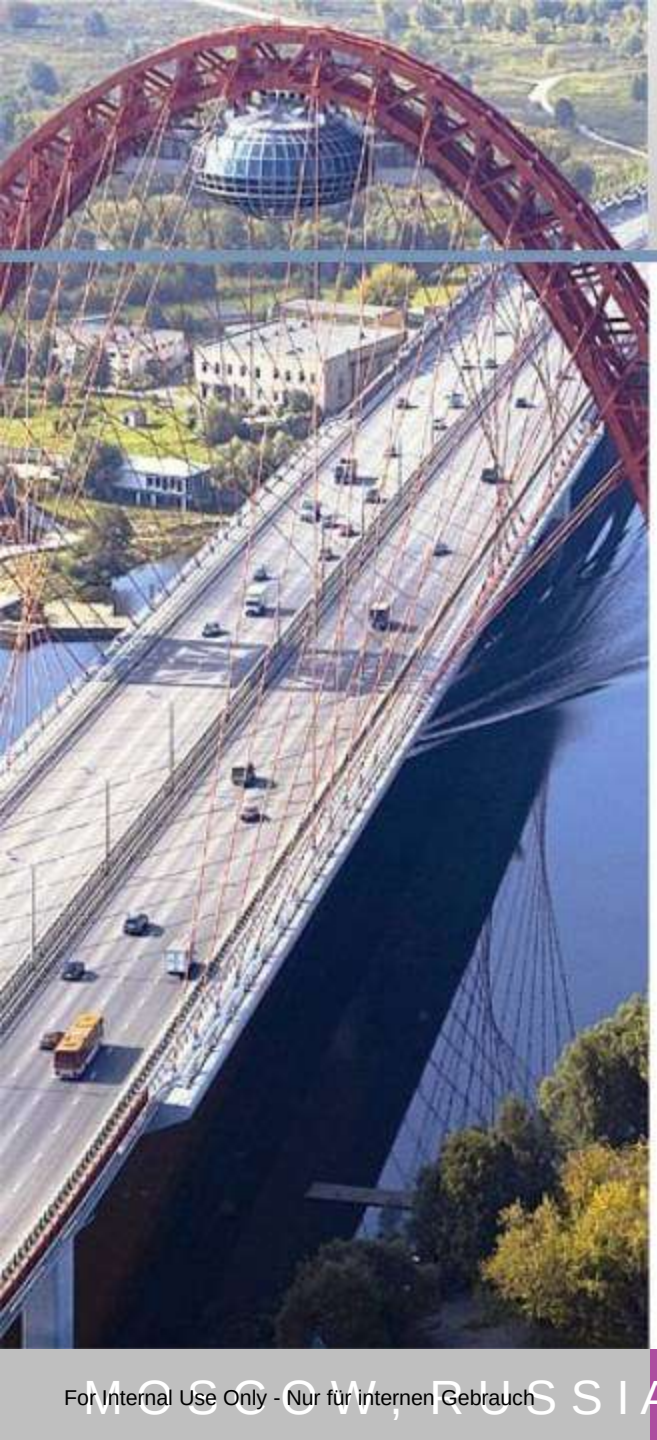


INTERNATIONAL ROAD CONGRESS

Innovation in Road Infrastructure

INTERNATIONAL ROAD FEDERATION
FÉDÉRATION ROUTIÈRE INTERNATIONALE

Continuous Asphalt Production Without Waste

An Illusion?

