

# 平面砂布輪材料介紹

## Materials of Flap Disc

### 氧化鋯磨料 Zirconia ( ZA )

名稱	氧化鋯
化學式	Al <sub>2</sub> O <sub>3</sub> 和ZrO <sub>2</sub>
縮寫	ZA
生產方式	Al <sub>2</sub> O <sub>3</sub> 和ZrO <sub>2</sub> (55% Al <sub>2</sub> O <sub>3</sub> + 45% ZrO <sub>2</sub> )，共熔後自然冷却硬的Al <sub>2</sub> O <sub>3</sub> 和ZrO <sub>2</sub> 互融再一起，與氧化鋁比較具有更好的韌性和較低的硬度，磨料有很好的自銳性。
應用	金屬粗磨和去毛邊、木材的刨磨

Material	Zirconia
Chemical Formula	Al <sub>2</sub> O <sub>3</sub> and ZrO <sub>2</sub>
Abbreviation	ZA
Producing Methods	Al <sub>2</sub> O <sub>3</sub> and ZrO <sub>2</sub> (55% Al <sub>2</sub> O <sub>3</sub> + 45% ZrO <sub>2</sub> ) melt together then via natural cooling. After that, harder Al <sub>2</sub> O <sub>3</sub> and ZrO <sub>2</sub> melt together again.
Features	Compared with Alumina, its toughness is better and hardness is lower Good abrasive materials and selfsharpness.
Application	Metals rough grinding, burring, and wood panels grinding.

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## Materials of Flap Disc

### 晶体的結構 The institution of a crystal

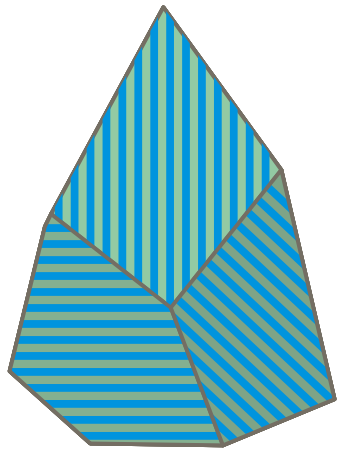
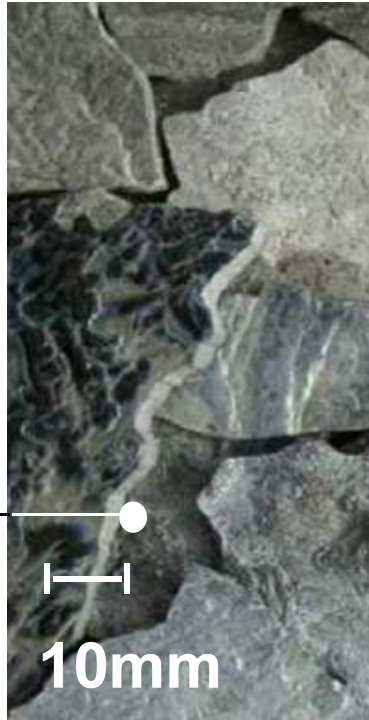


