Problem: Honeycomb sandwich panels are widely used in aerospace applications due to their high stiffness-to-weight ratios; however, this mechanical benefit is accompanied by poor acoustical performance.

Approach: Investigating noise control solutions that reduce sound transmission can produce quieter panels without sacrificing strength.

Method

Results

Conclusions

A higher value for mass law deviation & loss factor indicates superior acoustical & damping performance.

Placing a mid-plane layer in the subsonic core could produce superior acoustic and damping properties. This has the possibility of reducing mechanical stability. However, the Kevlar core shows transmission loss and loss factor values can be enhanced simultaneously. Therefore, enhanced acoustics can be achieved without sacrificing mechanical performance.