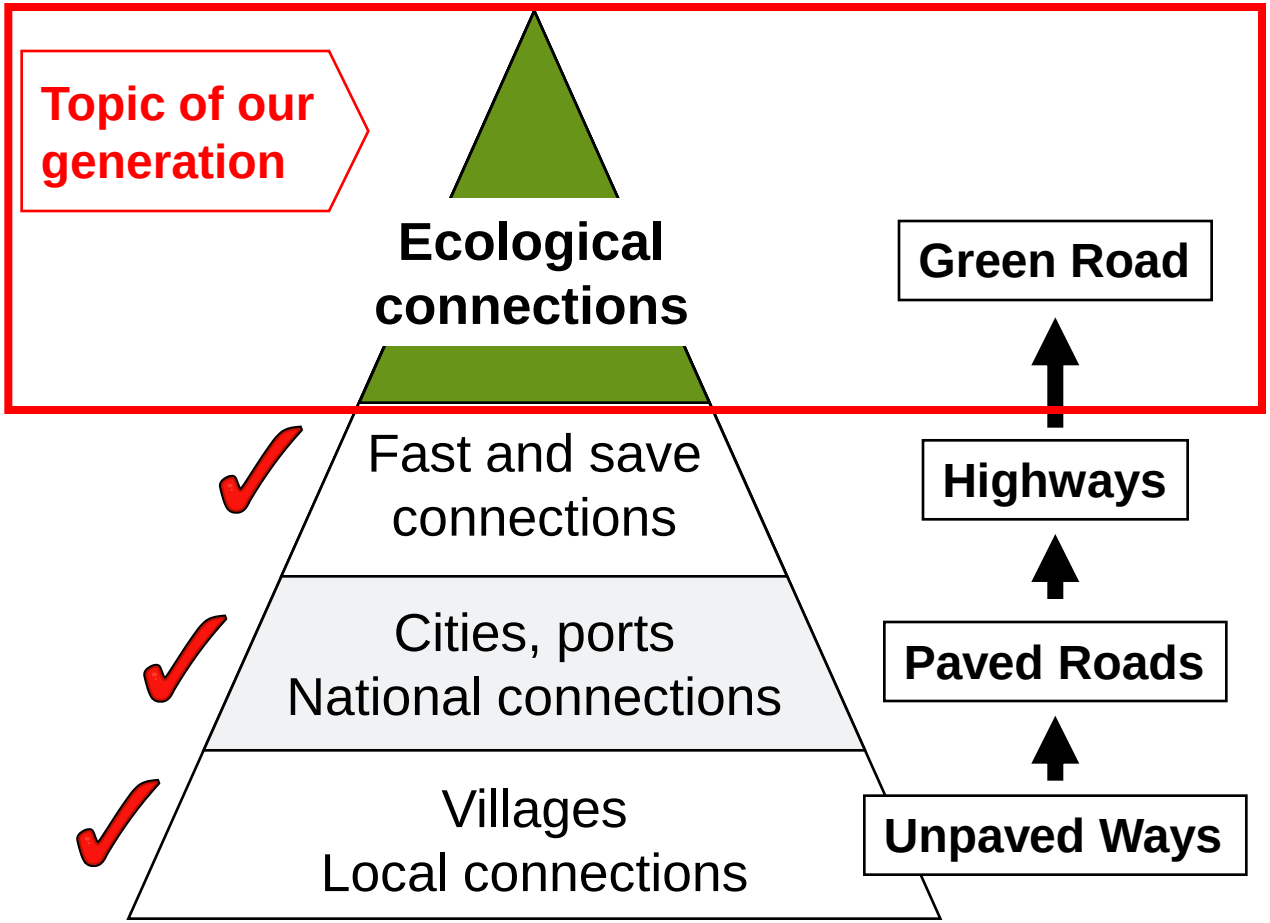
Dr. Andreas Biedermann

Ammann Group

www.ammann-group.com

AMMANN

The "Maslow"-Pyramid of Road Construction



Asphalt road – High Quality Requirements

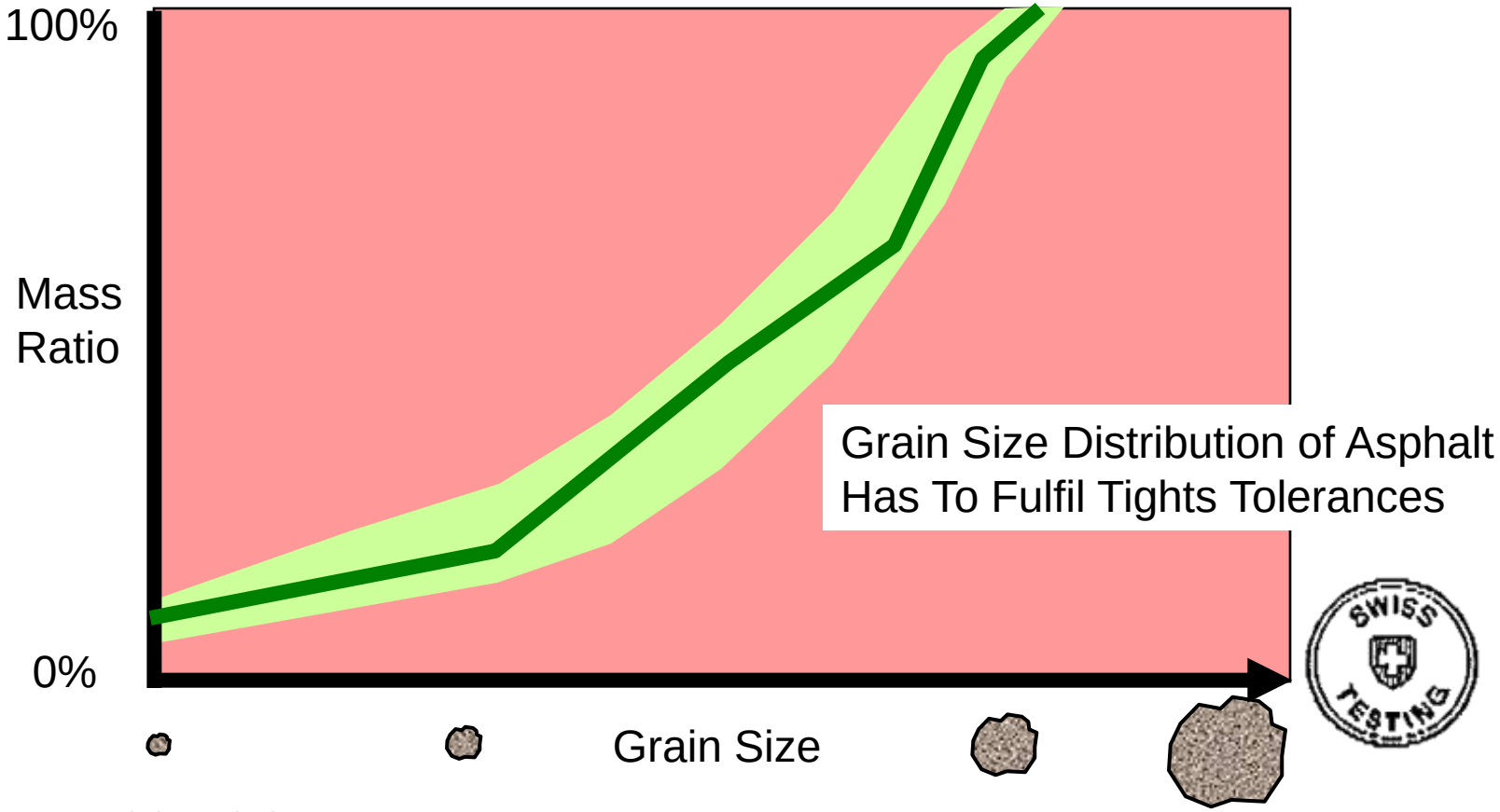
Asphalt:
95% aggregates
5% bitumen (binder)

