STUDY OF MECHANICAL PROPERTIES OF CONCRETE USING CEMENTITIOUS MATERIALS

Abstract:-

Concrete is the most versatile construction material because it can be designed to withstand the harshest environments while taking on the most inspirational forms. Engineers are continually pushing the limits to improve its performance with the help of innovative chemical and mineral admixture. Nowadays, most concrete mixture contains supplementary cementitious material which forms part of the cementitious component. These materials are majority byproducts from other processes. The main benefits of SCMs are their ability to replace certain amount of cement and still able to display cementitious property, thus reducing the cost of using Portland cement. The fast growth in industrialization has resulted in tons and tons of byproduct or waste materials, which can be used as SCMs such as fly ash, marble dust, ground granulated blast furnace slag, steel slag etc. The use of these byproducts not only helps to utilize these waste materials but also enhances the properties of concrete in fresh and hydrated states. Slag cement and fly ash are the two most common SCMs used in concrete. Most concrete produced today includes one or both of these materials. For this reason their properties are frequently compared to each other by mix designers seeking to optimize concrete mixtures. Research indicates that deficiency associated with the use of Fly ash cement is its low strength specially in early age. Similarly research papers show that slag cement gain strength at early stage but rate of gain of strength is low leading to comparatively less ultimate strength. Research studies indicate that inclusion of Silica Fume in binder mix positively improves the strength of the matrix and its chemical resistance but can create increase in water demand, placing difficulties, plastic shrinkage etc. However, all these materials have certain shortfalls but a proper combination of them can compensate each other’s drawbacks which may result in a good matrix product with enhance overall quality. In the present work a series tests were carried out to make comparative studies of various properties of concrete prepared by using Fly ash and marble dust. Experimental investigation has been carried out to study the effect of the fly ash, marble dust on the properties of both fresh and hardened concrete.

Student Name:--

Vivek Patel (100780106060)  
Maulik Patel (100780106040)  
Sapneel Patel (110783106011)  
Anil Chaudhary (100780106043)

Internal Guide:-

Dr. A. H. Shah (Principal – SRPEC)
USE OF E-WASTE AS A REPLACEMENT OF NATURAL SAND IN CONCRETE

Abstract:-

Concrete is a composite material composed of coarse granular material embedded in a hard matrix of material that fills the space among the aggregate particles and glues them together. Engineers are continually pushing the limits to improve its performance with the help of innovative chemical and mineral admixture. Nowadays, most concrete mixture contains supplementary cementations material which forms part of the cementations component. These materials are majority byproducts from other processes. The main benefits of SCMs are their ability to replace certain amount of cement and still able to display cementations property, thus reducing the cost of using Portland cement. Electronic waste or waste electronic and electrical equipment is an emerging issue posing serious pollution problems to the human and the environment. New effective waste management options need to be considered especially on recycling concepts. This paper presents the results of an investigation to study the performance of concrete prepared with E plastic waste as part of coarse aggregate. An effort has been made to detail a systematic study of compressive strength of concrete with various proportions of E-waste as coarse aggregate in concrete. The test results showed that a significant improvement in compressive strength was achieved in the E-plastic concrete compared to conventional concrete. The tests were also designed to evaluate the internal pore structure, its chemical resistance to environmental agents and reactivity with some components of the cement. The results indicated that the E-plastic aggregate up to 15% weight of the coarse aggregate and replacement of cement with fly ash (10% by weight) can be used effectively in concrete and thus results in waste reduction and resources conservation.

Student Name:-

Panchal Gaurav J. (100780106029)
Parmar Hitesh V. (100780106045)
Solanki Hasmukh G. (100780106053)
Nai Bhavesh A. (100780106035)

Internal Guide:-

Asst. Prof. Amar Y. Salriya
SOIL STABILISATION USING WASTE PLASTIC

Abstract:-

Soil stabilization can be done in number of ways. But the stabilization using waste plastic strips is an economic method since the stabilizer used here is waste plastic materials, which are easily and cheaply available. This report presents the various tests conducted on fiber reinforced soil with varying fiber content and different aspect ratio and their results are analyzed such that it can be used in the fields. Therefore, it is of utmost importance considering the design and construction methodology to maintain and improve the performance of such pavements. In this project, plastic such as shopping bags is used to as a reinforcement to perform the CBR studies while mixing with soil for improving engineering performance of sub grade soil. Plastic strips obtained from waste plastic were mixed randomly with the soil. A series of California Bearing Ratio (CBR) tests were carried out on randomly reinforced soil by varying percentage of plastic strips with different lengths and proportions. Results of CBR tests demonstrated that inclusion of waste plastic strips in soil with appropriate amounts improved strength and deformation behavior of sub grade soils substantially. The proposed technique can be used to advantage in embankment/road construction, industrial yards etc.

