

SPECIFICATION SECTION 01900

CONTROL OF MATERIALS

TABLE OF CONTENTS

1. DESCRIPTION.....	3
2. REQUIREMENTS.....	3
2.1 Reference Standards.....	3
2.2 General	4
2.3 The Schedule Of Materials.....	5
2.4 Special Requirements For The Control Of Materials	5
2.5 Acceptance And Notification Of Non-Compliance.....	9
2.5.1 Acceptance.....	9
2.5.2 Notification of Non-compliance	9
2.5.3 Certificate of Satisfactory Control of Materials	9
3. MEASUREMENT AND PAYMENT.....	9

SPECIFICATION SECTION 01900 - CONTROL OF MATERIALS

1. DESCRIPTION

This Specification Section prescribes the requirements and procedures to establish, implement and maintain a systematic procedure for Control of Materials by the Contractor.

The following definitions shall be referred to for proper interpretation of this Specification Section:

Schedule of Materials:	The schedule prepared for the Program, which describes and monitors the proper, adequate and well balanced use of Materials required for construction of the Works, which schedule is augmented by Shop/Working Drawings, summary bar bending schedules, quantity tables or diagrams, etc. as required and in accordance with the Program.
Program and the Schedule:	As defined in Specification Section 01300 Program of Work.
Shop Drawings and Working Drawings:	As defined in Specification Section 01200 Contractor's Drawings
Laboratory:	As defined in Specification Section 01750 Laboratory
Quality Control Plan :	As defined in Specification Section 01800 Contractor's Quality Control
Certificate of Satisfactory Control of Materials:	The certificate which the Engineer shall issue, for the purpose of issuing the Payment Certificates to certify that the relevant activities for Control of Materials have been performed by the Contractor in compliance with the requirements of this Specification Section.

2. REQUIREMENTS

2.1 Reference Standards

- a) In addition to the current applicable Vietnamese regulations referred to in Specification Sections 01750 and 01800 the latest editions of the following Standards shall be used where applicable.

Guide Specifications for Highway Construction, AASHTO, 1998.

Japan Highway Public Corporation (Nihon Doro Kodan) Manual for Supervision of Civil Works.

U.S. Department of Transportation, Federal Highways Administration; Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects - FP-2003 (Metric Units).

- b) Unless otherwise designated, when reference is made in the Specification to standards or test methods such as AASHTO, ASTM or others the reference shall mean the specification, standard or test method which is in effect until 28 days before the date of submission of bids.

2.2 General

- a) The Contractor shall be fully responsible for the provision of all Materials required for the Works including established commercial Materials.
- b) Regardless the origin of the source, all materials to be incorporated in the Works shall comply with all the requirements herein specified and shall have acceptance certificates issued by the Engineer based on quality control and testing results submitted by the Contractor.
- c) All Materials shall be subject to inspection, sampling, testing, retesting, and rejection at any time prior to the issue of the Performance Certificate.
- d) The stipulated Vietnamese regulations for quality control and for the Laboratory referred to in Specification Sections 01750 and 01800 shall also govern the basic procedures for establishment, implementation, and maintenance for Control of Materials for the Works, as applicable.
- e) The requirements established in this Specification Section are intended to be mutually explanatory and read in conjunction with the requirements in the following clause and subclauses of the Conditions of Contract:

Subclause 7.3, Inspection,

Subclause 7.4, Testing”,

Subclause 7.5, Rejection,

Subclause 9.4, Failure to Pass Tests on Completion,

Subclause 10.1, Taking Over of the Works and Sections,

Subclause 11.1, Completion of Outstanding Work and Remedying Defects ,

Subclause 11.5, Removal of Defective Work,

Clause 13 Variations and Adjustments.

Subclause 14.3, Application for Interim Payment Certificates,

Subclause 14.5, Plant and Materials intended for the Works,

Subclause 14.7, Payment.

- f) The requirements established in this Specification Section are intended to be mutually explanatory and read in conjunction with the provisions in the following sections of the General Requirements:

Section 01000 General Provisions;

Section 01300 Program of Work;

Section 01750 Laboratory;

Section 01800 Contractor's Quality Control and

- g) Failure of the Contractor to comply with the requirements of this Specification Section will be considered as a default under Specification Section 01800 Contractor's Quality Control, subsection 2.2 paragraphs (f) and (g).

