Precast-First

Industrialization of construction

Precast-First
Industrialization of construction

Industrialization of construction

Precast-First
Industrialization of construction

Big 5 inventions ending the current global housing crisis

1. The precast frame structure
2. Beams incorporated columns
3. **2-phases concrete mixing method**
4. Diagonals insulation system
5. Air destratification by extraction

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

3. **2-phases concrete mixing method**

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

3. 2-phases concrete mixing method

3.1 Analogy with peas salad

3.1.1 Peas salad ingredients




Precast-First
Industrialization of construction

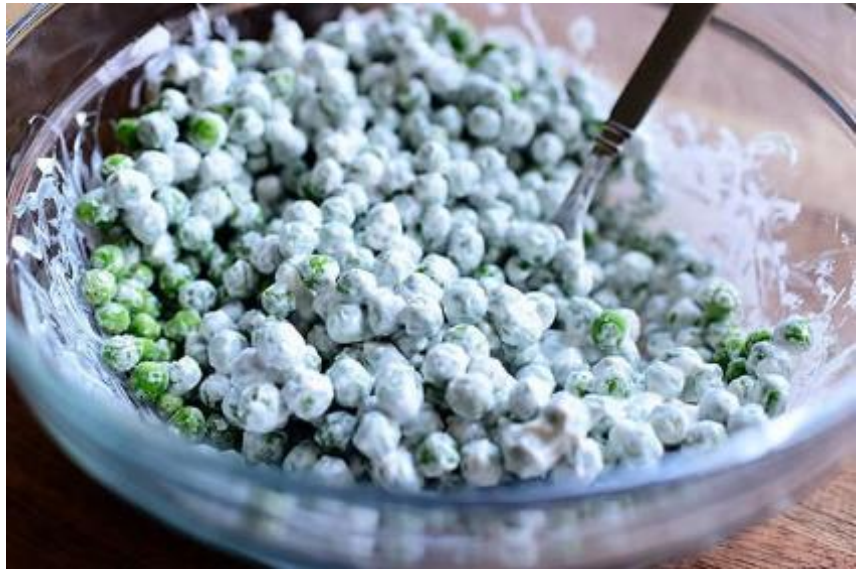
Precast-First
Industrialization of construction

3. **2-phases concrete mixing method**

3.1 Analogy with peas salad

3.1.2 First recipe:

Mixing all ingredients at once



Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

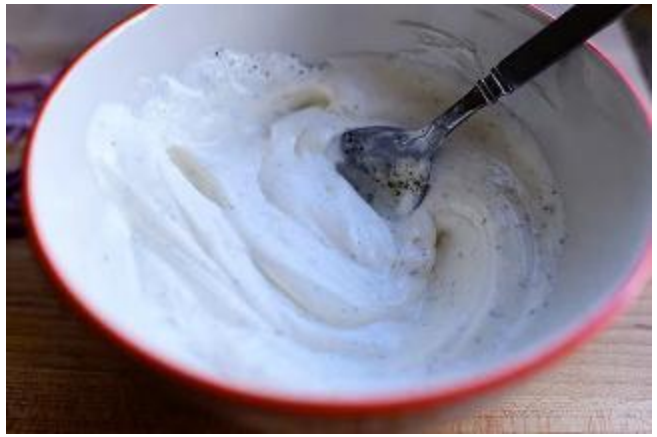
3. **2-phases concrete mixing method**

3.1 Analogy with peas salad

Precast-First
Industrialization of construction

3.1.3 Second recipe:

Preparing mayonnaise first and adding it to peas.



Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

3. **2-phases concrete mixing method**

3.1 Analogy with peas salad

3.1.3 Comparison between final products

Apparently, final products are similar, but in fact they are quite different.

