



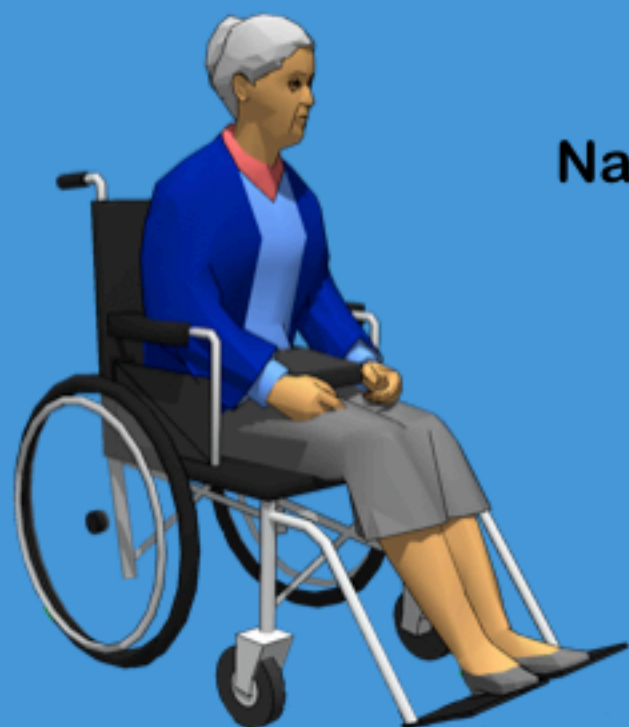
EMA
Enable Me Access



Accessibility as defined in the Laws and Building Standards of India

A graphic“explainer” manual for the

National Building Code 2016 & The Rights of Persons With Disabilities Act 2016



Contact:

info@EnableMe-Access.com +91 9825 368400 (Whatsapp)



1. National Building Code 2016

Why does the National Building Code and the Building Bye Laws (General Development Control Regulations) have sections specifically for features which make buildings accessible for persons with disabilities?

The reasons are simple. As the principles of Universal Design, which has been adopted worldwide, has still not been accepted or at least implemented in India there had been need for adapting the laws to fit the requirements. So the built environment standards applying to accessibility are provided in a separate section. This is less than ideal as it gives more leeway for unscrupulous building practices which ignore the needs of those with disabilities.

The National Building Code 2016 is the reference document to which all other building laws must defer to. The building bye laws (GDCR) are a legal requirement. Failure to comply with building bye-laws is an offence which can incur serious penalties. Government policy specifically requires that the bye-laws include the NBC Annex B clauses.

As of 2017 it is illegal to make any construction that is not compliant with the accessibility clauses in the Bye-Laws and in the Rights of People With Disabilities Act 2016.

13 REQUIREMENTS FOR ACCESSIBILITY IN BUILT ENVIRONMENT FOR ELDERLY AND PERSONS WITH DISABILITIES

13.1 General

13.1.1 These requirements deal with barrier free access to, movement within and around buildings, by the elderly persons and persons with disabilities who may have non-ambulatory disabilities, ambulatory disabilities, sight disabilities, hearing disabilities, disabilities of in coordination, ageing, allergies, heart and lung diseases, epilepsy, haemophilia, incontinence, enterostomy, etc.

It is intended to make all buildings and facilities used by the public accessible to, and usable by all people including those living with disabilities and may include those with inability to walk or difficulty in walking, reliance on walking/mobility aids, blindness and visual impairments, speech and hearing impairments, in- coordination of motor movements, reaching and manipulation, lack of stamina, difficulty in interpretation and reacting to sensory information and extremes in physical sizes. It supplements the general requirements of this Part of the Code, and reflects greater concern for safety of life and limb of every resident irrespective of age, gender or abilities.

13.1.2 These requirements apply to all buildings and facilities open to and used by the public. These shall also apply to all forms of public housing by the government/civic bodies or private developers. It does not apply to private residences. For extent of application of requirements covered under 13 to different building occupancy types, reference shall be made to 13.5.

13.1.3 The reference to the accessibility needs of persons with disabilities, made in this Part shall also mean a reference to such needs of the elderly persons, children and persons of too short stature in so far as the concerned provision is applicable to the type of disabilities that may be associated therewith.

13.2 For the purpose of this clause, the following definitions shall apply.

13.2.1 Ability identifiable human attribute, including but not exclusively, to walk, to speak, to hear, to see, to feel by touch, to taste, to understand, and to recognise.