2.3 The Schedule of Materials

- a) The schedule of Materials shall detail all activities related to the Control of Materials to be implemented for the Works taking into account all the requirements described in the Specification, the schedules in the Program, the material sources/delivery to the Works, the procedures for testing and acceptance and other aspects that the Contractor plans to introduce in the Program, or the Engineer may instruct.
- b) The general schedule of Materials shall be submitted along with the Program and shall be considered as one of the key schedules for the Works.
- c) Revisions during the construction period will be allowed if required by the Engineer or if proposed by the Contractor based on the actual conditions, provided that a plan be properly prepared and submitted to the Engineer for his review and approval, at least 28 days prior to its application in the work execution.
- d) The schedule of Materials shall include but not be limited to the following:
 - (i) The list of Materials to be controlled by the schedule of Materials.
 - (ii) The sources (location, capacity, technical properties and characteristics, testing results, providers or suppliers references, etc.).
 - (iii) The Contractor's material inspection system (supplementing the quality control plan specified in Specification Section 01800 Contractor's Quality Control).
 - (iv) All the details, Working Drawings, etc. describing the location or item where the material is intended to be used.
 - (v) All the supplementary schedules required for proper monitoring (time schedule, manning schedule, testing and quality control schedules, equipment, etc.).
 - (vi) All activities associated with the procurement, purchase, fabrication and shipment of Materials provided from local or international sources.
 - (vii) Others that the Engineer may require for monitoring.

2.4 Special Requirements for the Control of Materials

- (1) Source of Supply and Quality Requirements
 - a) The Contractor shall:
 - (i) Perform and fulfill all the requirements and procedures for quality control, testing and approval of Materials as stipulated in the Specifications.
 - (ii) Select sources and provide acceptable Materials.

- (iii) Notify the Engineer of all proposed sources before delivery of materials to the Site to expedite material inspection and testing.
 - (iv) Not incorporate material requiring submittal into the work until approved.
 - b) The material may be approved at the source of supply before delivery to the Works.
 - c) Achieving satisfactory test results does not constitute acceptance by the Engineer. The Engineer reserves the right to issue acceptance certificates based on the test results, actual conditions and actual necessities or requirements for the Works.
 - d) If an approved source does not continue to supply acceptable Materials during the execution of the Works, further use of that source will be denied, and the Contractor shall furnish Materials from other sources.
- (2) Material Sources
 - a) Local Material Sources: Except for commercially operated sources, no work shall be performed within a source until the Engineer approves the schedule of materials which shall include a detailed plan of operations for development of the source.
 - b) Contractor Located Sources: For the use of other sources the Contractor shall:
 - (i) Be fully responsible for all matters related to the source.
 - (ii) Use sources that fulfill entirely and satisfactorily the contract requirements with regard to quantity and quality.
 - (iii) Determine the quantity and type of equipment and work necessary to select and produce acceptable Materials.
 - (iv) Secure all permits and clearances for use of the source and provide copies of the documents to the Engineer.
 - (v) Bear all costs related thereto, including those needed for development, exploitation, erosion control, restoration, hauling and any other incidental cost.
 - (vi) Provide laboratory test reports and available historical performance data indicating that acceptable material is available from the source.
 - (vii) Not use Materials from a source that is unacceptable to the Engineer.
 - (viii) Dispose of unacceptable Materials and locate other sources at his expense, and without having right to an extension to the Time for Completion of the Works due to this matter.

(3) Material Source Management

The Contractor shall:

- a) Notify the Engineer, at least 28 days, before starting pit operations.

- b) Develop and operate within a material source according to the plan of operation included in the accepted schedule of Materials or Engineer's written acceptance for developing the source;
- c) If any or if applicable, before developing a material source,
 - (i) Measure the sediment content of water bodies adjacent to the work area that will receive drainage from the work area.
 - (ii) Control erosion so that the sediment levels in the water bodies within the drainage area of the work area do not increase.
 - (iii) Control erosion so that sediment does not leave the work area.
- (4) Storage and Handling of Materials
 - a) All Materials shall be handled in such a manner as to preserve their quality and fitness for the Works. Aggregates shall be transported from the storage site to the Works in tight vehicles so constructed as to prevent loss or segregation of Materials after loading and measurement.
 - b) The Contractor shall:
 - (i) Store and handle Materials to preserve their quality and fitness for the Works. Stored Materials approved before storage may again be inspected before use in the Works.
 - (ii) Locate stored Materials in such a way and place that prompt inspection is facilitated.
 - (iii) Place the stored materials on a hard and clean surface and when required, place them under cover.
 - (iv) Use only approved portions of the right of way for storing Materials and placing plant and equipment.
 - (v) Provide all additional space needed.
 - (vi) Not use private property for storage without the written consent of the owner or lessee and shall furnish the Engineer with copies of all agreements for such use.
 - (vii) Restore all the provided storage sites to their original condition, after completion of the Works, in a manner acceptable to the Engineer and at no cost to the Employer.
 - (viii) Be responsible for the security of all stored Materials.
- (5) Stockpiling
 - a) Material stockpiles shall be prepared by clearing and leveling to the approval of the Engineer.
 - b) The center of all aggregate stockpile areas shall be raised and sloped to the sides as required so as to provide proper drainage of excess moisture.
 - c) The Materials shall be stored in such a manner as to prevent segregation and to ensure proper gradation and moisture content.
- (6) Use of Materials Found in the Work

