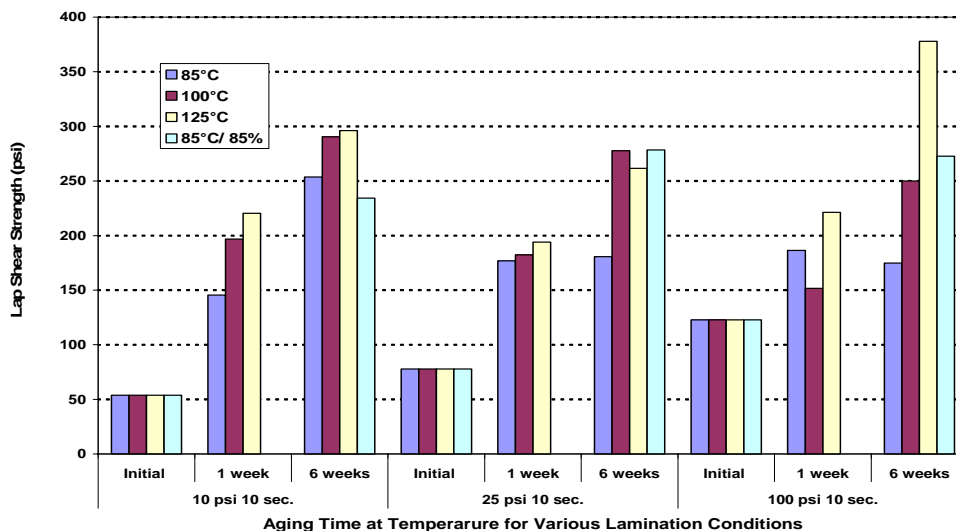


### Reliability Testing

The long term reliability of T418 tape was evaluated. Lap shear strength and thermal impedance were measured after exposing to various aging environments. Lap shear samples were prepared by sandwiching T418 tape between Al substrates with 1x1 inch<sup>2</sup> overlap. Thermal samples for reliability testing were also prepared by laminating the tape between Al substrates at various pressures. T418 exhibits excellent stability and passes thermal and adhesion properties after various aging conditions.

- Thermal aging: 1000 hours at three different temperatures: 85°C, 100°C and 125°C
- Thermal/ humidity aging: 1000 hours at 85°C/85% relative humidity
- Thermal shock: temperature ramp from -40 to 125°C at a rate of 10°C/minute with 10 minute hold at peaks for 100 cycles
- Mechanical shock: 3 blows in 6 directions (total of 18) with 60G's force in half sine pulse
- Sine vibration: vibration between 10 to 2000Hz with 2grams to 12grams force on X and Y axis only

### Lap Shear Strength After Thermal Aging



### Thermal Impedance After Thermal Aging

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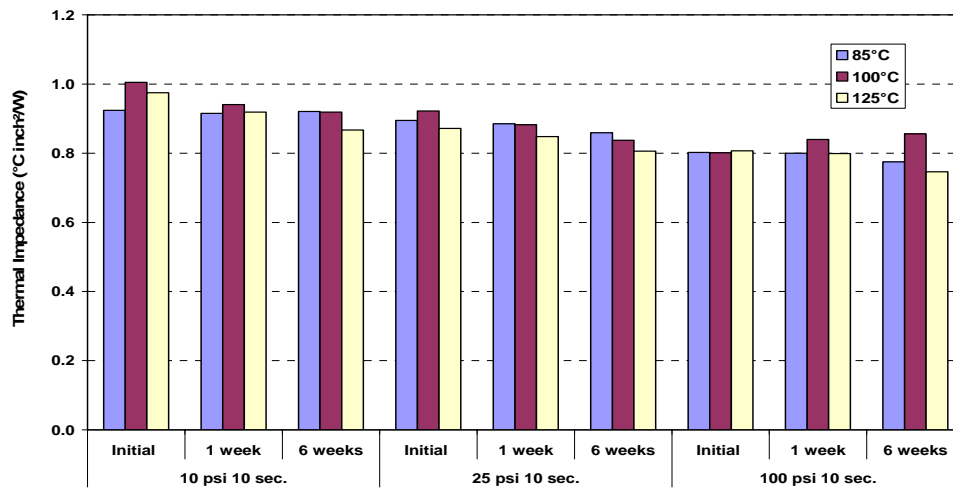
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Aging Time at Temperature for Various Lamination Conditions