13.2.2 Access Aisle An accessible pedestrian space between elements, such as parking spaces, seating and desks, that provides clearances appropriate for use of the elements

13.2.3 Accessible Site, Building, Facility or Portions A site, building, facility, or portions thereof that complies with the requirements given in this clause to which people, regardless of their disability, age or gender are able to gain access to, in to them, to use them and exit from them with dignity.

NOTE Accessibility includes ease of independent approach, entry, evacuation and/or use of a building and its services and facilities, by all of the buildings potential users with an assurance of individual health, safety and welfare during the course of those activities.

13.2.4 Accessible Route A continuous unobstructed path connecting all accessible elements and spaces in a building or facility that may be negotiated by a person with disability using a wheelchair and that is also safe for and usable by persons with other disabilities. Interior accessible routes may include corridors, ramps, elevators, lifts, and clear floor space at fixtures. Exterior accessible routes may include parking, access aisles, kerb ramps, walkways, pathways, footpaths/sidewalks, and ramps.

13.2.5 Accessible Toilet A compartment having the basic requirements of minimum clear spaces, water- closet, washbasin and other essential washroom accessories as required by people with non-ambulatory disabilities. There are also toilets for ambulant disabled which provide accessibility for convenient use by persons with ambulatory disabilities.

13.2.6 Ageing Those manifestations of the ageing processes that significantly reduce mobility, flexibility, coordination, and perceptiveness but are not accounted for in disability categories mentioned elsewhere in this Part.

13.2.7 Area of Rescue Assistance Building space directly adjoining, and visible from, a main vertical evacuation route, robustly and reliably protected from heat, smoke and flame during and after a fire, where people can temporarily wait with confidence for further information, instructions, and/or rescue assistance, without obstructing or interfering with the evacuation travel of other building users

NOTE Robust means structurally hardened and resistant to mechanical damage during the fire and for a period of time afterwards, that is, the cooling phase.

13.2.8 Assistive Product/Device Product/device especially produced or generally available, for preventing, compensating for, monitoring, relieving or neutralising impairments, activity limitations and participation restrictions.

13.2.9 Assisted Evacuation Strategy that exists during which a designated person or persons provide assistance, during an emergency, to another person to leave a building or a specific part of the built environment and to reach a final place of safety.

13.2.10 Automatic Door A door equipped with a power operated mechanism and controls that open and close the door automatically upon receipt of a momentary signal. The switch that begins the automatic cycle may be photo-electrical device, floor mat, sensing device, or manual switch mounted on or near the door itself.

2. Parking Introduction

For disabled people it might seem obvious why they need reserved parking as they face the challenges of their disabilities every day. Those who do not face these challenges usually have no practical experience of these access problems. There are no examples of disabled people in the media so those who do not have a personal connection with someone with disabilities has no idea of their burdens in travelling and parking.

Here is a familiar scenario. You are invited to a movie and you are excited to go there with your friends. You arrive just in time and take your vehicle to the parking area and quickly make your way to the theatre, maybe collecting your tickets on the way. Now that sounds simple and nothing really could go wrong with this could it? Well maybe but....What if the circumstance were slightly changed.

Let's say you have decided to take your grandmother because the movie stars her favourite actor and you know it will be fun listening to her old story of how their paths once crossed. Now your grandmother was badly injured in an accident a few years before and as a consequence she cannot walk far and cannot climb more than a few steps. It is 38° outside. Only you and your grandmother are in the vehicle and you don't like to leave her unattended so the drop down point while useful for most people is not your first option.

What you would really like to do is park in a space nearer to the entrance and preferably in an area covered from the intense heat from the sun.

Now add to this...your cousin who had polio in childhood cannot walk. He also wanted to see the movie. You managed to pick him up from his house. The wheelchair was folded and put in back of the taxi.

When you arrive at the venue you have to take care of your grandmother but your cousin needs help with getting from the car into the wheelchair. All three of you will have to manage the heat for longer and your grandmother may feel weak walking so far unless you can find a space near to the entrance. You ask the security at the gate to the parking area "Where is it the designated accessible parking and entrance for disabled?". The security guard gives you a perplexed look and tells you to go to the available parking plots. He points to a place far from the entrance.

