



NATIONAL QUALIFICATION

12UY0044-5

CENTRAL CONTROL OPERATOR (COOKER)

LEVEL 5

REVISION NO: 00

VOCATIONAL QUALIFICATION AUTHORITY

Ankara, 2012

PREFACE

The Central Control Operator (Cooker) National Qualifications have been prepared according to the provisions of the Vocational Qualifications Authority Law numbered 5544 and the “Vocational Qualifications, Test and Certification Regulation” established according to this Law.

Draft Qualification was prepared by Cement Industry Employers’ Association (ÇEİS) based upon cooperation protocol signed on 18 October 2010. The opinions of the relevant institutions and organizations on the prepared draft had been taken and following their evaluation, the necessary changes had been made on the draft. After that the final draft had been evaluated and assessed by the VQA Glass, Cement and Soil Industry Committee and that the assortment of the Committee had been taken, it had been approved by the decision dated 09 May 2012 and numbered 2012/39 of the VQA Board of Directors and was decided to be placed within the National Qualification Framework (NQF).

We would like to thank all the persons, institutions and organizations for the opinions they gave and the contributions they made during the preparation, opinion statement, examination and verification of the qualification and present it to the knowledge of all the parties which might benefit.

Vocational Qualification Authority

INTRODUCTION

The main criteria concerning the preparation of the national qualifications, their examination by sector committees and their entry into force after the approval of the VQA Board of Directors have been established in the Vocational Qualifications, Test and Certification Regulation.

National qualifications include the following matters;

- a) Name and level of the qualification,
- b) The objective of the qualification,
- c) Vocational Standard, Vocational Standard units or qualification units which form the basis for the qualification,
- d) Conditions required for entering the qualification test,
- e) Learning outcomes and performance criteria on the basis of qualification units,
- f) Assessment procedures and principles to be applicable to in the acquisition of the qualification, minimum testing materials and assessor criteria necessary for assessment,
- g) Validity of the qualification certificate, renewal conditions, supervision of the certificate holder if deemed necessary,
- h) Institution developing the qualification and Sector Committee verifying the Qualification.

National qualifications are built according to the relevant national Vocational Standard if there is one or to the relevant international Vocational Standard if there is none at the national level.

National qualifications are set in cooperation with the following bodies

- Formal and non-formal education and training institutions,
- Authorized Certification Bodies,
- Institutions having preapplied for certification to the authority,
- Institutions having drawn up national Vocational Standard,
- Vocational organizations.

12UY0044-5 NATIONAL QUALIFICATION OF CENTRAL CONTROL OPERATOR (COOKER)

1	NAME OF QUALIFICATION	CENTRAL CONTROL OPERATOR (COOKER)
2	REFERENCE CODE	12UY0044-5
3	LEVEL	5
4	INTERNATIONAL CLASSIFICATION CODE	ISCO 08: 8114
5	TYPE	-
6	CREDIT VALUE	-
7	A) DATE OF PUBLICATION	09/05/2012
	B) REVISION NO	0
	C) REVISION DATE	-
8	AIM	The objective of this national qualification is to determine whether workers and applicants possess the required qualifications in order to be successful in the occupation of CENTRAL CONTROL OPERATOR (Cooker) Level 5 and whether these qualifications are enough. This work is also a reference for the education system and the testing and certification institutions.
9	VOCATIONAL STANDARD(S) FORMING THE BASIS FOR THE QUALIFICATION	
	09UMS0038-5 Central Control Operator (Cooker) (Level 5) National Vocational Standard	
10	REQUIREMENTS TO TAKE QUALIFICATION TEST	
	-	
11	STRUCTURE OF QUALIFICATION	
	11-a) Compulsory Units	
	12UY0044-5/A1 OHS AND ENVIRONMENTAL SAFETY	
	12UY0044-5/A2 ROTARY KILN TECHNOLOGY IN CEMENT INDUSTRY	
	12UY0044-5/A3 OPERATION OF ROTARY KILN SYSTEM	
	12UY0044-5/A4 CLINKER PRODUCTION (COOKING)	
	12UY0044-5/A5 WORK ORGANIZATION AND OCCUPATIONAL DEVELOPMENT	
	11-b) Elective Units	
	-	
	11-c) Alternatives for Grouping of Units and Additional Learning Outcomes	
	In the certification of the occupation of Central Control Operator (Cooker) Level 5, the applicant should be successful in all the defined compulsory units.	
12	ASSESSMENT	
	GENERAL CONDITIONS	
	In order to be able to certify his/her vocational qualification, the candidate who applies for testing and certification in the occupation of Central Control Operator (Level 5) shall be successful in all qualification units, according to the criteria defined in each one of these units. A two-step measurement and assessment shall be made such as theoretical (written) and performance based (practical), which would meet the performance criteria of the learning outcomes defined in each unit.	

The candidates who fail in the theoretical assessment in qualification units of **Central Control Operator (Level 5) occupation** shall not be tested in the performance assessment until they succeed in the theoretical assessment.

Applicants who apply for Central Control Operator (Cooker) Level 5 vocational qualification certificate should be successful in all the defined compulsory units. Adayların başarılı olmadıkları birimlerde, tekrar sınava girme hakları mevcuttur.

Theoretical and performance-based examinations shall be conducted by the Examination Committee established by authorized certification body in accordance with assessor criteria determined for **Central Control Operator (Level 5) occupation**. The questions to be asked in the test shall be taken from the question banks according to the principles laid down in the procedure.

THEORETICAL EXAMINATION

Theoretical assessments in certification of Central Control Operator (Cooker) (Level 5) occupation a written examination arranged so as to include 4-option multiple-choice and / or short-answer classical questions whose minimum number is specified in qualification units. In this examination the candidates shall be given 1-1.5 (one, one-and-half) minutes per question. Each of questions shall have equal value and no penalty shall apply for the questions not answered or answered incorrectly. Number of questions to ask in theoretical examinations of qualification units shall be as follows:

Qualification Item	A1	A2	A3	A4	A5
Nr.of Theor. Quests.	10	10	15	10	5

The candidates applying for certification are expected to succeed in minimum in the theoretical test/s based on the criteria and ratios stated in the qualification units.

PERFORMANCE-BASED EXAMINATION

In the assessment of the qualifications of the candidate who applied to certify his/her qualifications in the occupation of Central Control Operator (Cooker) (Level 5), **the performance test/tests shall be carried out in a virtual and/or real production environment. In performance test/tests the qualifications shall be assessed through practical questions in the context of the learning outcomes and performance criteria defined in units.** The test questions shall be designed so as to measure all learning outcomes and performance criteria stipulated to be measured within the scope of the whole theoretical test.