High quality requirements
E.g. composition, performance

Worldwide production:
1‘500‘000‘000 tons per year

http://de.academic.ru/pictures/dewiki/71/Glaubach_asphalt.jpg

Asphalt – Tight Quality Requirements



e.g. European Asphalt Standard

Asphalt Production - Two Traditional Approaches

Batch Production
with Twin-Shaft Mixer

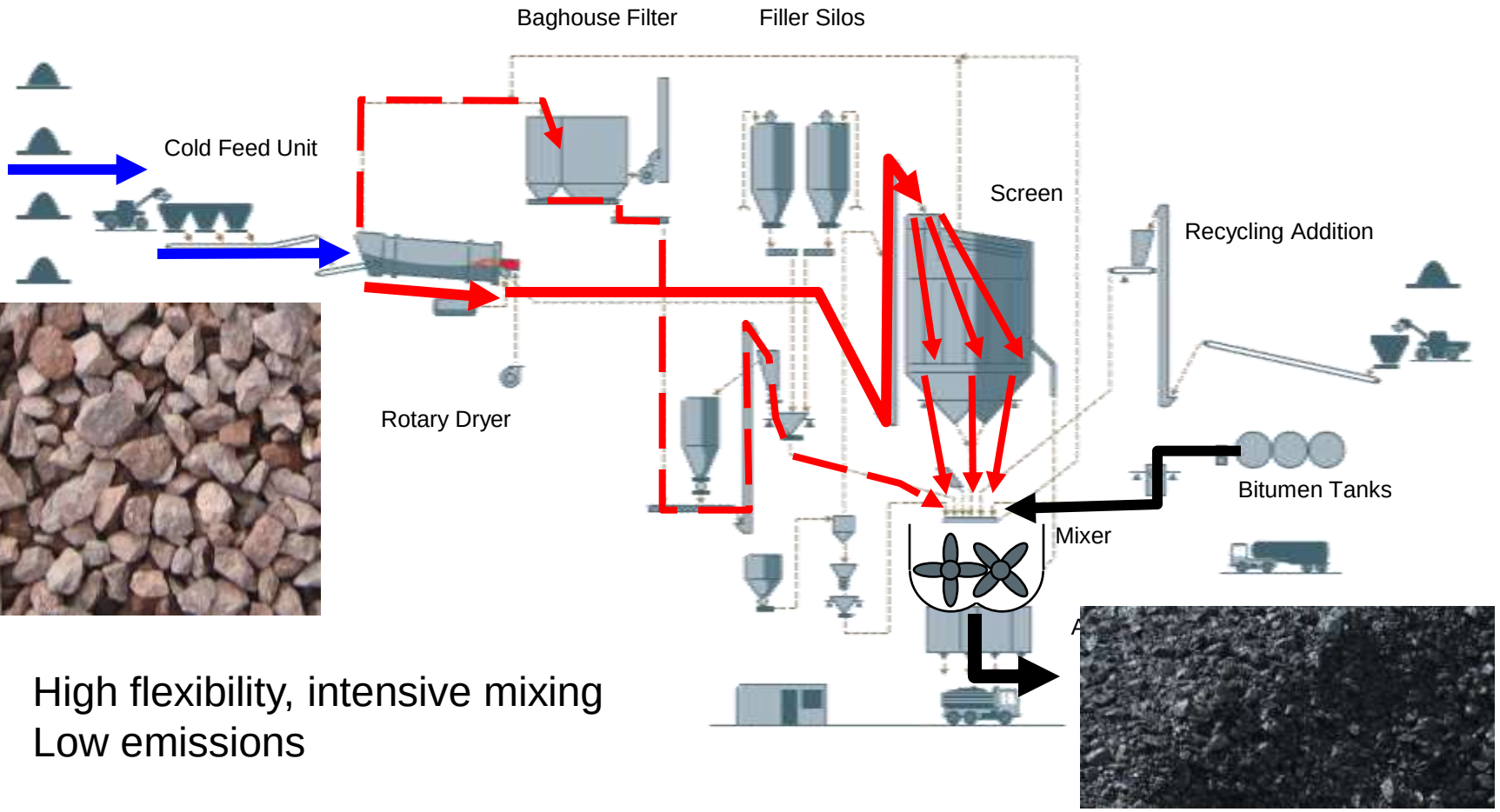
Continuous Production
with Drum Mixer

indianyellowpages.com. 2011

Batch Production With Twin-Shaft Paddle Mixer

Batch Production
with Twin-Shaft Mixer

Batch Production With Twin-Shaft Paddle Mixer



High flexibility, intensive mixing
Low emissions

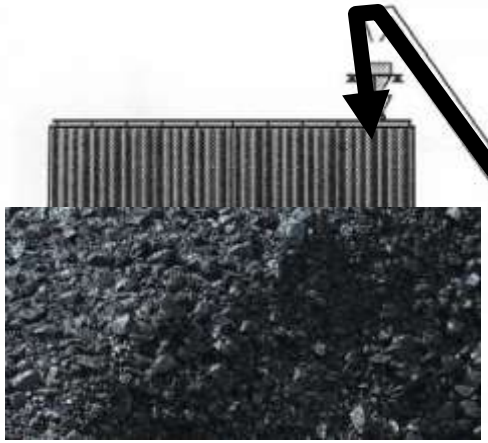
