

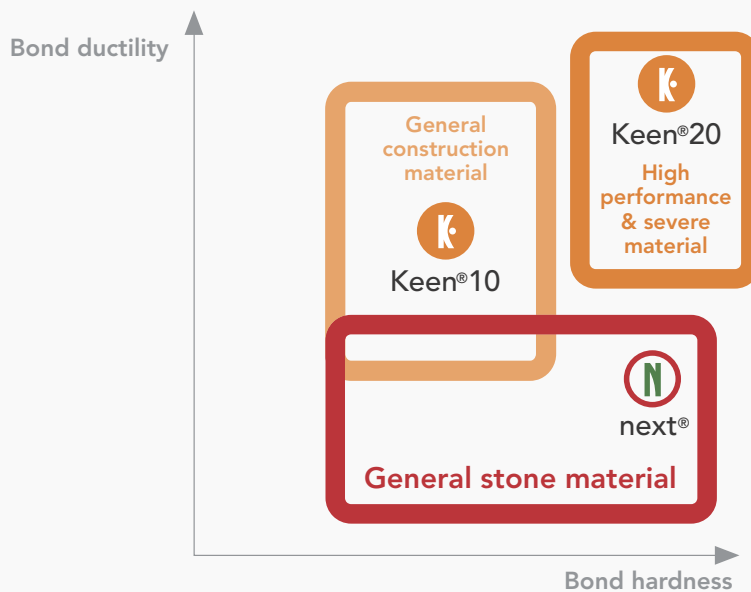


# Keen® range

## Keen® concept



- Following the 10 years success story of NEXT®, eurotungstene has developed, through an ongoing process of innovation, a new pre-alloyed range of powders: Keen®. Specially designed for abrasive and severe materials, Keen® is a new technical and economical alternative to traditional binders for the Diamond Tool industry.



## The Keen® range

### • Pure Keen®

Keen®10  
Keen®20

### Keen® premixed

KX1290  
KX2250  
KX2920

### Keen® granules

Keen®11  
Keen®21  
KX1291



### Keen® for all construction applications:

#### For all tools:

- Sawing
- Wire sawing
- Drilling
- Grinding
- Polishing

#### For all materials:

- Cured concrete
- Asphalt
- Fresh concrete
- Pre-stressed concrete
- Very abrasive natural stones

## Technical performances

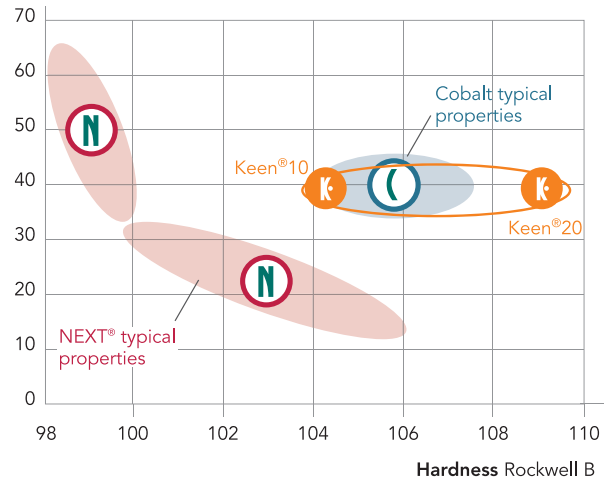
### Keen®10

- ▶ Similar behaviour to standard extra-fine cobalt.
- ▶ Mainly dedicated to general construction applications.
- ▶ High ductility and standard cobalt hardness.

### Keen®20

- ▶ Unique hardness and ductility combination.
- ▶ Dedicated to abrasive materials, high power applications.

Resilience (J/cm<sup>2</sup>)  
Measured Charpy (unnotched)



## Keen® main advantages

- ▶ High ductility.
- ▶ No oxidation.
- ▶ Cheaper than other traditional binders such as cobalt.
- ▶ Excellent alternative to cobalt.