The questions to ask in the test shall be taken from the question banks according to the principles laid down in the procedure. The performance-based questions may be in the formats of applications for measuring the process and results and/or fictionalized scenarios and conditions. The records of observation, evaluation and point scoring related to the learning outcomes required by the qualification unit and scores, outcomes and/or process steps, times (if required) and critical performances to meet the performance criteria are kept on the control lists which are defined and prepared as per the number of questions stated in the units and estimated performance. The score values and time criteria of the execution are stated in the execution checklist. Performance-based examination shall apply as follows by qualification units.

Qualification Item	A1	A2	A3	A4	A5
Performance Applc.	Yes	Yes	Yes	Yes	No

As well as the performance assessment of units may be carried out collectively based on the contents and process relations between the qualifications units, learning outcomes and performance criteria, it may also be carried out sectionally. The candidates applying for certification are expected to succeed in minimum in performance-based examination/s based on the criteria and ratios stated in the qualification units.

The candidates use the personal protective equipment provided for them in order to be protected against the unavoidable risks during the performance test.

13	VALIDITY OF CERTIFICATE	The validity of Central Control Operator (Cooker) (Level 5) Vocational Qualification is 5 years beginning from the date of issue of Certificate.
14	FREQUENCY OF SURVEILLANCE	The candidate shall be subject to surveillance at least once within validity period of the certificate. Performance assessment form shall be filled with information obtained from workplace for the purpose of assessing qualification of certified person.

15	ASSESSMENT METHODS TO BE FOLLOWED IN RENEWAL OF EXPIRED CERTIFICATES	For the renewal of expired certificates the higher council established within the body of the authorized certification institution might directly renew the certificate according to the result of the monitoring made and/or the performance assessment form and according to whether the person has actually continued to execute his/her occupation during the validity period of the certificate or decide to renew the test totally or partially. The candidate should take examination in order to renew her/his certificate at the end of second five year.
16	QUALIFICATION DEVELOPMENT INSTITUTION(S)	UNION OF CEMENT INDUSTRY EMPLOYERS (ÇEİS)
17	SECTOR COMMITTEE TO VERIFY QUALIFICATION	VQA GLASS, CEMENT, AND SOIL SECTOR COMMITTEE
18	DATE AND NUMBER OF APPROVAL BY VQA BOARD OF DIRECTORS	09.05.2012 – 2012/39

ANNEXES

ANNEX 1: QUALIFICATION ITEMS

12UY0044-5/A1 OHS AND ENVIRONMENTAL SAFETY
 12UY0044-5/A2 ROTARY KILN TECHNOLOGY IN CEMENT PRODUCTION
 12UY0044-5/A3 OPERATION OF ROTARY KILN SYSTEM
 12UY0044-5/A4 CLINKER PRODUCTION (COOKING)
 12UY0044-5/A5 WORK ORGANIZATION AND OCCUPATIONAL DEVELOPMENT

ANNEX 2: Terms, Symbols and Abbreviations

ANNEX 2: Terms, Symbols and Abbreviations

ABGAS:	The fan which enables the aspiration in the kiln system,
FLOW:	The mass or volume flow rate of the fluid,
ROTARY KILN:	The kiln which transforms the raw meal into clinker by turning with a high temperature,
ELEVATOR:	The elevator carrying the good,
RAW MEAL:	Raw materials granulated in the form of meal,
PNEUMATIC BAND:	Band which is used for the transportation of products such as cement, lime, ash, by using a pneumatic (related to air and other gas pressure) transportation method.
SPIRAL:	The system used in the transportation of cement and similar flour or granulated solids vertically, angularly or horizontally.
ISCO:	International Standard Classification for Occupation,
OHS:	Occupational health and security,
PPE (Personal protective equipment):	Any tool, instrument or material designed to be worn or carried on persons in order to get protected against one or more than one health and security dangers.
CARDOX TUBE:	The high pressure tube,
CLACK:	The equipment enabling to adjust the flow quantity and/or direction in the process lines,
CLINKER	The semi-finished cement material,
LSF:	The lime degree of saturation mentioned as “CaCO ₃ /calcium carbonate + magnesium ratio = titration”,
PLANNED SHORT STOP:	A short stop with partial maintenance purpose,
REFRACTOR:	Heat resistant coating material,
SPIRAL/ORAL	The blockage of production lines where raw materials, additives and semi-finished products are passing by making a sediment in the form of an arch,
ARCH:	
CYCLONE:	The closed unit decomposing the gas and the solid,
WATER JET:	The equipment used for opening the blocked lines with water,
RODDING:	Opening the blocked lines with equipment similar to skewers,
SCHOCKING TUBE/PULSE VALVE:	The system which empties quickly the compressed air,
DRIVE MOTOR:	The main high speed engine rotating the rotary kiln and the low speed auxiliary motors,
TERTIARY:	The calcineurin line gas flow pipe parallel to the kiln,
TÜRKAK:	Turkish Accreditation Agency
VIBRATION:	Trembling,

ANNEX 3: Ways of Horizontal and Vertical Progressing in the Occupation -

The vocation of Central Control Operator (Cooker) (Level 5), is generally a vertical progress position for Cement Production Workers (Level 4) working on the field who has reached a high level in knowledge, skill, competence and experience according to the criteria defined by enterprises.

The staffs who are identified as candidates for Central Control Operator according to their business careers, are first nominated as assistant behind the Central Control Operator. As they gain experience, they control the rotary kiln independently.

In enterprises, the occupation and position which people of this occupation moves forward horizontally is Cement Production Officer (Level 5). Unless s/he does not meet criteria determined for chief and / or unit officer there is no other position which the person in this occupation can move forward vertically.

ANNEX 4: Assessor Criteria

Assessment commission to establish for theoretical and performance-based test and assessment processes of Central Control Operator (Cooker) (Level 5) occupation within authorized certification bodies shall formed by at least three (3) people, at least one of whom is measurement-assessment and / or vocational qualification expert and at least two (2) are experts of occupation or industry.

Assessors who come from the occupation of Central Control Operator (Cooker) (Level 5) and those who are from the sector of cement production shall fulfill the minimum qualifications mentioned below:

- Being an engineer in the fields of chemistry, mechanics, geology, or mechatronics,,
- Having worked for at least two (2) years in cement factories as a chief or director responsible from the kiln,
- Preferably, having been trained in the fields of measurement and assessment.