Continuous Production with a Drum Mixer

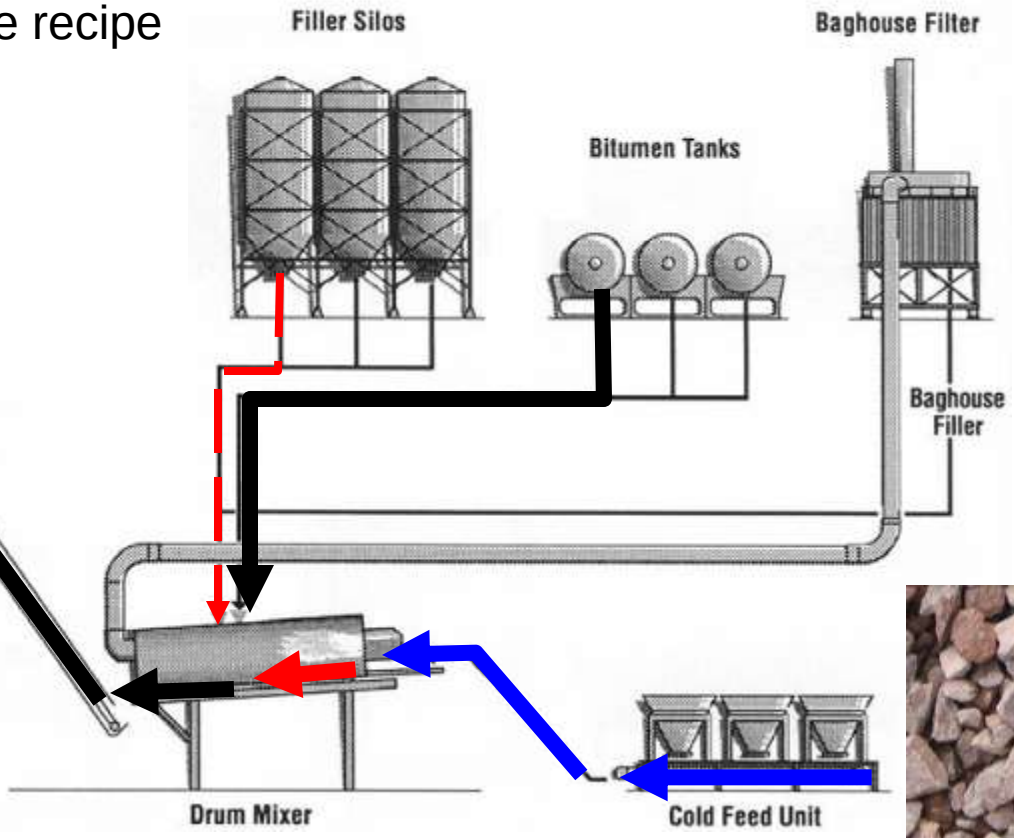
Continuous Production
with Drum Mixer

Continuous Production with a Drum Mixer

High volumes of same recipe

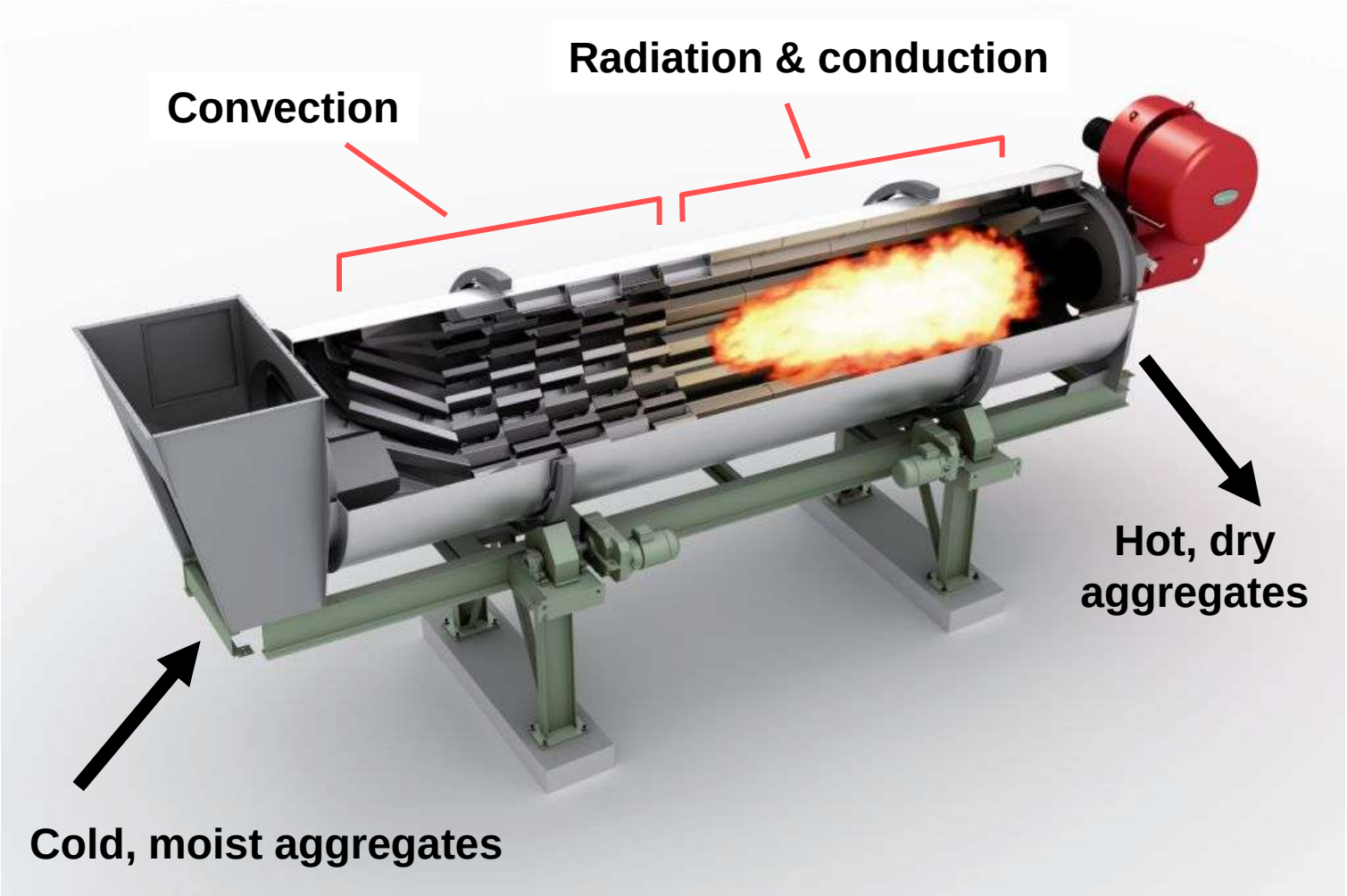
Main drawback:
Waste of asphalt



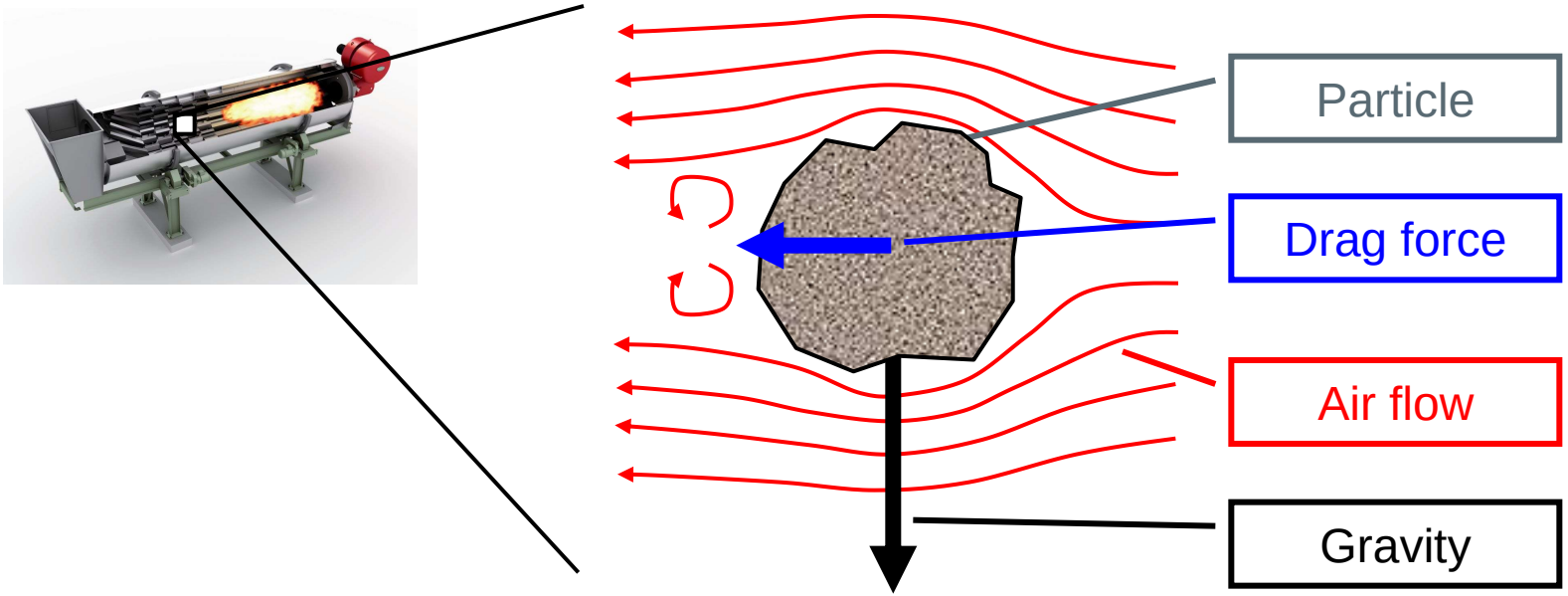


EAPA, 2007