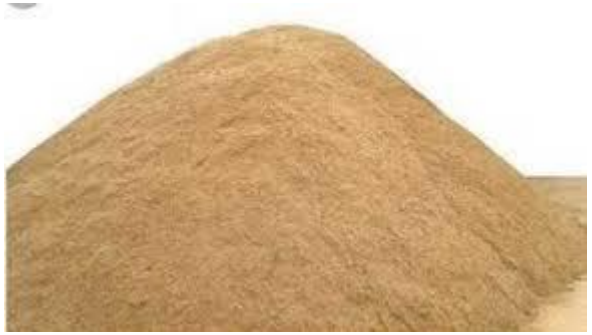
Precast-First
Industrialization of construction

3. 2-phases concrete mixing method

3.2 Concrete seen as aggregates salad

Precast-First
Industrialization of construction

3.2.1 Ingredients



Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

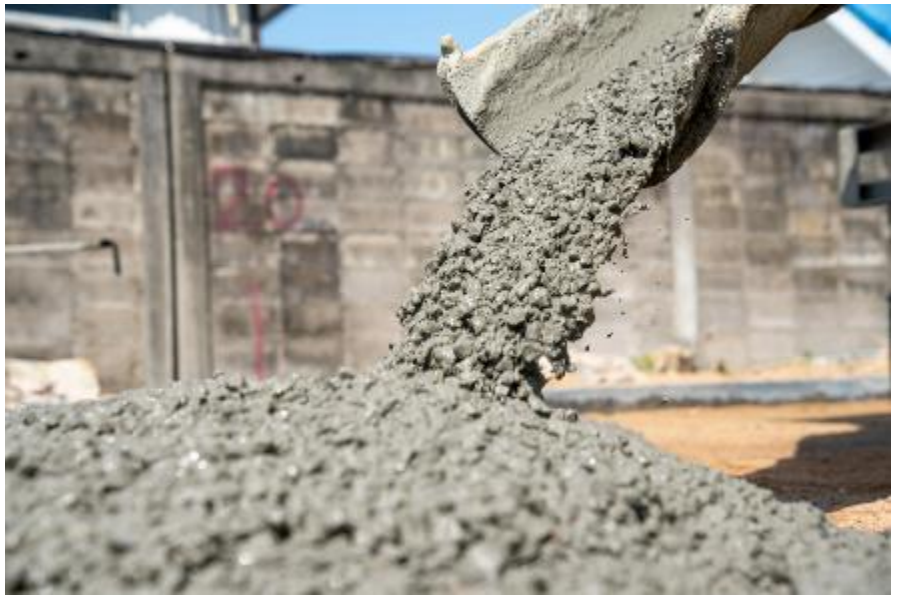
Precast-First
Industrialization of construction

3. **2-phases concrete mixing method**

3.2 Concrete seen as aggregates salad

3.2.2 First recipe:

Mixing all ingredients at once



Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

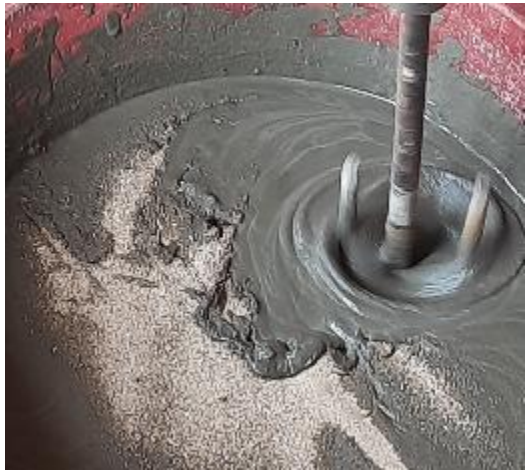
Precast-First
Industrialization of construction

3. **2-phases concrete mixing method**

3.2 Concrete seen as aggregates salad

3.2.3 Second recipe:

Making “mayonnaise” first



3. **2-phases concrete mixing method**

3.2 Concrete seen as aggregates salad

3.2.4 Comparison between final products

Apparently, final products are similar, but in fact they are quite different.