12UY0044-5/A1 OHS AND ENVIRONMENTAL SAFETY QUALIFICATION UNIT

1	NAME OF QUALIFICATION UNIT	OHS AND ENVIRONMENTAL SAFETY
2	REFERENCE CODE	12UY0044-5/A1
3	LEVEL	5
4	CREDIT VALUE	-
5	A) DATE OF PUBLICATION	09/05/2012
	B) REVISION NO	0
	C) REVISION DATE	-
6	VOCATIONAL STANDARD(S) FORMING THE BASIS FOR THE QUALIFICATION	
09UMS0038-5 Central Control Operator (Cooker) (Level 5) National Vocational Standard		
7	LEARNING OUTCOMES	
<u>Learning Outcome 1: Applies OHS and environmental security rules in the workplace.</u>		
Performance Criteria:		
<ol style="list-style-type: none"> 1.1. Identifies potential OHS and environmental risks and dangers in the rotary kiln field according to the conditions described. 1.2. Explains, pursuant to the instructions, measures that can be taken against the potential OHS and environmental security risks and dangers in the rotary kiln field according to the conditions described. 1.3. Uses the proper SPE conformably to its instructions under the field and risk and/or danger conditions described. 1.4. Makes proper notifications and orientations to the workers he/she orientates in the rotary kiln field, pursuant to OHS and environmental security instructions, according to the risks and dangers described on the field. 1.5. According to the specifications of the job to be done, applies the emergency lane precautions indicated in the instructions under the conditions described, and has them applied. 1.6. In order to provide OHS and environmental security at the work environment under the conditions described, communicates with the field officials the proper orientation messages in line with the instructions, according to the characteristics of works and potential situations and requires right/proper feedbacks. 1.7. Controls the working permits of field workers conformably to the procedures in situations described such as energy cuts-feedings, working in closed areas. 		
Context: Risks and dangers in the cement production process and the relevant measures, emergency intervention practices and methods, SPE types and characteristics, instructions and methods of implementation related to the use of secure equipment in SPE's, warning signs at the working environment, caution signals and their meanings, working permit practices in the rotary kiln field and the working permit format.		
<u>Learning Outcome 2: Intervenes in cyclone blockages when ensuring OHS and environmental security.</u>		
Performance Criteria:		
<ol style="list-style-type: none"> 2.1. Identifies, under the described production conditions, the blockage situation of pre-heater cyclones and stops the feeding of raw meal and fuel. 2.2. Continues to rotate the kiln with the auxiliary drive motor according to the long stop situation of the kiln. 2.3. Ensures the adequate/proper value of aspiration in the instruction of the pre-heater group of the blocked cyclone/cyclones. 2.4. Takes the pulse valves / shocking tubes to a manual position. 2.5. Ensures being closed of shocking valves. 2.6. Cuts the energy of the level meter of the blocked cyclone/cyclones and stops the kiln. 2.7. Fully notifies the OHS measures against hot gas backlashes and other risks defined in the instruction during the opening of the cyclone/cyclone cover and has them implemented. 2.8. During the procedures conducted by field workers in cyclone blockages, makes the system interventions from the central control room defined in the instruction. 		
Context: The pre-heater cyclones of the kiln, raw meal and fuel feeding mechanisms, auxiliary drive motors, aspiration, shocking tubes and valves, cyclone level meters, intervention methods, techniques and relevant machinery-equipment used in cyclone blockages (rodding tools, cardox tube, water jet etc.), SPE, machinery-equipment and methods proper to instructions for opening the cyclone blockages.		

Learning outcome 3: Implements the emergency precautions concerning OHS and environmental security.**Performance criteria**

The successful applicant;

- 3.1. Identifies, among various (emergency) conditions described, situations where the rotary kiln has to be stopped urgently.
- 3.2. Explains the emergency action plans together with their grounds, according to the risks and dangers described, in relation to the measures to be taken and the methods of application.
- 3.3. Under conditions described in a work accident, gives right and full information to the relevant authorized person/persons about the place of the accident, the required support and urgent measures and the situation of the shipwrecked person, if any.
- 3.4. Explains the types and duties of emergency case management teams.
- 3.5. Realizes in full, the operations selected from the practices related to the duties of at least one emergency team (security, fire, evacuation etc.) according to their aims and techniques,

Context: Emergency case action plans against various OHS and environmental risks and dangers, the application instructions, methods and techniques they cover, relevant units and authorized persons in emergency cases, instructions concerning work accidents, instructions and methods of application concerning the measures related to the rotary kiln and the associated systems in various disasters and emergency cases, the first aid equipment of the system and their methods of application, emergency situation teams and their task instructions, fire types, intervention methods, fire equipment and methods of application, relevant instructions, emergency case evacuation practices.

8 ASSESSMENT**8 a) Theoretical Examination**

Theoretical assessment of Repair Qualification Item is made by means of written examination consisting of at least 10 (ten) 4-choice (T1) and/or short-answered (T2) questions which cover defined learning outcomes and performance criteria. Questions to ask in the test shall be taken from the question banks according to the principles laid down in the procedure.

In this examination the candidates shall be given 1-1.5 (one, one-and-half) minutes per question. Each of questions shall have equal value and no penalty shall apply for the questions not answered or answered incorrectly.

The candidate should score at least 60 /100 in order to be successful in theoretical assessment of this unit. Weight of theoretical examination is 60% of qualification score of item.

8 b) Performance based Examination

The performance test of the candidates in the qualification item of taking OHS (Occupational Health and Safety), Environmental Safety and Quality Measures is performed in the virtual and/or real working environment and operation location by using the "application checklist" developed for learning outcomes and performance criteria. The questions to ask in the test shall be taken from the question banks according to the principles laid down in the procedure. The score values and time criteria of the execution are stated in the execution checklist.

Evaluation will be made on points specified for each step in the control list. Minimum 70 points over 100 should be scored in practice to succeed in the assessment of the performance test of this unit. Weight of performance based examination is 60 % of qualification score of item.

The candidates use the personal protective equipment provided for them in order to be protected against the unavoidable risks during the performance test.

8 c) Other Assessment related conditions

Theoretical and performance-based examinations shall be conducted by the Examination Committee established by authorized certification body in accordance with assessor criteria determined for **Central Control Operator (Level 5) occupation**.

Weight of OHS and Environmental security Qualification item in general assessment of all qualification units of **Central Control Operator n(Cooker) (Level 5) vocational qualification is 30%**.

