

MECH530 – Assignment 1
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Interface output:

CHOSEN MATERIAL: kevlar_epoxy

===== MATERIAL PROPERTIES =====

Modulus Parameters

E_x : 76000.000 MPa
E_y : 5500.000 MPa
E_s : 2300.000 MPa
nu_x : 0.340 none
nu_y : 0.025 none
m : 1.008 none

Strength Parameters

X_t : 1400.000 MPa
X_c : 235.000 MPa
Y_t : 12.000 MPa
Y_c : 53.000 MPa
S_c : 34.000 MPa
h_o : 0.125 mm
rho : 1460.000 kg/m³

===== GEOMETRY PARAMETERS =====

Layer Number	Layer Type	Thickness (mm)	Orientation (degrees)
1	ply	0.125	90
2	ply	0.125	90
3	ply	0.125	0
4	ply	0.125	90
5	ply	0.125	30
6	ply	0.125	-30
7	ply	0.125	90
8	core	150.000	N/A
9	ply	0.125	90
10	ply	0.125	-30
11	ply	0.125	30
12	ply	0.125	90
13	ply	0.125	0

14	ply	0.125	90
15	ply	0.125	90

===== ON-AXIS MATRICES =====

Matrix [S] (in MPa⁻¹):

1.316e-05	-4.474e-06	0.000e+00
-4.474e-06	1.818e-04	0.000e+00
0.000e+00	0.000e+00	4.348e-04

Matrix [Q] (in MPa):

76641.164	1885.776	0.000
1885.776	5546.400	0.000
0.000	0.000	2300.000