



**TECHNICAL REPORT**

**STUDENT INDUSTRIAL WORKING EXPERIENCE SCHEME (SIWES)**  
**ATTACHMENT HELD AT**  
**QURRY LINK COMPANY MINIRAL AND PETROLEUM RESOURCES ENGINEERING,**  
**ILORIN.**  
**&**

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## **ACKNOWLEDGEMENT**

Indeed, all praises are due to Almighty Allah, the Creator of all minds and the Master of the judgment day, for His maximum protection, provision and infinitude for evading me to complete this training.

My sincere appreciation will go to my industrial based supervisor, for his care, instruction and support for me throughout the period of this training. I will not fail to record my gratitude to the institutional based supervisor, Mr. Obaro .

My unalloyed gratitude is due to my parents for their care and support all the time. May Almighty Allah continue replenishing your pocket to my siblings, I say Jazakumullah Khyara

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## **DEDICATION**

This student industrial work experience scheme (SIWES) report is dedicated to almighty God. The master of universe, the giver of all inspiration and to my parent's and sibling brothers and sisters, for tolling so hard to get me educated towards the Four (4) months student industrial work experience scheme programme.

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## CHAPTER ONE

### 1.0 Introduction

The student's industrial work experience scheme (SIWES) has been designed to expose the students to practical aspect of what they were been taught in the classroom. The scheme was made to serve as complement to the deficiencies that were faced in the class room and also to give room for students who find it very difficult to adapt fully to the lecture method of teaching. This student's industrial work scheme was introduced by the Federal Government in 1971 when the Military Head of State and Commander in Chief of the Armed Forces, General Yakubu Gowon. SIWES was established by Industrial Trust Fund (ITF) in 1974 in conjunction with the National Board for Technical Education (NBTE) to solve the problem of adequate practical skills acquisition before employment. The programmed was aimed at exposing the students to practical knowledge the course they study in higher institutions in Nigeria, to be familiar to practical environment like exposing them to life machines and other hard tools of work.

Finally the scheme will enable the students above readiness to face the challenges of employment and experience in the work environment.

### 1.1 Definition of Siwes

SIWES can be defined as a student's industrial work experience scheme, it is still learning programme designed by ITF to expose and prepare students of universities, polytechnic and college of education and so for the industrial work situation they like meet alter graduation.

### 1.2 Objectives of Siwes

The aims of objectives of the student industrial work experience scheme (SIWES) are to:

1. To build students with various experience related to their course of study
2. To evaluate student knowledge
3. To student to professional practices.
4. To provide skills personnel
5. To indicate sub-reliance in student.

### 1.3 Importance of Siwes

The following are the importance of SIWES to students in general;

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- I. It provides the students the opportunity to put what they learnt into practice.
- II. It exposes the students to various activities in the offices by filling and checking document signed.
- III. It provides the students of higher institution the opportunity to improve practically.
- IV. It improves the scope of knowledge of students experience before returning to their institution.

## CHAPTER TWO

### INTRODUCTION

2.0 Crushing operations are often divided into coarse crushing, medium crushing and fine crushing according to the size of feeding and discharging particles. Commonly used crushers include jaw crusher, impact crusher, hammer crusher, cone crusher,

#### 2.0.1 Impact crusher

can crush coarse, medium and fine mineral or rock (granite, limestone, concrete, etc.) with a particle size of less than 120-500 mm and a compressive strength of less than 320 MPa. It is widely used in hydropower, high-speed Highway, artificial sand and gravel crushing industries. The impact crusher has a unique structure, equipped with high chromium hammers and impact liners.

#### 2.0.1 Hammer crusher

Hammer crusher is a kind of equipment for crushing materials in the form of impact. It is suitable for crushing medium hardness materials in cement, chemical industry, electric power, metallurgy and other industrial departments, such as limestone, slag, coke, coal and other materials in medium and fine crushing operations.

#### 2.0.2 Cone crushers

Cone crushers are widely used in mining industry, metallurgical industry, construction industry, road construction industry, chemical industry and silicate industry. They are suitable for crushing hard and medium hard ores and rocks, such as iron ore, limestone, copper ore, quartz, granite, sandstone, etc.