9	QUALIFICATION DEVELOPMENT INSTITUTION(S)/ORGANIZATIONS(S)	UNION OF CEMENT INDUSTRY EMPLOYERS (ÇEİS)
10	SECTOR COMMITTEE TO VERIFY QUALIFICATION UNIT	VQA GLASS, CEMENT, AND SOIL SECTOR COMMITTEE
11	DATE AND NUMBER OF APPROVAL BY VQA BOARD OF DIRECTORS	09.05.2012 – 2012/39

ANNEXES

ANNEX 1: Information on Recommended Training to Earn a Qualification Unit

Vocational knowledge and skills related to the “OHS and Environmental Security” qualification unit can be obtained through the courses given by private or public institutions in this subject. Furthermore, this knowledge and those skills may also be obtained during the on-the-job-training/in-service training given in cement factories.

12UY0044-5/A2 ROTARY KILN TECHNOLOGY IN CEMENT PRODUCTION QUALIFICATION UNIT

1	NAME OF THE QUALIFICATION UNIT	ROTARY KILN TECHNOLOGY IN CEMENT PRODUCTION
2	REFERENCE CODE	12UY0044-5/A2
3	LEVEL	5
4	CREDIT VALUE	-
5	A)DATE OF PUBLICATION	09/05/2012
	B) REVISION NR.	0
	C)REVISION DATE	-
6	VOCATIONAL STANDARD(S) FORMING THE BASIS FOR THE QUALIFICATION	
	09UMS0038-5 Central Control Operator (Cooker) (Level 5) National Vocational Standard	
7	LEARNING OUTCOMES	
	<p><u>Learning outcome 1: Knows and defines the structure of the rotary kiln and its functions.</u></p> <p>Performance criteria The successful applicant;</p> <ol style="list-style-type: none"> 1. 1. Defines in full the physical structure of the rotary kiln and its main components as well as its equipment (Including main and auxiliary drive motors), (on drawing/scheme and/or applied on the field). 1. 2. Defines/explains the characteristics and working principles of the burning and combustion system according to the types of rotary kiln, the components of burning and combustion equipment and types of fuel. 1. 3. Explains, according to their components, the characteristics of raw material feeding and transportation lines and cyclones as well as the working principles. 1. 4. Explains, according to their components, the characteristics of fuel feeding equipment and their lines as well as their working principles. 1. 5. Explains the characteristics and working principles of dust holding and evacuation, gas evacuation and cooling systems. 1. 6. Defines/explains the structure and equipment of clinker transportation and evacuation lines and cyclones on drawings or on the system. 1.7. Defines/explains the structure, characteristics and working principles of control, monitoring, follow-up and warning equipment (cameras, audible-colored warning device, monitoring covers, windows etc.). <p>Context: General physical structure and main components of the rotary kiln system; burning, electric, electronic, machinery and mechanics, dust holding, cooling equipment, feeding, transportation and evacuation lines and cyclones, refractories and refractory laying techniques, follow-up and warning equipment, control systems.</p> <p><u>Learning outcome 2: Supports the refractory change.</u></p> <p>Performance criteria The successful applicant;</p> <ol style="list-style-type: none"> 2.1. Identifies, according to the situation described, the breaches in the refractories of the kiln and specifies the changing needs. 2.2. Explains the types of refractories and their technical specifications as well as refractory laying techniques and measures that would extend their lifetime. 2.3. Controls, according to the situation described, the adequacy of refractory dismantling operations and explains the operations necessary to solve errors. 2.4. Controls, according to the situation described, the adequacy of refractory laying and concreting operations to instructions and explains the operations necessary to solve errors. <p>Context: Pre-heater group for the kiln, kiln cooling and tertiary lines, control instructions related to refractory, refractory types, methods and techniques for dismantling and laying, measures for protecting the refractory and prolonging its lifetime.</p>	

Learning outcome 3: Uses in a functional way the control equipment of the rotary kiln system.**Performance criteria**

The successful applicant;

- 3.1. Realizes combustion by arranging the form of the flame according to the type of fuel used in conformity with the instruction.
- 3.2. Makes interventions to the working conditions of the kiln according to the quality control values given, in conformity with its instructions.
- 3.3. Defines, according to the system warnings and situations described, the electrical, electronic and mechanical breakdowns or breakdown probabilities in the kiln and its components.
- 3.4. Controls the internal conditions of the rotary kiln according to the specifications of the refractory and in line with the directives mentioned in its instructions.
- 3.5. Makes the control arrangements defined in the instruction according to the graphic and system values described/given.
- 3.6. Manages in a functional manner the dust holding and evacuation, gas evacuation and cooling systems, under the conditions described, with values in line with its instructions.
- 3.7. Explains the measures defined in instructions and aimed at preventing the potential accidents that may arise due to dust holding and evacuation, gas evacuation and cooling systems breakdowns under the conditions described,
- 3.8. Explains and implements the interventions that would provide continuity in the working of the rotary kiln under the production conditions described.
- 3.9. Provides, under the production conditions described, the energy and fuel productivity in the defined values.
- 3.10. Explains in practice, under the production conditions described, the defined measures to decrease the rotary kiln stop durations.
- 3.11. Explains in practice, under the production conditions described, the measures to reduce the diffusion of combustion gasses deriving from the rotary kiln.
- 3.12. Explains, under the risk conditions described, the measures defined in order to prevent industrial accidents.

Context: Flame types and combustion instructions according to the fuel type of the rotary kiln, quality control values and clinker standards, interventions aimed at ensuring quality, arrangements and interventions regarding rotary kiln feedings, arrangements and interventions regarding rotary kiln system cooling and evacuations, potential rotary kiln electrical, electronic and mechanical breakdowns in clinker production (cooking process) and determining factors, characteristics of refractories and their control, the control instructions of the rotary kiln system according to information and warning systems, security precautions which enable the working continuity as well as the energy and fuel productivity of the rotary kiln, security precautions for rotary kiln systems in controlling industrial accidents.

Learning outcome 4: Knows raw materials, additives, fuels and their chemical reactions.**Performance criteria**

The successful applicant;

- 4.1. Distinguishes the chemical structure of raw meal and its factors.
- 4.2. Defines additives and their characteristics.
- 4.3. Distinguishes cooking/heat factors.
- 4.4. Explains the chemical structure of clinker and its reaction in the process of clinker formation.
- 4.5. Distinguishes the characteristics and combustion factors of fossil fuels used in rotary kilns (coal, fuel oil, natural gas) and alternative/waste fuels.
- 4.6. Makes the cooking calorie calculation under the good and production conditions described.
- 4.7. Makes the factor calculation of ground raw material (raw meal) under the good and production conditions described.

Context: Raw meal and its components, chemical reactions in clinker formation, heat factors, coal, fuel oil, natural gas, waste fuels, cooking and raw meal factor calculation method and formula.

