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Course Handout: Building Construction Materials 1

Level: 2nd Year Civil Engineering Degree



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Preface

This document, which I am placing in the hands of civil engineering students, is the result of reforms in teaching methods (from French to English) carried out by the Ministry of Higher Education and Scientific Research in Algeria. To this end, for the first time, an educational document entitled '**Building Construction Materials 1**' has been produced in English. This document presents the history of building materials used by ancient civilizations and still in use today, as well as environmental and economic materials resulting from scientific research. The manuscript largely covers knowledge relating to the characterization of materials (raw materials and binders) used in the formulation of different types of construction mortars (cement, lime and plaster).

General introduction

In this manuscript, which is part of the fundamental unit UEF 2.2.1 Subject 2 (Bachelor) and UEF 3.1 Subject 2 (Engineers) whose coefficient is 2, a certain amount of knowledge is presented on the ancient construction materials used until now, as well as on certain materials that are the fruit of research. The aim of this manuscript is, on the one hand, to introduce students to the processes involved in the production of construction materials (from the raw material to the finished product). On the other hand, to enable students to characterize the physical-mechanical parameters of construction materials, and thus make an optimum choice for their use in building structures.

In addition, for a better understanding of the course which takes place in English, scientific documentaries will be shown in the lecture hall via multimedia means.

This course handout is divided into four chapters.

The first chapter deals mainly with the history, classification and properties of construction materials.

The second chapter deals with the study of granularity, the classification of aggregates, and the characteristics and different types of aggregates used in construction.

The third chapter is dedicated to the manufacturing process of the different types of binders (cement, lime and gypsum), from the raw material to the finished product.

In the final chapter, an overview is given of the different types of mortar (cement, lime and plaster), from the raw material to the finished product.

Sumarry

Preface	i
General introduction	ii
Chapter1	
General properties of construction materials	
1. Introduction	2
2. Definition of a construction materials	2
3. Some dates in the history of constructions	2
4. Classes of construction materials	3
4.1 Construction materials	3
4.2 Protective materials	14
5. Measurement of the physical properties of aggregates	16
5.1 Density	16
5.2 Apparent density (bulk density)	16
5.3 Absolute density (specific mass)	20
5.4 Porosity and compactness	23
5.5 Moisture	23
5.6 Water absorption rate	24
5.7 Chemical properties	25
5.8 Gel sensitivity	26
5.9 Reactivity to alkalis	26
5.10 Total sulfur/Sulfates/Chlorides	26
5.11 Thermal properties	26
6. Mechanical properties	27
6.1 Compressive strength	28
6.2 Tensile strength	28
6.3 Flexural strength	30
6.4 Torsion	30
6.5 Elasticity	31
6.6 Ductility	32
6.7 Stability	32
6.8 Toughness	33
6.9 Hardness	34
Chapitre 2	
Aggregates	
1. What is a rock	37
2. Rocks formation cycle	37
3. Natural aggregates come from various rocks	37
3.1 Classes of igneous rocks	39
3.2 Classification of volcanic rocks	39
3.3 Metamorphic rocks	40
3.4 Sedimentary rocks	40

4. Aggregates	41
4.1 Texture and shape of aggregates	41
4.2 Physical characteristics of aggregates	42
5. Classification of aggregates	50
5.1 Aggregates according to their dimensions	50
Chapitre 3	
Binders	
1. Definition of binder	58
1.1 Air binders	58
1.2 Hydraulic binders	58
2. Cement	58
2.1 Class of cement	61
2.2 Main tests	62
2.2.1 Density	63
2.2.2 Fineness	63
2.2.3 Determination of the standard consistency	64
2.2.4 Setting time	68
2.2.5 Volume consistency	68
2.2.6 Determination of mechanical strength	70
2.3. The different types of mineral additions	70
2.3.1 Type I additions	72
2.3.2 Type II additions	77
3. Plaster	77
3.1 History of the use of plaster	78
3.2 The manufacture of plaster	82
3.3 Use of plaster in construction	84
3.4 Properties of plaster	84
3.5 Tests on plaster	84
3.5.1 Fineness	84
3.5.2 Consistency test	84
3.5.3 Setting time	85
3.5.4 Compressive strength	85
4. Lime	85
4.1 History of lime	86
4.2 Lime manufacturing	89
4.3 Benefits of using lime	89
4.4 Dosage of a hydraulic lime mortar	90
4.5 Use of lime	91
4.6 Test on lime	91
4.6.1 Fineness	92
4.6.2 Reactivity of lime	92
4.6.3 Loss on ignition (LOI) test	93
4.6.4 Free lime test	93
Chapitre 4	

Mortars	
1. History of mortars	97
2. Composition of mortar	97
3. Different mortars depending on the type of binder	97
3.1 Cement mortar	97
3.2 Lime mortar	97
3.3 Gypsum mortar	98
3.4 Ash lime mortar	98
3.5 Bastard mortar	98
3.6 Adhesive mortar	98
3.7 Jointing mortar	98
3.8 Waterproof mortar	98
3.9 Refractory mortar	98
3.10 Sealing mortar	98
3.11 Smoothing mortar	99
4. Dosage of mortars	100
5. Tests on mortars	100
5.1 Workability	102
5.2 Test of tensile strength by bending	102
5.3 Compressive strength	103

