Crushing Introduction

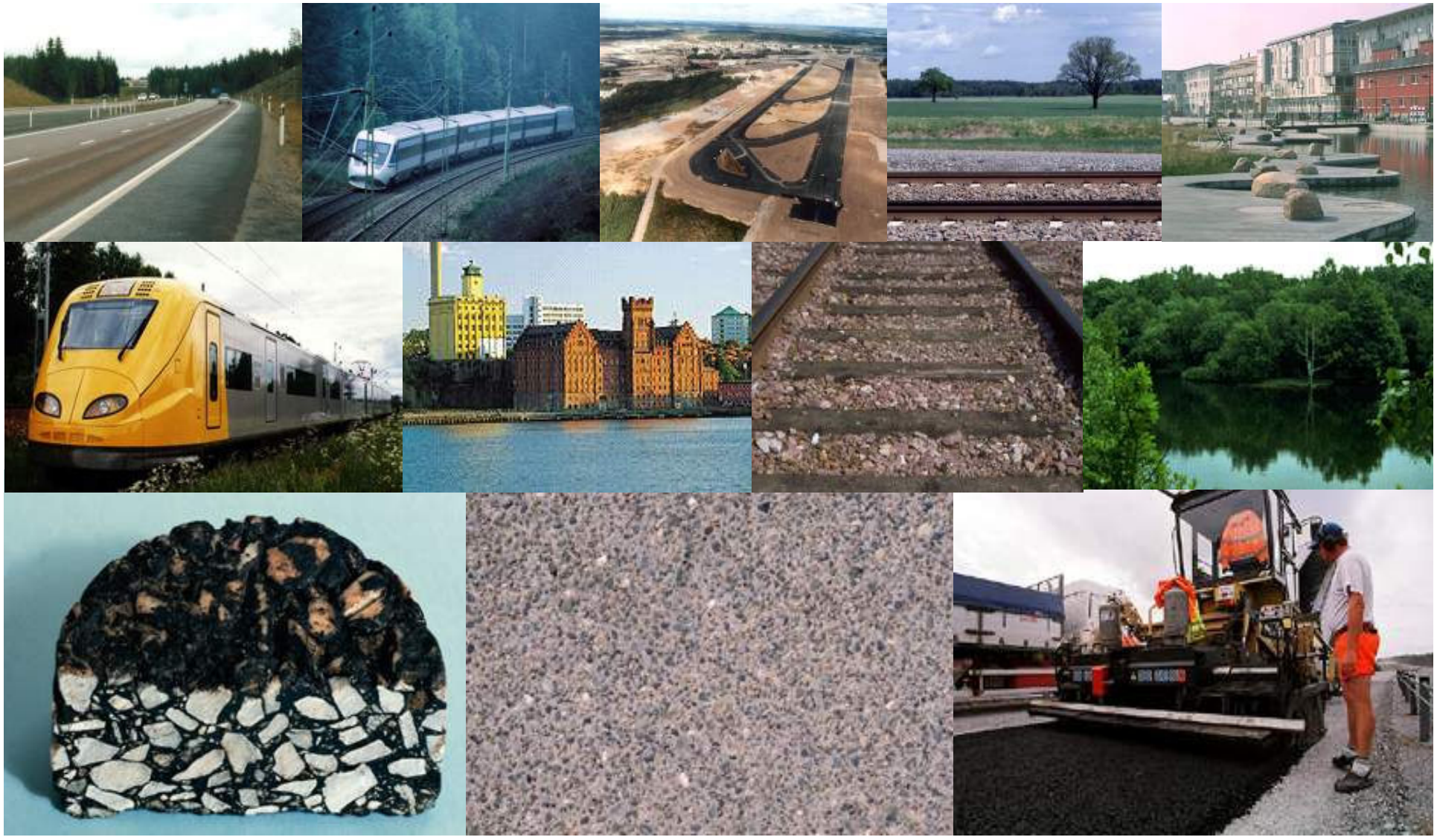
Improving Processes. Instilling Expertise.