Learning outcome 5: Applies cold test after planned short**Performance criteria**

The successful applicant;

- 5.1. Makes work manually and in place, the parts and equipment of the system according to the working instructions.
- 5.2. Controls and verifies manually and in place that the parts and equipment of the system are working, according to the control instructions.

Context: Planned stop, parts and equipment of the system such as the motor, spiral, elevator, pneumatic band, valve, chain, ball and their working and control instructions.

8 ASSESSMENT

8 a) Theoretical Examination

Theoretical assessment of Rotary Kiln Technology qualification item is made by means of written examination consisting of at least 10 (ten) 4-choice (T1) and/or short-answered (T2) questions which cover defined learning outcomes and performance criteria. The questions to ask in the test shall be taken from the question banks according to the principles laid down in the procedure.

In this examination the candidates shall be given 1-1.5 (one, one-and-half) minutes per question. Each of questions shall have equal value and no penalty shall apply for the questions not answered or answered incorrectly.

The candidate should score at least 60 /100 in order to be successful in theoretical assessment of this unit. Weight of theoretical examination is 65% of qualification score of item.

8 b) Performance based Examination

The performance test of the candidates in Rotary Kiln Technology in Cement Production qualification item is performed in the virtual and/or real working environment and operation location by using the “application checklist” developed for learning outcomes and performance criteria. The questions to ask in the test shall be taken from the question banks according to the principles laid down in the procedure. The score values and time criteria of the execution are stated in the execution checklist.

Evaluation will be made on points specified for each step in the control list. Minimum 70 points over 100 should be scored in practice to succeed in the assessment of the performance test of this unit. Weight of performance based examination is 35 % of qualification score of item.

The candidates use the personal protective equipment provided for them in order to be protected against the unavoidable risks during the performance test.

8 c) Other Assessment related conditions

Theoretical and performance-based examinations shall be conducted by the Examination Committee established by authorized certification body in accordance with assessor criteria determined for **Central Control Operator (Level 5) occupation.**

Weight of Rotary Kiln Technology in Cement Production qualification item in general assessment of all qualification units of **Central Control Operator n(Cooker) (Level 5) vocational qualification is15%.**

9	INSTITUTION(S) DEVELOPPING THE QUALIFICATION	CEMENT INDUSTRY EMPLOYERS' ASSOCIATION (ÇEİS)
10	SECTOR COMMITTEE VERIFYING THE QUALIFICATION	MYK GLASS, CEMENT, AND SOIL SECTOR COMMITTEE
11	DATE AND NUMBER OF THE APPROVAL OF THE VQA BOARD OF DIRECTORS	09.05.2012 – 2012/39

ANNEXES

ANNEX 1: Information on Recommended Training to Earn a Qualification Unit

Vocational knowledge and skills related to the “Rotary Kiln Technology in Cement Production” qualification unit can be obtained through the on-the-job-training or in-service-training given by cement factories to their workers.

12UY0044-5/A3 OPERATION OF ROTARY KILN SYSTEM QUALIFICATION UNIT

1	NAME OF QUALIFICATION UNIT	OPERATION OF ROTARY KILN SYSTEM
2	REFERENCE CODE	12UY0044-5/A3
3	LEVEL	5
4	CREDIT VALUE	-
5	A) DATE OF PUBLICATION	09/05/2012
	B) REVISION NO	0
	C) REVISION DATE	-
6	VOCATIONAL STANDARD(S) FORMING THE BASIS FOR THE QUALIFICATION	
	09UMS0038-5 Central Control Operator (Cooker) (Level 5) National Vocational Standard	
7	LEARNING OUTCOMES	
	<u>Learning outcome 1: Prepares liquid and/or as fuel in order to fire the rotary kiln.</u>	
	Performance criteria	
	The successful applicant;	
	<ol style="list-style-type: none"> 1. 1. Puts into use the fuel pump by making a circulation of fuel with steam. 1. 2. Brings the fuel injector to a functional position, accordingly to its instruction. 1. 3. Selects the appropriate nozzles according to the temperature degrees of the rotary kiln. 1. 4. Gives pressurized steam to the outward and inward lines of the rotary kiln in values appropriate to instructions. 1. 5. In case of natural gas use, arranges the valves of the flame tube to natural gas, accordingly to its instructions. 	
	Context: The fuel pump of the rotary kiln, fuel injector, nozzles, arrival and departure lines, valves of the flame tube and the instructions related to these topics.	
	<u>Learning outcome 2: Dries the rotary kiln refractory.</u>	
	Performance criteria	
	The successful applicant;	
	<ol style="list-style-type: none"> 2. 1. Defines, according to the planned drying programme, the drying method/methods of the refractory in determined time frames. 2. 2. While drying the refractory, follows up the gradual heat growth and make interventions, accordingly to its instructions. 	
	Context: Refractory of the rotary kiln, refractory drying programme, timing of the drying (time frames of 12-36 hours), gradual heat growth of the refractory and the instructions related to these topics.	
	<u>Learning outcome 3: Arranges the fuel type and quantity of the rotary kiln.</u>	
	Performance criteria	
	The successful applicant;	
	<ol style="list-style-type: none"> 3.1. Explains, according to its instructions, the adequate silo conditions concerning the coal to be burned. 3. 2. Makes the coal reach the burning temperature defined in its instruction. 3. 3. Gets the pre-heater of the kiln tempered tempering by using the burner of the tertiary. 3.4. Provides adequate quantity of air, according to its instruction, by using the entrance/primary fan as to ensure the combustion. 3. 5. Arranges the aspiration of the rotary kiln system according to the rotation of the filter fan and its instruction. 3. 6. Puts into use the chimney gas/abgas of the rotary kiln system before giving coal. 	
	Context: Coal silo equipment, provision and control of the combustion temperature of the coal according to the temperatures foreseen in the tempering programme, setting of fuel nozzles according to the fuel type (coal, natural gas etc.), tertiary burner and other pre-heating equipment, preliminary/primary fan, filter fan rotation, chimney gas/abgas mechanism.	
	<u>Learning outcome 4: Rotates the rotary kiln.</u>	
	Performance criteria	
	The successful applicant;	

4.1. After the planned stop, rotates the kiln according to the tempering programme.

4.2. Makes the kiln work in heavy-circuit in case of short and sudden stop.

Context: Auxiliary drive motors, tempering programme, diesel motor or generator, rotation mechanisms of the kiln, kiln rotation instructions.

Learning outcome 5: Gets the good (raw meal) to the rotary kiln.

Performance criteria

The successful applicant;

5.1. After the planned stop, takes intermediary good (raw meal) to the kiln, according to the tempering programme in order to protect the refractory.