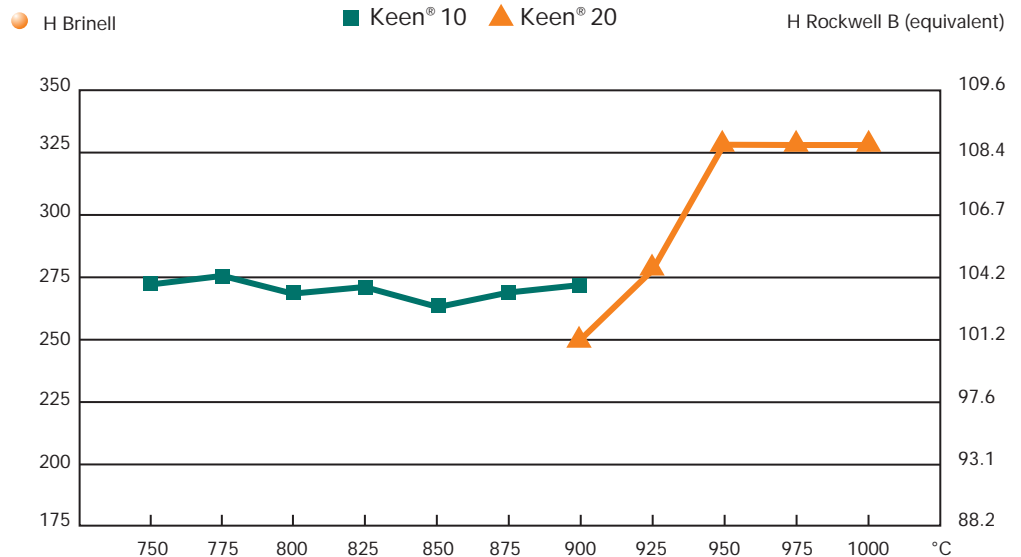


Keen®10



Keen®20

## Hardness as a function of sintering temperature (hot pressing)



### Keen®10

Recommended sintering parameters for most applications: **850°C**  
**350 kg/cm<sup>2</sup>/5mn**

### Keen®20

Recommended sintering parameters for most applications: **950°C**  
**400 kg/cm<sup>2</sup>/5mn**



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- Keen® can be mixed with traditional additives to optimize the tool performances.

### Improved free cutting

- Lower sintering temperature.
- Technical and economical solutions.

#### Keen® 10



10 % Bronze 85/15

**Recommendation:**

Bronze 85/15 (BR2314)  
Recommended sintering temperature: 825°C  
Pressure: 350 kg/cm<sup>2</sup>

**Applications:**

Fast cutting for cured concrete and standard construction material.

#### Keen® 10



10 % Iron



10 % Bronze 85/15

**Recommendation:**

Iron (FE2010)  
Bronze 85/15 (BR2314)  
Recommended sintering temperature: 800°C  
Pressure: 350 kg/cm<sup>2</sup>

**Applications:**

More ductility than Keen® + Bronze formula.

#### Keen® 20



10 % Bronze 89/11

**Recommendation:**

Bronze 89/11 (BR1351)  
Recommended sintering temperature: 920°C  
Pressure: 350 kg/cm<sup>2</sup>

**Applications:**

Fast cutting for fresh concrete and abrasive materials.

### Improved tool life

- More abrasion resistance.
- High level of impact strength.

#### KX1290

Keen®10 + 10 % Ni

**Formula:**

Nickel (2.5 µm)  
Recommended sintering temperature: 825°C  
Pressure: 350 kg/cm<sup>2</sup>

**Applications:**

Increased tool life for cured concrete and standard construction materials, more specifically in core drills.

#### Keen® 10



10 % Ni



10 % WC

**Recommendation:**

Nickel (2.5 µm)  
CW5522 (3.0 µm)  
Recommended sintering temperature: 850°C  
Pressure: 350 kg/cm<sup>2</sup>

**Applications:**

Increased tool life for cured concrete and standard construction materials.

#### Keen® 20



10 % Ni



20 % WC

**Recommendation:**

Nickel (2.5 µm)  
CW5522 (3.0 µm)  
Recommended sintering temperature: 975°C  
Pressure: 375 kg/cm<sup>2</sup>

**Applications:**

Very abrasive and severe construction materials.



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## The KX Cement range

### Main advantages

- The KX Cement solution, part of the Keen® range, is specially designed for very abrasive materials: asphalt, fresh concrete, abrasive stones...
- ▶ KX2250 (KX Cement base)
  - Designed to be mixed with high percentages of carbides (WC, Fused Tungsten Carbide...) for the production of very abrasion resistant bonds.
- ▶ KX2920 (KX Cement premixed): (KX2250 + 60% carbides)
  - Lower sintering temperature than traditional solutions:
    - 950°C - 350 kg/cm<sup>2</sup> - 5mn.
    - Reduced costs (energy, graphite, diamond).
- ▶ Enhanced cutting speed.
- ▶ Technical and economical advantages of the pre-alloyed technology.



keengranules

### Main advantages

- ▶ Keen® granules offer, after sintering, the same properties as non-granulated Keen® powders while providing:
  - Improved flow properties.
  - Easy debinding.
  - Very low generation of dust while handling.
- ▶ Range of Keen® powders available in granulated versions are:
  - Pure Keen®: Keen®11, Keen®21.
  - Keen® premixed: KX1291.

### Sintering certificates

- *Sintering certificates available upon request.*

### Packing

- Metal drums containing polyethylene bag sealed under inert gas.  
*Consult us for available drum size.*

### @bout

- Download at [www.eurotungstene.com](http://www.eurotungstene.com) (online catalogue):
  - Technical data sheets.
  - Material Safety Data Sheets.