Products

By far the largest industrial product by volume

QUARRY ACADEMY

Products

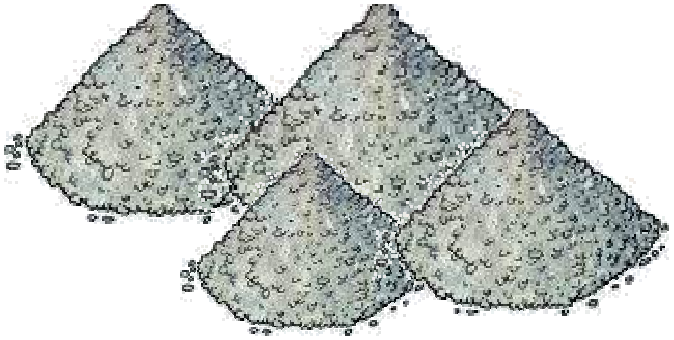


QUARRY ACADEMY

Products

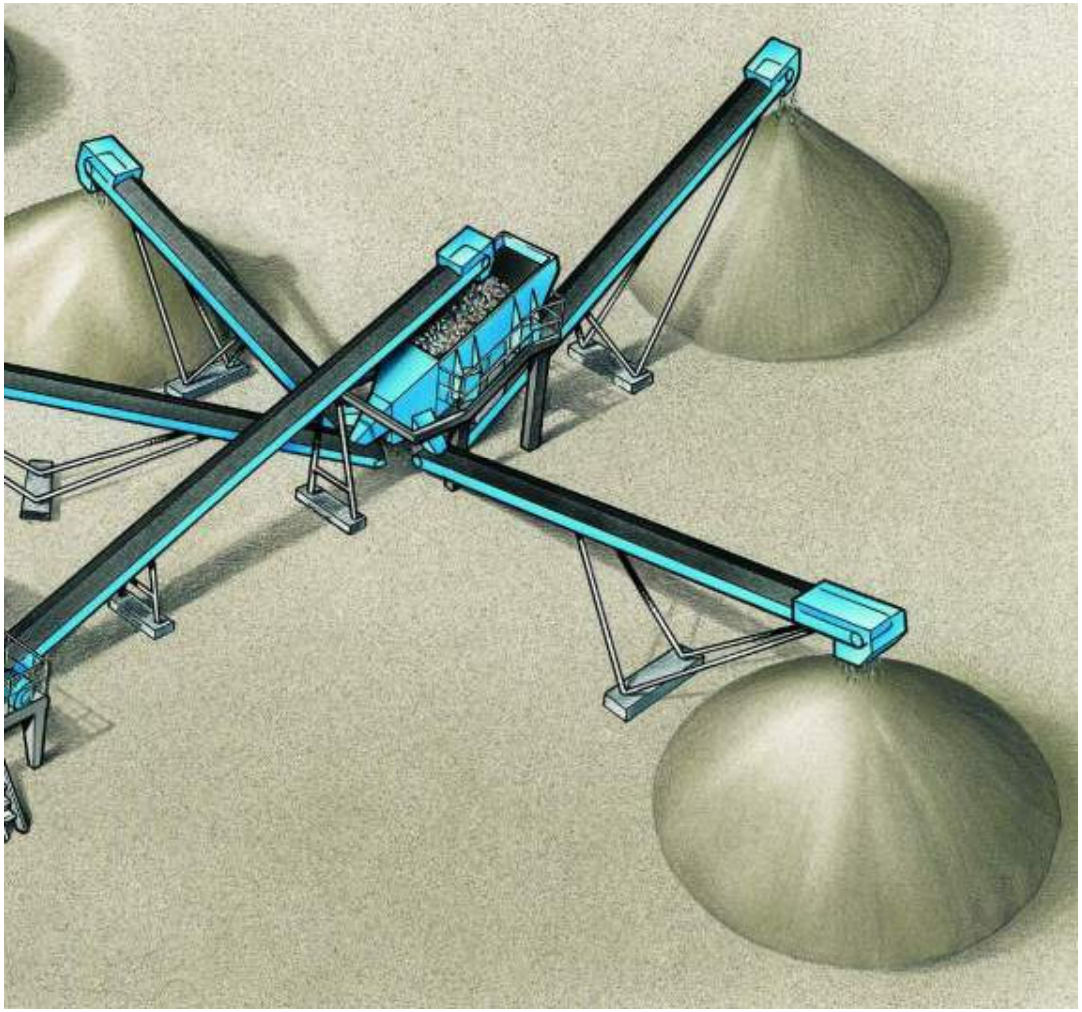
Different product requirements for

- **Subbase**
- **Concrete**
- **Asphalt**
- **Others...**



QUARRY ACADEMY