5.2. After the planned stop, puts into use the transportation and cooling systems according to their instructions.

5.3. Takes the kiln from auxiliary drive motors to main drive motors for passing to the cooking position.

5.4. Increases the aspiration by speeding the filter fan and abgas fan accordingly to their instructions.

5.5. Gets the valves closed.

5.6. Sets the fuel quantities according to the abgas speed.

5.7. Provides that field workers pass to a position as to get the goods.

5.8. Gets the goods to the rotary kiln by putting into use the raw meal weighing-machine.

5.9. Takes the rotary kiln to optimum levels/values in raw meal quantity and temperature value.

Context: Kiln tempering programme, refractory protection, increasing aspiration, cyclone covers, air valves, abgas speeds, communication with field/production workers, raw meal weighing mechanisms, fuel, tonnage, kiln speed; abgas speed, raw meal feeding, fuel increase, cooling airs.

Learning outcome 6: Stops the rotary kiln feedings for the planned stop.

Performance criteria

The successful applicant;

1.1. Follows-up the values of the rotary kiln system, determines the adequate positions and evacuates the feeding bunkers and weighing machines.

1.2. In case when the evacuation is not realized, applies alternative evacuation methods according to the instructions.

1.3. Stops the raw meal feeding weighing machine by using the monitor mechanisms.

1.4. Has the coal mill stopped.

1.5. Controls from the monitor, the adequacy of the evacuation situation of the raw meal feeding line and pre-heater systems.

1.6. During the evacuation of feedings, decreases the speed of the abgas and kiln, the quantity of fuel given and the cooling fan flow to values in line with the instructions.

1.7. Gets the dust coal silo level of the coal mill come to the minimum level.

1.8. Sets the coal quantity according to the remaining raw meal quantity.

1.9. Evacuates the coal remaining in the system by burning it.

1.10. In case when the coal gets finished before the planned quantity and time, makes ready the alternative fuel and evacuate the remaining raw meal in the kiln by cooking it with the alternative fuel.

Context: Stop plan; level, ampere, silo meter, weighing, tonnage values of the system; alternative evacuation methods, alternative fuels, raw meal feeding weighing mechanism and line, raw meal and coal mills, pre-heater systems, abgas and kiln speed, cooling fans and flow values, dust coal silo and level values.

Learning outcome 7: Balances the quantities of good (raw meal) and coal in the rotary kiln.

Performance criteria

The successful applicant;

7.1. Controls the quantity of good (raw meal) in the rotary kiln.

7.2. Takes adequate quantity of coal in conformity with instructions to the burning line, by considering the quantity of good (raw meal) existing in the rotary kiln and the cooking time.

Context: Kiln cameras, communication with field workers, raw meal and coal silos, cooking instructions.

Learning outcome 8: Conserves the temperature of the rotary kiln in short, sudden, incidental stop.

Performance criteria

The successful applicant;

8.1. Sets the coal quantity, cooling fan, abgas speeds and aspiration valves in the temperature conservation position.

8.2. Continues to rotate the kiln in a position suitable to the short stop instruction.

Context: Coal quantity, cooling fan and abgas speeds and aspiration valves values and setting mechanisms, short stop instruction, auxiliary drive motor.

Learning outcome 9: Manages/conducts the evacuation, cooling and stopping processes of the rotary kiln in the planned/long stop.

Performance criteria

The successful applicant;

- 9.1. Controls the evacuation situation of the kiln where goods are cooked and evacuated; deactivates the main drive motor and puts into use the auxiliary drive motors according to instructions.
- 9.2. Takes the rotary kiln to the stop position according to its instruction.
- 9.3. In the position of rapid cooling, defines the maximum value/levels for abgas and cooling fan cycles according to the chimney gas setting.
- 9.4. Defines dust emission, heat, abgas back pressure setting, water tower temperatures eligible for cooling .
- 9.5. Takes the proper decisions according to its instruction when the rotary kiln gets cold under the data and conditions described.
- 9.6. Stops the cooling system according to the operation steps and methods defined in its instruction.
- 9.7. During the long stop, gets the pre-heater group ready to be cleaned with the operations defined in its instruction.
- 9.8. After cooling, stops the rotary kiln in an inactive position pursuant to its instructions

Context:

- Kiln cameras, communication with the field workers, main and auxiliary drive motors, kiln stop positions, kiln positioning mechanisms, kiln evacuation instruction.
- Rapid and normal cooling instructions and methods, cooling values, cooling cabins, cooling and head pressure, cooling fan, cooling drive motor and speed values, clinker evacuation methods (sweeping etc.).
- Instructions for using and cleaning the pre-heater, the pre-heater aspiration value, shocking tubes control position, cyclone level meters, energy cutting procedures.
- Kiln stopping instruction and stopping mechanisms.

8 ASSESSMENT**8 a) Theoretical Examination**

Theoretical assessment of Rotary Kiln system Operation Qualification Item is conducted by means of written examination consisting of at least 15 (fifteen) 4-choice (T1) and/or short-answered (T2) questions which cover defined learning outcomes and performance criteria. The questions to ask in the test shall be taken from the question banks according to the principles laid down in the procedure.

In this examination the candidates shall be given 1-1.5 (one, one-and-half) minutes per question. Each of questions shall have equal value and no penalty shall apply for the questions not answered or answered incorrectly.

The candidate should score at least 60 /100 in order to be successful in theoretical assessment of this unit. Weight of theoretical examination is 40% of qualification score of item.

8 b) Performance based Examination

The performance test of the candidates in Rotary Kiln system Operation qualification item is performed in the virtual and/or real working environment and operation location by using the “application checklist” developed for learning outcomes and performance criteria. The questions to ask in the test shall be taken from the question banks according to the principles laid down in the procedure. The score values and time criteria of the execution are stated in the execution checklist.

Evaluation will be made on points specified for each step in the control list. Minimum 70 points over 100 should be scored in practice to succeed in the assessment of the performance test of this unit. Weight of theoretical examination is 60% of qualification score of item.

The candidates use the personal protective equipment provided for them in order to be protected against the unavoidable risks during the performance test.

8 c) Other Assessment related conditions

Theoretical and performance-based examinations shall be conducted by the Examination Committee established by authorized certification body in accordance with assessor criteria determined for **Central Control Operator (Level 5) occupation.**

Weight of Rotary Kiln system Operation qualification item in general assessment of all qualification units of **Central Control Operator n(Cooker) (Level 5) vocational qualification is 20%.**

9	INSTITUTION(S) DEVELOPPING THE QUALIFICATION	CEMENT INDUSTRY EMPLOYERS' ASSOCIATION (ÇEİS)
10	SECTOR COMMITTEE VERIFYING THE QUALIFICATION	MYK GLASS, CEMENT, AND SOIL SECTOR COMMITTEE
11	DATE AND NUMBER OF THE APPROVAL OF THE VQA BOARD OF DIRECTORS	09.05.2012 – 2012/39

ANNEXES

ANNEX 1: Information on Recommended Training to Earn a Qualification Unit

Vocational knowledge and skills related to the “Rotary Kiln System Operation in Cement Production” qualification unit can be obtained through the on-the-job-training or in-service-training given by cement factories to their workers.

