
strainlocallaminate

Computes the local strains at the top, middle, and bottom of each laminate

Inputs

strainglobalplies - Global strains
 epsx - Global longitudinal strain
 epsy - Global transverse strain
 epsxy - Global in-plane strain
angleplies - Angle of each ply in degrees
nplies - Thickness of each ply

Outputs

[strainlocalplies] - Local strains
 eps1 - Local longitudinal strain
 eps2 - Local transverse strain
 eps12 - Local in-plane strain

Calling the Function

```
[strainlocalplies]=strainlocallaminate(strainglobalplies,angleplies,  
                                       nplies)
```

Testing File

Click [here](#) to see a testing file for using the function
strainlocallaminate

Example

Inputs:

Number of plies: 3

For Ply: 1

Angle of Ply: 0

Top

Epsx		8.944E-08
Epsx		5.955E-06
Gammaxy		-3.836E-06

Middle

Epsx		1.637E-07
Epsx		5.134E-06
Gammaxy		-2.811E-06

Bottom

Epsx		2.38E-07
Epsx		4.313E-06
Gammaxy		-1.785E-06

For Ply: 2

Angle of Ply: 30

Top

Epsx		2.38E-07
Epsx		4.313E-06
Gammaxy		-1.785E-06

Middle

Epsx		3.123E-07
Epsx		3.492E-06
Gammaxy		-7.598E-07

Bottom

Epsx		3.866E-07
Epsx		2.67E-06
Gammaxy		2.655E-07

For Ply: 3

Angle of Ply: -45

Top

Epsx		3.866E-07
Epsx		2.67E-06
Gammaxy		2.655E-07

Middle

Epsx		4.609E-07
Epsx		1.849E-06
Gammaxy		1.291E-06

Bottom

Epsx		5.352E-07
Epsx		1.028E-06
Gammaxy		2.316E-06

Outputs:

For Ply: 1

Top		
Eps1		8.944E-08
Eps2		5.955E-06
Gamma12		-3.836E-06
Middle		
Eps1		1.637E-07
Eps2		5.134E-06
Gamma12		-2.811E-06
Bottom		
Eps1		2.38E-07
Eps2		4.313E-06
Gamma12		-1.785E-06

For Ply: 2

Top		
Eps1		4.83822E-07
Eps2		4.06718E-06
Gamma12		2.63655E-06
Middle		
Eps1		7.78222E-07
Eps2		3.02608E-06
Gamma12		2.3738E-06
Bottom		
Eps1		1.07241E-06
Eps2		1.98419E-06
Gamma12		2.11023E-06

For Ply: 3

Top		
Eps1		1.39555E-06
Eps2		1.66105E-06
Gamma12		-2.2834E-06
Middle		
Eps1		5.0945E-07
Eps2		1.80045E-06
Gamma12		-1.3881E-06
Bottom		
Eps1		-3.764E-07
Eps2		1.9396E-06
Gamma12		-4.928E-07

Description

Outputs the local strains at the top, middle, and bottom of each laminate