#### 2.0.3 To wrap up

The above is an introduction to the working principles of 4 types of commonly used crushers. **Which type of crusher to choose**, also needs to be considered in combination with the hardness of the material, the particle size of the feed material, the required crushing particle size, and the processing capacity. When selecting crusher, it is recommended that you consult a professional crushing equipment manufacturer to select the most suitable one for your industry





## 2.1 Identification of Hand Tools

The Identify tool identifies features on all layers of the map, including layers that are not visible in the current zoom level. When you identify a feature, the Identify window opens and lists features at that position on the map.

There is a huge range of tools and they all perform different functions, but 10 of the most commonly used are a hammer, a screwdriver, a mallet, an axe, a saw, a wrench, a chisel, pliers, a drill, and a tape measure.

## 2.2 Crushing of Marble

Some marble is pulverized enough that it can be crushed, processed to remove impurities, and used as whiting, fillers, extenders, and even in cosmetics and dietary supplements for humans and animals. Pulverized marble is simply marble reduced to fine particles through the process of grinding, crushing, or pounding.



Marbleizing (also spelt marbleising) or faux marbling is the preparation and finishing of a surface to imitate the appearance of polished marble. It is typically used in buildings where the cost or weight of genuine marble would be prohibitive.

### 2.3 Off Loading

If you offload something that you do not want, you get rid of it by giving it or selling it to someone else. [mainly British] Prices have been cut by developers anxious to offload unsold apartments.

### 2.4 Packing and Sealing of the Final Product

Sealing methods are processes used to close or seal packaging materials, ensuring the product inside remains protected from external factors such as moisture, air and contaminants. The two primary sealing methods are heat sealing and cold sealing, each with its own advantages and applications.

A good seal preserves the product and maintains its organoleptic properties, as well as ensuring it is tamper-proof and extending its shelf life. It also guarantees a positive experience for the user.

### 2.5 Extracted of Marble

Marble quarrying refers to the process of extracting marble blocks or slabs from the earth's crust through a series of controlled and meticulous steps. This extraction process requires skill, precision, and utmost care to preserve the integrity of the marble and ensure the finest quality end product.

## CHAPTER THREE

### 3.0 Introduction to Chipping

#### Chipping

This is defined as a chip-removing cutting process. A distinction is made between chipping with geometrically determined cutting edges (e.g. turning, milling, drilling, planing, sawing) and geometrically indeterminate cutting edges (e.g. grinding, honing, lapping, sliding chips).

With the calculation tool Cost Control, the processing times for different cutting processes can be calculated easily and quickly. It is possible to calculate the times in several stages from approximate (involving lower number of inputs) to exactly (input of the individual cutting steps and cutting material selection).



#### 3.0.1 Turning

During turning, the cutting movement of the rotating workpiece and the auxiliary movement (feed and delivery) are performed by the tool. After completion of the turning operation, the workpiece in the machined region is rotationally symmetrical to the axis of rotation. There are several different turning processes including: facing, round turning, screw turning, rolling, profiling, and turning.

#### 3.0.2 Drilling and tapping

Drilling is done with a mostly double-edged tool (drill). The cutting tool penetrates the material with a circular cutting movement and creates an inner mostly cylindrical and rotationally symmetrical body (drill hole).

#### 3.0.3 Milling

During milling, individual chips are lifted off the mostly cubic workpiece by special tools rotating around their own axis. The cutting movement is performed by the tool and the auxiliary movement (feed and delivery) of the tool and / or the workpiece. The following are examples of milling processes: Face milling, hobbing, profile milling, screw milling, circular milling, form milling and plunge milling.

### 3.0.4 Sawing

Sawing is a manufacturing process for cutting and slitting work pieces. The cutting movement can be straight (band or hacksaw) or circular (circular saw). The feed motion is performed in a direction perpendicular to the cutting direction plane with a narrow multi-toothed tool. The tool carries out the cutting and feed movement.

### 3.0.5 Grinding

During grinding, the material is removed at high speed by numerous bonded abrasive grains. This method is also used to obtain a small dimensional tolerance, a geometric surface as accurate as possible or a specific surface condition.