Again you tell ask him adding that, "My cousin cannot walk and needs to use his wheelchair and my mother is a little weak... so guide me to the designated parking for disabled". He again looks confused and consults with his colleagues... you are getting late for the show. He eventually confides that there is nothing like "designated parking" for disabled here and anyway it didn't matter because the road is smooth and the wheelchair can easily pass. Here is the first barrier. It is in this form. The lack of sensitisation of the staff to the needs of persons with disabilities.

Next when you find a parking space it is the standard size. You cannot get the wheelchair in the space between your car and the parked car next to you. Let alone open the door enough to have sufficient space to help him transfer from the car to the wheelchair. This is the second barrier. Standard width parking spaces do not have adequate rooms for wheelchair access.

You have to reverse out and leave your car in the road. As soon as you do this the vehicles behind you start honking their horns. Never mind, you managed to get the wheelchair out and your cousin into it. You park the car while your cousin and grandmother move slowly ahead to the entrance. You catch up and try to guide them out of the way of the impatiently driven vehicles passing by. There is a pathway but your cousin cannot get on to it because there is no kerb ramp. This is the third barrier, an inaccessible route to the entrance.

A safe route from the parking space should prevent vulnerable people from having to use the same routes as vehicles (imagine if your grandmother had insisted on bringing your hyperactive four year old niece how much more dangerous this would have been)!

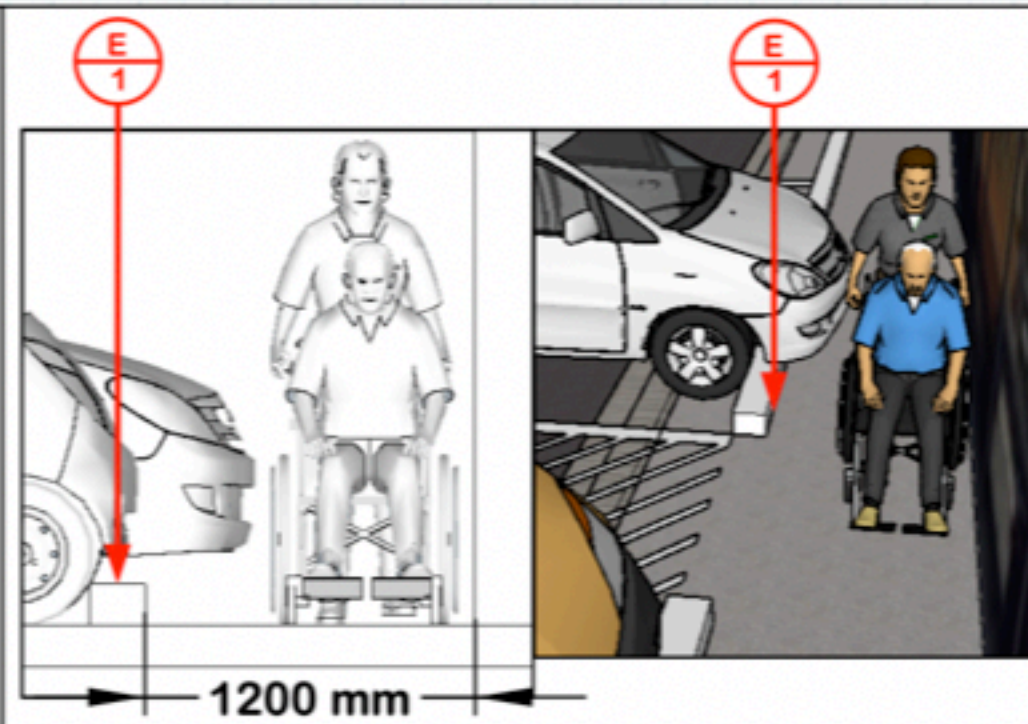
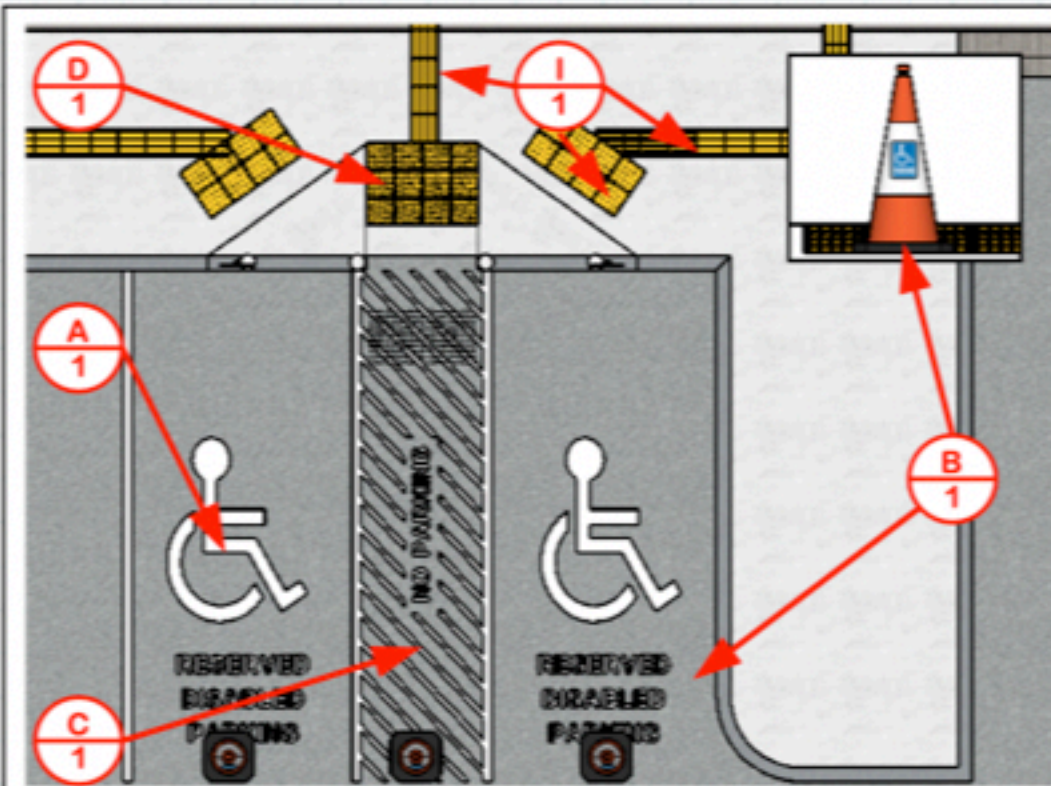
You get to the entrance and you suddenly see the three steps and the narrow security scanner... your heart drops.. you are now seriously late for the start of the movie.