3. **2-phases concrete mixing method**

3.3 Implementation on field

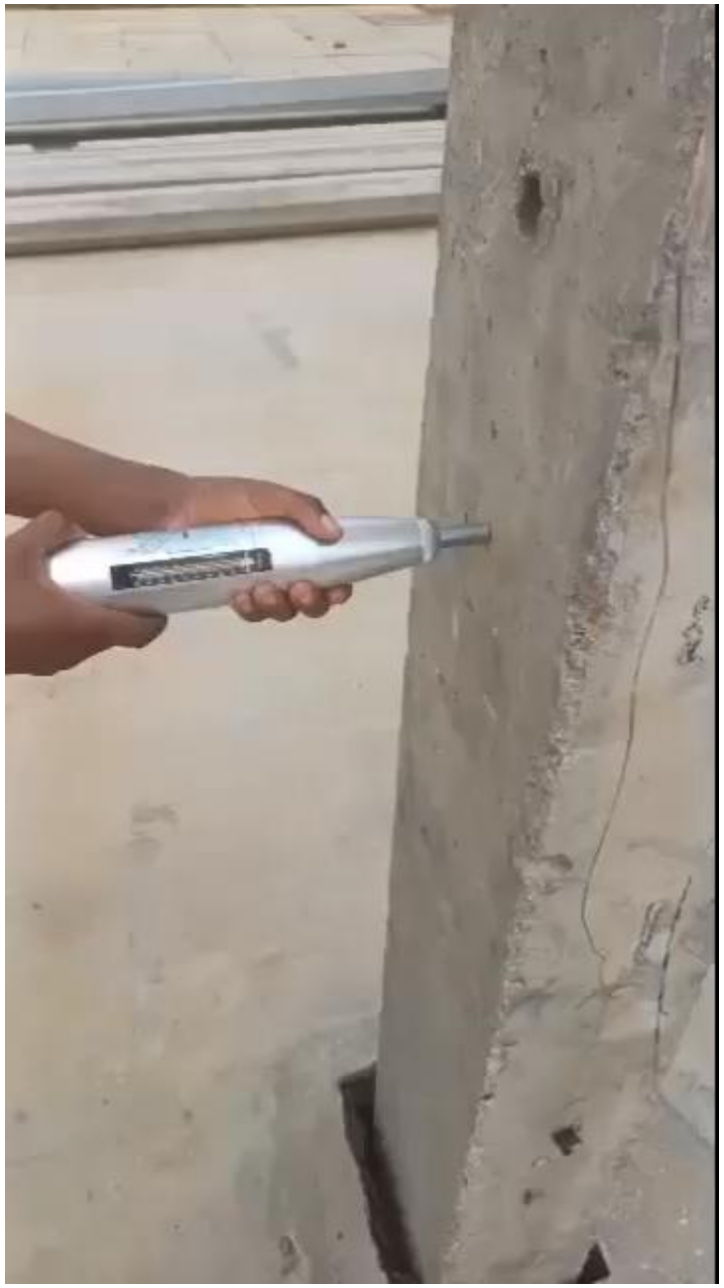
The following live tests are being performed on existing constructions which were built using 2 phases mixed concrete.

Nominal mix 1-2-4: **350kg/m3**
Admixture: **None**.
The result is amazing: **50 MPa** on average!!
Expected results with conventional method: **15-25 MPa**.

For comparison, a stone is also tested: **72 MPa**. A close cousin!

Precast-First
Industrialization of construction

3. **2-phases concrete mixing method**



3.3 Implementation on field

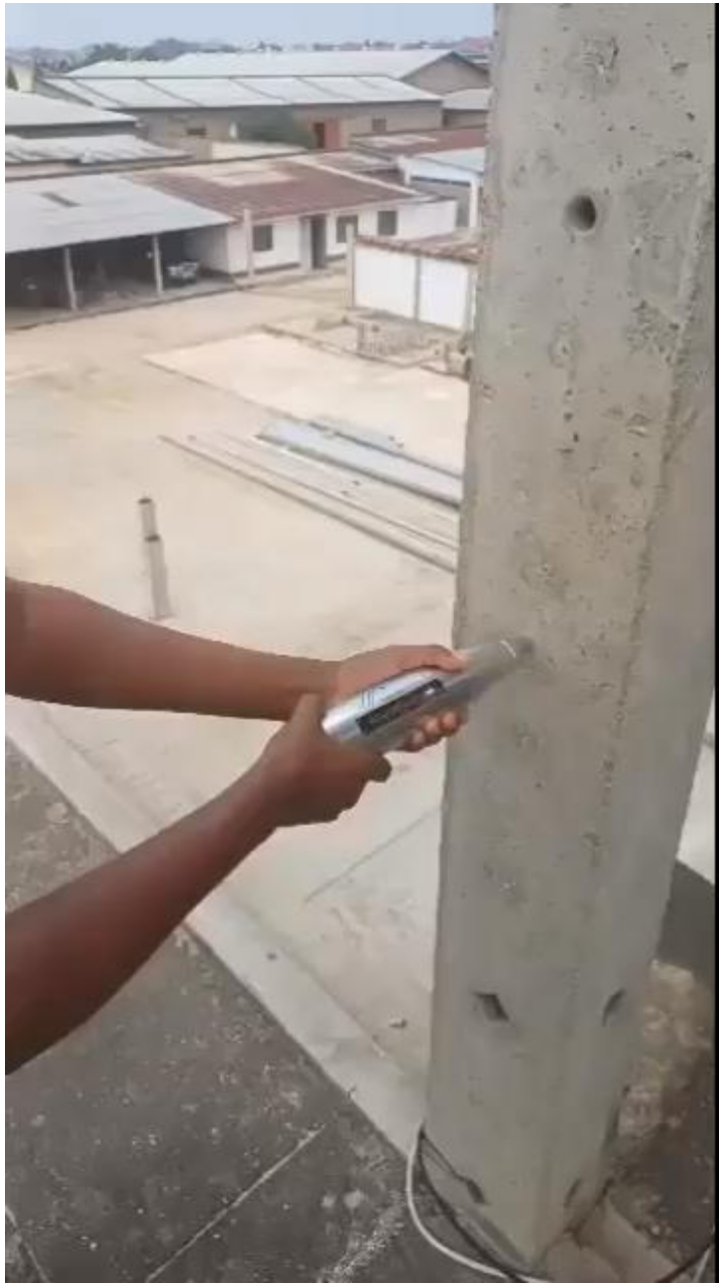
Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