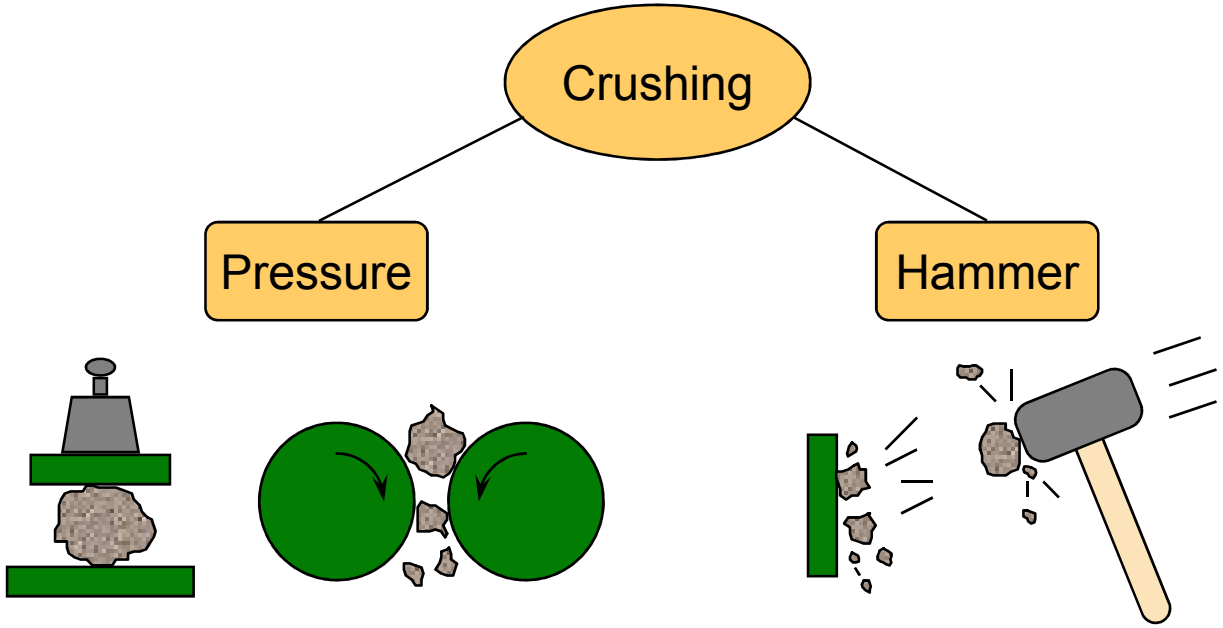
Products



- **Size**
  - ✓ Fraction Limits
  - ✓ Misplaced Particles
  - ✓ Size Distribution
- **Shape**
  - ✓ Flakiness
  - ✓ Elongation
- **Surface**
  - ✓ Crushed Surface
- **Physical properties**
  - ✓ LA-value
  - ✓ Micro-Duval
  - ✓ Etc…

QUARRY ACADEMY

In what ways can stones be crushed?



