

the middle; values of composite material alfa/epoxy are lower compared to those found for glass/epoxy and carbon/epoxy.

Conclusion

The results found after genetic calculation show that the level of damage to the interface is related to the nature of the materials used. The interface of alfa/epoxy has a greater resistance to mechanical stress compared with the interface of glass/epoxy and carbon/epoxy. The numerical simulation has good agreement with the result obtained from our genetic algorithm calculation, which shows that the alfa/epoxy is stronger than the carbon/epoxy and glass/epoxy; the figures show that the values of interface damage found for alfa/epoxy are far inferior to those for carbon/epoxy and glass/epoxy. The alfa/epoxy composite material has good mechanical resistance and can be used in applications requiring such materials (textiles, industrial, aeronautical ...). Therefore our findings revealed that the model worked well with the phenomenon of damage to unidirectional composite materials.

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Received 17.06.2015 Reviewed 09.11.2015

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