示意图 Diagram:  
明亮的 Bright one:  $ZrO_2$   
暗色的 Dark one:  $Al_2O_3$

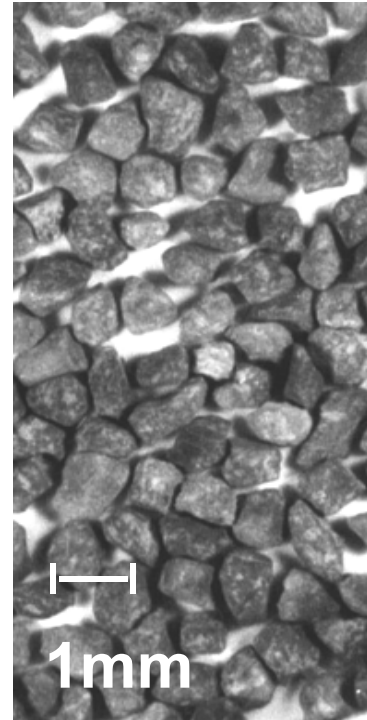
磨料片的厚度 Thickness

大约.1.5 mm About 1.5mm

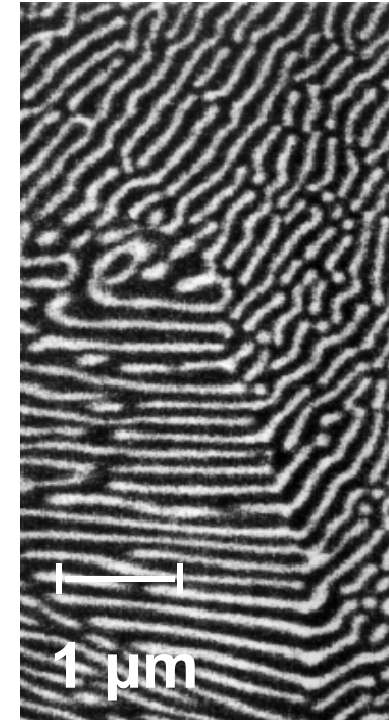
照片 Picture:  
Z/A-片状 piece-shape



顯微圖 Micrographic:  
Z/A, P36



顯微图 Micrographic:  
浅色 Light:  $ZrO_2$   
黑暗 Dark:  $Al_2O_3$



# 平面砂布輪材料介紹

## Materials of Flap Disc

Z/A (氧化鋯) 的自銳過程  
Process for self-sharpening

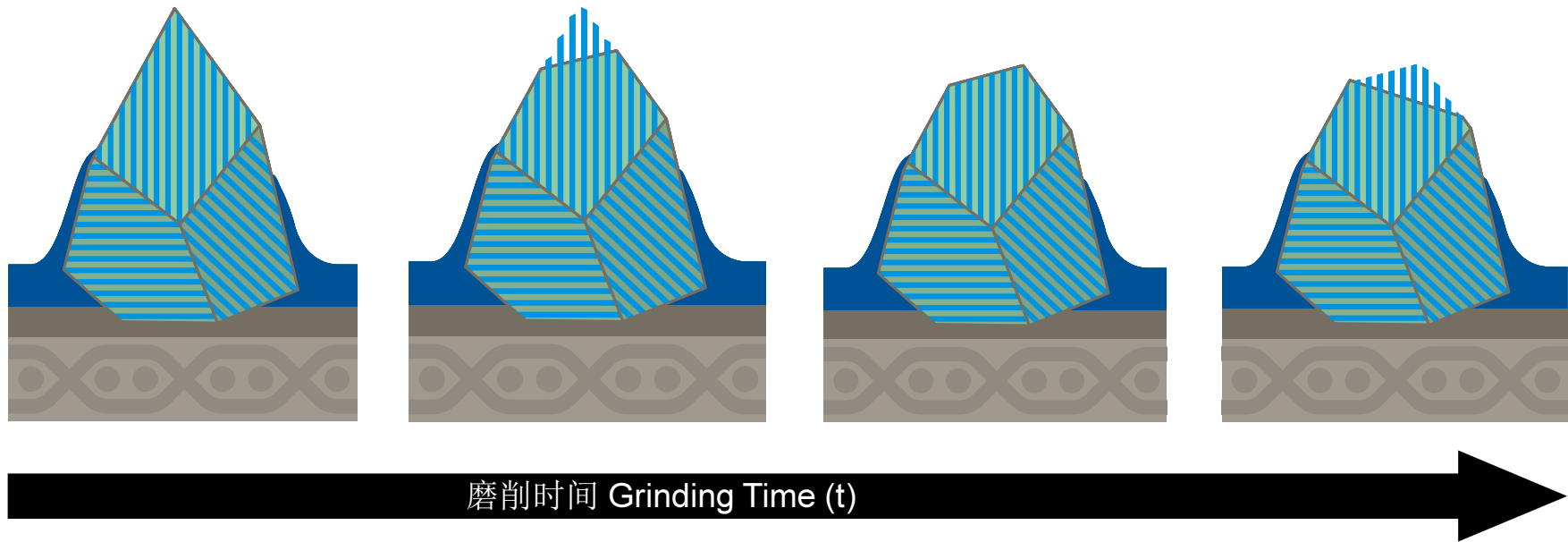


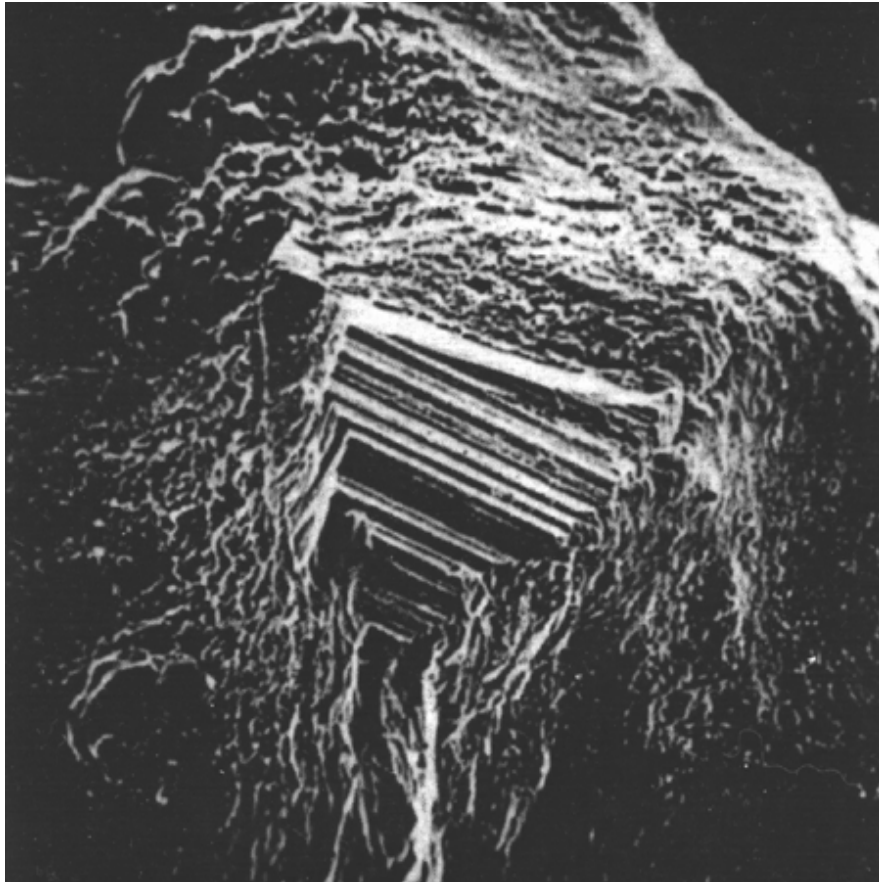
示意图 Diagram:  
明亮的 Bright: ZrO<sub>2</sub>  
黑暗的 Dark: Al<sub>2</sub>O<sub>3</sub>

磨削過程中，較軟的ZrO<sub>2</sub>先磨損，之後易碎的Al<sub>2</sub>O<sub>3</sub>成分磨掉，如此往覆進行。  
In the process, first, softer ZrO<sub>2</sub> wears then ingredients of fragile Al<sub>2</sub>O<sub>3</sub> wear.

