

In-situ reinforced concrete

- Basic elements of the technology:
- Formwork
- Concrete
- Reinforcement
- Site planning
- Transportation
- Preparation/treating
- Storing

The order of the works?

Basic steps of technology

1. Checking the structures existing/done before and site

2. Layout of the planned structure

3. Preparation of the formwork (concrete, reinforcement)

4. Assembling the formwork

5. Placing the reinforcement

6. Placing the concrete

7. Consolidating and curing the concrete

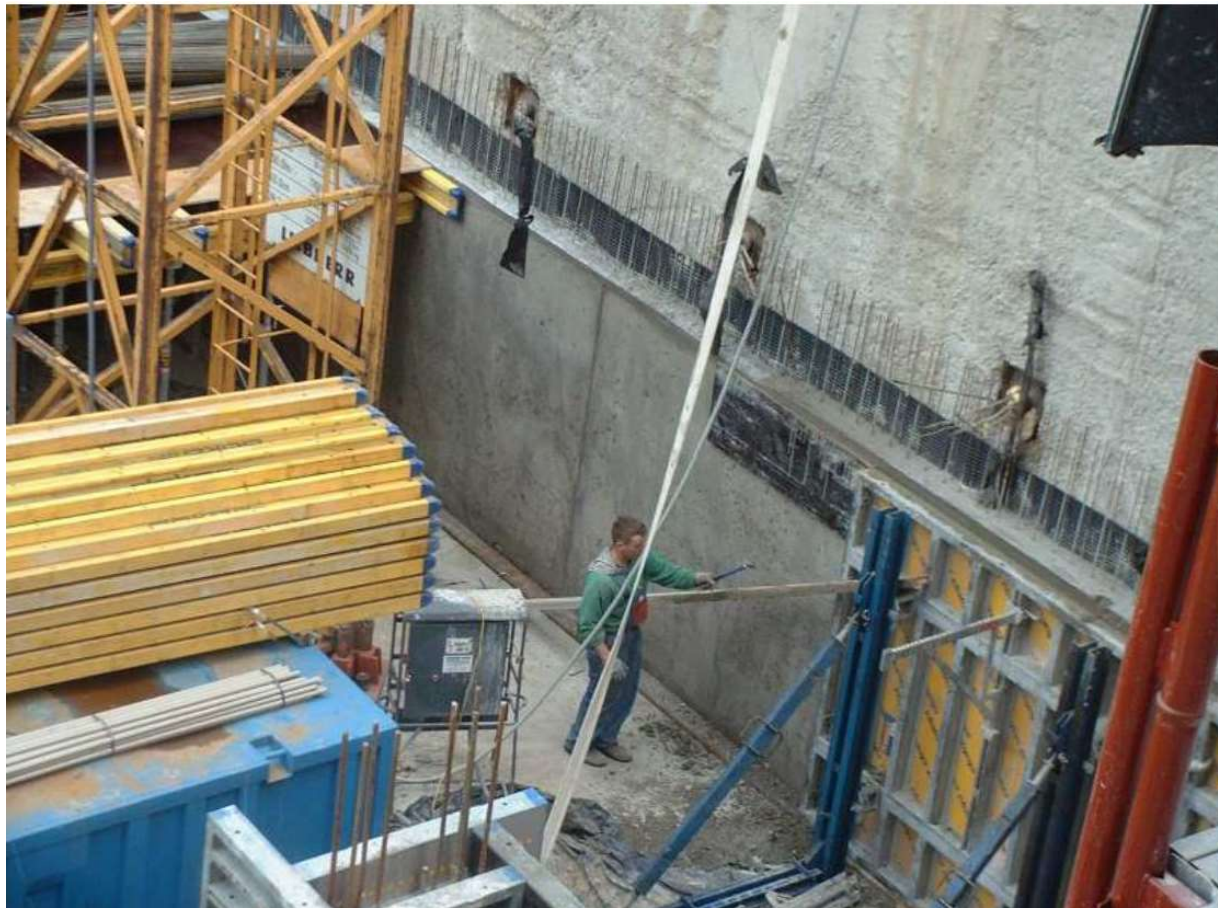
8. Disassembling of the formwork (striking)