Student Name:-

Patel Hiren G. (100780106007)
Patel Hardik I. (100780106010)
Patel Satish V. (100780106018)
Prajapati Pavan H. (090780106050)

Internal Guide:-

Asst. Prof. Amar Y. Salriya
COMPARATIVE STUDY OF SHEAR WALL IN MULTI-STORIED R.C. BUILDING

Abstract:-

Looking to the past records of earthquake, there is increase in the demand of earthquake resisting building which can be fulfilled by providing the shear wall systems in the buildings. Also due to the major earthquakes in the recent pasts the codal provisions revised and implementing more weightage on earthquake design of structure. The decision regarding provision of shear wall to resist lateral forces play most important role in choosing the appropriate structural systems for given project. In the present project shear wall are provided on different position in multi storey RCC building, and seismic response of the building is checked using ETABS software. By this one will be able to choose best location of shear wall in building for best seismic performance. The response of the building is checked in terms of stiffness, storey drift, storey displacement, peak ground acceleration etc.

Student Name:-

Patel Jigar A. (100780106052)
Patel Minku R. (090780106038)
Patel Jaimin P. (090780106016)

Internal Guide:-

Dr. A. H. Shah (Principal – SRPEC)
WARM BITUMINOUS MIXES-A ROAD TO SUSTAINABLE PAVEMENT SURFACE

Abstract:-

The transport sector has become a heavy polluter in recent decades because of the hike in the construction of roads. Due to unavailability of sufficient funds, the construction of Rigid Pavement is pretty uncommon and hence Flexible Pavements are made. The construction of such pavements require Hot Mix Asphalt (HMA) plants for obtaining bituminous concrete which is the essential material used for the surface course in flexible pavement construction. The HMA plants causes pollution and emits certain poisonous gases like CO2, CO, NO, etc. So, in order to reduce the emissions, certain methods are used, one of which is Warm Bituminous Mixes (WBM). As the asphalt industry is getting more aware of the warm mix technology, there is an increasing need to perform research to determine the feasibility of these technologies. Some European countries are already using the warm mixture technology to be able to produce asphalt mixes at lower temperatures without significantly affecting the quality of the mixes. While the energy savings and the air quality improvements by using warm bituminous mixes are appealing. Warm Bituminous Mixes allows the producers of asphalt pavement material to lower the conventional temperature range at which the material is mixed and laid on the road. WBM solution allows reducing the working temperature of asphalt up to 30°C. Since the start of developing modern WBM technologies, a lot of experiments have been carried out to establish potential benefits of using WBM and evaluating the performance compared to traditional Hot Mix Asphalt (HMA). First research reports are from Europe from mid 90's and starting from 2002 a lot of testing and field trials have been conducted in US with publically available reports. Various tests on bitumen with WBM were conducted at different dosage content to check its property. In this study we refer many research papers on WMA and from this research paper we find that evotherm and sesobit will be used to prepare WMA. So, we are going to use this two material in different proportion for making WMA. Then, we are going to check the change in physical properties of bitumen and also the stability of same material.

Student Name:-

Patel Sanket H. (100780106001)
Patel Neel N. (100780106006)
Patel Chintan K. (100780106012)

Internal Guide:-

Asst. Prof. Bhavik G. Patel
STONE MATRIX ASPHALT USING NON-CONVENTIONAL FIBERS

Abstract:-

Stone Matrix Asphalt (SMA) is gap graded mixture which contains the higher content of the coarse aggregate, asphalt as binder and fibers as the stabilizers. In the present study, we have referred different literature and concluded the Optimum Fiber Content at 0.3% which increase the stability and decrease the flow value. The fiber content will be added with the binder namely bitumen grade of 60/70 in SMA. We have performed the tests and obtained the physical properties of the conventional bitumen and aggregate.

We have studied Marshall Test and observed that 0.3% addition of coconut fiber and 0.3% addition of jute fiber with the 6% of bitumen content significantly improve the Marshall property of Stone Matrix Asphalt.