There is no available ramp except one that is steep and slippery. Your cousin wouldn't be able to go up alone and your grandmother would be unstable on this. There are no handrails and you worry your niece will fall off. This is the fourth barrier. No suitable ramp or lift.

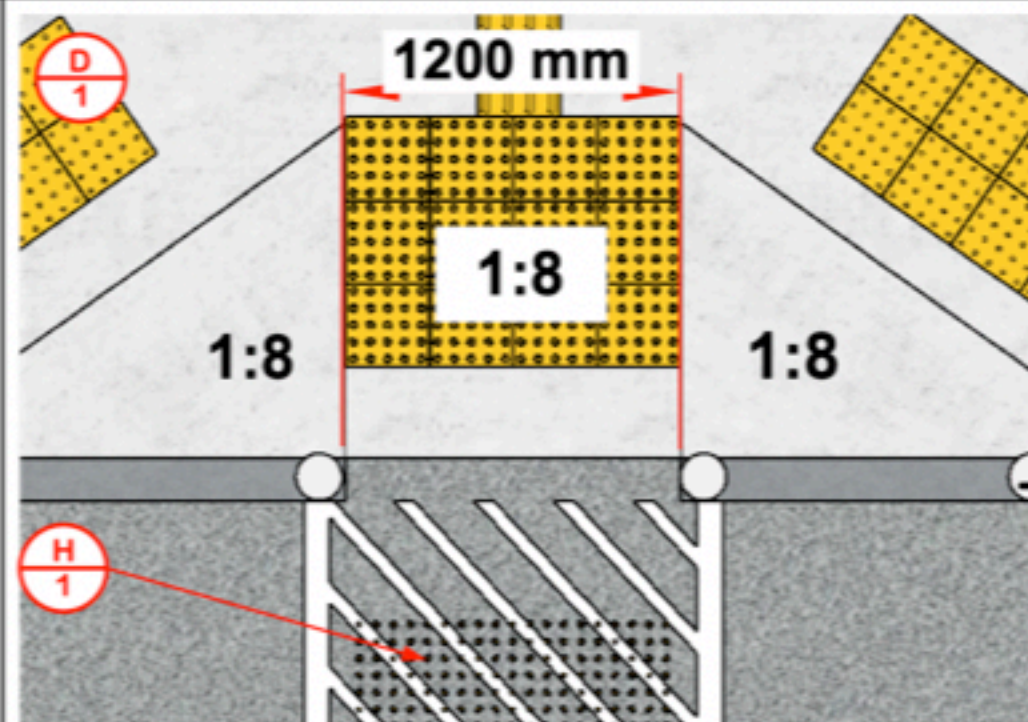
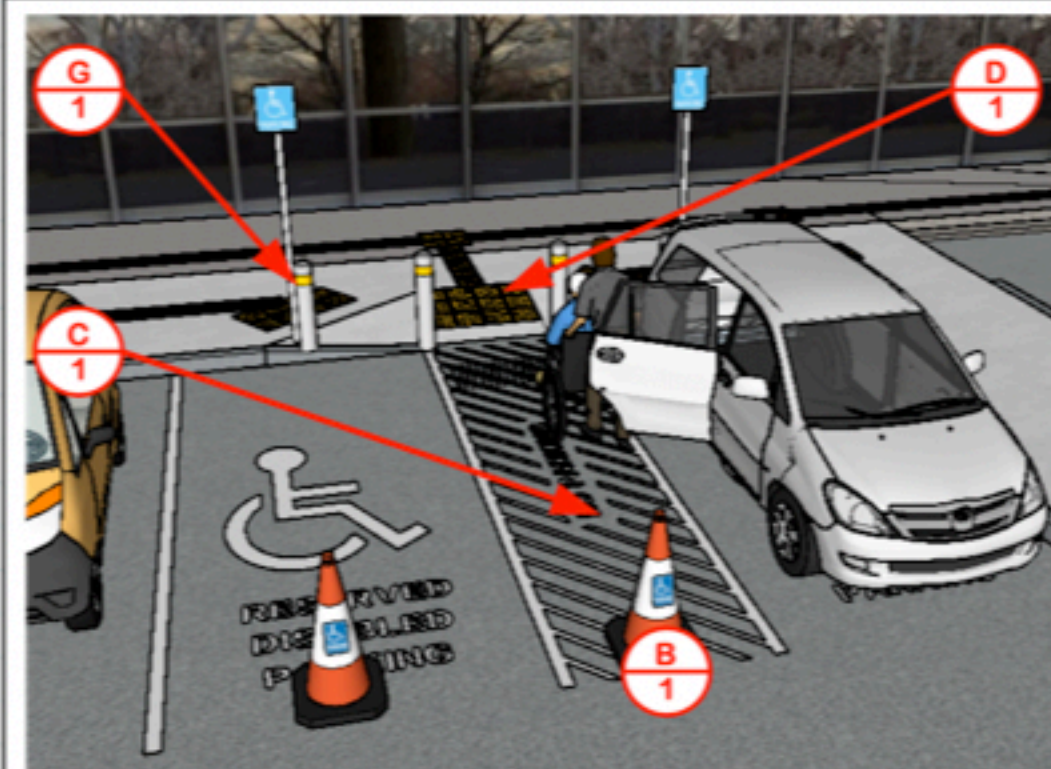