1	NAME OF QUALIFICATION UNIT	CLINKER PRODUCTION (Cooking)
2	REFERENCE CODE	12UY0044-5/A4
3	LEVEL	5
4	CREDIT VALUE	-
5	A) DATE OF PUBLICATION	09/05/2012
	B) REVISION NO	0
	C) REVISION DATE	-
6	VOCATIONAL STANDARD(S) FORMING THE BASIS FOR THE QUALIFICATION	
	09UMS0038-5 Central Control Operator (Cooker) (Level 5) National Vocational Standard	
7	LEARNING OUTCOMES	
<u>Learning outcome 1: Monitors the product and the kiln during clinker production (cooking).</u>		
Performance criteria		
The successful applicant;		
1. 1. Identifies, during production, the process values of the rotary kiln defined in the monitoring instruction, by reading them from the system monitors.		
1. 2. During production, controls from the cameras present within the kiln and the cooler according to the criteria defined in the monitoring instruction, whether the situation of the combustion as well as the situation of the good and the kiln are adequate.		
1. 3. Identifies, during production, the raw meal, fuel and clinker values defined in the product monitoring instruction, by reading them from the system monitors.		
1. 4. Verifies the situation of the clinker and the situation of the production/cooking steps with the process and product quality results.		
Context:		
<ul style="list-style-type: none"> Aspiration, heat, pressure, ampere, cyclone, clinker level, flow, speed, dust, tonnage, gas analysis, raw meal transfer, vibration values, raw meal, fuel and product monitoring instructions. Flame and form of burning as well as flame tube, physical situation of the clinker, spiral/ oral arch formations at the exit of the kiln, kiln heating-cooling temper, cameras within the kiln, material level, cooling regime, tertiary dust cyclone, good flow, refractory control, cameras within the cooler, kiln monitoring instructions. Fineness, LSF (CaCO₃ /calcium carbonate + magnesium ratio= titration=lime standard), silicate (SM) and aluminate (TM) module, calorie according to the fuel types (coal, fuel oil, natural gas etc.), fineness, flame values, LSF, weigh in liters (density/consistency), free lime, exit temperature. 		
<u>Learning outcome 2: Corrects the deviations from reference values concerning the product and the process during the clinker production (cooking) process.</u>		
Performance criteria		
The successful applicant;		
2. 1. Finds the deviations by comparing the actual values he/she has determined during production on the process, the kiln and the product as well as the quality control results with the minimum and maximum reference values and confirms them with the field workers.		
2. 2. Determines, under the production conditions described, the probable reasons of the deviations defined and the remedial measures according to reasons.		
2. 3. Under the production conditions described, corrects the defined deviations, pursuant to instructions by using the automatic control mechanisms of the system and/or by intervening at the manual control position.		
2. 4. Under the production conditions described, implements the secondary measures defined in instructions for the values which did not ameliorate.		
2. 5. Under the conditions described, in deviations which did not improve in spite of the secondary measures, takes the decision of incidental/sudden stop according to the criteria specified in its instruction.		
Context: Monitoring instructions and process, maximum and minimum reference values for the kiln and the product, measures to improve deviations and methods of application, manual control position, instructions and criteria for sudden/incidental stop.		
<u>Learning outcome 3: Intervenes to errors and breakdown related to production in clinker production (cooking).</u>		

Performance criteria

The successful applicant;

- 3.1. Defines the meanings of visual and audial signals and warnings given by the system in the described breakdowns and deviation situations.
- 3.2. Explains, in the described breakdown and deviation situations, the source and reasons of breakdowns and deviations according to the visual and audial signals and warnings given by the system.
- 3.3. Ensures the transfer and storage of the clinker or the semi-finished good which has been reported as unsuitable from the quality control laboratory/explains the transfer and storage methods and procedures according to its instruction.
- 3.4. Evacuates the clinker or semi-finished good which had been reported as unsuitable from the quality control laboratory by using the mechanisms of the transport/transfer lines of the system.

Context: Visual and audial warning mechanisms of the rotary kiln system and meanings, sources of breakdown/deviation/error signals; breakdown reporting instructions and methods according to the meanings and sources of breakdown/deviation/error signals of the kiln, unsuitable product transfer and storage method.

Learning outcome 4: Burns the alternative/waste fuel in the rotary kiln.

Performance criteria

The successful applicant;

- 4.1. Identifies, according to the criteria defined in its instruction, whether the described alternative/waste fuel is appropriate for burning.
- 4.2. In order to burn the appropriate alternative/waste fuel described, identifies the most suitable conditions in terms of process values, timing and quantity according to the criteria defined in its instruction.
- 4.3. Observes the formation of proper kiln/combustion conditions he/she has fixed in order to burn the appropriate alternative/waste fuel described and give order to the relevant field worker at the most convenient time for burning.
- 4.4. Controls the appropriateness of the burning situation of the alternative/waste fuel from the system, according to the criteria specified in its instruction.

Context: Alternative/waste fuel burning instruction; carbon, oxygen, gas analysis, timing and quantity values of the alternative/waste fuel, alternative/waste fuel transfer mechanisms to kiln burning units.

8 ASSESSMENT

8 a) Theoretical Examination

Theoretical assessment of Clinker Production (Cooking) qualification unit is made by means of written examination of at least 10 (ten) 4-choice (T1) and/or short-answered (T2) questions which cover defined learning outcomes and performance criteria. The questions to ask in the test shall be taken from the question banks according to the principles laid down in the procedure.

In this examination the candidates shall be given 1-1.5 (one, one-and-half) minutes per question. Each of questions shall have equal value and no penalty shall apply for the questions not answered or answered incorrectly.

The candidate should score at least 60 /100 in order to be successful in theoretical assessment of this unit. Weight of theoretical examination is 55% of qualification score of item.

8 b) Performance based Examination

The performance test of the candidates in Clinker Production (cooking) qualification item is performed in the virtual and/or real working environment and operation location by using the “application checklist” developed for learning outcomes and performance criteria. The questions to ask in the test shall be taken from the question banks according to the principles laid down in the procedure. The score values and time criteria of the execution are stated in the execution checklist.