3. 2-phases concrete mixing method



Precast-First
Industrialization of construction

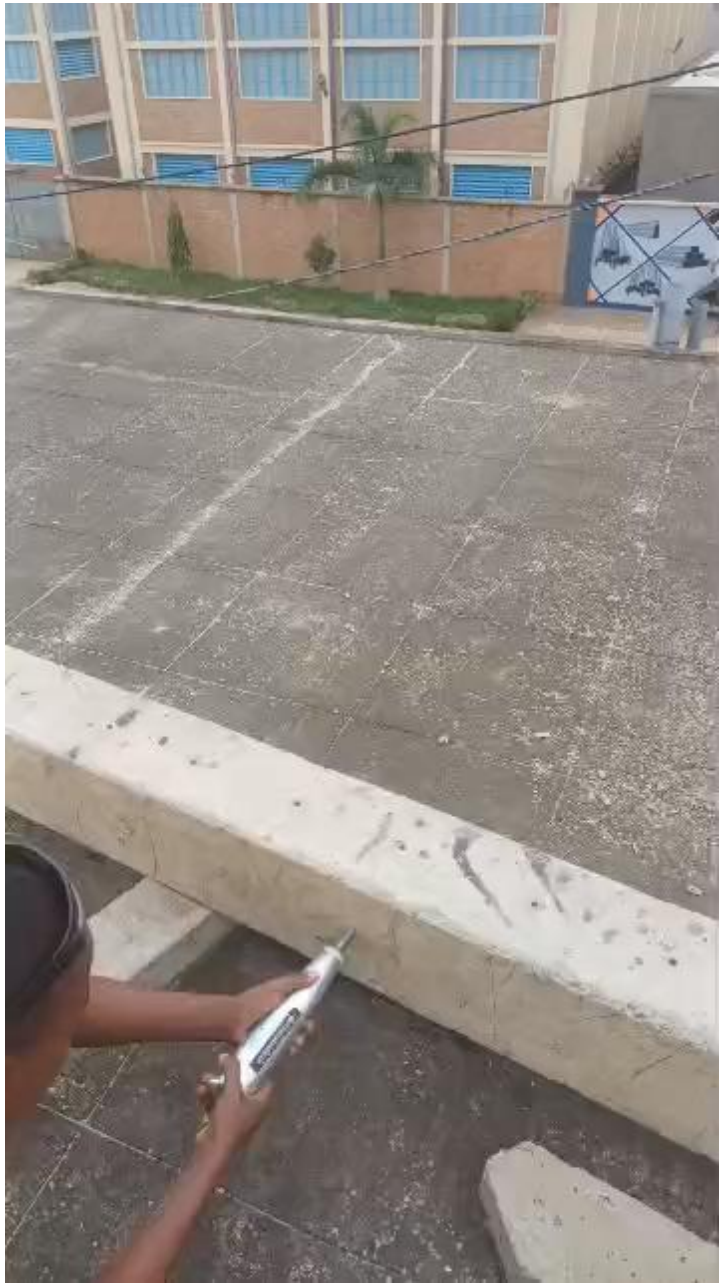
3.3 Implementation on field

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

3. 2-phases concrete mixing method



Precast-First
Industrialization of construction

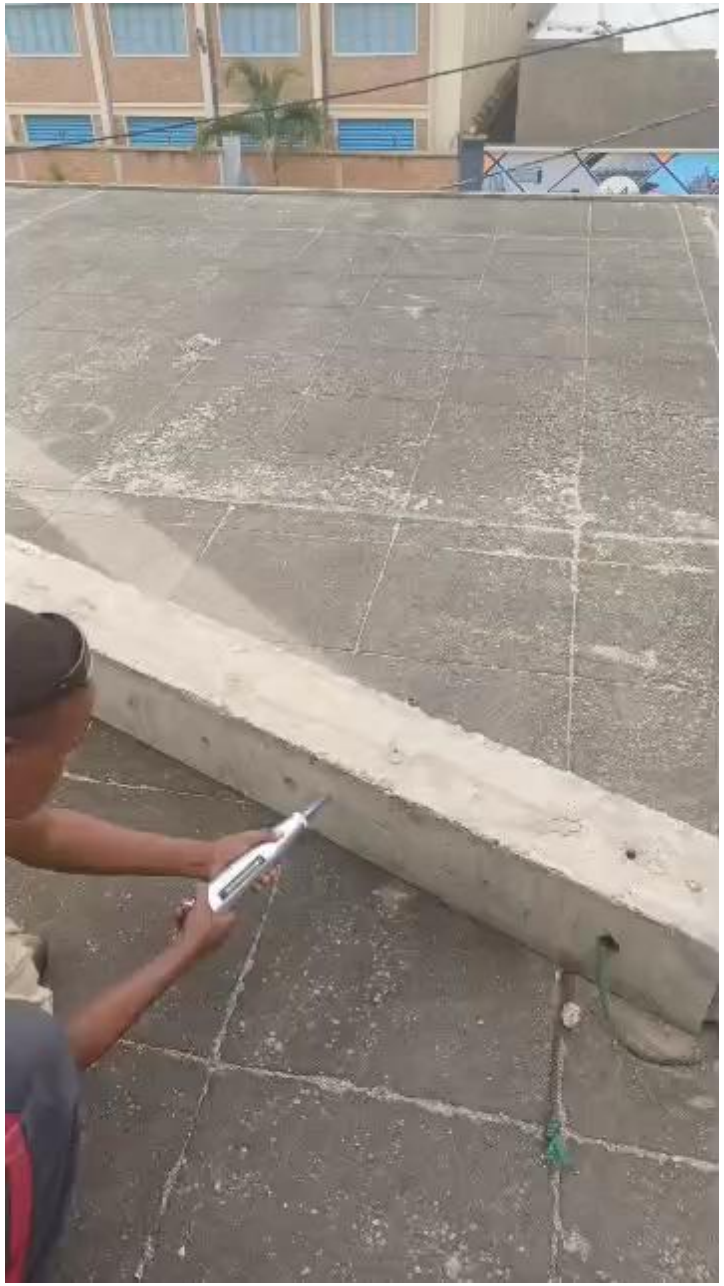
3.3 Implementation on field

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

3. 2-phases concrete mixing method



