A Review Paper on Test's conducted for Road Pavement

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Abstract- ***Concrete Road*** **design has become increasingly important for concrete road propulsion over the years. Motivated by high investment costs, the benefits of low maintenance coverage over the longest service life must be demonstrated prior to construction. It has crack resistance, tensile strength, and brittle fracture mechanism during tension. Due to these undesired properties of concrete, reinforcements are generally provided with steel rods that are placed on the concrete structure in the right place to withstand the applied tensile and shear stresses. In this task, experimental work is tried and performed to determine the results.**

Index Terms-Concrete Road, **Investment cost, Concrete, Construction, reinforcements.**

I.INTRODUCTION

The concrete road, also known as rigid pavement, has many advantages in the long run. Economically, it is often the cheapest option for flexible cover, given life cycle costs. This is due to the fact that concrete maintenance is minimal and, when properly designed and built using durable materials and methods, it is less annoying to road users. Concrete ceilings have been used for rural roads, roads, highways, airport runways, parking lots, industrial buildings, and other types of infrastructure. Decades of construction and the use of hard pavement have shown that environmental sustainability is positively impacted by longer lifespan compared to flexible

The concrete surface also has high reflectance from the surface. This improves night visibility and reduces street lighting. Also noteworthy is the reduction in traffic delays due to the construction of concrete roads that can be reopened in a few hours, as opposed to flexible road construction that reduces fuel consumption and emissions. Concrete roads are designed to withstand bending loads due to traffic loads and crack control due to various processes such as drying shrinkage, curvature and war page. The bending strength of concrete can be higher than the tensile strength, but lower for homogeneous materials. Higher bending strength results from the fact that under load the concrete has a stronger material at its ends, as only the extreme fibers are the location of the maximum load and it deforms it under higher loads. Concrete roads distribute the load over a large area. Therefore, the carrier layer receives less pressure from the axle load.

II. ADVANTAGES OF CONCRETE ROADS

1. The service life of such roads is longer.
2. Such roads provide an impermeable layer of cement.
3. Cement concrete roads are strong and durable and are not affected by weather.
4. Good night visibility.
5. Cement concrete roads provide a dust-free and hygienic surface.
6. Cement concrete roads do not generate corrugations, so they provide a noise-free road surface.
7. Can be designed more accurately for load balancing.
8. Cement concrete roads are virtually independent of weather and temperature.
9. Old concrete roads can be used as the foundation for new concrete roads and bitumen roads.

III. RESULT AND DISCUSSION

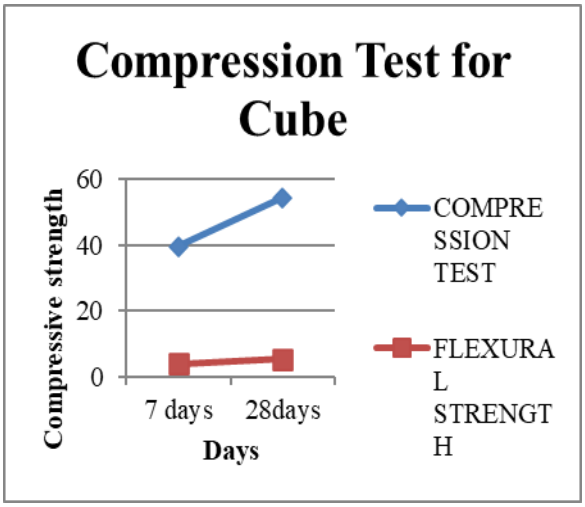
A. Experimental Investigation

In experimental work carried out with flowing test

1. Compressive strength
2. Bending Strength
3. Initial setting time
4. Final setting time
5. Soundness test
6. Standard consistency test

Sample	COMPRESSION TEST	FLEXURAL STRENGTH
	M40	M40
7 days	39.48	3.89
28days	54.23	5.51

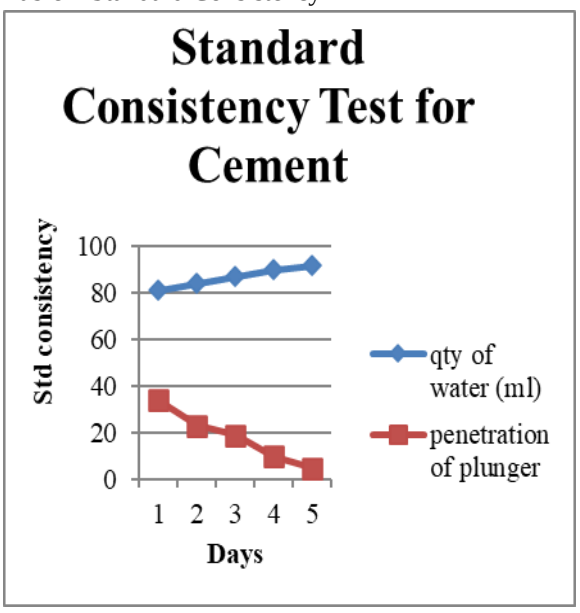
Table 1 Compressive Strength test result