Student Name:-

Patel Karan A. (100780106025)
Patel Ravi N. (100780106020)
Prajapati Arjun D. (100780106054)
Chaudhari Kiran J. (090780106046)

Internal Guide:-

Asst. Prof. Chirag B. Patel
MODE CHOICE BETWEEN ROADWAY AND WATERWAY

Abstract:-

In this study we are going to compare choice of mode between roadway and waterway, for that we are choosing the starch between Subhash bridge to Paldi. For that we are doing a different survey on this route and than after analysis. We conclude that whether it is feasible or not. Transportation modes are an essential component of transport systems since they are the means by which mobility is supported. Geographers consider a wide range of modes that may be grouped into three broad categories based on the medium they exploit: land, water and air. Each mode has its own requirements and features, and is adapted to serve the specific demands of freight and passenger traffic. This gives rise to marked differences in the ways the modes are deployed and utilized in different parts of the world. More recently, there is a trend towards integrating the modes through intermodality and linking the modes ever more closely into production and distribution activities. At the same time, however, passenger and freight activity is becoming increasingly separated across most modes.

Student Name:-

Kugshiya Ashvin (110783106004)
Patel Karan (090780106028)
Fofani Pratik (090780106015)

Internal Guide:-

Asst. Prof. H. V. Patel
IMPROVEMENT OF ENGINEERING PROPERTIES OF SWELLING SOIL (BLACK COTTON SOIL) BY ADDING FLY ASH

Abstract:-

Urbanization and Transportation growth in the economy of India have led to the steep increase in the construction activities and has necessitated the implementation of infrastructure projects such as highways, railways, air strips, water tanks, reclamation etc. These projects invariably require quality earth in massive quantity. In urban areas, borrow earth is not easily available which has to be hauled from a long distance. Quite often, large areas are covered with highly plastic and expansive soil like black cotton soil, which is not suitable for such purpose. Black cotton soil has the tendency to swell when their moisture content is increased and shrink when their moisture content is decreased. The moisture may come from rain flooding, leaking water or sewer lines or from reduction in surface evapotranspiration when an area is covered by a building or pavement. To achieve the economy and for proper performance of structures it is necessary to improve the engineering properties of black cotton soil. Various stabilizers’ are used such as lime, cement and calcium chloride. In the present scenario fly ash has emerged as a one of the potential admixture to stabilize the soil. In the present work an attempt is made to understand the effect of fly ash on various properties of expansive soil. Fly ash is mixed in various proportions in a parent soil. For these various proportions of fly ash different properties of soil are determined in laboratory and compared with the parent expansive soil properties. The study is carried out on various properties i.e. compaction properties, Atterberg’s limit C.B.R.

Student Name:-

Patel Harsh A. (090780106054)
Gajrani Bhavna D. (100780106009)
Patel Utsav K. (100780106017)
Mevada Parth D. (100780106036)

Internal Guide:-

Asst. Prof. A. Y. Salariya
EXPERIMENTAL & ANALYTICAL EVALUATION OF BASE ISOLATED WATER TANK STRUCTURE

Abstract:-

The safety of a water tank will depend upon the use of seismic protection system and initial architectural and structural configuration of the water tank and design and their ductile performance under seismic loading, so in our study we use friction pendulum system which is the one type of base isolation and which is the one of the seismic protection system for protect water tank and any kind of structure. Base Isolation is the concept of protecting a water tank from the damaging effects of an earthquake by introducing some type of support that isolates it from the shaking ground. The idea behind base isolation is to detach the water tank from the ground in such a way that earthquake motions are not transmitted up through the water tank or at least greatly reduced. The main object of present study to development of a base isolation system to physically demonstrate the concept of friction pendulum single and double sliding system in laboratory. The responses of a water tank with & without base isolation are measured on shake table simultaneously using the accelerometer attached to the model structures. Further the analytic model of base isolation water tank is prepared and analyses using SAP 2000. The results are verified with experiment results.