Chapter 1		
Figure 1	The Roman Bridge Pont du Gard and the Gardon River, Gard France	2
Figure 2	Old stone house in Great Britain	3
Figure 3	Old wooden house	5
Figure 4	Concrete Bridge	7
Figure 5	Testing the workability of concrete by the Abrams cone	9
Figure 6	Molds used for concrete compression testing	10
Figure 7	Steel in constructions	12
Figure 8	Construction coatings	14
Figure 9	Facade painting	15
Figure 10	Bitumen concrete	16
Figure 11	Container filling method	18
Figure 12	Explanatory diagram of absolute density	20
Figure 13	Correct volume reading	21
Figure 14	Porosity and compactness of an aggregate	25
Figure 15	Degradation of concrete structures: cause	28
Figure 16	Compressive strength test	29
Figure 17	Tensile strength test	30
Figure 18	Flexural strength test	30
Figure 19	Torsion of a reinforced concrete slab	30
Figure 20	Elastic limit diagram of construction materials	31
Figure 21	Tension test on materials – ductile versus brittle materials	32
Figure 22	Stress-strain curve	33

Figure 23	Apparatus for measuring the hardness of materials	34
Figure 24	The hardness scale of some material according to Mohs	35
Chapter 2		
Figure 1	Types of rocks	37
Figure 2	Cycle de formation des roches	37
Figure 3	Schematic position of the main igneous rocks according to their mineralogical composition	38
Figure 4	Sand equivalent apparatus	40
Figure 5	Sand equivalent-Reading on test tubes (clean sand and flocculat)	44
Figure 6	Railway track ballast	46
Figure 7	Material used for Deval test	47
Figure 8	Los Angeles device	49
Figure 9	Apparatus for granulometric analysis	52
Figure 10	Granulometric curves	54
Chapter 3		
Figure 1	Physical appearance of the binders	58
Figure 2	Stages of manufacturing Portland cement	59
Figure 3	Detail of the rotary kiln	60
Figure 4	Clinker	60
Figure 5	Density Funnel	62
Figure 6	Volumenometer Le Chatelier	63
Figure 7	Blaine apparatus	63
Figure 8	Consistency measuring apparatus	65
Figure 9	Material used	65
Figure 10	Evolution of the consistency of the cement paste as a function of the ratio	66
Figure 11	Le Chatelier Mould	68
Figure 12	Limestone	71
Figure 13	The different types of pigment	72
Figure 14	Silica fume	73
Figure 15	Metakaolin	74
Figure 16	Fly ash	75
Figure 17	Ground vitrified blast furnace slags	76
Figure 18	Compact crystallized slag and Porous crystallized slag	77
Figure 19	Old construction made of plaster	77
Figure 20	Stages of plaster manufacturing	78
Figure 21	Extraction of gypsum by mechanical equipment	79
Figure 22	Underground gypsum mining	80
Figure 23	Old plaster oven	81
Figure 24	Modern oven for baking plaster	81
Figure 25	Plaster in buildings	83
Figure 26	Old construction in lime	86
Figure 27	Lime cycle	87
Figure 28	Lime kiln	87
Figure 29	Vase Dewar	92

Chapter 4		
Figure 1	Mortar precursors through time	96
Figure 2	Mortar Shaking Table	101
Figure 3	Device for measuring the mechanical strength of mortars	102
Figure 4	3 point bending test	102
Figure 5	Prismatic mold for mortar	103

Chapter I		
Table 1	Values of thermal conductivity of the most natural stones used in construction	4
Table 2	Values of density and hardness of wood	6
Table 3	Values of thermal conductivity of wood	7
Table 4	Slump flow values for concrete	9
Table 5	Strength values of concrete at different ages	11
Table 6	Creep coefficient values of concrete	11
Table 7	Values of the main mechanical properties of steel	13
Table 8	Densities of some materials	17
Table 9	Temperature and Moisture Deformations for Some Common Building Materials	27
Table 10	Strength values for materials widely used in construction	29
Chapter 2		
Table 1	Chemical composition of Basalt, Granit and Eruptive rocksOxides for some rocks	39
Table 2	Sedimentary rocks	40
Table 3	Quality of sand according to its sand equivalent value	44
Table 4	MDE values	49
Chapter 3		
Table 1	Limit values of compressive strength	70
Table 2	Plaster setting time values	85
Table 3	Type of plaster according to its mechanical strength	85
Table 4	Type of calcium lime	88

Table 5	Type of dolomitic lime	90
Table 6	Physical and mechanical properties of hydraulic Lime	91
Table 7	Fineness values of lime	91
Chapter 4		
Table 1	Dosage of mortars	99
Table 2	Mortar consistency as a function of mortar slump	101

