

# Nanocoatings: part 2 of improving linearized stress resistance.

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- **Abstract:** Using a simulation of the Nano coating impact on linearized stress resistance using FEA software, part 2 of the study is a continuation of part 1. As a result, an aluminium (Al7075-T6) spherical vessel was coated with two distinct nano-layers made of titanium (Ti) and nickel (Ni) and subjected to internal pressure before and after the coating was applied (100nm, 500nm, and 900nm). After that, the acquired findings were compared to those obtained before and after the coating was applied. According to the findings, the aluminium Al7075-T6 thin walled spherical vessel was effectively coated with Titanium and Nickel using ANSYS modelling software. Additionally, the findings have revealed that the linearized stress resistance of the 100,500 and 900nmthickness Nickel coated aluminium 7075-T6 thin walled spherical vessel. These linearized stress resistance gains with Nickel coating were equivalent to 42% when compared to Titanium coating thickness (100, 500 and 900 nm). The linearized stress maximum resistance has improved by approximately 2.5% for Ti and by 5% for Ni.
- **Keywords:** Simulation, Nano coating, FEA, Pressure, Titanium, Linearized, Resistance,