Student Name:-

    Umesh Patel (100780106013)
    Kevin Patel (100780106019)
    Anant Patel (100780106014)
    Kalpesh Prajapati (100780106034)

Internal Guide:-

    Dr. A. H. Shah (Principal – SRPEC)
Abstract:-

Water treatment system requires identifying and fully characterizing the source of the raw water to be treated. The common sources of feed water for water treatment projects include surface waters, well water, and municipal water. A complete and representative water analysis should then be ade. Each new system should be chosen or designed based on the prevailing water analysis, user preferences and other nontechnical parameters. Absolutely pure water is rarely, if ever, found in nature. The impurities occur in three progressively finer states - suspended, colloidal and dissolved matter. Different methods of treatment are required for their removal or reduction to acceptable limits. The flow through a unit of a drinking water treatment plant is one of the most important parameters in terms of a unit’s effectiveness. In the production of drinking water, screening, plain sedimentation, coagulation and flocculation are almost universally used before filtration, except where water is treated by slow sand filtration. Clarification, which may be by settlement or flotation, is the unit step used immediately before filtration, unless direct filtration is used in cases where the source water is low in turbidity, colour and microorganisms.

The design and construction of water treatment plant for use in rural areas has been given due consideration. Water samples from two sources i.e. well and stream water are collected and each of these samples is poured in the treatment plant to determine its efficiency. The analysis shows that the electrical conductivity and the total dissolved solid present in the two samples of water are drastically reduced which is a function of the turbidity of the water and the water quality itself. It is therefore necessary to construct a plant for use so that the rural inhabitants would have an access to safe fresh and portable water for consumption, and at a minimal cost.

Student Name:-

Patel Vaibhav B. (100783106011)
Raval Bhavesh (110783106003)
Patel Jigar (110783106002)
Patel Dharamesh (090780106026)

Internal Guide:-

Asst. Prof. D. D. Patel
METAKAOLINE AND ALCCOFINE AS A ADMIXTURE IN CONCRETE

Abstract:-

The durability of cement concrete is defined as its ability to resist weathering action, chemical attack, or any other process of deterioration. Durable concrete will retain its original form quality, and serviceability when exposed to environment. One of the main reasons for deterioration of concrete in the past is that too much emphasis is placed on concrete compressive strength rather than on the performance criteria. The deterioration of reinforced concrete structures usually involves the transport of aggressive substances from the surrounding environment followed by physical and chemical actions in its internal structure. The transport of aggressive gases and/or liquids into concrete depends on its permeation characteristics. As the permeation of concrete decreases its durability performance, in terms of physio-chemical degradation, increases. Therefore, permeation of concrete is one of the most critical parameters in the determination of concrete durability in aggressive environments. Since high resistance to chloride penetration can be directly related to low permeability that dominates the deterioration process in concrete structures, the resistance to chloride penetration is one of the simplest measures to determine the durability of concrete. Therefore, in this study, the rapid chloride permeability test method designated in ASTM C 1202(1997) is adopted. The advantage of adopting this rapid chloride permeability test (RPCT) test is direct cost savings could be quantified when compared to other tests and the brief procedural steps involved significantly reduce the technician time necessary to evaluate a particular concrete.

Student Name:-

Prajapati Bhavik (100780106042)
Patel Ilesh (100780106026)
Patel Kunj (100780106015)
Prajapati Mehul (10783106012)

Internal Guide:-

Asst. Prof. H. V. Patel
USE OF WASTE PLASTIC IN BITUMINOUS CONCRETE MIX DESIGN

Abstract:-

Bituminous mixes are most commonly used all over the world in pavement construction. Flexible pavement constitutes over 95% of total road network in India. In 1960, Charlie Mac Donald in Phoenix, Arizona used tyre rubber as an additive in bitumen binder modification. The useful life of flexible pavement has declined due to high susceptibility to temperature variations, tendency to crack, lesser effective life. In addition to, changes in traffic details using the road. Bituminous pavements fail to give the expected service life under adverse climatic, environmental & traffic conditions. This caused to look for alternative methods of road construction in which one of major development of materials are in the area of utilization of bitumen modifiers such as waste materials such as LDPE & HDPE. In this study we refer different research paper and from this paper we find that 4% HDPE and 4% LDPE increase the physical properties of bitumen and stability of bituminous mix. We further going to use LDPE and HDPE of 1%, 2%,3% and 4% Proportion of bitumen and then we will check the physical properties and stability value. In this study we find the physical properties of neat bitumen and aggregate.

