

**Project Title:** [Design of Molding Press Platen to Reduce Temperature Differential in Heat Transfer](#)

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**Area:** [Mechanical Engineering](#)

**Sponsor:** [Trelleborg Sealing Solutions](#)

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Trelleborg Sealing Solutions is a world leader in engineered polymer-based seals and components used in general machinery and tooling as well as the automotive, maritime, and aerospace industries. During a process used to create one of their many products, uncured rubber is placed into a mold that is then placed in a heated hydraulic press to produce an elastomer seal. Depending on the seal being produced and the type of elastomer being used, the mold is subjected to pressures up to 30 tons at temperatures up to 370 degrees Fahrenheit for 4 to 9 minutes. During the elastomer curing process a 15 to 20 degree Fahrenheit temperature differential was found between the temperature read by thermocouples located within the heated platens used to compress the molds and the inner surface of the molds themselves. This temperature differential has led to quality issues in the produced seals, therefore Trelleborg is seeking to reduce the temperature differential. The objective is to minimize the temperature differential between the temperature read by the platen's thermocouple and the inner surface of the mold to 5 degrees Fahrenheit or less.

The design and development budget for the project is \$1000. This budget will cover all prototyping costs and does not include any tooling, machining, or equipment changes that Trelleborg may have to perform.