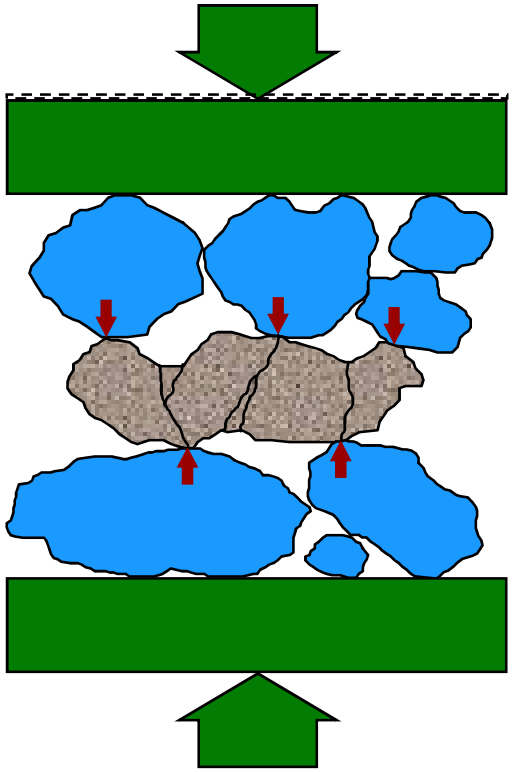
QUARRY ACADEMY

Crushing stone-to-metal

Discharge end of jaw crusher, viewed from beneath

QUARRY ACADEMY

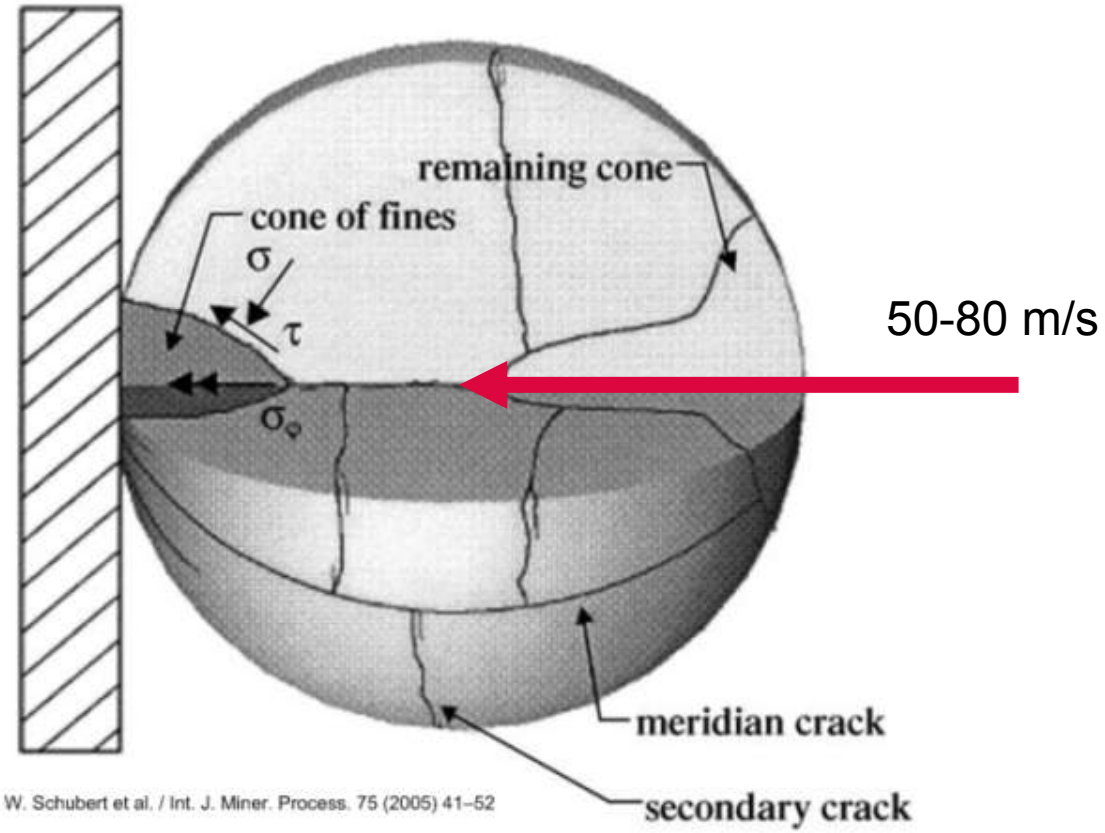
Crushing stone-to-stone



Complex loading ⇨ More cubical particles

QUARRY ACADEMY

Impact Crushing



W. Schubert et al. / Int. J. Miner. Process. 75 (2005) 41–52

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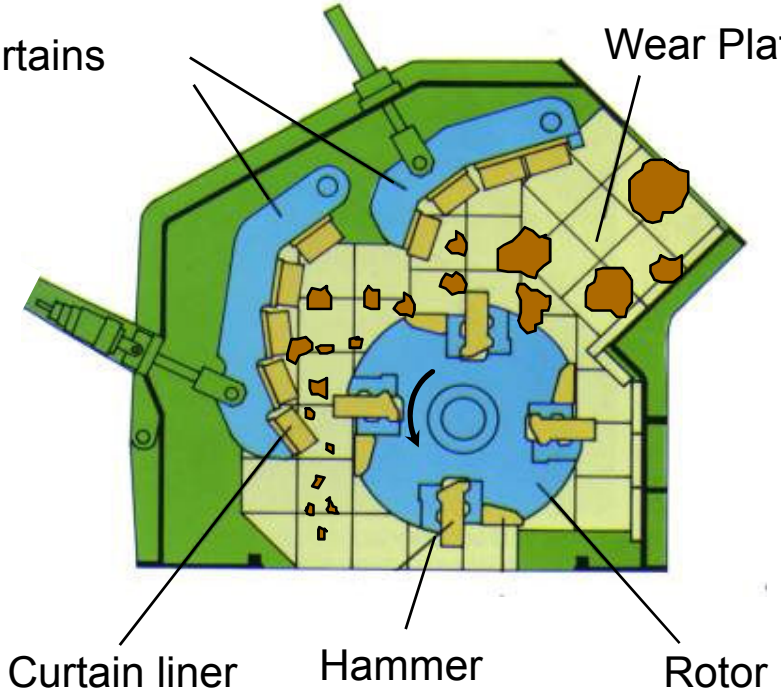
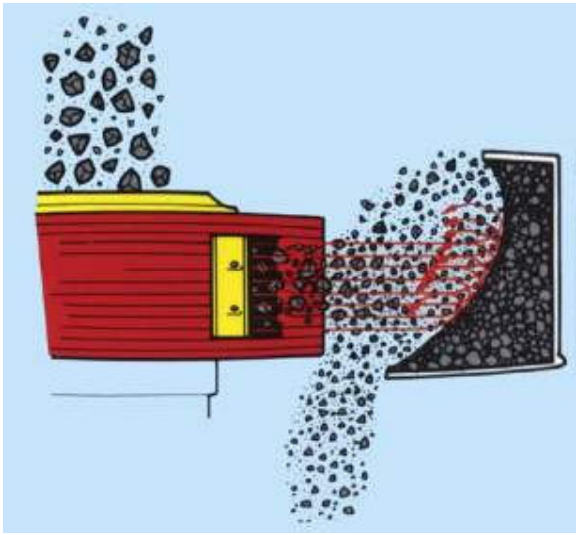
Impact Crushing



