

**ASSESSMENT ON RAINFALL BEHAVIOUR AT SINKHOLE TRAGEDIC  
AREA IN IPOH NORTH AND PERLIS**

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## TABLE OF CONTENT

ACKNOWLEDGEMENT	i
TABLE OF CONTENT	ii
LIST OF FIGURES	v
LIST OF TABLES	vii
LIST OF APPENDICES	viii
ABSTRACT	ix

CHAPTER	PAGE
1 INTRODUCTION	1
1.1 General	1
1.2 Problem Statement	1
1.3 Scope of Study	2
1.4 Objective	2
1.5 Research Significant	2
1.6 Research Assumption	3
2 LITERATURE REVIEW	4
2.1 Background	4
2.2 The collapse of Sinkhole	4
2.2.1 Factors effecting formation of a sinkhole	5
2.3 Water In filtration into soil	7
2.3.1 Weathering of rocks and rock mineral	8

## ABSTRACT

Sinkhole is a costly recurring problem faced by many countries such as Malaysia where some of the areas having limestone with underground cavities as the bedrock. Economic loss or damages of properties and loss of lives occur in major sinkhole failure.

Erosivity of rainfall and type of soil are the main parameters that might influence and contribute to the sinkhole occurrences. In this research, the erosivity of rainfall is the only parameter taken into consideration and thoroughly analysed in predicting the contributing factor of sinkhole occurrences.

Erosivity factor itself is strongly influence by the climatic condition and it is totally related to the rainfall characteristic and its kinetic energy. Then the relationship between rainfall pattern can be related to ROSE Index to predict the occurrence to the sinkhole.

In this study it was found that sinkholes occurred when the ROSE Index is in the category of high, very high and critical.

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 GENERAL**

Sinkhole is hazards to both shallow and deep foundations including piling. A sinkhole is a natural phenomenon in which the ground surface suddenly sinks resulting in a large hole being formed. The common features of sinkhole as reported occurring in Peninsular Malaysia are the approximately circular shape in plan with diameters up to about 10m and the steep or nearly vertical sides with depths up to about 10m.

Recently, sinkhole failure occurrence in Malaysia is becoming one of the major environment disasters. The recent sinkhole occurrence at Kem Oran, Perlis and Sg.Tapah, Ipoh Perak are some of the examples of them. Most of the sinkhole occurred in areas having limestone with layers of cavities as the bedrock.

### **1.2 PROBLEM STATEMENT**

Sinkhole is formed when subsurface erosion into cavities and dissolution channels has created voids in the overburden. Besides posing problems to foundations, they also create problems when they are sometimes activated by the construction process. In this study is to find the relationship between rainfall pattern in Malaysia and sinkhole occurrence within North of Ipoh, Perak and Perlis.