

# Recommended Edge Breaks for Hexoloy® Silicon Carbide



## Saint-Gobain Ceramics Structural Ceramics

### Introduction

Design engineers can effectively use the best properties of ceramics and minimize any disadvantage by proper component design. The biggest issue in substituting for a ductile metal with a relatively brittle ceramic is in handling. Caution and care must be exercised to gain full benefit of the superior properties of ceramic materials.

### Factors in Handling

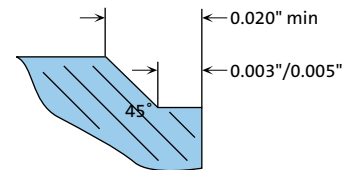
Edge chipping can be a problem in handling and installing ceramic components. The combination of high stiffness and low fracture toughness make proper edge preparation of paramount importance for finished parts. Proper edge design can ensure that the superior properties of ceramics can be utilized in any application.

### Recommendations for Hexoloy®

The key to minimizing impact damage is edge definition. Eliminating right angle edges will minimize impact damage and make the ceramic "user friendly". A minimum 0.020" chamfer is recommended on all edges based on studies done at our facility. Following are tops for improved performance:

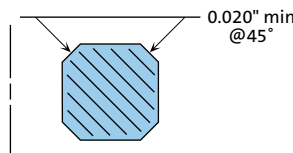
#### Dry Pressed Seals

The mechanics of dry pressing necessitates a unique chamfer shape to accommodate the press punches. All O.D. and I.D. edges should have a 0.020" minimum chamfer as shown at right:

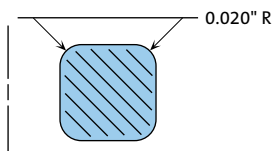


#### Ground Seals

Grinding provides an opportunity to blunt edges to eliminate flats and sharp angles. Chamfers of 0.020" minimum on both OD/ID are recommended:



Severe applications may call for radiuses on edges which eliminate sharp edges.



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