AMBEKESHWAR GROUP OF INSTUTATION, LUCKNOW

CIVIL ENGINEERING

SESSIONS 2023-24

PRESENTATION ON SUMMER TRAINING

ROAD CONSTRUCTION OF A FLEXIBLE PAVEMENT

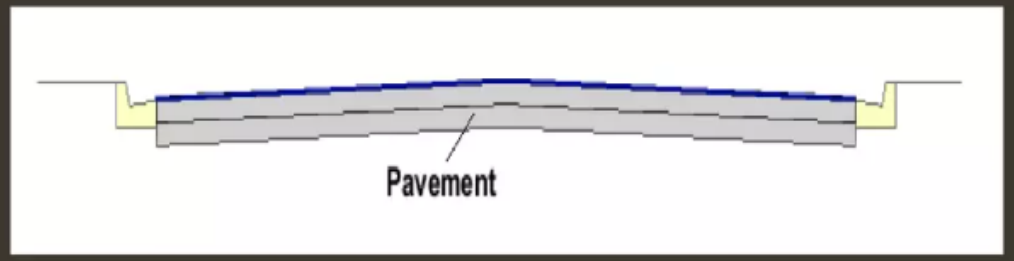
INTRODUCTION

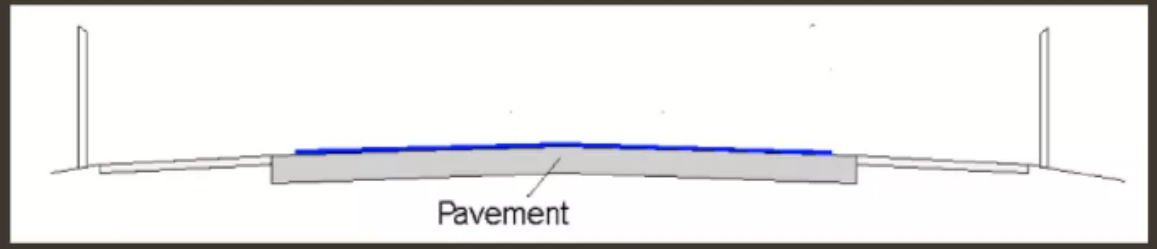
- Training department: PWD, Bahraich
- Incharge:
- Period: 08/08/2023 to 04/09/2023
- Location: BAHRAICH -271801
- Specification of road:
  - Type of Road: National Highway
  - Length of Road: 3km
  - Width of Road: 10m (4 lane)
  - Cost:40crore

WHAT IS ROAD PAVEMENT

Pavement is finished with a hard smooth surface directly above the subgrade. It helped make roads durable and able to withstand traffic and the environment.

One of the primary functions of pavement is load distribution.





TYPES OF PAVEMENTS

- There are various types of pavements depending upon the materials used; a briefs description of all types is given here-

- **FLEXIBLE PAVEMENT**

- Bitumen has been widely used in the construction of flexible pavements for a long time. This is the most convenient and simple type of construction. The cost of construction of single lane bituminous pavement varies from 20 to 30 lakhs per km in plain area.

