

DENKI KAGAKU KOGYO KABUSHIKI KAISHA  
(Denka)

## Denka Receives the Japan Prestressed Concrete Institute 2014 Award for Outstanding Engineering Innovations

On May 26, 2015, the Japan Prestressed Concrete Institute (“JPCI”) awarded a 2014 JPCI Award for Outstanding Engineering Innovations for the construction of the Denka Kotakigawa Bridge. This road bridge was designed and constructed by Kajima Corporation using SUQCEM ultrahigh-strength fiber-reinforced concrete (“UFC”) and a cast-in-place construction method. DENKI KAGAKU KOGYO KABUSHIKI KAISHA (headquarters: Chuo-ku, Tokyo; president: Shinsuke Yoshitaka; hereinafter “Denka”) is one of four companies that jointly developed *SUQCEM*.

It was Denka’s first time receiving this award, which is given in recognition of structures built using outstanding prestressed concrete construction methods or techniques that contribute to the industry’s technological development.

This year marks the 100th anniversary of Denka’s founding. To expand the use of clean energy in the coming 100 years, Denka is taking such measures as updating its existing hydroelectric power plants and constructing new power plants. Dating back to 1921, the Kotakigawa Power Plant has been operating for more than 90 years and is Denka’s oldest hydroelectric power plant. To refurbish this plant, the existing Kotakigawa Bridge, which allows access to the plant, had to be replaced in order to allow the passage of the necessary heavy vehicles.

Because the bridge site is mountainous and subject to heavy snowfall, particular consideration was given to the replacement structure’s durability and maintenance requirements. At the same time, the narrow access roads leading to the bridge made it difficult to transport the large precast concrete components typically used to construct bridges. A completely novel approach that entailed casting *SUQCEM* in place at the construction site was employed to solve this problem, allowing the in situ construction of the Denka Kotakigawa Bridge (road bridge; length: 39 m; effective width: 4 m).

Denka is focusing management resources on infrastructure as a new growth strategy under the Denka100 management plan. As part of these efforts, the special cement additives business is advancing long-lasting, environment-friendly product manufacturing, thus contributing to the sustainable development of society.

### \* References

Prestressed concrete: <http://www.jpcci.or.jp/download/pc-hp-bukai-gian-130214.pdf>

(From the JPCI website, Japanese only; For general information on JPCI, see <http://www.jpcci.or.jp/eng-index.htm>)

*SUQCEM* ultrahigh-strength fiber-reinforced concrete: <http://www.suqcem.com/>

(*SUQCEM* Development Group website, Japanese only)



Denka Kotakigawa Bridge



Award ceremony