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## Materials of Flap Disc

### ZA的自銳过程 Process for self-sharpening



在自銳狀態下的  
氧化鋯磨粒的尖端

It shows the tip of grain.

# 平面砂布輪材料介紹

## Materials of Flap Disc

### 陶瓷磨料 **Ceramic (CER)**

名稱 陶瓷磨料  
合成材料, 不存在天然形式

化學式  $AL_2O_3$

縮寫 CER

生產方式 氧化铝粉末與水、酸和其他化合物一起攪拌，此化合物經過乾燥成形最後燒結(類似于陶瓷與瓷器的製造).

特色 韌性高，硬度好，自銳性好

應用 金屬磨削

Material Ceramic

Chemical Formula AL2O3

Abbreviation CER

Producing Methods Put A/O power, water, acid and other chemicals together then combine them. After dry processed, it turns to be sintering.

Features High toughness, hardness, and selfsharpness.

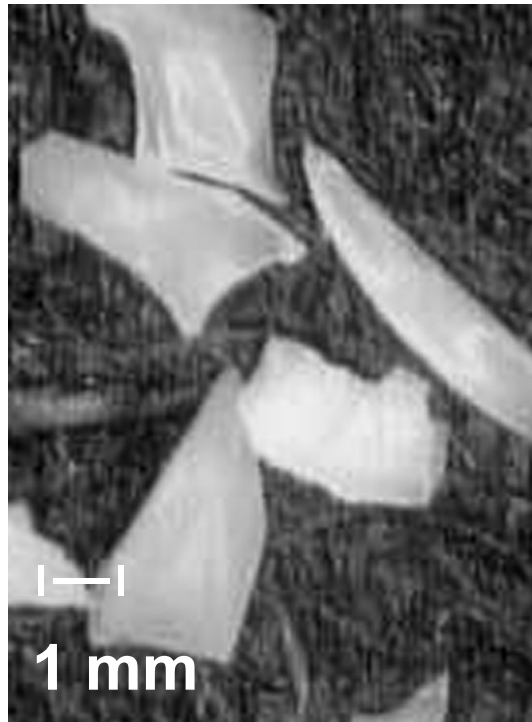
Application It is for metals grinding.

