Contents


```
Ex = 57.18 *10^9;
Ey = 8.17 * 10^9;
G = 3.037 * 10^9;
Vxy = 0.296;
Vyx = Ey/Ex*Vxy;
```

On-axis Compliance

```
S = [1/Ex    -Vyx/Ey   0;
     -Vxy/Ex    1/Ey   0;
     0          0    1/G];
```

On-axis Stiffness

```
 P = 1/(1-Vxy*Vyx);

 Q = [P*Ex  P*Vyx*Ex  0;
      P*Vxy*Ey P*Ey   0;
      0        0      G];
```

Off-axis compliance +45 comliance

```
 T = [0.5 0.5 1;
      0.5 0.5 -1;
      -0.5 0.5 0];

 S_45 = T'*S*T;
```

Off-axis stiffness +45 stiffness

```
R = [0.5 0.5 0.5;
     0.5 0.5 -0.5;
     -1 1 0;];

Q_45 = R'*Q*R;
```

Off-axis compliance -45 comliance

```
 T = [0.5 0.5 -1;
      0.5 0.5 1;
      0.5 -0.5 0];
```

```
S_N45 = T'*S*T;
```

Off-axis stiffness -45 stiffness

```
R = [0.5 0.5 -0.5;
     0.5 0.5 0.5;
     1 -1 0;];

Q_N45 = R'*Q*R;
```

```
disp('On-axis compliance')
disp(S)

disp('On-axis stiffness')
disp(Q)

disp('Off-axis compliance +45 comliance')
disp(S_45)

disp('Off-axis stiffness +45 stiffness')
disp(Q_45)

disp('Off-axis compliance -45 comliance')
disp(S_N45)

disp('Off-axis stiffness -45 comliance')
disp(Q_N45)
```

```
On-axis compliance
   1.0e-09 *

    0.0175   -0.0052         0
   -0.0052    0.1224         0
         0         0    0.3293

On-axis stiffness
   1.0e+10 *

    5.7905    0.2449         0
    0.2449    0.8274         0
         0         0    0.3037

Off-axis compliance +45 comliance
   1.0e-09 *

    0.1147   -0.0499   -0.0525
   -0.0499    0.1147   -0.0525
   -0.0525   -0.0525    0.1502

Off-axis stiffness +45 stiffness
   1.0e+10 *

    2.0806    1.4732    1.2408
    1.4732    2.0806    1.2408
    1.2408    1.2408    1.5320
```

```
Off-axis compliance -45 comliance
   1.0e-09 *

    0.1147   -0.0499    0.0525
   -0.0499    0.1147    0.0525
    0.0525    0.0525    0.1502

Off-axis stiffness -45 comliance
   1.0e+10 *

    2.0806    1.4732   -1.2408
    1.4732    2.0806   -1.2408
   -1.2408   -1.2408    1.5320
```

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