Autogenous crushing

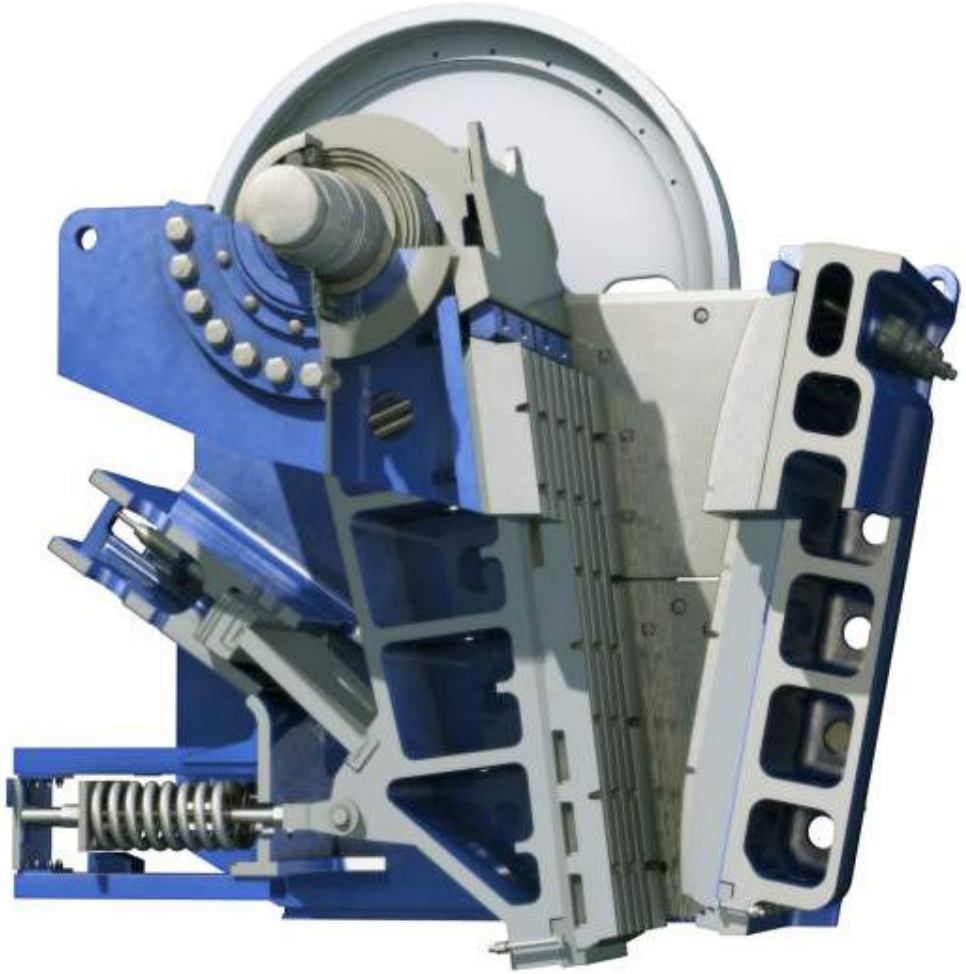


Details of a vertical impact crusher

The result is often a more cubic product with high amount of fines.

QUARRY ACADEMY

Primary Crushing



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Secondary Crushers

Gyratory or cone crusher

Secondary Impactor

QUARRY ACADEMY

Final crushing

Cone crushers

Impactors - VSI

QUARRY ACADEMY

Crushing Plants

Stationary

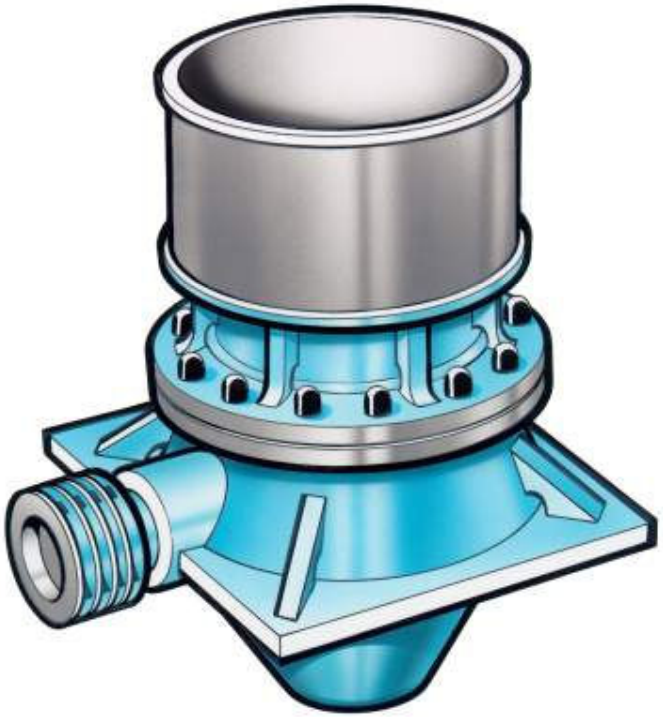
- Long term Contracts
- Valuable products
- Range of products
- Production on demand
- Flexibility with many stages
- High Production control