Evaluation will be made on points specified for each step in the control list. Minimum 70 points over 100 should be scored in practice to succeed in the assessment of the performance test of this unit.

Weight of performance based examination is 45 % of qualification score of item.

The candidates use the personal protective equipment provided for them in order to be protected against the unavoidable risks during the performance test.

8 c) Other Assessment related conditions

Theoretical and performance-based examinations of this unit shall be conducted by the Examination Committee established by authorized certification body in accordance with assessor criteria determined for **Central Control Operator occupation.**

Weight of Clinker Production (Cooking) qualification item in general assessment of all qualification units of **Central Control Operator (Cooker) vocational qualification is 25%.**

9	INSTITUTION(S) DEVELOPPING THE QUALIFICATION	CEMENT INDUSTRY EMPLOYERS' ASSOCIATION (ÇEİS)
10	SECTOR COMMITTEE VERIFYING THE QUALIFICATION	MYK GLASS, CEMENT, AND SOIL SECTOR COMMITTEE
11	DATE AND NUMBER OF THE APPROVAL OF THE VQA BOARD OF DIRECTORS	09.05.2012 – 2012/39

ANNEXES

ANNEX 1: Information on Recommended Training to Earn a Qualification Unit

Knowledge and skills related to the “Clinker Production (Cooking)” qualification unit can be obtained through the on-the-job-training or in-service-training given by cement factories to their workers.

**12UY0044-5 / A5 WORK ORGANIZATION AND VOCATIONAL DEVELOPMENT
QUALIFICATION UNIT**

1	NAME OF QUALIFICATION UNIT	WORK ORGANIZATION AND VOCATIONAL DEVELOPMENT
2	REFERENCE CODE	12UY0044-5/A5
3	LEVEL	5
4	CREDIT VALUE	-
5	A) DATE OF PUBLICATION	09/05/2012
	B) REVISION NO	0
	C) REVISION DATE	-
6	VOCATIONAL STANDARD(S) FORMING THE BASIS FOR THE QUALIFICATION	
	09UMS0038-5 Central Control Operator (Cooker) (Level 5) National Vocational Standard	
7	LEARNING OUTCOMES	

Learning outcome 1: Establishes the production registries and reports.

Performance criteria

The successful applicant;

- 1.1 Writes, at the end of the clinker production, the daily production report, pursuant to the information and format given.
- 1.2 For products where he/she has identified inappropriateness according to the conditions described/the quality control results, fills out the inappropriate product form given.
- 1.3 Under the conditions described, fills out the stop form according to the stops of the kiln.

Context: Daily production report format, inappropriate product and stop form formats, instructions related to reporting and form registers.

Learning outcome 2: Ensures efficient communication with field workers during the rotary kiln production process.

Performance criteria

The successful applicant;

- 2.1. Transfers in full, the job rotation information given in written and/or orally to the new shift according to the management procedures.
- 2.2. In the processes of putting into use the rotary kiln, stopping, refractory changing and cooling, gives and takes feedbacks in conformity with job instructions to field workers and to chiefs and/or engineers related to coal and raw meal mill, mechanics, electricians, quality control and other auxiliary units
- 2.3. According to the sources and reasons of the rotary kiln breakdowns and deviations described, makes notification to the related repair-maintenance units and at the end of the intervention to the unit chief.

Context: Shift change procedures, coal and raw meal mill units, mechanics, electricians, electronics, quality control units, fire room and auxiliary units, field production workers and rotary kiln system communication instructions and methods, field communication instruments and equipment, terms of reference of chiefs and/or engineers and central control operators related to rotary kiln.

Learning outcome 3: Establishes the production field.

Performance criteria

The successful applicant;

- 3.1. Makes a functional job division between workers at the production field where the rotary kiln is situated, suitable for rotary kiln operations.
- 3.2. Explains the operations aimed at cleaning and establishing order in the production field where the rotary kiln is situated, according to the relevant instructions.
- 3.3. Explains the ways and methods for providing the tools and equipment suitable for rotary kiln operations, according to the management procedures.

Context: Instructions on rotary kiln site and operating processes, Central Control Operator and field production operators job definitions, communication instructions and methods for and between field production personnel and rotary kiln system, field communication tools and hardware.

Learning outcome 2: Gives on-the-job training.

Performance criteria

The successful applicant;

- 4.1. According to the situations described, identifies the information, skills and behavioral errors and deficiencies of his/her assistants/backup.
- 4.2. Overcome the information, skills and behavioral errors and deficiencies he/she has identified and defines the proper on-the-job training activities and methods.

4.3.Explains the ways to assess the performance of person/persons to whom he/she has given on-the job-training.

8 ASSESSMENT

8 a) Theoretical Examination

Theoretical assessment of Work Organization and Vocational Development Qualification Item is made by means of written examination consisting of at least 10 (ten) 4-choice (T1) and/or short-answered (T2) questions which cover defined learning outcomes and performance criteria. The questions to ask in the test shall be taken from the question banks according to the principles laid down in the procedure.

In this examination the candidates shall be given 1-1.5 (one, one-and-half) minutes per question. Each of questions shall have equal value and no penalty shall apply for the questions not answered or answered incorrectly.

The candidate should score at least 60 /100 in order to be successful in theoretical assessment of this unit. Weight of theoretical examination is 100% of qualification score of item.

8 b) Performance based Examination

There is no performance-based assessment for Work Organization and Vocational Development Qualification Item.

8 c) Other Assessment related conditions

Theoretical and performance-based examinations shall be conducted by the Examination Committee established by authorized certification body in accordance with assessor criteria determined for Central Control Operator occupation.

Weight of Work Organization and Vocational Development Qualification Item in general assessment of all qualification units of Central Control Operator n(Cooker) (Level 5) vocational qualification is 10%.

9	INSTITUTION(S) DEVELOPPING THE QUALIFICATION	CEMENT INDUSTRY EMPLOYERS' ASSOCIATION (ÇEİS)
10	SECTOR COMMITTEE VERIFYING THE QUALIFICATION	MYK GLASS, CEMENT, AND SOIL SECTOR COMMITTEE
11	DATE AND NUMBER OF THE APPROVAL OF THE VQA BOARD OF DIRECTORS	09.05.2012 – 2012/39

ANNEXES

ANNEX 1: Information on Recommended Training to Earn a Qualification Unit

Knowledge and skills related to the “Work Organization and Vocational Development” qualification unit can be obtained through the courses given by private or public institutions in this subject as well as by practicing in Vocational life. Furthermore, this knowledge and those skills may also be obtained during the on-the-job-training/in-service training given in cement factories.