

## Content

Title : Directions Governing the Inspection Procedure for Cement Ch

Date : 2023.02.24

Legislative : 1. Adopted and promulgated by Ministerial Order No. 09920016200, BSMI, MOEA on 11 October 2010.  
2. Clauses 4 and 7 amended and promulgated by Ministerial Order No. 10020009030, BSMI, MOEA on 25 July 2011.  
3. All Clauses amended and promulgated by Ministerial Order No. 10420001040, BSMI, MOEA on 1 April 2015.  
4. Clauses 4 and 5 amended and promulgated by Ministerial Order No. 11120003800, BSMI, MOEA on 26 May 2022, and enforced on 1 June 2022.  
5. All Clauses amended and promulgated by Ministerial Order No. 11220000320 on 24 February 2023.

Content : 1. These Directions are stipulated by the Bureau of Standards, Metrology and Inspection (BSMI) for implementing the inspection of cement.

2. Scope of Inspection: Portland cement and blended hydraulic cement that are imported or domestically-manufactured to be placed on the market.

3. Inspection schemes: monitoring inspection or management-system-based monitoring inspection.

4. Inspection standards and inspection items:

(1) Portland cement: CNS 61, including the following items:

a. All items on chemical compositions and physical properties, among which the compressive strength shall be performed on cement age 3 days, except type IV. For type IV, the test shall be performed on cement age 7 days.

b. Contents of additives: Contents of additives added to limestone used for Portland cement and manufacturing processes.

(2) Blended hydraulic cement: CNS 15286, including the following items:

a. All requirements for chemical compositions.

b. Physical properties:

(a) Autoclave expansion and contraction.

(b) Time of initial setting.

(c) Air content of mortar.

(d) Compressive strength, performed on cement age 3 days for all types except IS ( $\geq 70$ ) and IT ( $S \geq 70$ ). For IS ( $\geq 70$ ) and IT ( $S \geq 70$ ), the test shall be performed on cement age 7 days.

(3) The BSMI may develop other monitoring plans to monitor compressive strength of cement of other ages or decide items to be inspected when there are options provided by the standards.

5. The relevant requirements of monitoring inspection (including management-system-based monitoring inspection):

(1) Application:

a. Monitoring inspection: The obligatory inspection applicant shall apply to the BSMI or its branch (hereinafter referred to as the Inspection Authority) for inspection by submitting an inspection application form before the product is imported or transported out of the production premises.

b. Management-system-based monitoring inspection:

(a) An applicant shall register in the monitoring system and submit the application form, together with quality management system certificates issued by the BSMI or by certification bodies recognized by the BSMI, and a list of basic inspection equipment, to the Inspection Authority.

(b) The basic inspection equipment includes autoclave, Le Chatelier pycnometer, constant temperature and humidity incubator, air permeability apparatus, Vicat apparatus, compression machine (25 tons), flow table and muffle furnace (high temperature furnace that can be used constantly up to 1200 degrees).

(2)Commodity Inspection Mark:

- a.Cement shall bear the Commodity Inspection Mark on the smallest packaging unit. But those in bulk can be exempted from labelling the Commodity Inspection Mark.
- b.Where monitoring inspection procedure is selected, the obligatory inspection applicant may print the Commodity Inspection Mark by themselves if the product lot number or manufacture date is identified in the application form, and the smallest packaging unit is labelled with the product lot number or manufacture date. The identification number is composed of the letter "M" and the monitoring inspection registration number.
- c.Where the production premises are registered under the management-system-based monitoring inspection, the obligatory inspection applicants may print the Commodity Inspection Mark by themselves. The identification number is composed of the letter "Q" and the monitoring inspection registration number.

(3)Inspection Requirements:

a.Monitoring inspection:

(a)The inspection is carried out by batch examination. Where the obligatory inspection applicant applies for inspection for products of the same origin, the same production premise or brand, and the same type, which have passed batch examination for three consecutive batches, the subsequent applications will be subject to randomly-sampled batch examination (one out of every two batches being sampled for inspection). Where non-compliance is found in the randomly sampled products, batch examination will be resumed.

(b)When the bulk cement, which has passed inspection, is repackaged into small units, the obligatory inspection applicants shall apply for re-inspection. For re-inspection applications that are accompanied by the ex-factory or import monitoring inspection certificate and proof of delivery, the procedure of document review is adopted. When necessary, on-site check of packaging, appearance

and labelling or sampling inspection may be conducted. For those not inspected or sampled for ten consecutive batches, the next batch shall be inspected or sampled.

b.Management-system-based monitoring inspection:

(a)Domestically-manufactured cement to be sold in Taiwan: A production premise shall perform inspection of its cement and issue, by countersigning, the monitoring inspection certificate if compliance is demonstrated after the inspection.

(b)For imported cement: the obligatory inspection applicant shall submit a copy of the registration certificate of the production premise under management-system-based monitoring inspection and the original inspection records produced by the production premise to the BSMI for approval before

issuing the monitoring inspection certificate.

(c)Production premises registered under management-system-based monitoring inspection are required to include the content of additives (slag, fly ash, silicon material and limestone) in the inspection records. The BSMI may examine or conduct sampling inspection when it is deemed necessary.

(4)Principles for the delivery of samples and confirming the content of the additives:

a.Imported cement (including those subject to monitoring inspection and those subject to follow-up batch examination after having failed monitoring inspection): Upon receipt of the samples, the Inspection Authority will mix them and divide them into three portions: one being subject to testing of chemical composition and content of additives (for slag, only the quantity of sulfur in sulfide in the original cement sample is tested) by the Inspection Authority; another being subject to physical characteristics testing by specialised cement laboratory of the BSMI (Taichung or Hualian Branch); and the other being subject to testing by the BSMI's specialized slag laboratory (Hualian Branch).

b.Domestic-manufactured cement (including those from production premises registered under management-system-based monitoring inspection, domestic production premises and those subject to follow-up batch examination after having failed monitoring inspection): Upon receipt of the samples, the Inspection Authority will mix them and divide them into three portions: one being kept by the Inspection Authority for future inspection; another being subject to testing of physical properties, chemical composition and content of additives (for slag, only the quantity of sulfur in sulfide in the original cement sample is tested) by a specialised cement laboratory; and the other being subject to inspection by a specialized slag laboratory.

c.The content of fly ash, silicon material and limestone shall be tested in accordance with CNS 12459. The quantity of sulfur in sulfide in the original cement sample shall be tested in accordance with Clause 7.3 of CNS 12459, and a ratio of 1:100 shall be used as the estimated content for slag. The mass of limestone added to cement shall not be more than 5% of the total cement mass. The sum of the estimated slag quantity, fly ash, and silicon material content shall not be more than 5% of the total cement mass. Cement will be deemed as a product containing questionable additive

contents when its sum of estimated slag quantity, fly ash, and silicon material content is more than 5% of the total cement mass.

d. When cement is deemed as a product containing questionable additive contents after the above testing, the Inspection Authority or specialised cement laboratory shall seek confirmation from the specialised slag laboratory, and inform the obligatory inspection applicant that an additional six working days is needed for testing. The extension shall be noted accordingly in the "Specialized Laboratory Management System" at the same time.

e. The specialised slag laboratory shall provide the testing results to the Inspection Authority within six working days after receiving the calls.

(5) Period of inspection: six working days upon receipt of samples, and eight working days if the inspection item includes compressive strength to be performed on cement age 7 days. When the sample is deemed as a product containing questionable additive contents and requires confirmation on the slag content, the inspection period will be extended for another six working days.

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Data Source : Ministry of Economic Affairs R.O.C.(Taiwan) Laws and Regulations Retrieving System