Student Name:-

Patel Hiren B.  (110783106007)
Dave Vishal R.  (090780106006)
Patel Maulik S.  (110783106005)
Darji Sandip R.  (110783106008)

Internal Guide:-

Asst. Prof. Bhavik G. Patel & Asst. Prof. Chirag B. Patel
Abstract:-

Transportation contributes to the economic, industrial, social and cultural development of any country. Transportation by road is the only mode which could give maximum service to one and all. Due to the increase in population, number of vehicles is increasing day by day which leads to the increase in road network. It has been estimated that over 30,000 persons die and over 10 to 15 million persons are injured every single year in road accidents throughout the world. An accident black spot is a term used in road safety management to denote a place where road traffic accidents have historically been concentrated. It may have occurred for a variety of reasons. The present work is intended to identify various black spots (accident prone location) on SH-41 UNJHA TO MEHSANA ROAD. For this purpose, the road accident data for the years 2011, 2012 and 2013 considering accident particulars like date, location, and type of vehicle involved, number of persons injured or died are collected. The data were analyzed for different parameter and black spot were identified from the analytical process. For the identified black spot, we measured in the accident prone locations to find out the causes for the accident. Based on the result, suggestions will be provided to reduce the accidents in the future. The whole accident mitigation process is referred as black spot improvement.

Student Name:-

Sujal K. Parikh (110783106001)
Nikunj R. Patel (090780106032)
Hitesh S. Patel (110783106006)
Siddhant K. Zala (090780106040)

Internal Guide:-

Dr. A. H. Shah (Principal – SRPEC)
USE OF RED SAND AS A GREEN MATERIAL WITH REPLACEMENT TO NATURAL SAND IN CONCRETE

Abstract:-

The aggregate comprises a substantial portion of concrete. Including coarse and fine aggregates it is normally obtained from natural sources. Fine aggregate in India is usually extracted from River. As the demand for concrete production increases, more natural sand is needed. The need for fine aggregate should be addressed in an environmentally friendly manner, considering the diminishing sources of natural sand. Various industrial by-products, such as fly ash, ground granulated blast-furnace slag and silica fume, have been used in concrete to improve its properties. This also enables any environmental issues associated with their disposal. Another material that is available in large quantities and requiring alternative methods of disposal is the Bauxite Residue (Red Sand) from the Bayer process used to extract alumina from bauxite. Enormous quantity of Red Sand is generated worldwide every year posing a very serious and alarming environmental problem. Hence an investigation was carried out to establish its potential utilization as a sand replacement material in concrete. In addition to fresh properties of concrete containing Red Sand up to 100% by mass of Portland cement, mechanical and durability properties were determined. These properties indicated that Red Sand can be used to replace natural sand up to 100% by mass of cement to improve the properties of concrete without detrimentally affecting their physical properties. Combining these beneficial effects with environmental remediation applications, it can be concluded that there are specific applications where concretes containing Red Sand could be used.

Student Name:-

Bhavsar Chintan B. (100780106002)
Patel Parth R. (100780106027)
Patel Darshan N. (100780106021)
Patel Parth H. (100780106028)

Internal Guide:-

Asst. Prof. Amar Salariya
PROBLEM IN WATER SUPPLY SYSTEM- A CASE STUDY AT VISNAGAR CITY

Abstract:-

Next to the air, the other important requirement for human life to exist is water. Water supply system has a tremendous influence on daily life and is essential to modern society. A reliable supply of water is necessary to protect people’s health, safety, and quality of life. Like many other cities in the world, Visnagar faces the problem of irregular and inadequate water supply. The whole water supply of the Visnagar city is provided by Nagar Palika.

It has been observed that lack of attention to the important aspect of Management, Operation & Maintenance of water supply system often leads to deterioration of the useful life of the systems necessitating premature replacement of many system components. As such, even after creating such assets by investing millions of rupees, they are unable to provide the services effectively to the community for which they have been constructed, as they remain defunct or under-utilized most of the time. To overcome problems in management system, a record sheet is made which can be kept as a field records and software is provided for permanent record database. During the survey it had found total of 3 lakes which are not in use now due to its improper management, so if these lakes are maintain properly as per current situations, it not only solve the water shortage problems but also prevent the flood. Techniques are provided for finding leaks in pipelines and Repair of that. Design of groundwater reservoir is given for storage of rainwater which can be utilized during scarcity of water for various purposes. This report is intended primarily for the managers and technician in-charge of the operation and maintenance of the drinking water supply system of Visnagar Nagar Palika. The procedures mentioned in the report are intended to be guidelines for ensuring effective Operation & Maintenance of the water supply system.