# 平面砂布輪材料介紹

## Materials of Flap Disc

### 结构 Institution

顯微照片Micrographic :  
陶瓷磨料, 粒度 24  
CER, Grit 24



陶瓷磨料的微微結構  
Detailed institution of CER

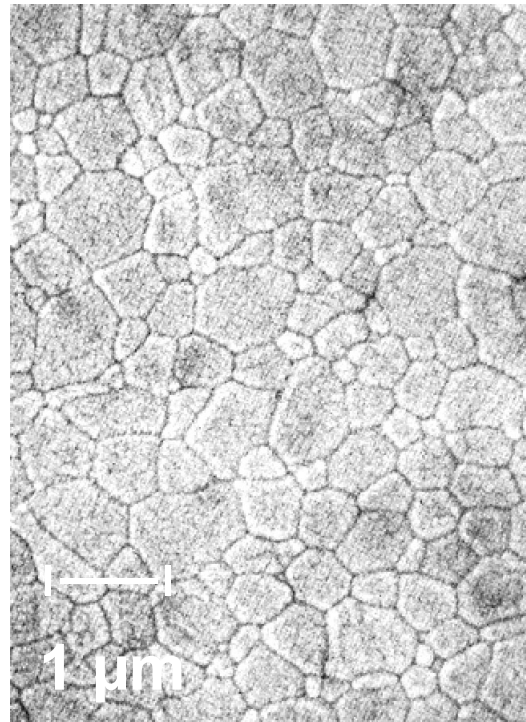
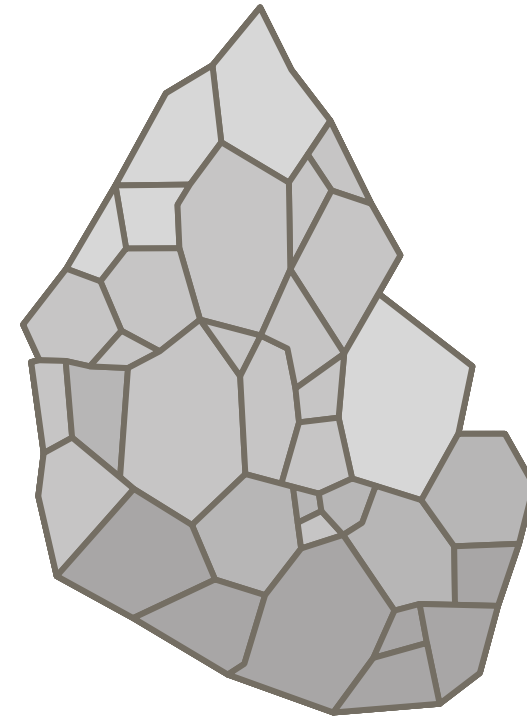