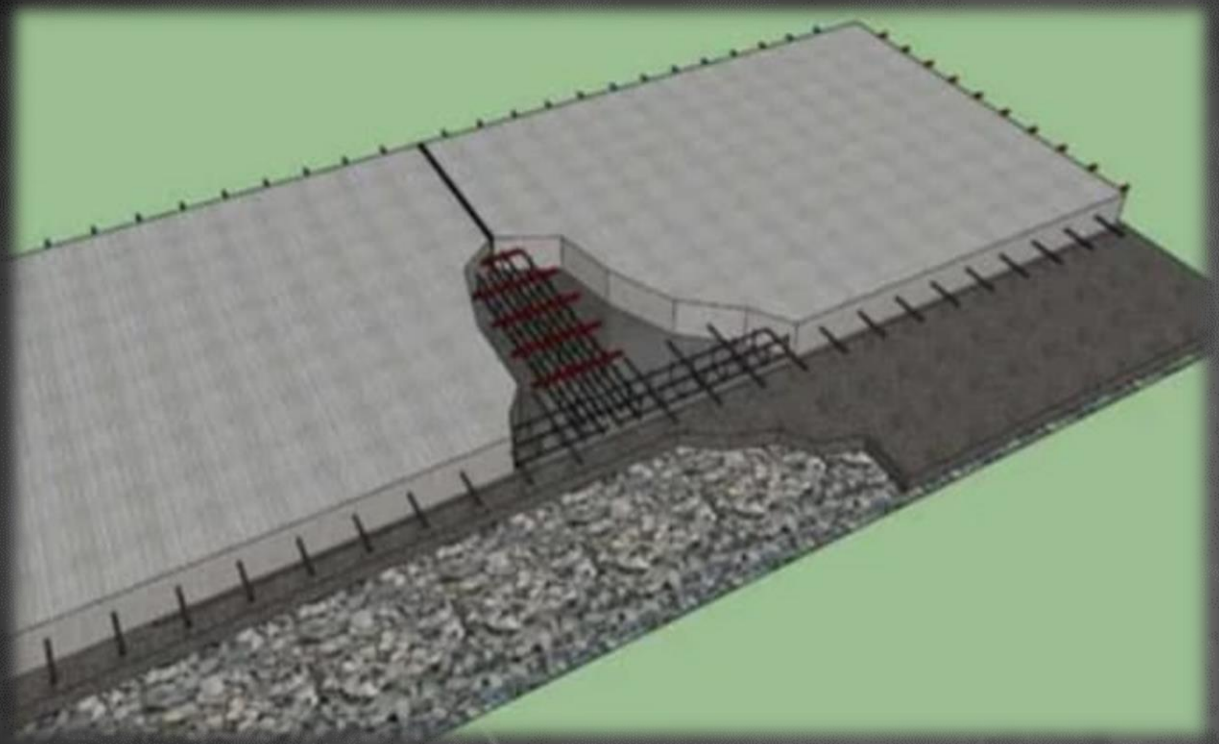
- Flexible pavement have-

  - Have low flexural strength
  - Load is transferred by grain to grain contact
  - Have low completion cost but repairing cost is high

RIGID PAVEMENT

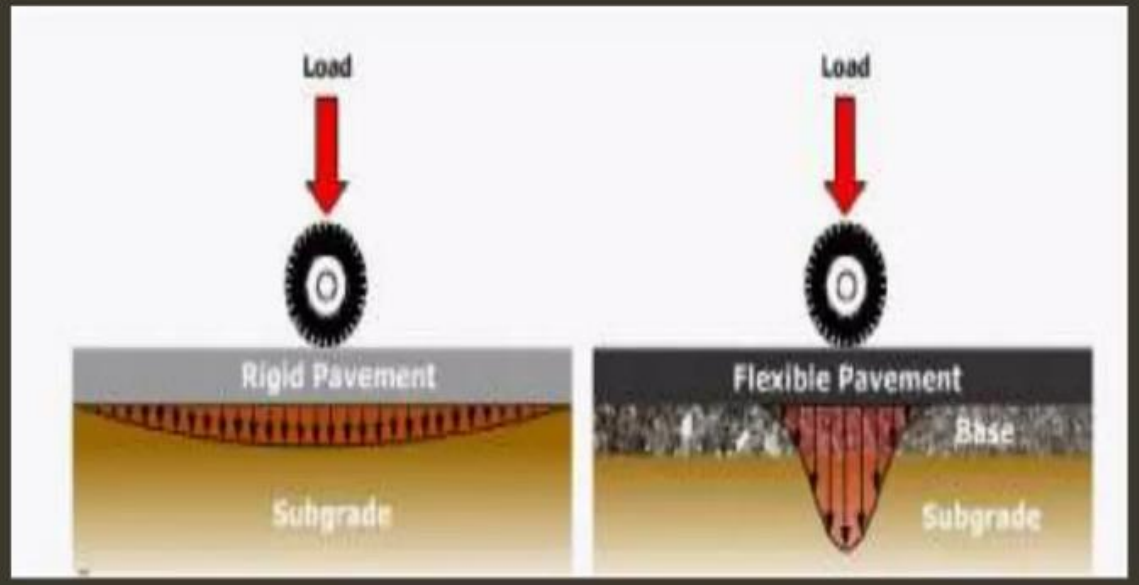
- Rigid pavements, though costly in initial investment, are cheap in long run because of low maintenance costs, The cost of construction of single lane rigid pavement varies from 35 to 50 lakh per km in plain area,
- Rigid pavement have-
- Deformation in the sub grade is not transferred to subsequent layers
- Design is based on flexural strength or slab action
- Have high flexural strength
- No such phenomenon of grain to grain load

  transfer exists
- Have low repairing cost but completion cost is high
- Low Maintenance Cost