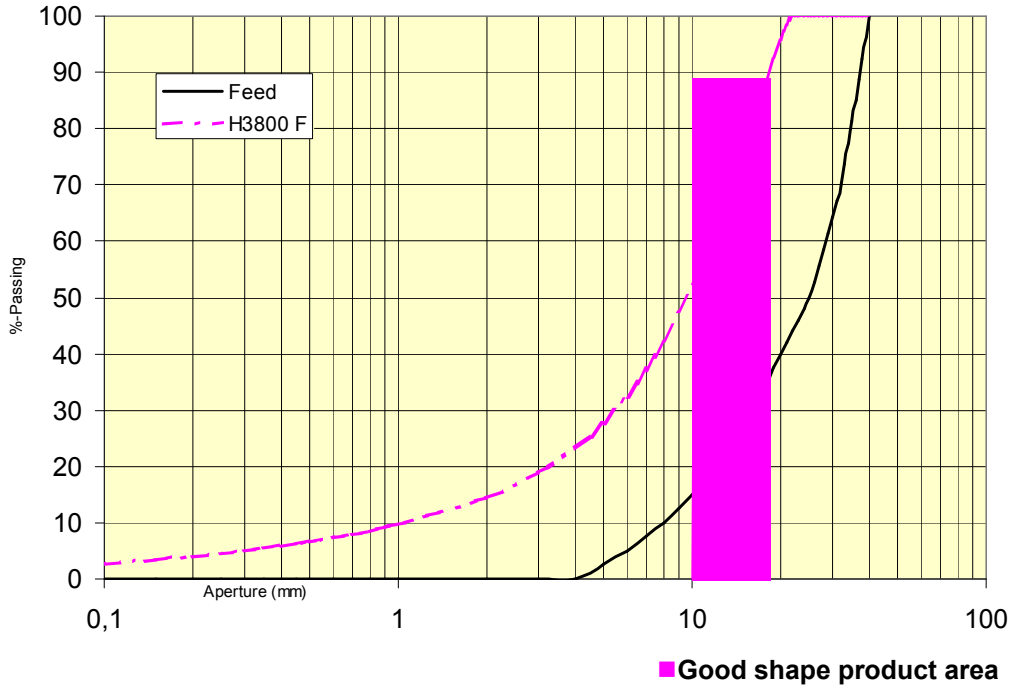
Mobile

- Contract crushing
- Crushing at construction site
- Low product demands
- Few products
- Flexibility with Fleet