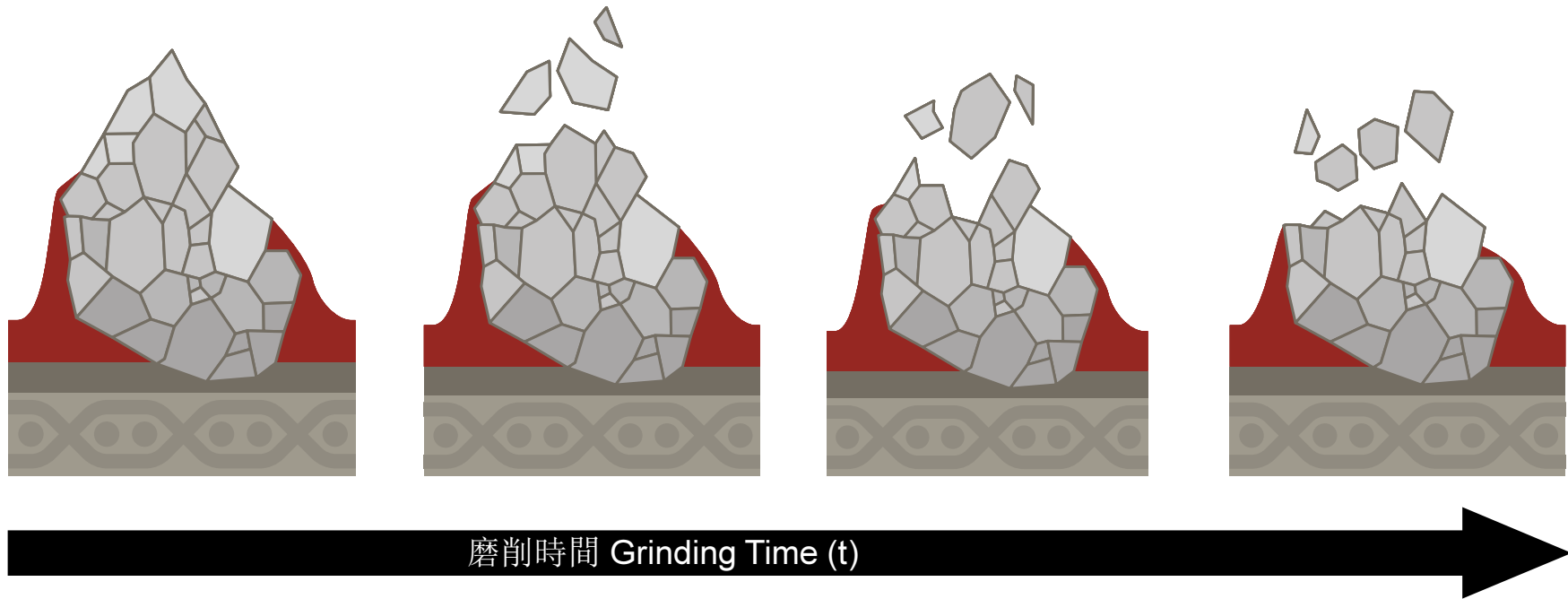
示意圖 Diagram



# 平面砂布輪材料介紹

## Materials of Flap Disc

### 陶瓷磨粒的自銳過程 Process for self-sharpening



在磨削力的作用下，微晶(燒結中形成)  
不斷破碎，所以磨粒總有新的尖銳的刀口。

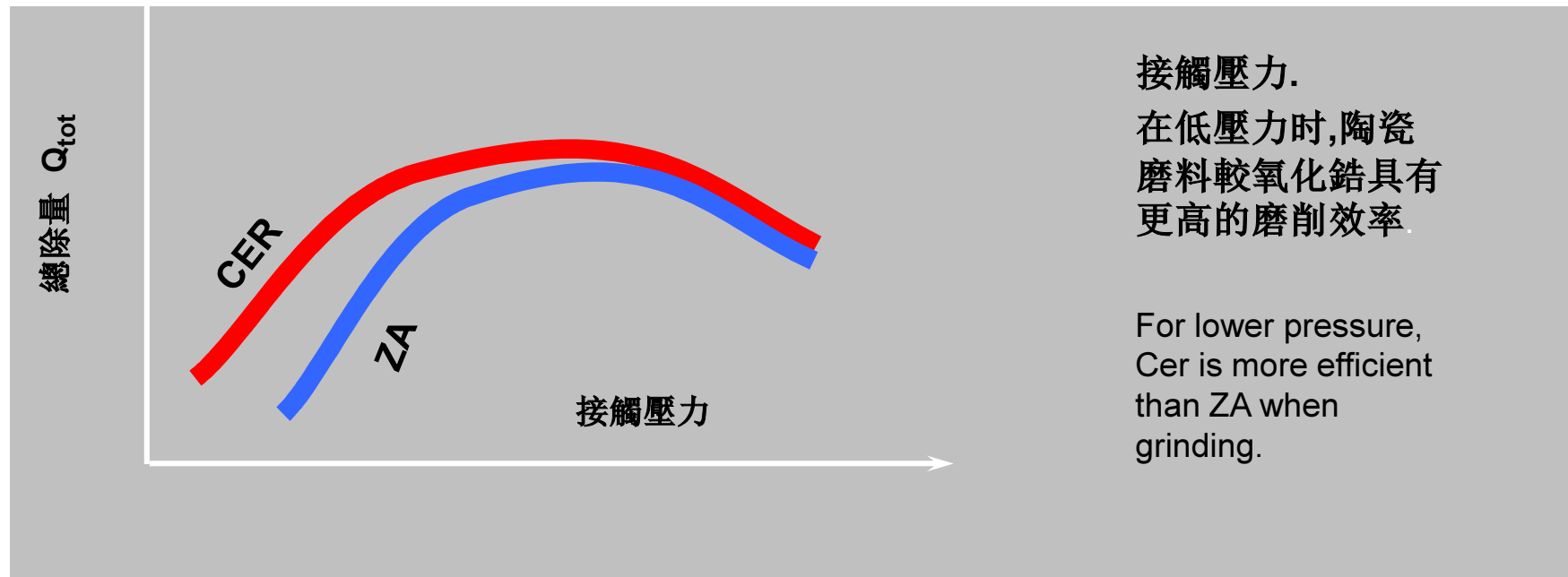
In the grinding process, the microlite splits so there will be new edges on grains.

# 平面砂布輪材料介紹

## Materials of Flap Disc

### 接觸壓力和總去除量

### Connection Pressure and $Q_{tot}$





# 平面砂布輪材料介紹

## Materials of Flap Disc

材料硬度和總去除量

Materials hardness and  $Q_{tot}$