9. Removing props (horizontal structures)

Formwork

Wall formworks

- Framed formwork (panel formwork)
- Timber-beam formwork
- Special elements, e.g. column formwork



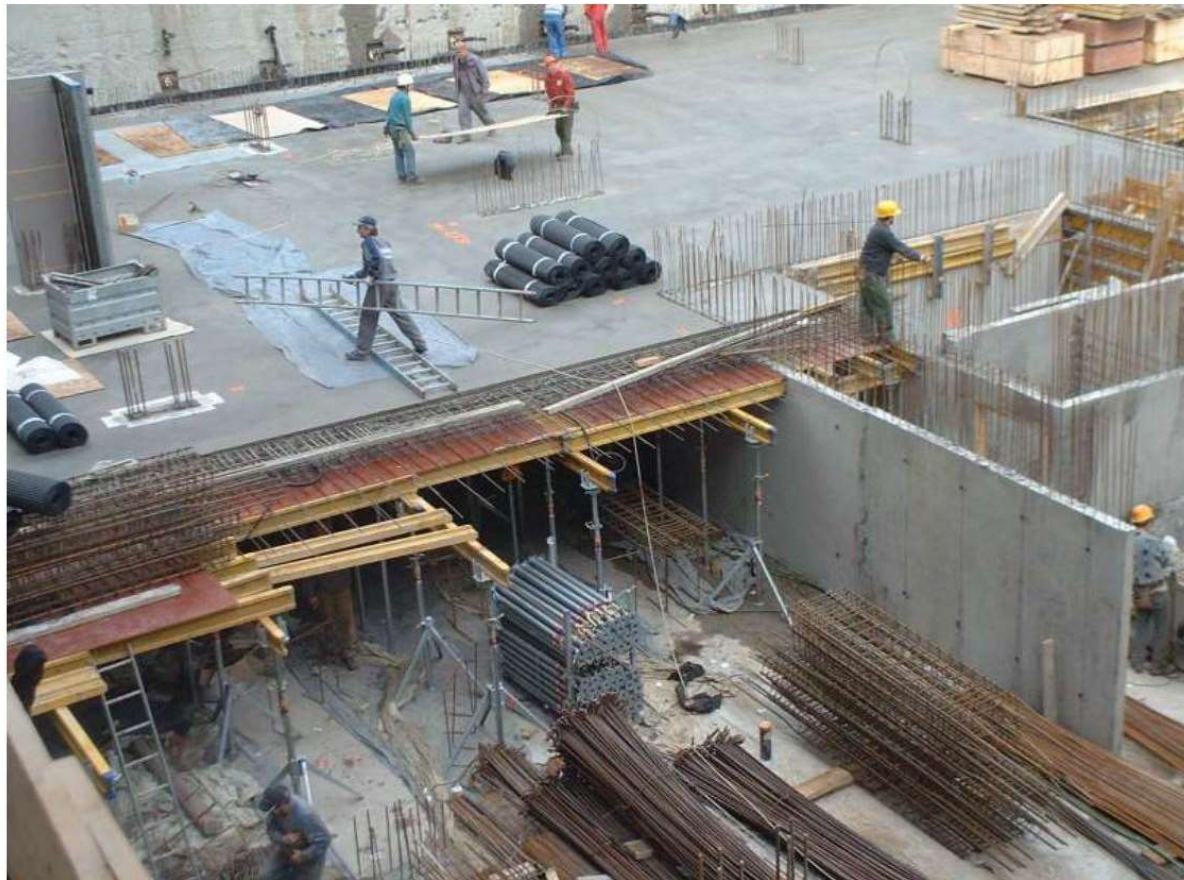
Formwork



Formwork

Slab formworks

- Panel formwork
- Timber-beam formwork
- Special formwork systems, e.g. drophead system, table system



Concrete

Material:

Binder material, usually
Portland Cement

Water

Aggregate, e.g. sand, gravel
or crushed stone

Admixtures, e.g.
accelerators, retarders,
pigments, pumping aids

Characteristics:

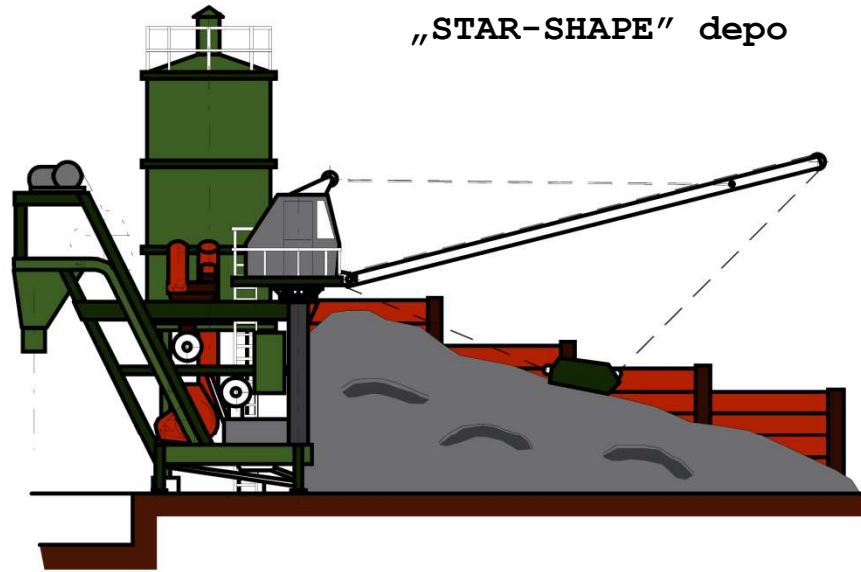
- **Consistency**, setting time...
- **Strength**, loadbearing capacity
- **Spec. characteristics**, e.g.
colour

Mixing concrete:

- **Ready-mixed concrete** (off site);
- **On-site mixing**

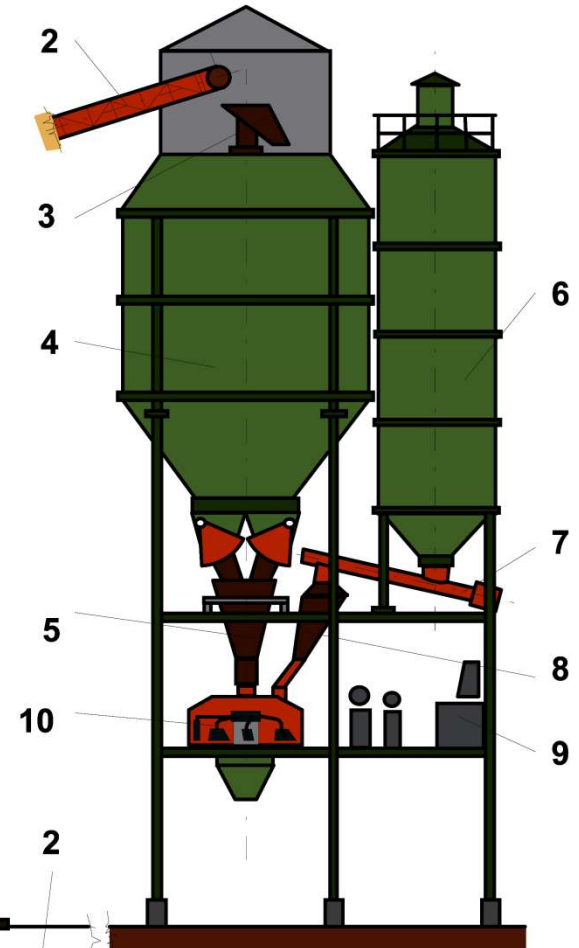
Concrete plants

Mobile mixing plant

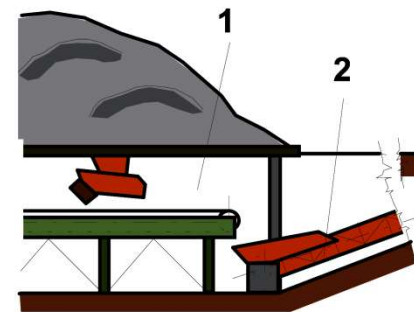


Fix mixing plant

1. Conveyor belt-tunnel
2. Conveyor belt
3. Rolling slide
4. Gravel tank (sectioned)
5. Gravel scale
6. Cement tank
7. Cement spiral
8. Cement scale
9. Mixer