Segregation Due To Different Movement of Particles

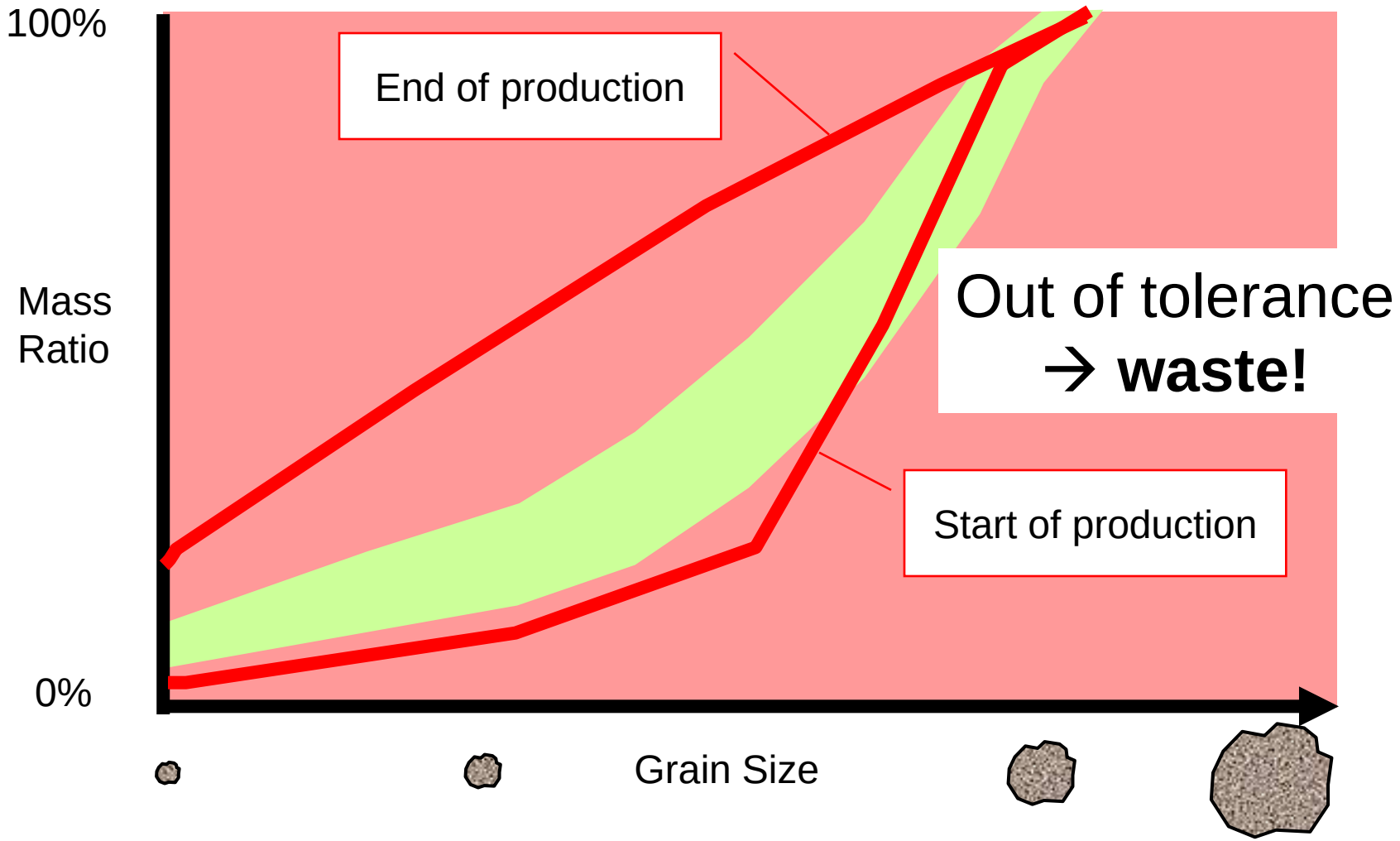


Segregation Due To Different Movement of Particles



Large particles stay longer in the drum than small ones.
→ Segregation at the start and end of production

Drum Mixer – Waste



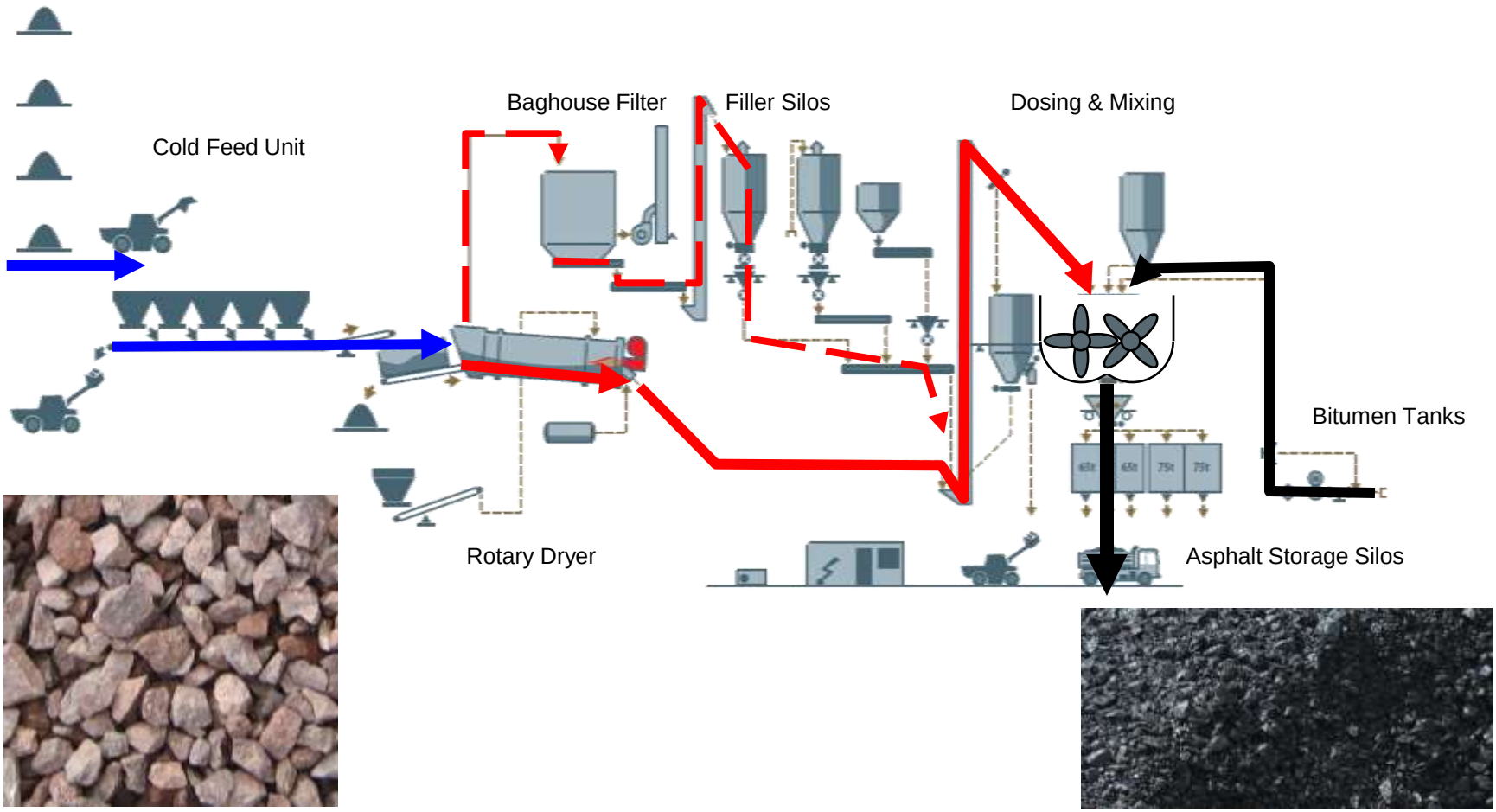
Waste of Asphalt Next To A Drum Mixer Plant