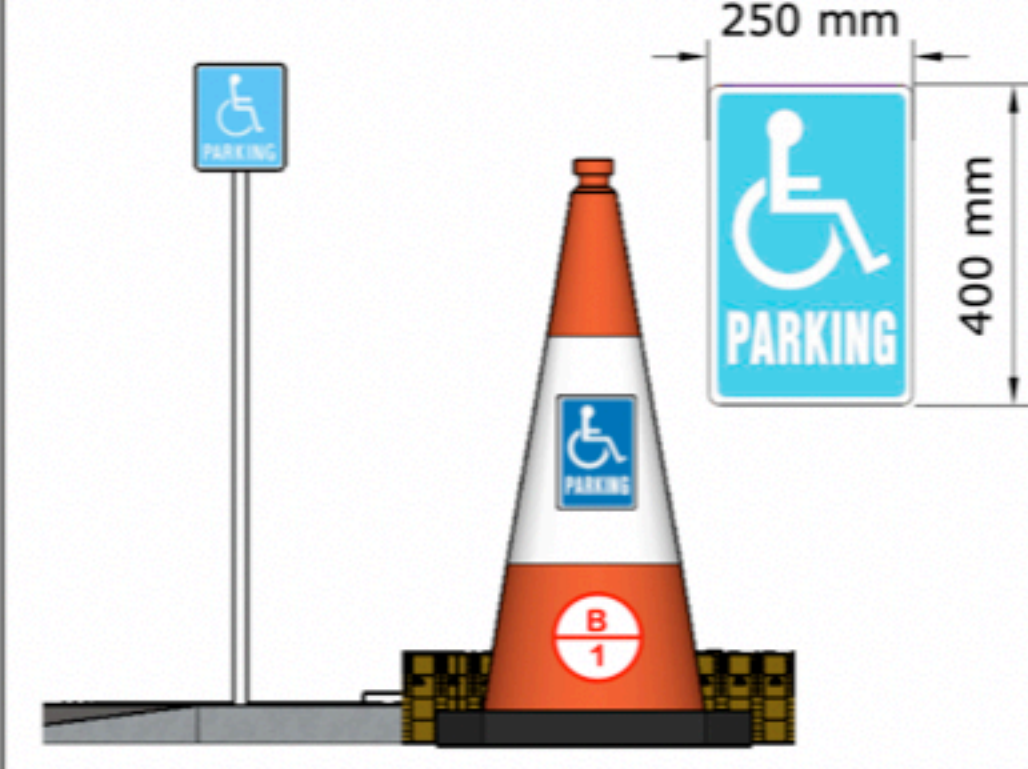
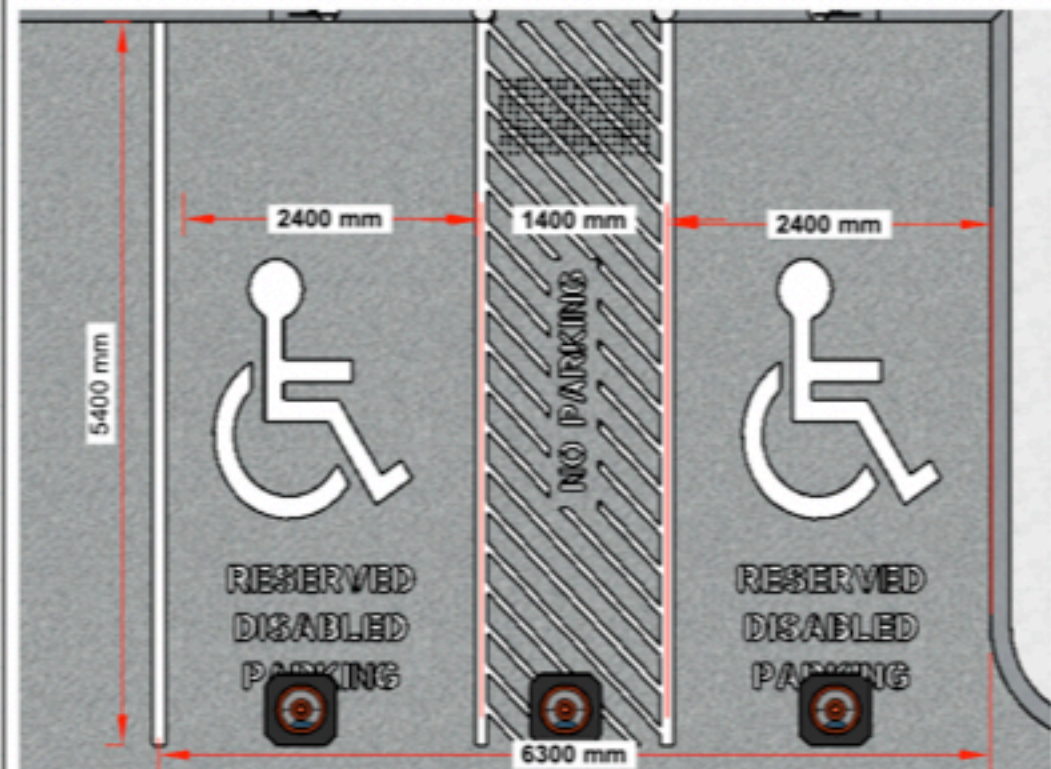
You decide to ask for help to get your cousin up the three steps, Its embarrassing for your cousin and your grandma as the scene gets very complicated and the wheelchair is lifted by a group of sweaty staff. The chair is banged a little which hurts your cousin as he has pressure sores.

