT(1,1)=THKNS*E1*(1.0-ANU12)/SO
      CMAT(1,2)=THKNS*E1*ANU21/SO
      CMAT(2,2)=THKNS*E2*DENOM/SO/(1.0+ANU12)
      ELSE
C
C      Plane stress
C
      WRITE(ITT,510)
      CMAT(1,1)=THKNS*E1/DENOM
      CMAT(1,2)=ANU21*CMAT(1,1)
      CMAT(2,2)=E2*CMAT(1,1)/E1
      ENDIF
      ELSE
C
C      Plate bending problems:-----
C
      WRITE(ITT,500)
      IF(ITYPE.EQ.3) THEN
      WRITE(ITT,505)
      ELSE
      WRITE(ITT,506)
      ENDIF
      READ(IN,*) E1,E2,ANU12,G12,G13,G23,THKNS
      WRITE(ITT,520) THKNS,E1,E2,ANU12,G12

```