Student Name:-

Patel Dhruv K. (100780106056)
Patel Hiren P. (100780106044)
Patel Hardik H. (100780106016)
Jani Archit H. (100780106046)

Internal Guide:-

Asst. Prof. Darshana. D. Patel
① Boring
Boring Bar

② Confirming
Listening Stick

Confirmation
Double Check to Save the Excavation Money. Minimize the hole to repair.
CONSTRUCTION WASTE MANAGEMENT

Abstract:-

Waste management is a fundamental component to any manufacturing or production enterprise. It is estimated that there are million tons of quarrying waste are produced in each year. The excessive wastage of materials, improper management on site and low awareness of the need for waste reduction are common in the local construction sites in India. With the urge for development and to satisfy the needs and wants, working and growth of Construction Industry is unavoidable. Over the last two decades material management, the world over has gained recognition as a science to be studied extensively and applied systematically to ensure efficiency and viability of any industry. This thesis discusses the various waste material management methods/techniques for effective waste material management for minimization of project cost and better material management through a case study of construction. Construction waste is generated throughout the construction process such as during site clearance, material use, material damage, material non-use, excess procurement and human error. The exact quantity and composition of construction waste generated throughout the projects are difficult to be identified as they are keep on changing due to the dynamic nature of the construction activities. Different stages of construction generate different types and composition of waste. Therefore the trend of waste generated throughout the construction stages need to be identified.

Student Name:-

Varun Patel (100780106004)
Meet Patel (100780106022)
Priyank Patel (100780106024)
Sarvang Salvi (100780106057)

Internal Guide:-

Dr. A. H. Shah (Principal – SRPEC)
Abstract:-

The major factors affecting the Road User Costs (RUC) are the speed coupled with traffic flow characteristics at which vehicles operate on roads, which in turn determines fuel consumption and other cost components per unit distance traveled. Considering this, the Government of India has been involved in roadway capacity augmentation by building multi-lane divided carriageways to link major cities through the implementation of various projects, like, Golden Quadrilateral, North-South, East-West and Expressway Corridors during the last decade. These radical changes in road network coupled with radical advancements in vehicle technology have resulted in huge variations in speed - flow characteristics, which necessitated the evolution of exclusive speed-flow equations and roadway capacity for multi-lane highways. Accordingly, an attempt has been made in this Paper to explicitly study the speed- flow characteristics on varying types of multi-lane highways encompassing four-lane, six-lane and eight-lane divided carriageways in plain terrain. From the collected data, free speed profiles and speed - flow equations for different vehicle types for varying widths of multi-lane highways in the country has been developed based on traditional and microscopic simulation models and subsequently roadway capacity has been estimated. Further, the lane change behavior of different vehicle types has been extensively studied and its impact on roadway capacity has been estimated on multi-lane highways. Finally, the Design Service Volume for varying types of divided carriageways including four-lane, six-lane and eight-lane has been evolved with reasonable degree of authenticity under the prevailing heterogeneous traffic conditions on multi-lane highways in India. In this study we are going to show that the behavior of speed flow relationship and capacity estimation on SH-41. For that we are choosing the highway road between Unjha to Mehsana. For that we are doing a different survey on this route and then after analysis. We conclude that whether it is feasible or not.

Student Name:-

Shrimali Krunal (100780106050)
Sharma Sumit (100780106008)
Desai Dipakkumar (090780106055)

Internal Guide:-

Asst. Prof. H. V. Patel
Abstract:

Among the natural calamities, earthquakes are the most destructive, in terms of loss of life and destruction of property. The rising frequency of earthquake has made it imperative to focus our attention on all aspects of pre-disaster preparedness from seismic studies as if we are standing on Earth earthquakes do not harm us much, but if we are standing inside a building then we do need to worry as the brutal impact of earthquake is seen on the buildings. So we do need to study the building and for that the structural aspects are to be taken into consideration. The one type of base isolation system is Friction Pendulum Bearing in which the superstructure is isolated from foundation. This study represents development of a single, double sliding surface and fixed model with concept of friction pendulum in laboratory. The study presents development of a base isolation system to physically demonstrate the concept of Friction Pendulum Bearing in the laboratory for earthquake engineering education. Single and double concave FP bearing allows for significantly larger displacements for building structure. Base isolation system measured on shake table using accelerometer. Further the analytical model of base isolation building structure is prepared and analyses using SAP2000. The results are verified with experimental results.

Student Name:  
Suthar Darshan S. (100780106031)  
Thakor Hemant P. (100780106037)  
Prajapati Ashish B. (100780106058)  
Darbar Anshuman B. (100780106038)

Internal Guide:  
Dr. A. H. Shah (Principal – SRPEC)