

## TECHNICAL DATASHEET

# PE Dock Bumper

Composite loading dock bumper: UHMWPE impact face bonded to a black rubber cushion

The Diode PE Dock Bumper is a two-component bumper for loading docks and truck bays. The rubber component absorbs and dissipates the impact energy of reversing vehicles, while the UHMWPE component forms a hard-wearing, low-friction contact face that resists abrasion, moisture and chemicals and protects both the dock wall and the vehicle.

## 1. Product Construction

| Component      | Material                 | Function                                                                             |
|----------------|--------------------------|--------------------------------------------------------------------------------------|
| A. Impact face | UHMWPE (black / natural) | Wear-resistant, low-friction contact surface (COF 0.12); negligible water absorption |
| B. Cushion     | Black rubber, 75 Shore A | Elastic energy absorption and recovery; low permanent set                            |

## 2. Component A: UHMWPE Impact Face

| Property                                 | Test Method | Unit              | Value                       |
|------------------------------------------|-------------|-------------------|-----------------------------|
| <b>Physical Properties</b>               |             |                   |                             |
| Density                                  | ASTM D792   | g/cm <sup>3</sup> | <b>0.93 – 0.97</b>          |
| Water Absorption                         | ASTM D570   | %                 | <b>&lt; 0.01</b>            |
| <b>Mechanical Properties</b>             |             |                   |                             |
| Tensile Strength                         | ASTM D638   | MPa               | <b>40</b>                   |
| Elongation at Break                      | ASTM D638   | %                 | <b>300</b>                  |
| Flexural Strength                        | ASTM D790   | MPa               | <b>24</b>                   |
| Compressive Strength (10% deformation)   | ASTM D695   | MPa               | <b>21</b>                   |
| Hardness, Shore D                        | ASTM D2240  | –                 | <b>D66</b>                  |
| Coefficient of Friction                  | –           | –                 | <b>0.12</b>                 |
| <b>Thermal Properties</b>                |             |                   |                             |
| Heat Deflection Temperature              | ASTM D648   | °C                | <b>47</b>                   |
| Melting Point                            | ASTM D3412  | °C                | <b>135</b>                  |
| Continuous Service Temperature           | –           | °C                | <b>82</b>                   |
| <b>Electrical Properties</b>             |             |                   |                             |
| Surface Resistivity                      | ASTM D257   | Ω                 | <b>&gt; 10<sup>15</sup></b> |
| Volume Resistivity                       | ASTM D257   | Ω·cm              | <b>&gt; 10<sup>15</sup></b> |
| Dielectric Constant (10 <sup>6</sup> Hz) | ASTM D150   | –                 | <b>2.3</b>                  |
| Dielectric Strength                      | ASTM D604   | kV/mm             | <b>45</b>                   |

### 3. Component B: Rubber Cushion

| Property                    | Test Method | Specification | Test Result |
|-----------------------------|-------------|---------------|-------------|
| Density (g/cm³)             | GB 5723     | 1.6 ± 0.05    | 1.55        |
| Hardness (Shore A)          | GB/T 531    | 70 ± 5        | 75          |
| Elongation at Break (%)     | GB/T 528    | ≥ 250         | ≥ 270       |
| Tensile Strength (MPa)      | GB/T 528    | ≥ 4.0         | ≥ 4.0       |
| Temperature Resistance (°C) | –           | -30 to 120    | -30 to 120  |
| Permanent Set at Break (%)  | –           | ≤ 25          | ≤ 25        |

Rubber test report ref. AB011, tested 27 Jan 2019 (report dated 05 Feb 2019) at 25 °C, 50% RH.

### 4. Key Features

- Two-component construction: UHMWPE face for wear resistance, rubber core for shock absorption
- Very low friction face (COF 0.12) reduces vehicle and trailer scuffing
- Water absorption below 0.01%; suitable for outdoor and wet dock environments
- Excellent electrical insulation (> 10<sup>15</sup> Ω)
- Rubber cushion rated -30 °C to 120 °C; UHMWPE continuous service up to 82 °C
- Custom sizes and mounting hole layouts available on request

### 5. Typical Applications

- Warehouse and distribution centre loading docks
- Truck, trailer and container bays
- Industrial plants, ports and logistics yards
- Wall, column and loading-bay edge protection

### 6. Notes

The values stated are typical and are provided for guidance only. They are not a specification guarantee and may vary within normal manufacturing tolerances. Users should verify suitability for their application. Diode Trading EST reserves the right to revise this datasheet without notice.