Precast-First
Industrialization of construction

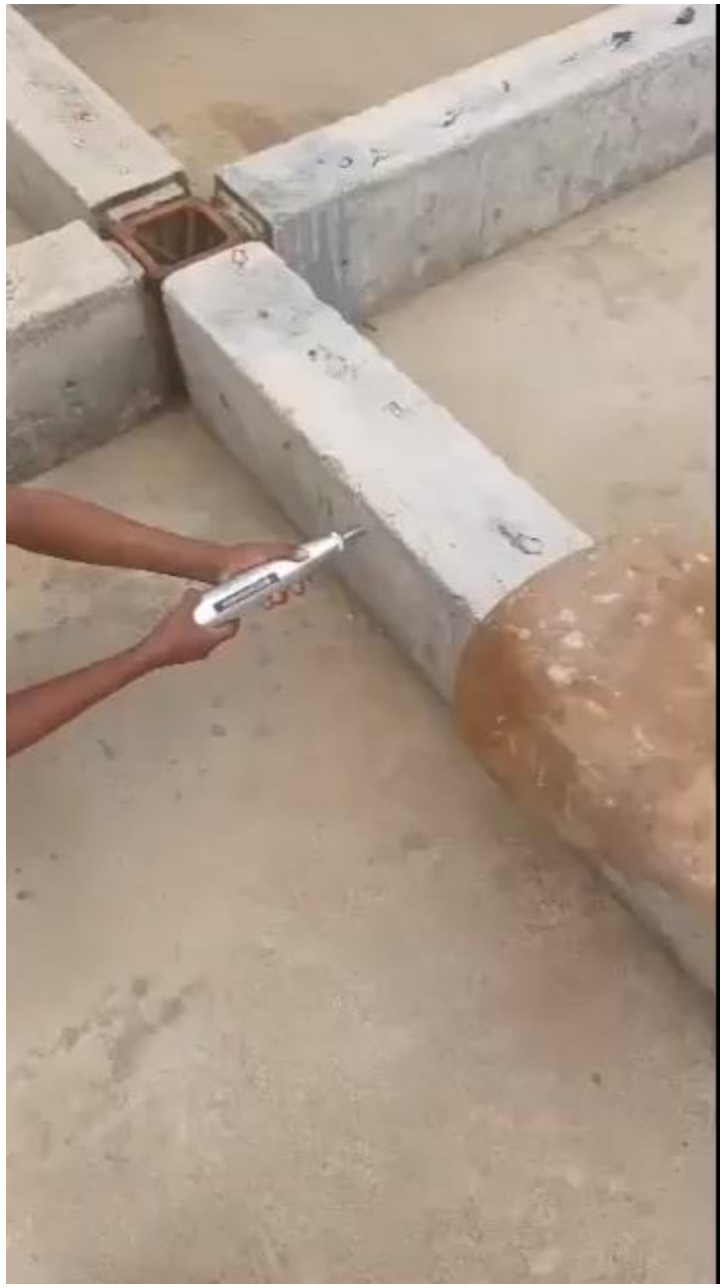
3.3 Implementation on field

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

3. 2-phases concrete mixing method



Precast-First
Industrialization of construction

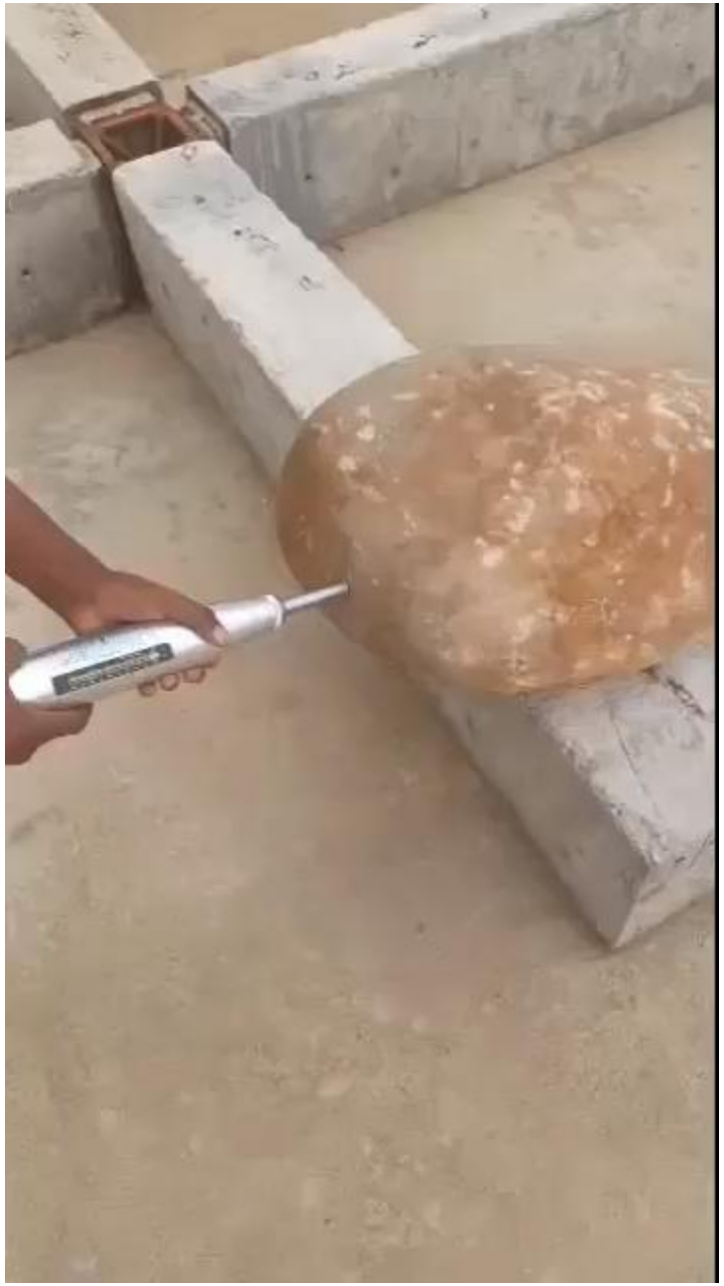
3.3 Implementation on field

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

3. **2-phases concrete mixing method**



