

Nagpur Classification and Roads Classification Criteria

Nagpur classification

In Nagpur road classification, all roads were classified into five categories as National highways, State highways, Major district roads, Other district roads and village roads.

National highways

They are main highways running through the length and breadth of India connecting major ports, foreign highways, capitals of large states and large industrial and tourist centers including roads required for strategic movements. It was recommended by Jayakar committee that the National highways should be the frame on which the entire road communication should be based. All the national highways are assigned the respective numbers. For e.g. the highway connecting Delhi-Ambala-Amritsar is denoted as NH-(Delhi- Amritsar), where as a bifurcation of this highway beyond Fullundar to Srinagar and Uri is denoted as NH- 1_A. They are constructed and maintained by CPWD. The total length of National highway in the country is 58,112 Kms, and constitute about 2% of total road networks of India and carry 40% of total traffic.

State highways

They are the arterial roads of a state, connecting up with the national highways of adjacent states, district head quarters and important cities within the state. They also serve as main arteries to and from district roads. Total length of all SH in the country is 1,37,119 Kms.

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Major district roads

Important roads within a district serving areas of production and markets, connecting those with each other or with the major highways. India has a total of 4,70,000 kms of MDR.

Other district roads

Roads serving rural areas of production and providing them with outlet to market centers or other important roads like MDR or SH.

Village roads

They are roads connecting villages or group of villages with each other or to the nearest road of a higher category like ODR or MDR. India has 26,50,000 kms of ODR+VR out of the total 33,15,231 kms of all type of roads.

Roads classification criteria

Apart from the classification given by the different plans, roads were also classified based on some other criteria. They are given in detail below.

Based on usage

This classification is based on whether the roads can be used during different seasons of the year.

All-weather roads: Those roads which are negotiable during all weathers, except at major river crossings where interruption of traffic is permissible up to a certain extent are called all weather roads.

Fair-weather roads: Roads which are negotiable only during fair weather are called fair weather roads.

Based on carriage way

This classification is based on the type of the carriage way or the road pavement.

Paved roads with hard surface : If they are provided with a hard pavement course such roads are called paved roads.(eg: stones, Water bound macadam (WBM), Bituminous macadam (BM), concrete roads)

Unpaved roads: Roads which are not provided with a hard course of at least a WBM layer they are called unpaved roads. Thus earth and gravel roads come under this category.

Alignment

The position or the layout of the central line of the highway on the ground is called the alignment. Horizontal alignment includes straight and curved paths. Vertical alignment includes level and gradients. Alignment decision is important because a bad alignment will enhance the construction, maintenance and vehicle operating costs. Once an alignment is fixed and constructed, it is not easy to change it due to increase in cost of adjoining land and construction of costly structures by the roadside.

Requirements

The requirements of an ideal alignment are

The alignment between two terminal stations should be short and as far as possible be straight, but due to some practical considerations deviations may be needed.

The alignment should be easy to construct and maintain. It should be easy for the operation of vehicles. So to the maximum extent easy gradients and curves should be provided.

It should be safe both from the construction and operating point of view especially at slopes, embankments, and cutting. It should have safe geometric features.

The alignment should be economical and it can be considered so only when the initial cost, maintenance cost, and operating cost are minimum.

Source : <http://nprcet.org/e%20content/Misc/e-Learning/CIVIL/IV%20SEMESTER/CE2255%20-%20Highway%20Engineering.pdf>