Comparison of Asphalt Production Concepts

	Batch Plant	Drum Mixer
Investment & Flexibility		
Investment Costs	+	++
Production capacity	+	++
Time for recipe change	++	
Flexibility and Quality		
Possible asphalt recipes	++	
Intensity of mixing	++	-
Environment		
Prevention of waste	++	-
Emission values	++	+

*: ContiMix ZeroWaste concept

ContiMix - Continuous Production With Twin-Shaft Mixer



ContiMix Asphalt Plant

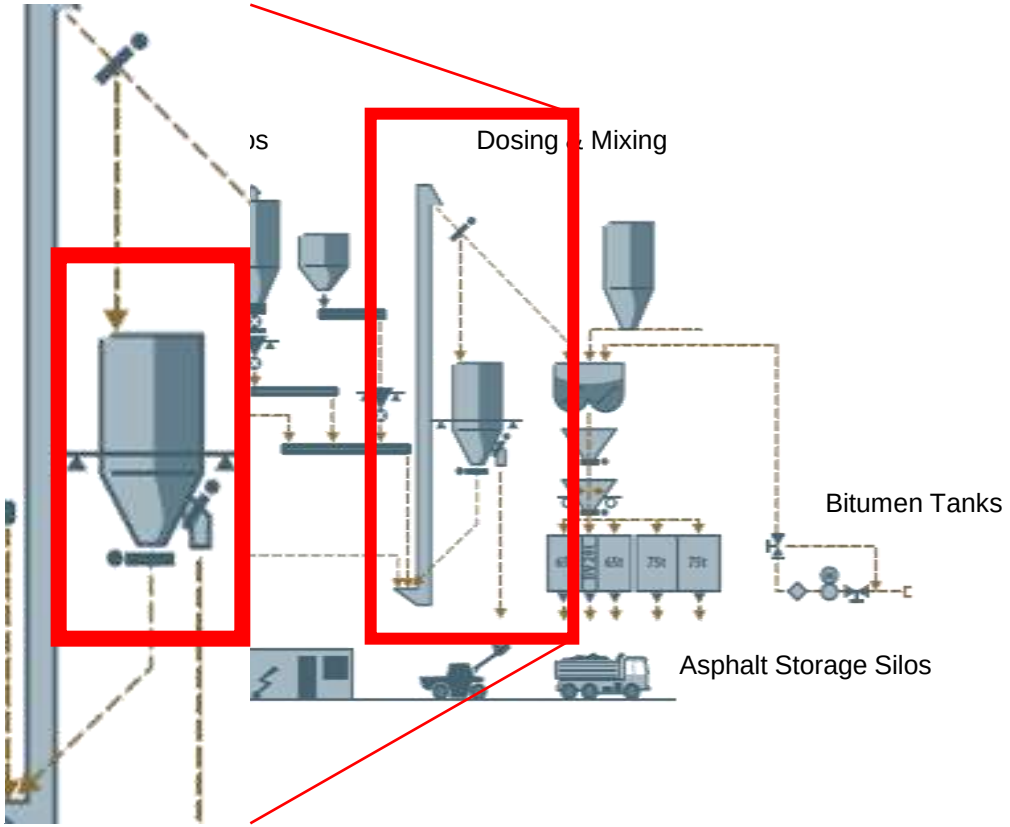
ZeroWaste Concept – No Waste in Continuous Production