QUARRY ACADEMY

Cone Crushers

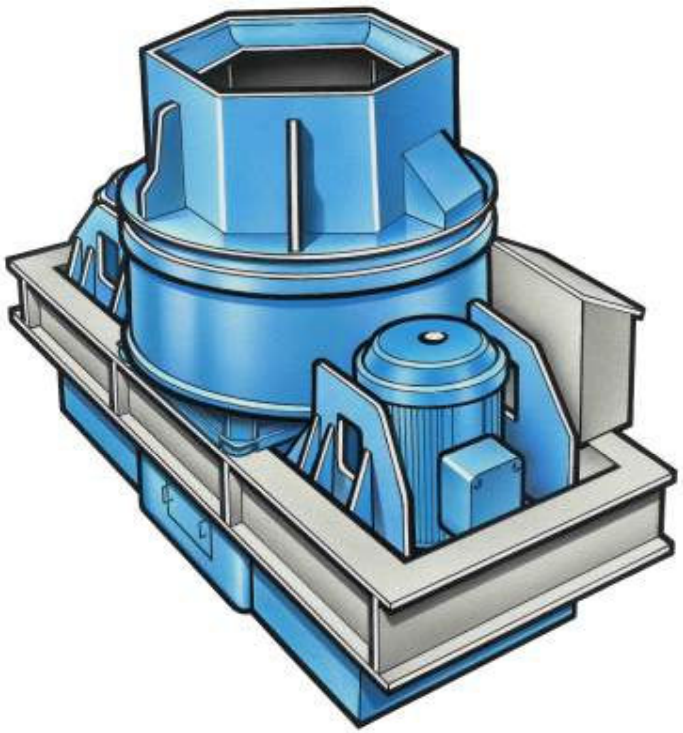


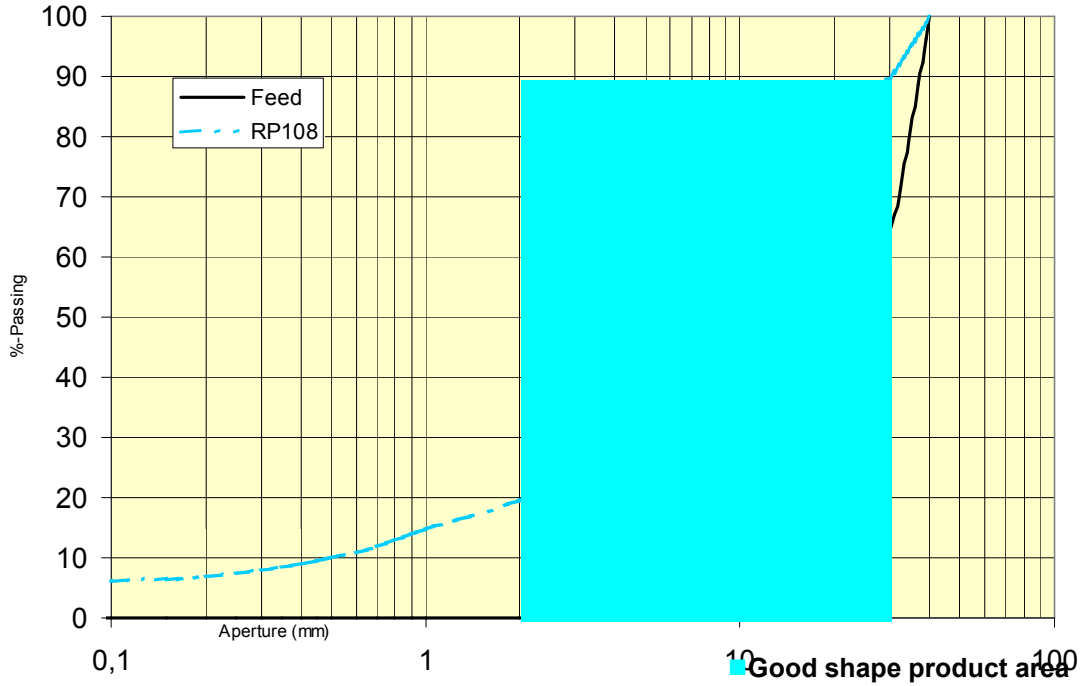


- **Good Flexibility**
- **Higher crushing forces**
- **Good shape in the 5-80 mm range**
- **Uniform reduction ratio**

QUARRY ACADEMY

Impactors – VSI or HSI





- Better shape
- Good shape in the +40 micon range
- Uneven Reduction
- Limited topsize capacity
- High fines production

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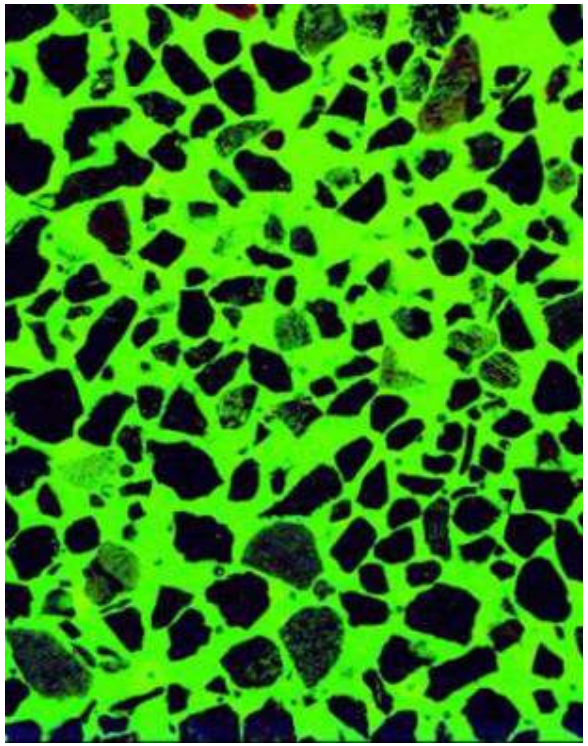
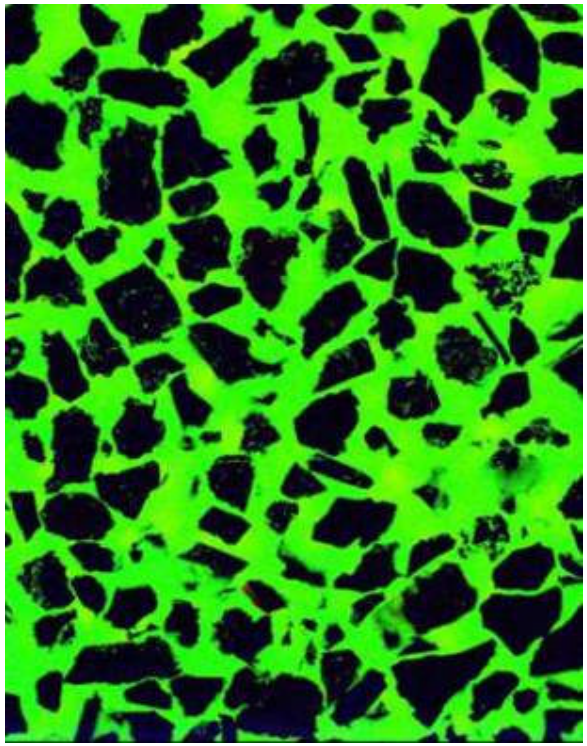
Manufactured Sand from VSI

