

### **A Plastics Project: Plastic Electrical Connectors for Outdoors-Exposure**

Efficient plastics design for economical and timely market development is our business focus. This includes part design, material recommendations, tooling sources, and if needed, production quotes. Our design cycle for some customers has included initial tooling trials and limited production runs. We have also provided rapid prototypes made for hands-on look-and-feel, and functional, 3D printed parts.

As a project example, a two-component set was designed for a high-voltage, high-amperage connection system. One piece was intended to be panel-mounted, the other a free-standing piece that connected to the former. Both had insert-molded conductive inserts (not shown). Besides mechanical considerations, weathering and UV exposure were factors, as was exposure to petrochemicals.

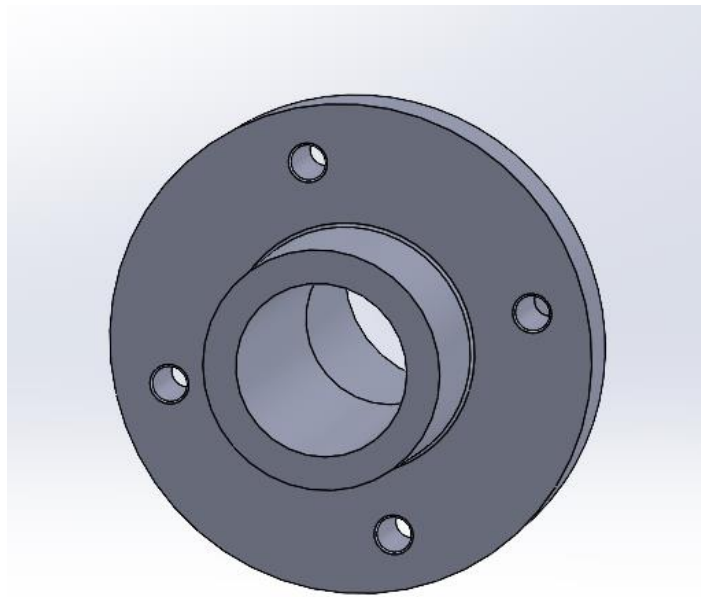
#### ***Soft-shell piece:***



The above component, a 25 cm long piece (10 inches), was a flexible polymer over-molded onto a brass insert, and required a central mold core to orient and hold that brass piece during the molding process.

- Designed the outer shell material component per customer specifications / sketches
- Recommended a selection of potential materials chosen for physical / chemical / weathering / electrical properties
- Obtained mold quotes from three different mold manufacturers
- Obtained production quotes from two molding facilities

***Hard shell piece:***



This component was a rigid material with a built-in mounting flange, also insert-molded with a brass piece with a central core in the mold to orient and hold that brass piece during the molding process.

- Designed the outer shell material component per customer specifications
- Structural strength & field-durability demands necessitated heavy-duty construction
- Bolt circle compatibility was critical for application & mounting to existing installations
- Recommended two similar but subtly-different materials chosen for physical / chemical / weathering / electrical properties
- Obtained mold quotes from two different vendors
- Obtained production quotes from one molding house (uncommon material with unique molding challenges)

***Project Conclusion:***

CAD models, material recommendations, and quotations for tooling and production submitted to the customer towards their product launch.

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When your firm wants timely, cost-effective designs that are brought to the point of production, consider **David O. Hunt PE LLC**.