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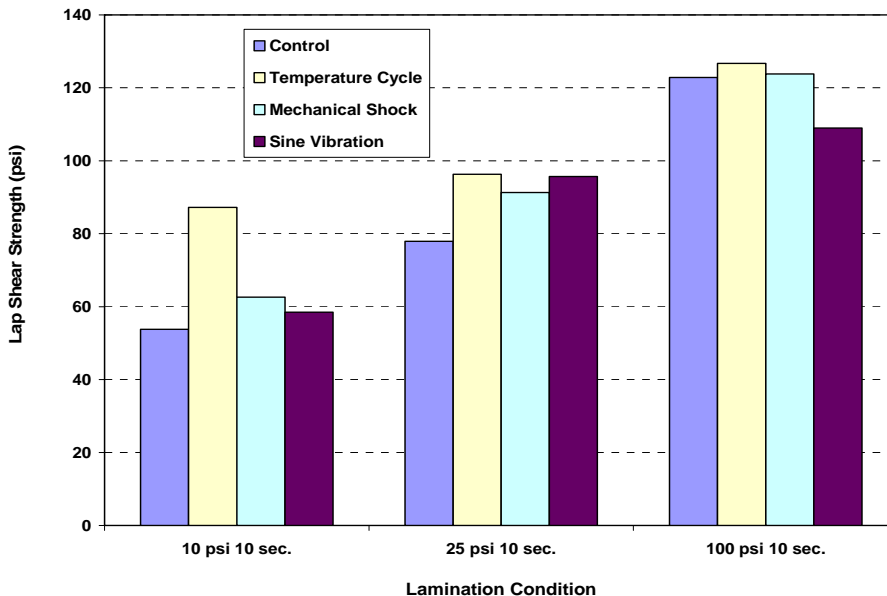
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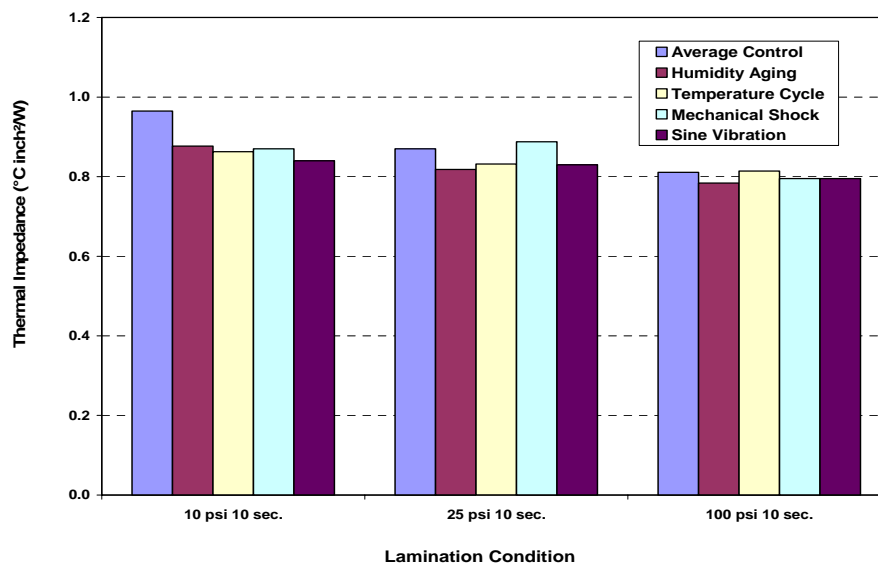
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### Lap Shear Strength After Different Reliability Stress



### Thermal Impedance After Different Reliability Stress



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