Steel cord reinforcement

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Bekaert in brief

- Founded in 1880 by Leo Leander Bekaert
- 30,000 employees worldwide
- Sales of €4.8 billion (2017)
- Listed on Euronext® Brussels – BEL20®
Core competences

Steel wire transformation

from wire rod
6.5 mm

to metal fibers
1 µm

Drawing, bunching, cabling, profiling, welding, knitting, weaving, ...

Coating technologies

from traditional coatings

Adhesion
Corrosion resistance
Wear resistance
Anti-fouling

to advanced coatings
Market leadership in diverse sectors

- Automotive: 44%
- Construction: 23%
- Energy & Utilities: 9%
- Agriculture: 7%
- Consumer goods: 6%
- Basic Materials: 6%
- Equipment: 5%
Concrete reinforcement

Strands and cables

Asphalt reinforcement

Masonry reinforcement
Focus on innovation

- €63 million in-house R&D
- 2 R&D labs in Belgium and China
  - Dedicated concrete lab
- In-house engineering
- Outward focus
  - Co-development
  - Research centers & universities
  - Venture capital
Reinforcement in 3DP

The need
- A repeatable and automated solution, without limiting form freedom
Steel cord

Wire drawing
- Deformation
- Strength per mm²

Rebar: 250 – 500 MPa
Wire: 4000+ MPa

Cord making
- Strength
- Flexibility

Ø1mm → 120 kg breaking load
Optimal cord for C3DP

Construction

| 3x1  | 1+6  | 3+6  | 4+6x3 |

- Strength
- Ductility
- Flexibility

Coating & wire material

- Adhesion
- Corrosion resistance
- Process interaction

- Alloys
- Metallic coatings
- Non-metallic coatings
- Concrete interaction
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