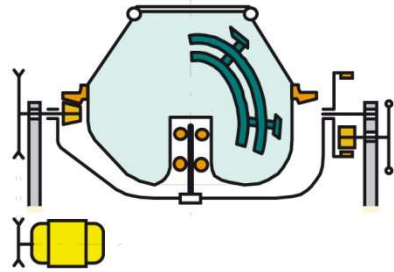
Little mixing plant



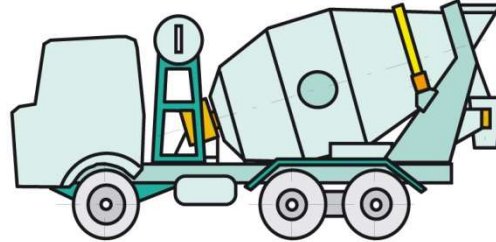
Mixers

Gravitational

Mixing drum



Mixer truck

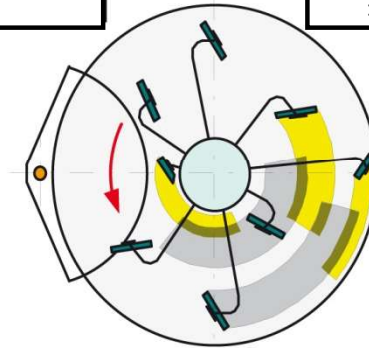


Planetary Concrete Mixer

Vertical axis

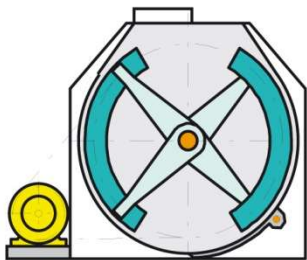
Modern mixers

Traditional mixers



Horizontal axis

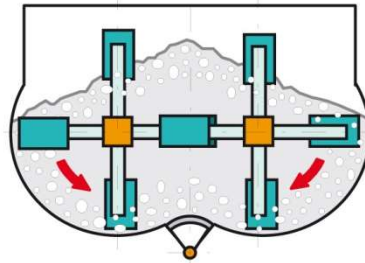
Simple axis



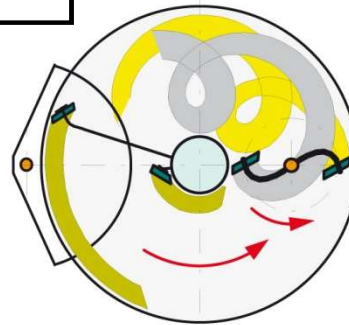
Double axis

Continuous operation

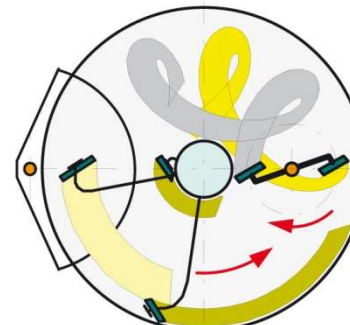
Intermittent operation



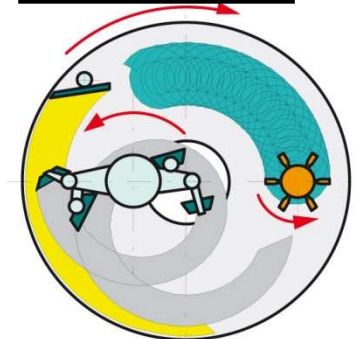
Direct-current



Counter-current



Activator rotor



Formwork

Slab formworks

- Panel formwork
- Timber-beam formwork
- Special formwork systems, e.g. drophead system, table system



Formwork



Reinforcement

Traditional reinforced concrete

Steel - reinforcing bars,
mesh - cut, bent and
assembled

Size:

length 6m (12m),
diameter 6mm-,
mesh 5x2,15m

Special reinforcement

- Pre-stressed reinforcement
- Steel/plastic/glass fibres
- Special materials, e.g.
bamboo, hemp...



