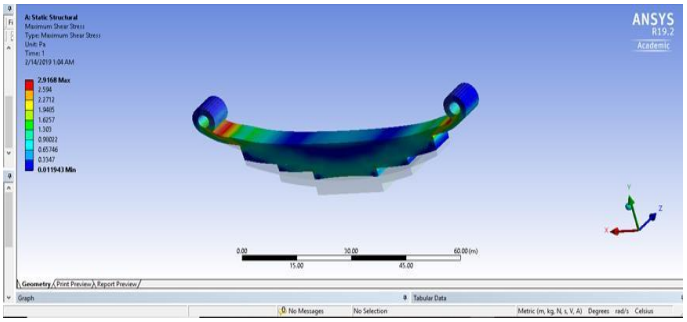

Figure 10: Maximum shear stress in steel leaf spring

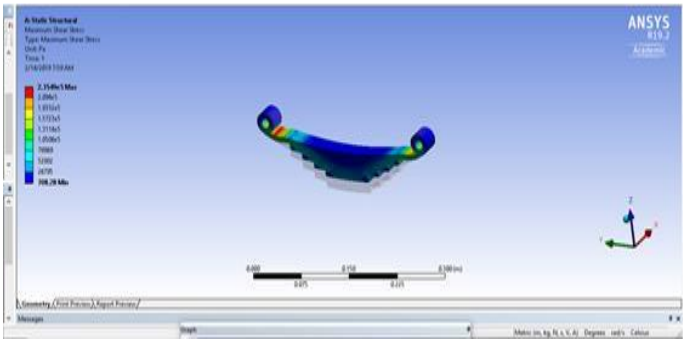

Figure 5: Maximum shear stress in E-glass/epoxy

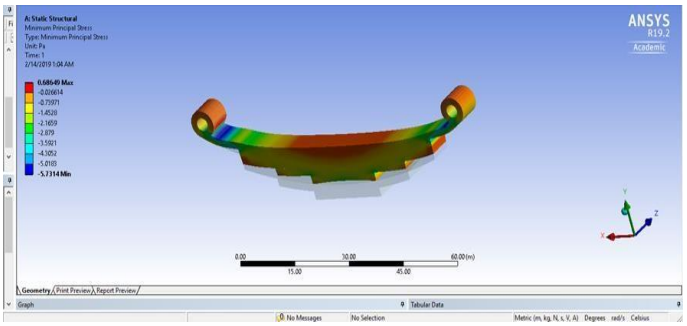

Figure 5: Maximum principle stress in steel leaf spring

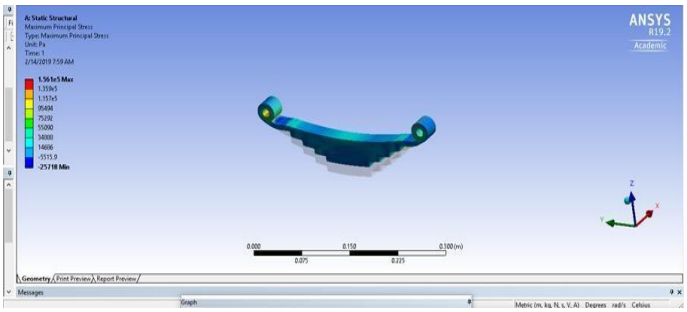

Figure 5: Maximum principle stress in E-glass/epoxy

Table 2: Comparison of steel and E-glass/epoxy

Parameters	Conventional steel leaf	E-GLASS/EPOXY COMPOSITE LEAF SPRING
Total Deformation (maximum)	$1.1353^{e^{-9}}$	$6.5303^{e^{-7}}$
Equivalent stress (maximum)	5.6913	$4.5706^{e^{-5}}$
Directional deformation (maximum)	$1.253^{e^{-10}}$	$1.4879^{e^{-8}}$
Maximum shear stress (maximum)	2.9168	$2.3549^{e^{5}}$
Maximum principal stress (maximum)	0.68649	$1.5615^{e^{5}}$

Conclusion

Analysis of leaf spring with different material shows that composite E-glass/epoxy shows less stress for a particular load as compared to conventional steel material. Since weight factor is one of the major concern while designing vehicles and weight of composite material e-glass/epoxy is less than steel hence it shows better results when compared with steel.

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