- a) Materials such as rock, stone, gravel or sand, found in the excavation for the roadway, structures, or channel relocation may be used for another pay item when acceptable.
 - b) When there is an acceptable material found in the work, which is suitable for another item, the Contractor shall prepare a plan for the use of such material and it shall be included in the schedule for Materials herein described.
 - c) If the Contractor produces or processes Materials found on the Site in excess of the quantities required for the Contract, the Engineer may:
 - (i) Determine and direct the use of the excess material and determine the amount of payment to the Contractor including only the cost of production; or
 - (ii) Direct the removal of the material and restoration of the land to a satisfactory condition at no cost to the Employer.
- (7) Condition of Materials
- Unless otherwise specifically provided in this Contract, all items incorporated in the completed Works such as; equipment, materials and other articles shall be new and of the most suitable grade for the purpose intended.
- (8) Control of Materials Records and Reports
- The records, reports and monthly summary for the Control of Materials shall be prepared in accordance with Specification Section 01800 Contractor's Quality Control, subsection 2.5.3 Quality Control's Records and Reports and shall be incorporated into the QC reports.
- (9) Certification of Compliance
- a) When a certification is required under the Contract and or the Specification, a certificate of compliance in which the Lot is clearly identified shall accompany each Lot of such Materials delivered to the Works.
 - b) Certificates initiated by the manufacturer and when required, supported by tests performed by the manufacturer shall accompany commercially manufactured Materials. Copies of such test results shall be furnished to the Engineer.
 - c) A production certificate shall be provided for each material to be transported to the Site and shall identify the date and place of manufacture, as well as the lot number or other means of cross referencing in the inspection and testing system. The Contractor shall furnish specific test results on Materials from the same lot upon request by the Engineer.

2.5 Acceptance and Notification of Non Compliance

2.5.1 Acceptance

- a) The results obtained by the application of the system established in this Specification Section for the Control of Materials shall be evaluated.
- b) If the Engineer determines that the Control of Materials implemented by the Contractor in executing the Works is ineffective or contains defects the Contractor shall make immediate improvements to correct these inadequacies.

2.5.2 Notification of Non Compliance

The notification of non compliance with the requirements for Control of Materials herein specified shall be made in accordance with the procedure established in Specification Section 01800 Contractor's Quality Control, subsection 2.6.2 Notification of Non Compliance.

2.5.3 Certificate of Satisfactory Control of Materials

This certificate will be issued by the Engineer, on a monthly basis, upon due compliance by the Contractor with the following conditions:

- a) No failures in complying with the requirements of this Specification Section have been reported by the Engineer and the schedule of Materials has been properly implemented to the Engineer's satisfaction and
- b) The Control of Material's records and reports, including the monthly summary have been submitted to the Engineer in good time.

Failure by the Contractor to comply with the requirements of this Specification Section shall be considered as a serious default in meeting his contractual obligations under subclause 14.5 of the Conditions of Contract. In this situation, the Engineer will adjust the value of the work in the Interim Payment Certificate(s) as foreseen in subclause 14.6(b) of the Conditions of Contract.

3. MEASUREMENT AND PAYMENT

The Control of Materials in accordance with the provisions and requirements of this Specification Section is defined as Inherently Paid Work, which shall neither be measured nor paid separately and shall be deemed included or distributed among all the rates and prices entered in the unit prices of the Bills of Quantities. No separate payment will be made for these items.

Any Control of Materials Works not specifically identified in this Specification Section but which are necessary for the performance of the Works shall be deemed to be Inherently Paid Work, which shall neither be measured nor paid separately and shall be deemed included in or distributed among all the pay items listed in the Bill of Quantities.