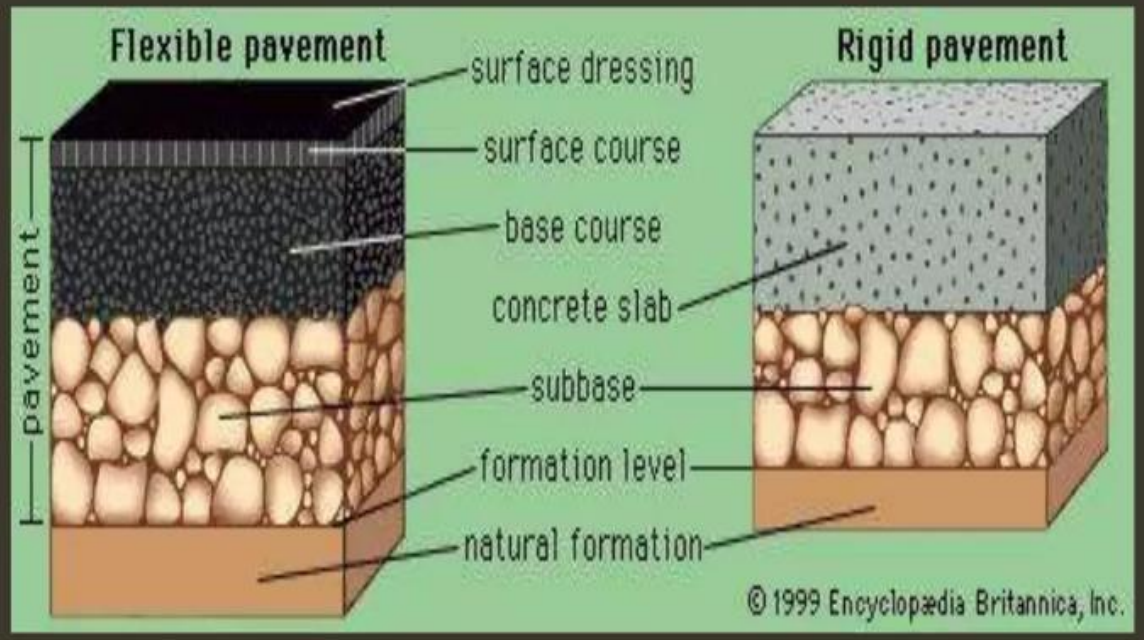


Rigid Pavement

Flexible Pavement



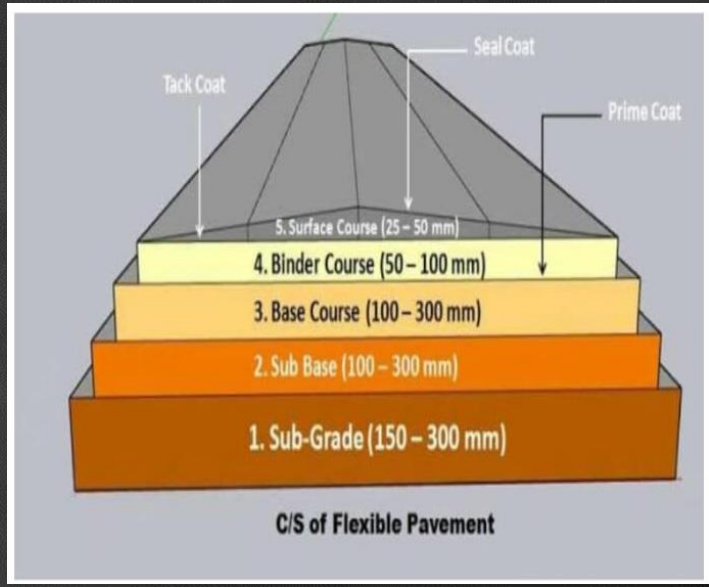
Difference b/w Flexible and Rigid Pavement in terms of load distribution In different layers