+250-500 microns

Cone crusher



Natural gravel



VSI

QUARRY ACADEMY

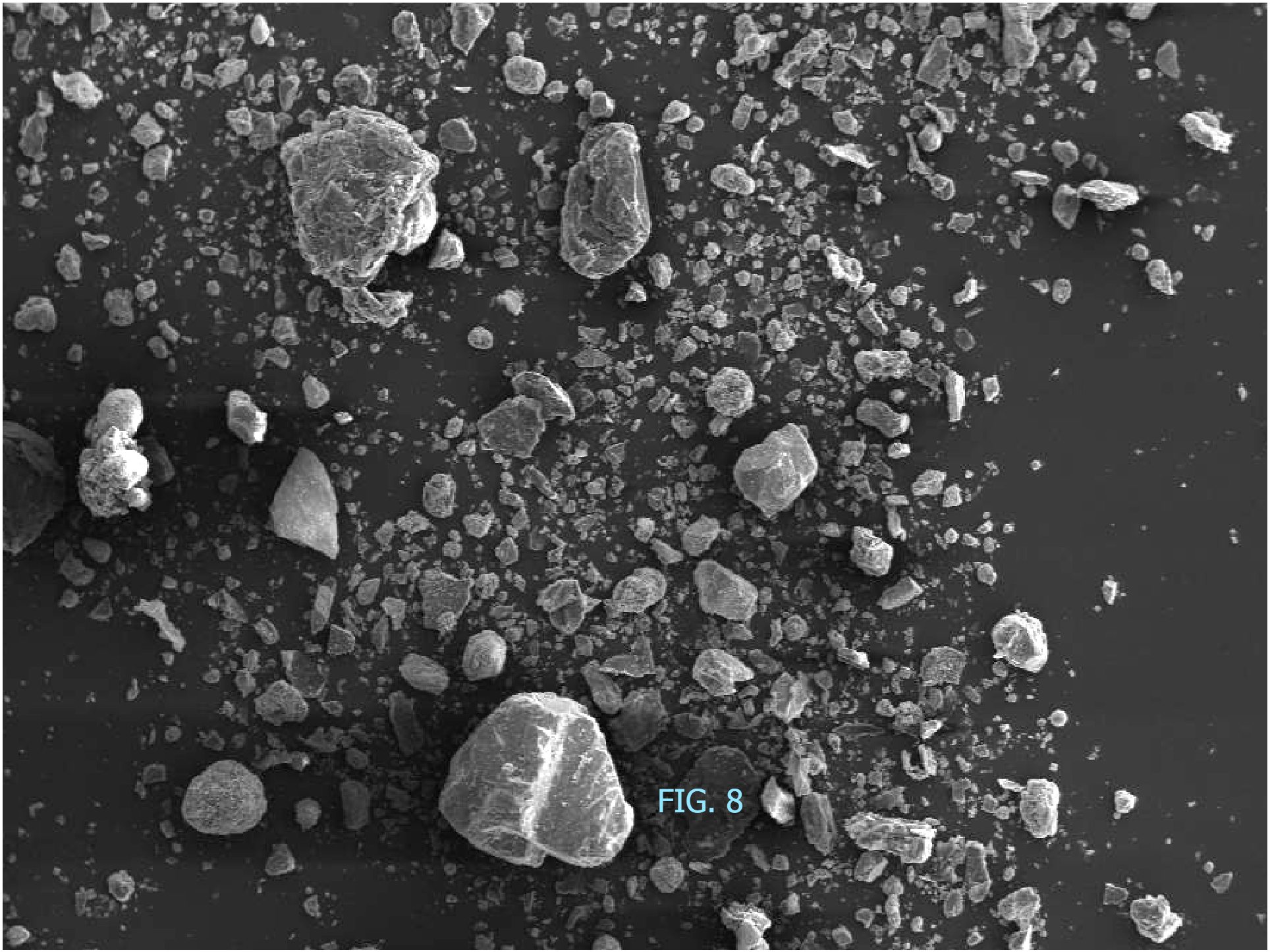


FIG. 8