

# ZIRCONIA TRIM FOR HIGH PRESSURE CONTROL VALVES

THE ANSWER TO VALVE ABRASION



**KIMRAY**  
INC.®

## HOW IS ABRASION AFFECTING YOUR VALVES?

Premature wear on control valves can cost you thousands of dollars in repairs, downtime, and replacement valves. Choosing the right valve trim for your environment is key.

Kimray's wear-resistant Zirconia Trim is designed specifically for highly abrasive oil and gas applications. Zirconia offers a combination of abrasion and corrosion resistance not found in steels, alloys, or many forms of other ceramics and carbides.

## WHAT'S THE SECRET TO ZIRCONIA?

Zirconia is a robust, hard ceramic material. It outperforms metal trim materials in abrasion resistance. This is an ideal solution for high-sand areas like North Texas, Australia, India, and China.

**Zirconia is superior to Stellite and other metals for two reasons:**

1. It is a harder material than metal
2. Because it is a ceramic and not metal, it is inert to corrosive material

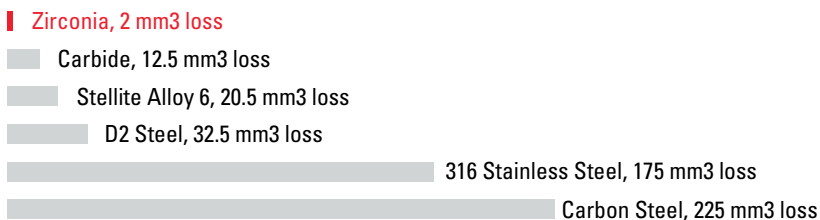
In an ASTM G65 test of material loss, Zirconia outperformed 316 Stainless Steel, Tungsten Carbide, and Stellite.

The chart below shows the results of the ASTM G65 Sand Abrasion Test. This test measures material loss based in cubic millimeters (mm<sup>3</sup>).

**Kimray's Magnesia Stabilized Zirconia valve trim performed 10 times better than Stellite Alloy and nearly 90 times better than 316 Stainless Steel.**

## ASTM G65 Test of Material Loss

Standard Test Method for Measuring Abrasion Using the Dry Sand/Rubber Wheel Apparatus



Data provided by Refractron

## VALVE TRIM CHOICES ARE EASY WITH ZIRCONIA

Kimray's Zirconia Trim combats valve abrasion more effectively than any choice on the market. That keeps your valves up and running, and your wellsite reaching its peak performance. Zirconia Trim is available now in Kimray High Pressure Control Valves.

## DO YOU OPERATE UNDER EXTREME CONDITIONS?

Valve trim performance can be affected by more than just valve abrasion. At extremely high temperatures, metals like Stellite can be compromised. Zirconia Trim is an ideal solution for operation in extreme temperatures. This trim is designed to perform at temperatures ranging from -200°C to 850°C. Stellite, meanwhile, is only tested for temperatures between 315°C– 600°C. And because Zirconia is not a metal, it's not subject to NACE.

## ZIRCONIA APPLICATIONS

- Erosive/Abrasive Conditions
- Fracking
- Coal Seam Gas



Kimray's Angled and Through Body High Pressure Control Valves



Kimray Zirconia Trim Set