Different layers in Flexible and Rigid Pavement

CONCEPT OF FLEXIBLE PAVEMENT

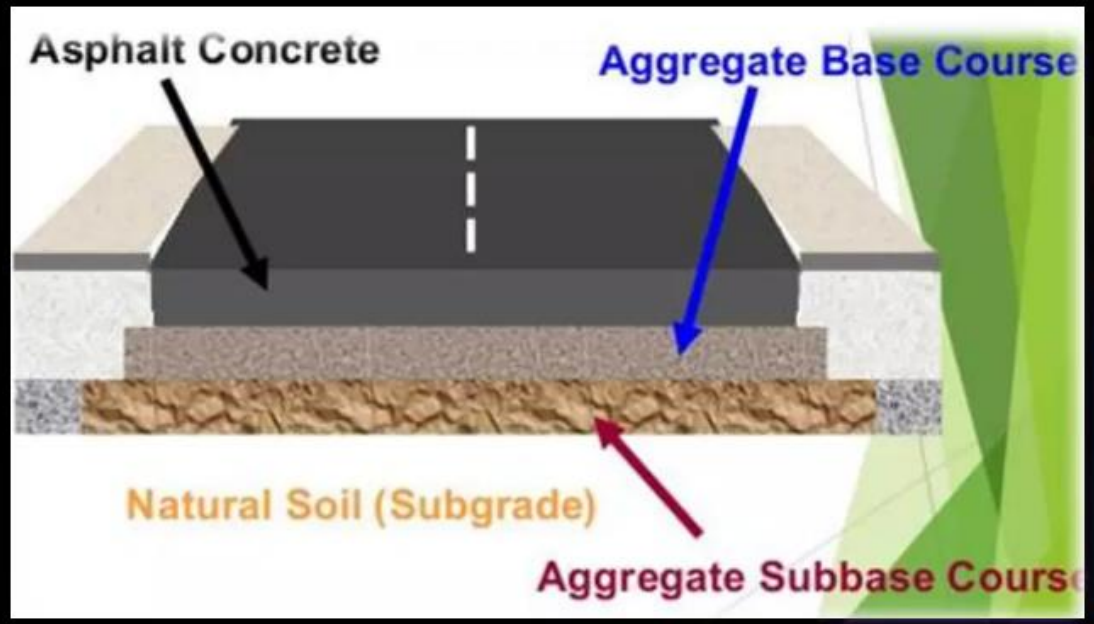
1. Soil Subgrade
2. Sub Base Course
3. Base Course
4. Surface Course



Layers

Sub-grade:

Sub-grade is commonly compacted before the construction of a road , pavement or railway truck , and sometimes Stabilized by the addition of asphalt , lime… , the sub-grade is the foundation of pavement on which the sub-base is laid

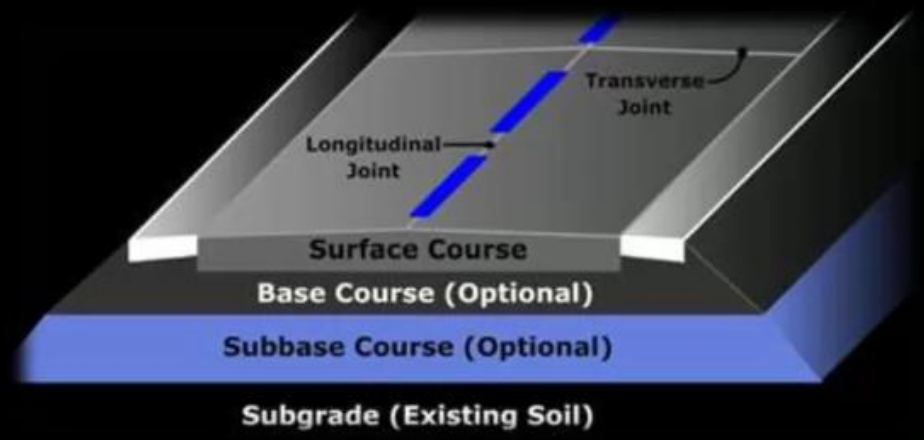


Preparation of the sub-grade for construction usually involves digging , in order to remove surface vegetation , topsoil.

