Fuel-Cell and Energy Storage Components
Composite bipolar plates and seals

Improve performance and reliability, extend product life, and reduce system cost. Dana has been precision-molding highly conductive, polymer composite bipolar plates for fuel-cell stack developers for several years. In conjunction with high-volume polymer molding expertise, Dana’s unique capabilities in ultra-thin bonded plate assemblies with integrated seals make the company a valuable partner for all your plate and sealing needs.
Delivering low-cost product solutions for advanced fuel-cell engines.

Applications for Dana’s technologies include bipolar plates for polymer electrolyte fuel-cell (PEFC) and flow battery energy storage systems, with markets extending to stationary power, industrial mobility, and transportation.

Features:
- Precision-molded graphite-polymer composite plates
- More than 10 years of production experience and proven field reliability
- Adhesively bonded plate modules with mold-in-place seals
- Custom seal design capability

Fuel-cell and flow battery components:
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<table>
<thead>
<tr>
<th>Reviews</th>
<th>Customized to your project</th>
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<tbody>
<tr>
<td>Materials</td>
<td>Optimized to your design</td>
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<tr>
<td>Conductivity</td>
<td>20 to 50 S/cm</td>
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<tr>
<td>Flexural Strength</td>
<td>45 to 55 MPa</td>
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<tr>
<td>Minimum Plate Thickness</td>
<td>&lt;0.028”/0.7 mm</td>
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<tr>
<td>Web Thickness</td>
<td>&lt;0.3 mm</td>
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<tr>
<td>Parallelism</td>
<td>&lt;0.038 mm active area</td>
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<tr>
<td>Molded Plate Size</td>
<td>Up to 2,000 cm²</td>
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Proven technologies for tomorrow’s power sources.

A global leader in the fuel-cell market, Dana has the reliable alternative energy technologies that OEMs are looking for — both today and in the future.

Learn more today by visiting dana.com/light-vehicle.

Production Supply
Dana operates an established manufacturing facility for serial production of composite fuel-cell and flow battery plates, along with integrated seals.

Development Capabilities
Dana works with customers to create customized plate solutions to meet application requirements, while ensuring robust design for manufacturability and low cost. We use customized seal materials and application processes to ensure seal reliability and system compatibility. An extensive materials characterization laboratory — complete with fuel-cell testing equipment — is used for these projects.

Technology Development
Our customers benefit from Dana’s ongoing technology improvements in plate and seal materials, as well as manufacturing improvements to reduce cost and improve product reliability. The combination of our strategic supplier alliances and in-house capabilities allows Dana to provide product solutions for a wide range of fuel-cell and flow battery applications.

Modularity
Dana offers its customers both bonded plate assemblies and optional short stack modules, each of which features integrated seals.
- Conductively bonded plate assemblies allow internal liquid cooling and improved plate-to-plate conductivity
- Mold-in-place seals and insulators on either side of bonded assemblies for robust stack sealing and simplified stack assembly

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