Graph 1: Compressive Strength test result

Sr. no	wt of cement	qty of water (ml)	penetration of plunger
1	300	81	34
2	300	84	23
3	300	87	19
4	300	90	10
5	300	91.5	5

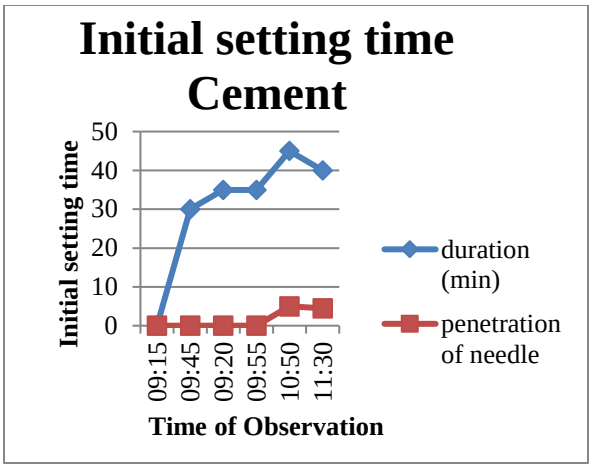
Table 2 Standard Consistency



Graph 2: Standard Consistency

sr.no	time of observation	duration (min)	penetration of needle
1	9:15	0	0
2	9:45	30	0
3	9:20	35	0
4	9:55	35	0
5	10:50	45	5
	11:30	40	4.5
			Avg =185

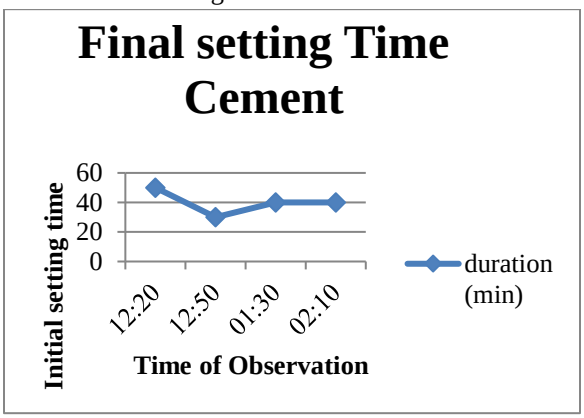
Table 3 Initial setting time



Graph 3 Initial setting time

sr.no	time of observation	duration (min)	point marked of the needle occred
1	12:20	50	y
2	12:50	30	y
3	1:30	40	y
4	2:10	40	N
			FSI =345 Min

Table 4 Final setting time 185 min



Graph 4 Final setting time

Sr. no	description	test 1	Test 2
1	wt of sample	100	100
2	wt of residue in sieve	3.35	2.9
3	fineness of cement	3.35	2.9
	avg	3.13%	

Table 5 Fineness test

sr. no	description	test 1	Test 2
1	Initial dst bet indicator point	14.14	16.53
2	Final dst bet indicator point	15.82	17.54
3	Expansion mm	0.68	1.01
	Avg Expansion	0.845 mm	

Table 6 Soundness test

VI. CONCLUSION

Road concrete pavement works even in poor drainage conditions and avoids wasting resources by repeatedly treating flexible pavement. Proper design of concrete

pavement will definitely help make it durable and inexpensive. Technical facilities need to enhance the design aspects of concrete ceilings for the optimal benefit of the next generation of engineers and scientists.

The pavement is a structure composed of layers of treated material on top of natural subsoil, the main function of which is to distribute the applied vehicle load to the roadbed. The

Sidewalk forms a support structure for road traffic. Each pavement layer must perform a number of functions that must be fully considered during the planning process. Different types of sidewalks can be used depending on traffic requirements. Improperly designed pavement leads to early pavement failures that also affect ride comfort flowing result are concluded in this study

28 days compressive strength of cube is 54.23 Mpa
28 days flexural strength of cube is 5.51 Mpa
Avg initial time 185 min
Ang final time 185 min
Avg fineness of cement = 3.13%
Avg Expansion = 0.845 mm.

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