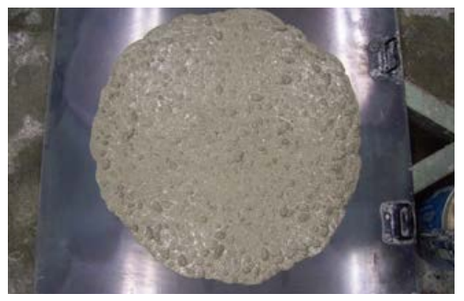
Delivering high workability

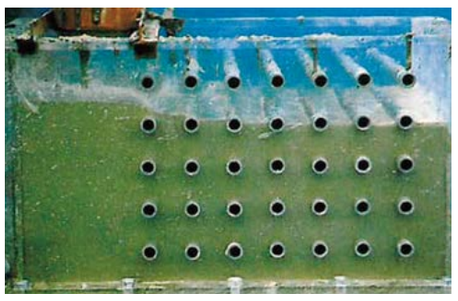
High-flow Concrete

High-flow concrete "NV concrete" with excellent self-compactability

"NV concrete" is a self-compacting high-flow concrete that does not require vibration compaction work during construction. Its excellent quality stability and self-compactability can provide construction of high quality and reliable structures.



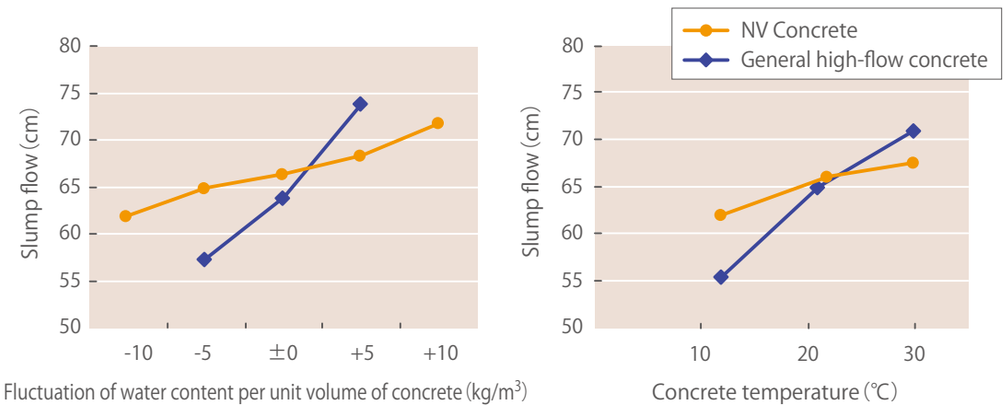
Slump flow test (high fluidity)



Filling property test
(excellent self-compactability)

Features

- The work not involving vibration compaction can achieve labor savings.
- It facilitates placement into complicated cross-section parts, high-density reinforcement parts, and parts that a person cannot enter.
- Due to resistance to segregation, frequent change of placing position is unnecessary, which allows smooth construction work.
- The absence of bleeding and laitance provides homogeneous and highly reliable structures.
- Selection and combination of materials enables addition of various properties such as low heat, low shrinkage, and high early strength.
- Use of a special viscosity agent, manufacture and supply of stable quality concrete can be possible.



Stability of slump flow of NV Concrete

- Exhibiting higher durability than conventional concrete

Items related to durability	NV Concrete	Plain Concrete
Freeze-thaw resistance (Relative dynamic modulus of elasticity after 300 cycles)	99	93
Carbonation speed coefficient (cm/year)	0.068	0.120
Chloride ion diffusion coefficient (cm^2 /s)	4.7×10^{-8}	30×10^{-8}

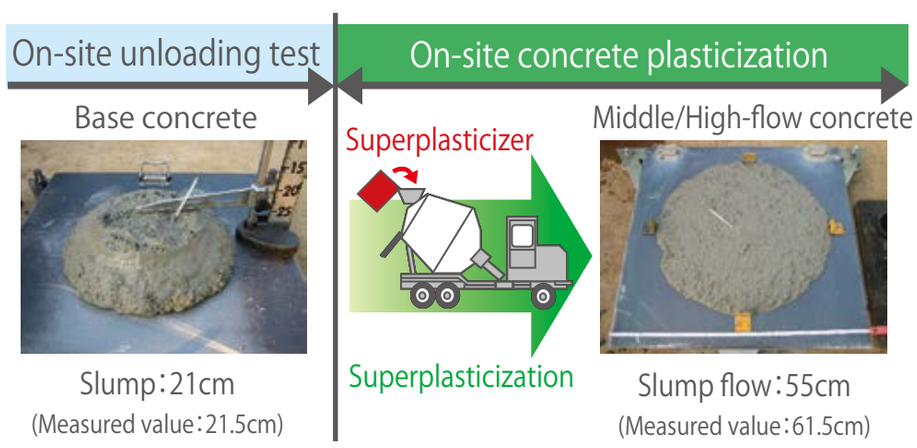
〈Condition of mix proportion〉 W/C=53%, Water content per unit volume of concrete175kg/m^3, Air content4.5%

Application example

- We boast construction of bridge, urban civil engineering, etc., of 300,000 m3 in 230 sites (as of March 2017).

Post-addition type middle/high-flow concrete

This concrete gives a flowability or fluidity between those of plain concrete and high-flow concrete by addition of an originally developed superplasticizer into the concrete after an on-site unloading test. By using this, it becomes possible to form a framework while slightly compacting and fill the concrete densely.



Manufacturing method of middle/high-flow concrete

Features

- Slump flow can be adjusted by an addition amount of the superplasticizer (range of 45-55 cm).
- Incorporating a thickening component in the superplasticizer provides the concrete with excellent segregation resistance.
- Regardless of the addition of superplasticizer, the compressive strength is the same.
- Post-addition of the superplasticizer allows separate placement of concrete with ease, for example, by using the superplasticizer only for parts where high superplasticization is required.
- A performance evaluation certificate (GBRC No. 11-03) is acquired as a third party evaluation.

Application example

- Arch frame
- Filling concrete for lower part of base isolation foundation
- Reinforcement of existing members (retrofit work), etc.

Tama Art University Library Building Exterior

Tama Art University Library Building Interior

KAJIMA CORPORATION