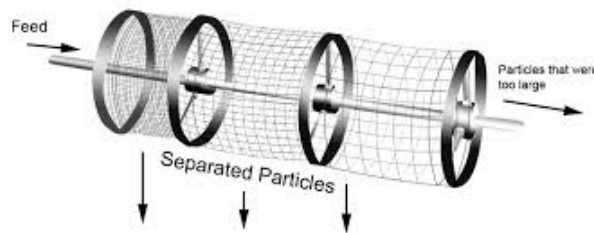
## 3.1 TRAILER OF MARBLE STONE

Marble is a rock resulting from metamorphism of sedimentary carbonate rocks, most commonly limestone or dolomite. Metamorphism causes variable re-crystallization of the original carbonate mineral grains. The resulting marble rock is typically composed of an interlocking mosaic of carbonate crystals.



## 3.2 THE TROMMEL SCREEN PRODUCES CHIPPING SIZE

A trommel screen, also known as a rotary screen, is a mechanical screening machine used to separate materials, mainly in the mineral and solid-waste processing industries. It consists of a perforated cylindrical drum that is normally elevated at an angle at the feed end. Trommel screens range in lengths and diameters as different jobs require different specifications. Sizes range from (3') diameter x (10') long to (8') diameter x (30') long.



### **3.3 THE CRUSHED TWO PULLEY WITH BELT**

The bigger your driven pulley (vs the driver), the slower it will turn but the more torque it will produce. The smaller your driven pulley (vs the driver), the faster it will turn but the less torque it will produce.

## CHAPTER FOUR

### 4.0 Track with calcium

1. **Shelcal Tablet.** Shelcal 500 mg/250 IU Tablet is a well-balanced calcium supplement that combines calcium carbonate with vitamin D3. This combination enhances calcium absorption and promotes overall bone health, making it an excellent choice for individuals looking to maintain strong bones.

### 4.1 Packaging of marble

Inspection of marble tiles for quality, size, finish, color, and defects. 2- Packaging of marble tiles into wooden crates with Styrofoam sheets and polythene sheets for cushioning and waterproofing. 3-Loading of wooden crates into container trucks with the help of a crane and arranging them carefully.

### 4.2 Cleaning and marine tainance

Prepare a cleaning solution of water and mild soap such as Woolite or Dawn dishwashing liquid. Use a soft bristle brush to clean. Allow cleaning solution to soak into the fabric. Rinse thoroughly until all soap residue is removed

### 4.3 Packing granitic

a light-coloured coarse-grained acid plutonic igneous rock consisting of quartz, feldspars, and such ferromagnesian minerals as biotite or hornblende

Granite makes up most of the continental crust, while another igneous rock called basalt makes up the oceanic crust. Quote. “ Granite forms when igneous rock cools deep within the Earth. The slower it cools, the larger its mineral size.

## CHAPTER FIVE

### 5.0 Placing charge and detonating

Detonation is a process of supersonic combustion in which a shock wave is propagated forward owing to energy release in a reaction zone behind it. In a detonation, the shock wave compresses the unburnt gases and thus increases the temperature to the point of ignition. The flame front proceeds with supersonic speed. A general theory of explosives is that the detonation of the explosives charge causes a high-velocity shock wave and a tremendous release of gas. The shock wave cracks and crushes the rock near the explosives and creates thousands of cracks in the rock. These cracks are then filled with the expanding gases.

### 5.1 Types of drilling

The four main types of drilling include rotary drilling, which uses a rotating bit; percussion drilling, which uses a heavy weight and a chisel bit; auger drilling, which uses a helical screw; and diamond drilling, which uses a diamond-encrusted bit.

### 5.2 Offloading of marble

Weather conditions can effect outdoor marble tile quickly causing them to look matte, stained, dull or dirty. You should still maintain and properly care for your outdoor stone by knowing the proper cleaning methods. For dirt and grime, use a natural stone cleaner.

### 5.3 Crushing of marble

Marble often has compressive strengths as high as 20,000 psi, and when used in dry climates or in areas protected from precipitation, the stone is quite durable. Some varieties, however, are decomposed by weathering or exposure to industrial fumes, and are suitable only for interior work.

### 5.4 Bagging and packaging

A bag is a specific type of container, made from a loose material, such as plastic or cloth, although there are also paper bags. A package, generally speaking, refers to the entire packing container and its contents. This could be contained within a bag, a box, or some custom wrapping of sorts.

### Conclusion.

Energy and mineral resources are essential for our survival. If these energies were not discovered, we would have continued to live the stone age life. The mineral and energy resources fulfil our daily needs, but we tend to overuse and misuse them in some sense or the other

