Ceramic Armor
Superior Lightweight Protection
CoorsTek offers an unparalleled selection of extreme-duty, advanced ceramics. We help you select the best-fit material for your application and budget.

Advanced ceramic vehicle tiles

Exceptionally well-suited for vehicular applications, CoorsTek produces lightweight technical ceramic tiles using tight-tolerance standards, high-purity formulations, and controlled microstructures to ensure a consistently reliable defense to unexpected threats.

Shapes and sizes for all needs

CoorsTek offers CeraShield™ advanced ceramic vehicle tiles in a variety of shapes and sizes. Choose from square or hexagonal shapes at various imperial and metric measurements, or let our specialists help you select custom shapes, thicknesses, and configurations.

**CeraShield® High-density aluminum oxides**

- Using this traditional monolithic plate material, CoorsTek offers high-volume, multi-facility production capacity
- Standard sizes and shapes including all SAPI sizes
- Custom thicknesses available from 1mm and up

**CeraShield™ Ceramic Armor For Superior Lightweight Protection**

- **Superior hardness for advanced threats**
- **Lower weight with higher performance benefits**

### Properties

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>UNITS</th>
<th>TEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>g/cc</td>
<td>ASTM-C 20</td>
</tr>
<tr>
<td>Flexural Strength (MOR), 20°C</td>
<td>MPa</td>
<td>ASTM-F417</td>
</tr>
<tr>
<td>Elastic Modulus, 20°C</td>
<td>GPa</td>
<td>ASTM-F348</td>
</tr>
<tr>
<td>Poisson’s Ratio, 20°C</td>
<td></td>
<td>–</td>
</tr>
<tr>
<td>Compressive Strength, 20°C</td>
<td>MPa</td>
<td>ASTM-C 773</td>
</tr>
</tbody>
</table>
| Hardness                        | GPA   | Knoop 3000
| Fracture Toughness, Kc         |       | Notched Beam |
| Thermal Conductivity, 20°C      | W/m·K | ASTM-C 406 |
| CTE, 25-1000°F                  | 1 X 10-6/°C | ASTM-C 372 |

### CoorsTek® Offers

- **CeraShield™ and Cercom® Ceramic Armor Ceramics**
  - Superior hardness for advanced threats
  - Lower weight with higher performance benefits

Many sizes and shapes are offered in all CeraShield and Cercom materials. Custom shapes, sizes, and thicknesses are readily manufactured to customer specifications.

### Contact Information

For more information, contact CoorsTek at

- Phone: +1 303 271 7100
- Email: info@coorstek.com
Ceramics for Advanced Armor

Proven performance for advanced armor
CoorsTek CeraShield and Cercom ceramics offer many advantages over conventional materials. Specially formulated ceramic armor materials provide:
• Low weight
• High hardness
• Controlled, uniform microstructure
• Dimensional stability over a wide temperature range
• Compatibility for use in finished armor systems with proven ballistic performance for National Institute of Justice (N.I.J.) and international design standards (C).

Expert design assistance for amazing performance
CoorsTek engineers offer assistance:
• Selecting the best material for individual applications
• Designing for manufacturability:
  - Optimized performance
  - Competitive manufacturing costs

Quality with a passion for excellence

Technical ceramics for over 100 years
Since 1910, CoorsTek has solved technical challenges for innovative customers. With armor tile production dating back to the 1960’s, our long-term experience, broad range of materials, variety of cost-effective manufacturing techniques, and unparalleled capacity provide peace of mind for manufacturers around the globe.

Leaders in technical ceramics
A recognized worldwide leader in the engineering and manufacturing of technical ceramics, CoorsTek provides advanced materials and design configurations for ballistic-grade ceramics used in appliqué and integrated armor systems. Call us today at +1 303 271 7100 for assistance.

Variety of materials for a wide range of applications
CoorsTek offers a broad selection of CeraShield and Cercom materials for specific ballistic applications:
• High-density aluminum oxides
• Boron carbides
• Silicon carbides
• Zirconia-toughened aluminas

Advanced manufacturing capabilities
With state-of-the-art forming methods and statistically controlled processing, CoorsTek ensures leading-edge, low-cost manufacturing. Advanced capabilities in green machining and precision grinding enable extreme customization of design to meet the most demanding applications.

The chart is intended to illustrate typical properties. Engineering data is representative. Property values vary somewhat with method of manufacture, size, and shape of part. Any suggested applications are not made as a representation or warranty that the material will ultimately be suitable for such applications. The customer is ultimately responsible for all design and material suitability decisions. Data contained herein is not to be construed as absolute and does not constitute a representation or warranty for which CoorsTek assumes legal responsibility. ANY WARRANTY OR REPRESENTATION FOR WHICH COORSTEK IS RESPONSIBLE SHALL BE SUBJECT TO A SEPARATELY NEGOTIATED AGREEMENT. (C)CeraShield armor ceramics are not rated by the National Institute of Justice (N.I.J.). Manufacturers of finished ceramic armor systems have achieved N.I.J. Level III and IV ratings for complete armor systems incorporating CeraShield armor ceramic components. CoorsTek and Cercom are registered trademarks of CoorsTek, Inc. CeraShield and OpX are trademarks of CoorsTek, Inc.

coorstek.com