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**SPACE STANDARDS
FOR
ROADS IN URBAN AREAS**



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SPACE STANDARDS FOR ROADS IN URBAN AREAS

1. INTRODUCTION

The Space Standards for Roads in Urban Areas were approved by the Traffic Engineering Committee (personnel given below) in their meeting held on the 7th December, 1976:

H.C. Malhotra
Dr. N.S. Srinivasan

—Convenor
—Member-Secretary

MEMBERS

Prof. G.M. Andavan	J.R. Patwardhan
A.K. Bandopadhyaya	S.M. Parulkar
A.K. Bhattacharya	Dr. K.S. Pillai
Prof. H.U. Bijlani	S. Ramanatha Pillai
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Dr.N.V.A. Narasimham	P.R. Wagh
M.S. Nerurkar	Director General (Road Development), <i>Ex-officio</i>
M.D. Patel	

These standards were then processed by the Specifications & Standards Committee in their meeting held on the 16th May, 1977. These were later approved by the Executive Committee and finally by the Council in their 90th meeting held on the 29th July, 1977.

2. SCOPE

2.1. The function of a network of urban roads is to ensure safe and efficient circulation of traffic. To achieve this, through traffic routes should not be used for direct access to buildings, or even to minor roads serving the buildings, because in that case not only the capacity of the through routes will be reduced but the intersections will also be unsafe. Moreover, the heavy volume of

traffic on through routes will affect the environmental characteristics and safety of the residential areas.

2.2. In the interest of efficient road transportation, which effectively serves the various land uses in an urban area and at the same time ensures logical community development, it is desirable to establish a network of roads divided into different classifications, each system serving a particular function or purpose. The principal factors to be considered in designating roads into appropriate classifications are the existing and proposed land uses, overall travel demand, pattern of movement by various modes of transportation, safety of traffic, environmental considerations etc.

2.3. These standards deal with classification of streets in urban areas into different systems and their right-of-way i.e. space requirements.

2.4. The standards pertain to urban roads in plains only.

3. DEFINITIONS

3.1. Expressway

A divided arterial highway for motor traffic with full or partial control of access and provided generally with grade separations at intersections.

3.2. Arterial Highway/Street

A general term denoting a highway/street primarily for through traffic usually on a continuous route.

3.3. Sub-arterial Highway/Street

A general term denoting a highway/street primarily for through traffic usually on a continuous route but offering somewhat lower level of traffic mobility than the arterial street.

3.4. Collector Street/Road

A street or road for collecting and distributing traffic from and

to local streets/roads and also for providing access to arterial streets/roads.

3.5. Local Street/Road

A street or road primarily for access to residence, business or other abutting property.

4. CLASSIFICATION OF STREETS

Roads in urban areas should be classified into the following general types :

- (i) Expressways;
- (ii) Arterial streets;
- (iii) Sub-arterial streets;
- (iv) Collector streets; and
- (v) Local streets.

5. FUNCTIONS OF THE DIFFERENT STREET SYSTEMS

5.1. Expressways

The function of expressways is to cater for movement of heavy volumes of motor traffic at high speeds. They connect major points of traffic generation and are intended to serve trips of medium and long length between large residential areas, industrial or commercial concentrations, and the central business district. They are divided highways with high standards of geometrics and full or partial control of access. They are generally provided with grade separations at intersections. Parking, loading and unloading of goods and pedestrian traffic are not permitted on these highways.

5.2. Arterial Streets

This system of streets, along with expressways where they exist, serves as the principal network for through traffic flows. Significant intra-urban travel such as between central business district and outlying residential areas or between major suburban centres takes place on this system. Arterial streets should be co-ordinated with

existing and proposed expressway systems to provide for distribution and collection of through traffic to and from sub-arterial and collector street systems. Continuity is essential for arterial streets to ensure efficient movement of through traffic. A properly developed and designated arterial street system would help to identify residential neighbourhoods, industrial sites and commercial areas. These streets may generally be spaced at less than 1.5 kms in highly developed central business areas and at 8 kilometres or more in sparsely developed urban fringes. The arterial streets are generally divided highways with full or partial access. Parking, loading and unloading activities are usually restricted and regulated. Pedestrians are allowed to cross only at intersections.

5.3. Sub-arterial Streets

These are functionally similar to arterial streets but with somewhat lower level of travel mobility. Their spacing may vary from about 0.5 km in the central business district to 3 to 5km in the suburban fringes.

5.4. Collector Streets

The function of collector streets is to collect traffic from local streets and feed it to the arterial and subarterial streets or vice versa. These may be located in residential neighbourhoods, business areas and industrial areas. Normally, full access is allowed on these streets from abutting properties. There are few parking restrictions except during the peak hours.

5.5. Local Streets

These are intended primarily to provide access to abutting property and normally do not carry large volumes of traffic. Majority of trips in urban areas either originate from or terminate on these streets. Local streets may be residential, commercial or industrial, depending on the predominant use of the adjoining land. They allow unrestricted parking and pedestrian movements.

6. SPACE REQUIREMENTS OF DIFFERENT CATEGORIES OF STREETS

6.1. The overall land width required for different road categories will depend on a number of factors, for instance present and anticipated traffic, land use pattern, likely future developments, predominant means of travel etc.

6.2. The recommended range of land width for different classes of streets is given in Table 1.

TABLE 1 RECOMMENDED LAND WIDTH FOR STREETS IN URBAN AREAS

<i>Category of street</i>	<i>Recommended land width in metres</i>
Expressways	50-60
Arterial Streets	50-60
Sub-arterial Streets	30-40
Collector Streets	20-30
Local Streets	10-20

7. TYPICAL CROSS-SECTIONS

7.1. Typical cross-sections of different classes of streets are shown in Figs. I to 11. These are meant only for general guidance. Cross-sections for particular situations should be determined on the basis of nature and intensity of traffic and other requirements. Cross-sections may be developed in stages according to needs.

7.2. The cross-sections shown will be adequate for general requirements, such as plantation of roadside trees, accommodation of utility services and side drains. But if there is a need to provide additional facilities, overall dimensions should be suitably increased.

