

● Research on Hardened Material made of Fry Ash (Research on Effective Utilization of Coal Ash)

1. Outline of Research

The purpose of the research is to promote effective utilization of coal ash by undertaking the research and survey on characteristics of miscellaneous hardened material, which is made mostly of fly ash, and also by developing appropriate means how to use it.

At present, for those purposes, the following research and survey activities are under promotion.

R & D on its chemical and dynamical features during compaction of pulverized coal ash and its slurry form uses

Survey on applicability of Fly Ash for the use of construction excavated earth

2. Progress of R & D

(1) R & D on its chemical and dynamical features during compaction of pulverized coal ash and its slurry form uses

Regarding the earth material disposal after the civil engineering uses, where a large amount of coal ash is expected to be effectively used, we have been surveying the solvency restriction effects, etc. of the hardened material, both during its compaction and working in the form of slurry, by adding stabilizing agents (conventional Portland cement, blast furnace cement of B type, desulfurized flue gas product of gypsum and blast furnace slag powder, etc.). The tests have been done every year on several types of pulverized coal combustion ash in order to collect and better to use those fundamental information regarding its applicability and its quality control standard, etc.

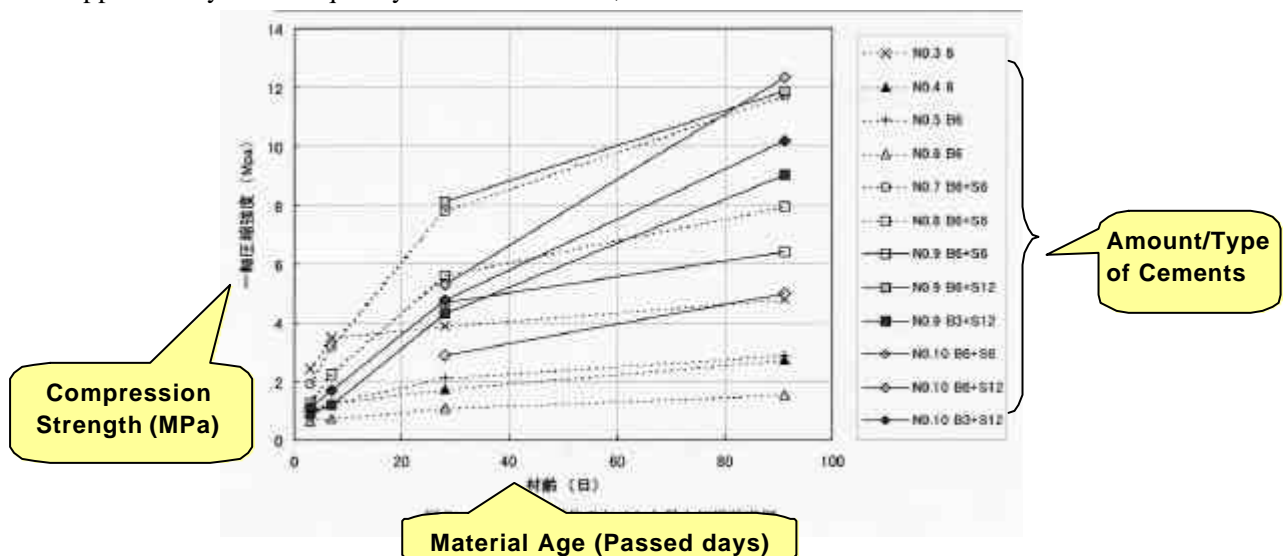


Fig.1 Relationship between the Amount of Cement in the Compacted Testing Sample and its Compression Strength (Example)

(2) Utilization Applicability Survey of Fly Ash for Construction Excavated Earth

It has been found that the fly ash has possibility to be used as a soil quality improving material, when it is used with various excavated ground earth coming from construction sites, through implementation of laboratory and demonstration mixing tests, etc. In other words, it was found that by mixing the coal ash with loose ground earth generated from construction works, an effective improvement of results has been found in the decrease of water content ratio, etc.

In practice, constructional banking tests were done. We have confirmed dynamical characteristics changes caused by fly ash mixing ratio, how to control the elusion of the microelements and its chronological changes of their characteristics, etc.



3. Cooperating Companies, etc.

(1) R&D on Compaction of pulverized coal combustion ash and its Chemical and dynamical Characteristics, etc. under Slurry Working

Niigata University

Ibaraki University

Idemitsu Kosan Co., Ltd.

Taiheiyo Cement Co., Ltd.

(2) Adaptability Survey of Fly Ash Utilization for Construction Excavated Earth

Civil Engineering Research Center

4. Schedule of Research

	FY1999	FY2000	FY2001	FY2002
(1) Survey and Research on chemical and dynamical features of the coal ash produced from Pulverized Coal Firing Bolers				→
(2) Survey and Research on Applicability of Fly Ash for the use of Construction Excavated Earth				→