Start of production:
Segregated material is stored

End of production:
Segregated material is stored

After continuous production:
Final batch is produced

& for each change of recipe



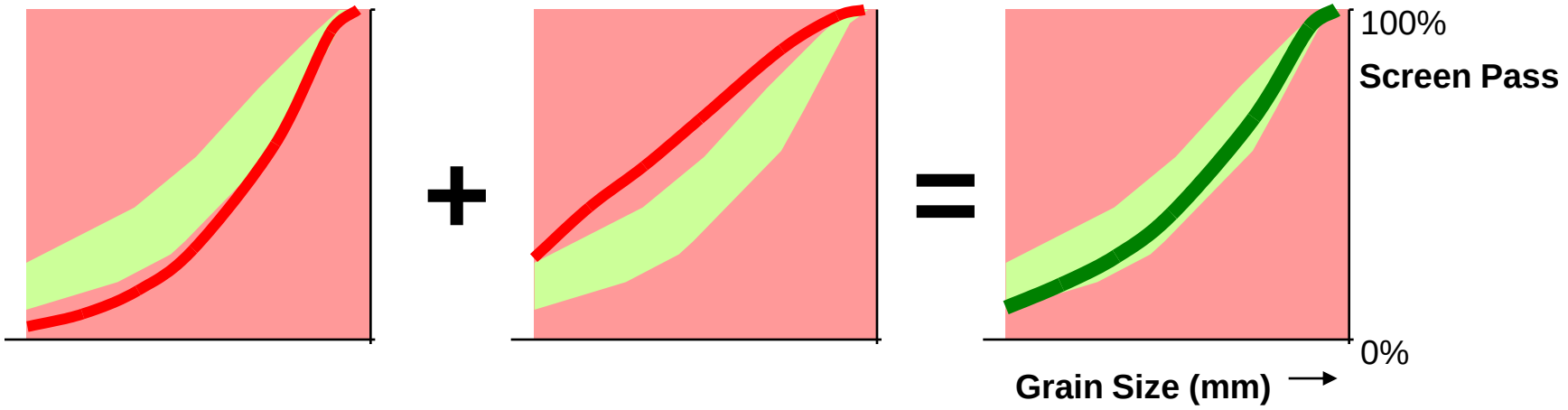
Patent pending

ZeroWaste Concept – No Waste in Continuous Production

Tail at start
of production

Tail at end
of production

Mixture
of both tails



Too much
coarse aggregates

Too much
fine aggregates

Mix within
tolerance

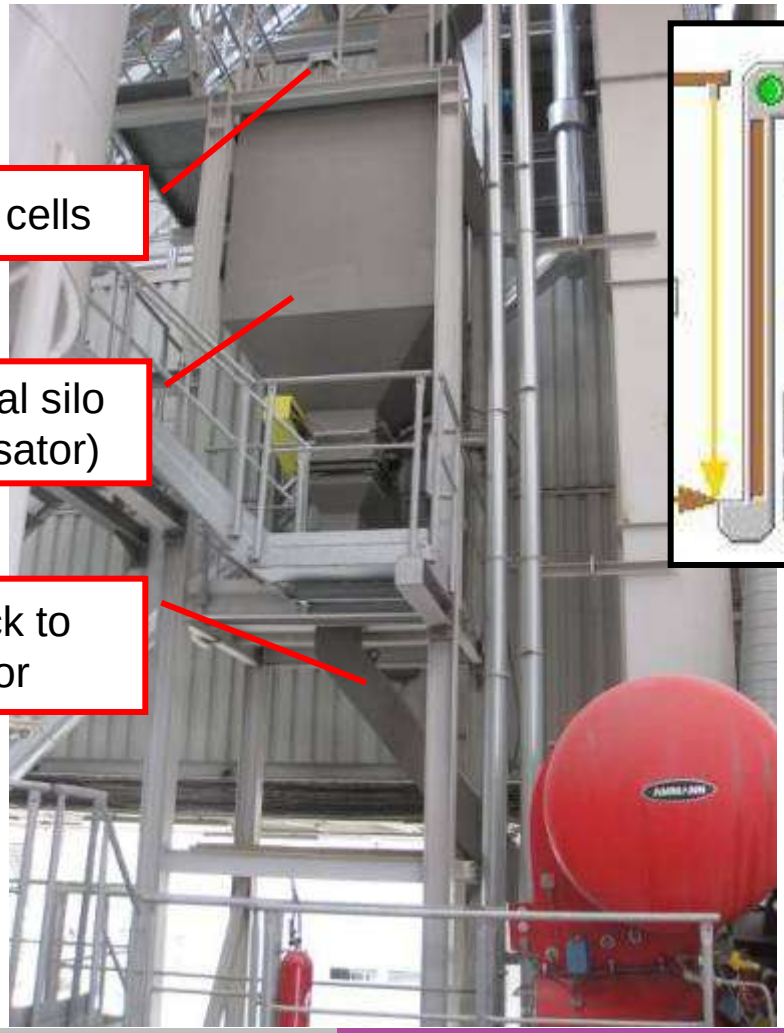
→ No waste

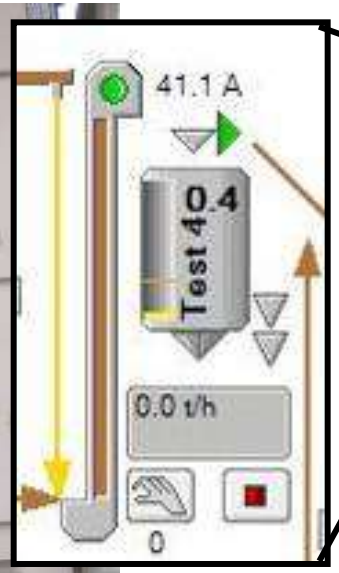
ZeroWaste Concept – Compensator

Weighing cells

Hot mineral silo (Compensator)

Feedback to elevator





Fully automated

Fully controlled

ContiMix Plant With ZeroWaste Technology

Eurovia, France & Ammann

Contimix with ZeroWaste technology

- Three types of asphalt production: Batch, drum mixer, ContiMix
- Waste is major drawback of drum mix
- **ContiMix with ZeroWaste technology**:
  - Minimize waste at start and end of production
  - Combine advantages of twin-shaft paddle mixer and continuous production concept

A powerful step towards the Green Road.