

Category: Design and Analysis

Example: Composite Shell to Eliminate Assembly / Ergonomic Issues

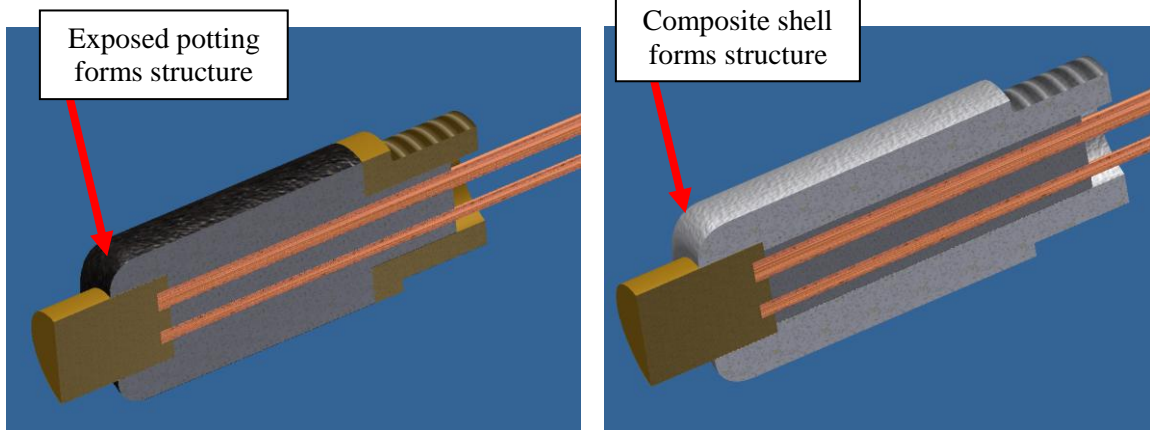


Image 1: Original design requires hand-tightened mold; cured potting forms body

Image 2: Composite shell holds and aligns components; eliminates molding

Problem: Separate components were placed in a mold, which required significant hand-tightening of screws creating an ergonomic issue. After curing, the product was held together by fragile cured potting, and often fractured.

Action:

1. Conceived idea of integral mold and body exterior
2. Worked with outside vendor to identify material; checked material properties with Product Engineer
3. Obtained prototypes and demonstrated elimination of poor ergonomic assembly actions; design change also reduced hands-on assembly time by 30%
4. Prototype assemblies demonstrated significantly-increased robustness
5. Wrote and submitted ECO

Result:

1. Complete elimination of ergonomic issue (and freeing area shelf space through elimination of multiple molds)
2. Decreased hands-on assembly cycle time by 30%
3. Improved product quality and durability