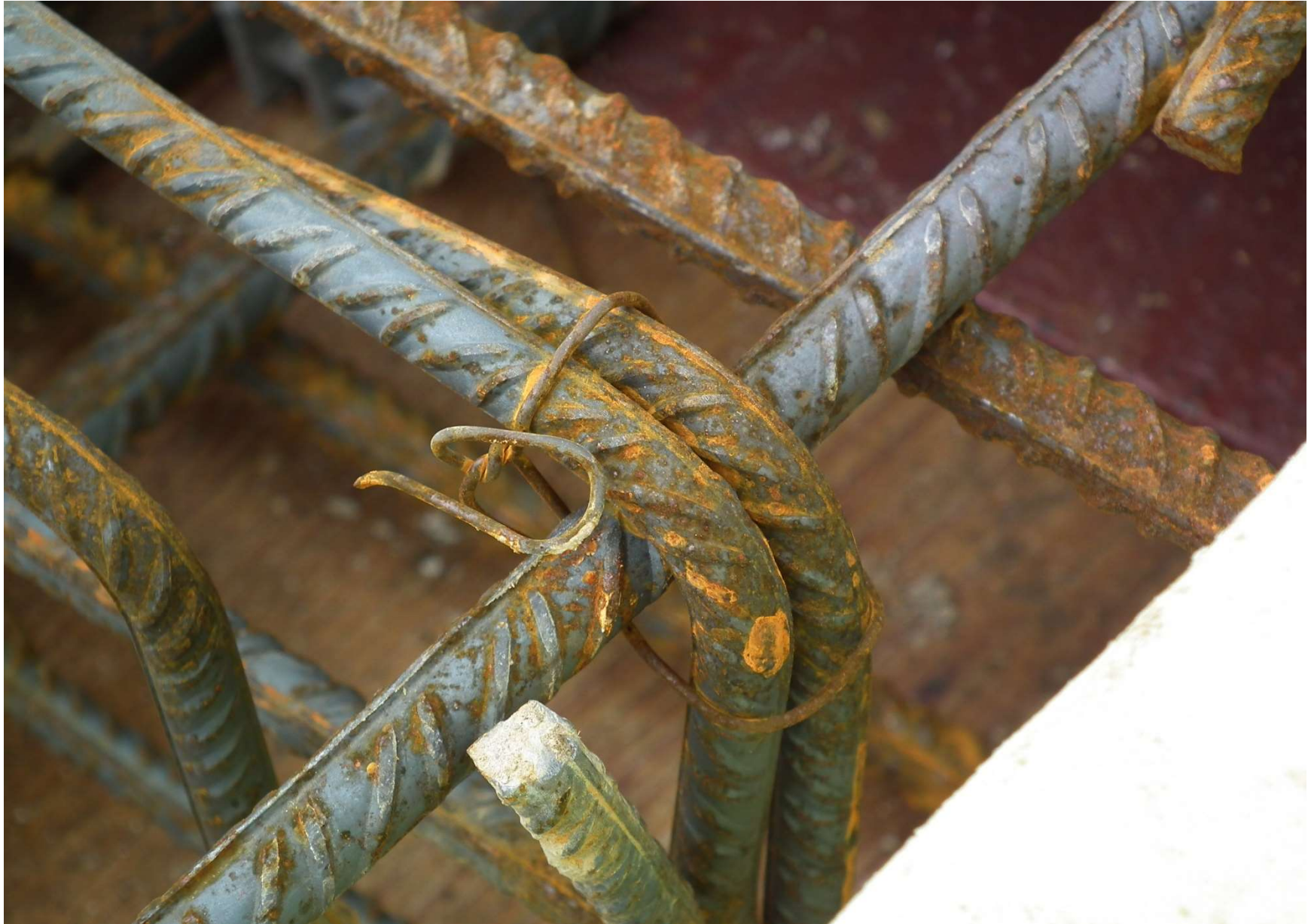
Reinforcement



Reinforcement



Reinforcement



Reinforcement



Concreting



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