3.3 Implementation on field

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

Precast-First
Industrialization of construction

3. **2-phases concrete mixing method**

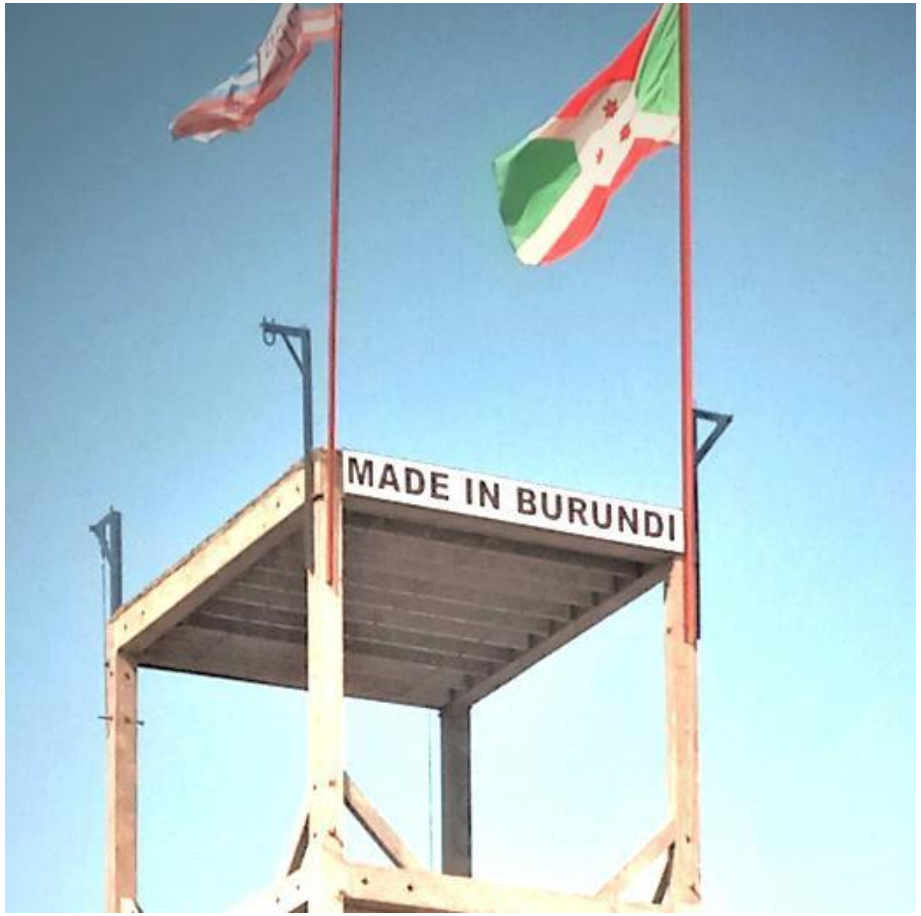
3.4 Conclusion

- With 2-phases concrete mixing method, we reach easily a compressive strength of 50 MPa, using 43 grade cement, nominal mix 1-2-4, without admixture.
- With more appropriate ingredients, even higher strength can be expected.
- The standard grade of concrete goes up to 45MPa. Beyond that we enter the High Performance Concrete category, which fits for construction of high-rise buildings.
- For common construction, lower dosage of cement can be considered, resulting in other substantial savings in cement, and lower impact on the environment.

Precast-First

Industrialized construction to solve the current global housing crisis

Precast-First



Precast-First

Precast-First