Sub-base:

The sub-base generally consist of lower quality materials than the base course but better than the sub-grade soils.

A sub-base course is not always needed or used(optional).



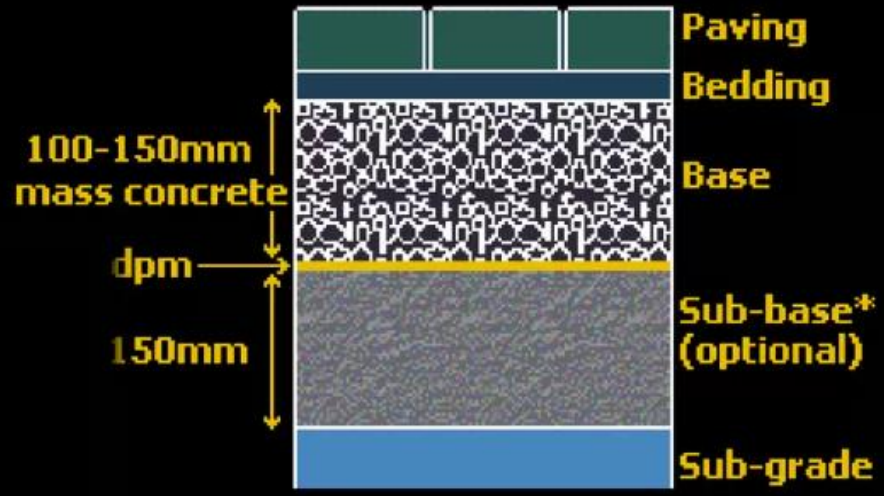
Advantage of sub-base:

1-minimize the intrusion fines from sub-grade into the pavement structure

2-improves drainage.

3-minimize frost action damage.

4-provide a working platform for construction.



Sub-base Course

Base course:

The Base course is immediately beneath the surface course , and it provides additional load distribution , contributes To drainage and frost resistance.

The main load-bearing(load spreading).

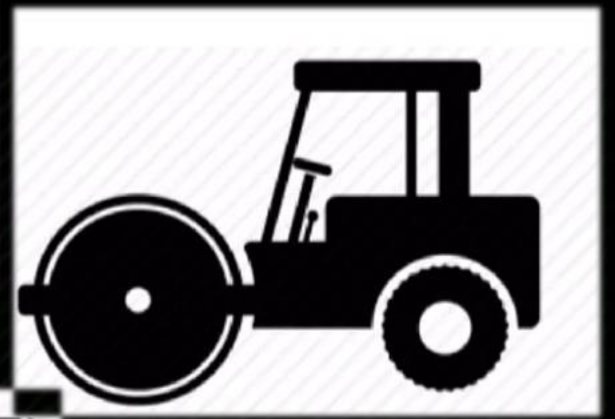
Base course are usually constructed out of:

Aggregate : base courses are most typically constructed from durable aggregate that will not be damaged By moisture or frost action .

Machinery used in site preparation

- Loader :to cutting or filling.

- Grader:to cut and fill small rate and make straight.
- truck: transport soil and course material.



- Compactor: uses for compaction layers.
- Tank : uses for water distributors.

WET MIX MACADAM PLANT

STONE DUST

+

WATER

+

BITUMEN

OFFICE OF THE EXECUTIVE ENGINEER
P.D., P.W.D., BAHRAICH

No. 226/ सैम्य/2023-24 Dated 4.9.2023

CERTIFICATE

Certified that ***Mr. Abhishek Singh*** **S/o Sri Lalit Kumar Singh** a student in Civil Engineering 2nd Year in **Ambekeshwar Istitute of Technology & Management, B.K.T., Lucknow** has got 4 weeks summer training skillfully in this department. w.e.f. **08.08.2023 to 04.09.2023**

Mr. Abhishek Singh is very laborious and well behaved student. I wish him success in future.

सहायक अभियन्ता (प्रथम)
Executive Engineer,
P.D., PWD, Bahraich

THANK YOU