Finally you arrive at the movie theatre sweating, embarrassed for your cousin's humiliating experience. So in the end it wasn't so simple and we haven't even discussed the other issues about whether your cousin can drink soft-drinks because he is avoiding going to the toilet!

Accessible Parking



B-3.5.g) Accessible route behind park cars.



B-3.6 Kerb Ramp from Parking Space

OFF-STREET PARKING SPACES (Clauses 10.1 and 10.4) A-1 The off-street parking spaces shall be as given in Table 9.

Sn	Occupancy	Population Less than 50,000	50,000 and 200,000	2,00,000 and 1,000,000	1,000,000 and 5,000,000	Population above 5,000,000
1	2	3	4	5	6	7
i	a) Residential a) Multi-family	-	-	a) 2 tenement of 101 to 200m ²	1 tenement of 100m ² sum of built up area	a) 2 tenement of 75m ²
	b) Lodging establishments, tourist homes and hotels, with lodging	12 Guests rooms	8 guest rooms	b) 1 tenement		b) 1 tenement
ii	Educational (See note 1)	-	-	Of built up area above 200m ²		
				4 guest rooms	3 guest rooms	2 guest rooms
				70m ²	50m ²	35m ²
				Area or part thereof of the administrative office area and public service areas.		
iii	Institutional (Medical)	20 beds (Private) 30 beds (Public)	15 beds (Private) 25 beds (Public)	10 beds (Private) 15 beds (Public)	5 beds (Private) 10 beds (Public)	2 beds (Private) 5 beds (Public)
	a) Assembly halls cinema theatres	120 seats	80 seats	25 seats	15 seats	10 seats
	b) Restaurants	60 seats	40 seats	20 seats	10 seats	5 seats
	c) Marriage halls, community halls	600m ² plot area	400m ² plot area	200m ² plot area	50m ² plot area	25m ² plot area
iv	d) Stadia and exhibition centre	240 seats	160 seats	50 seats	30 seats	20 seats
	e) Sport complex (without stadium), parks and multipurpose open spaces	-	-	1000m ² plot area	500m ² plot area	250m ² plot area
	(a) Business offices and firms for private business	300m ² area or fraction thereof	200m ² area or fraction thereof	100m ² area or fraction thereof	50m ² area or fraction thereof	25m ² area or fraction thereof
	b) business office and firms for private business	500m ² area or fraction thereof	300m ² area or fraction thereof	200m ² area or fraction thereof	100m ² area or fraction thereof	50m ² area or fraction thereof
v	Mercantile (Note 2)	300m ² area or fraction thereof	200m ² area or fraction thereof	100m ² area or fraction thereof	50m ² area or fraction thereof	25m ² area or fraction thereof
vi	Mercantile (Note 2)	300m ² area or fraction thereof	200m ² area or fraction thereof	100m ² area or fraction thereof	50m ² area or fraction thereof	25m ² area or fraction thereof
vii	Industrial	400m ² area or fraction thereof	300m ² area or fraction thereof	200m ² area or fraction thereof	100m ² area or fraction thereof	50m ² area or fraction thereof
viii	Storage	-	-	500m ² area or fraction thereof	250m ² area or fraction thereof	125m ² area or fraction thereof

NOTES

- 1 In the case of auditoria for educational buildings, parking spaces shall be provided as per SI No. (iv).
- 2 For plots u to 50 m, as in the case of shops, parking spaces need not be insisted upon.
- 3 For other institutions, transport/communication centre, parking space requirement shall be assessed based on the proposed building.
- 4 In case of permitted mixed residential-commercial or mixed residential- areas the parking requirements shall be double the
- 5 The requirements specified in this table shall not be applicable for buildings meant for parking alone, including the multi-level car parking buildings which shall be as decided by the Authority.
- 6 Design accessible parking spaces shall be provided in accordance with B-3 for the occupancies specified in 13

I	TGSI Tactile Tiles or Pavers	xxx
H	TGSI Tactile Studs	xxx
G	Bollard	xxx
F	Clear Space	B-2.3.3
E	Wheel Stop	Fig. 39
D	Kerb Ramp	B-3.6
C	Access Aisle	B-3.5.g)
B	Traffic Cone	
A	International Symbol for PWD	B-3.3.f)
ITEM	DESCRIPTION	NBC 2016

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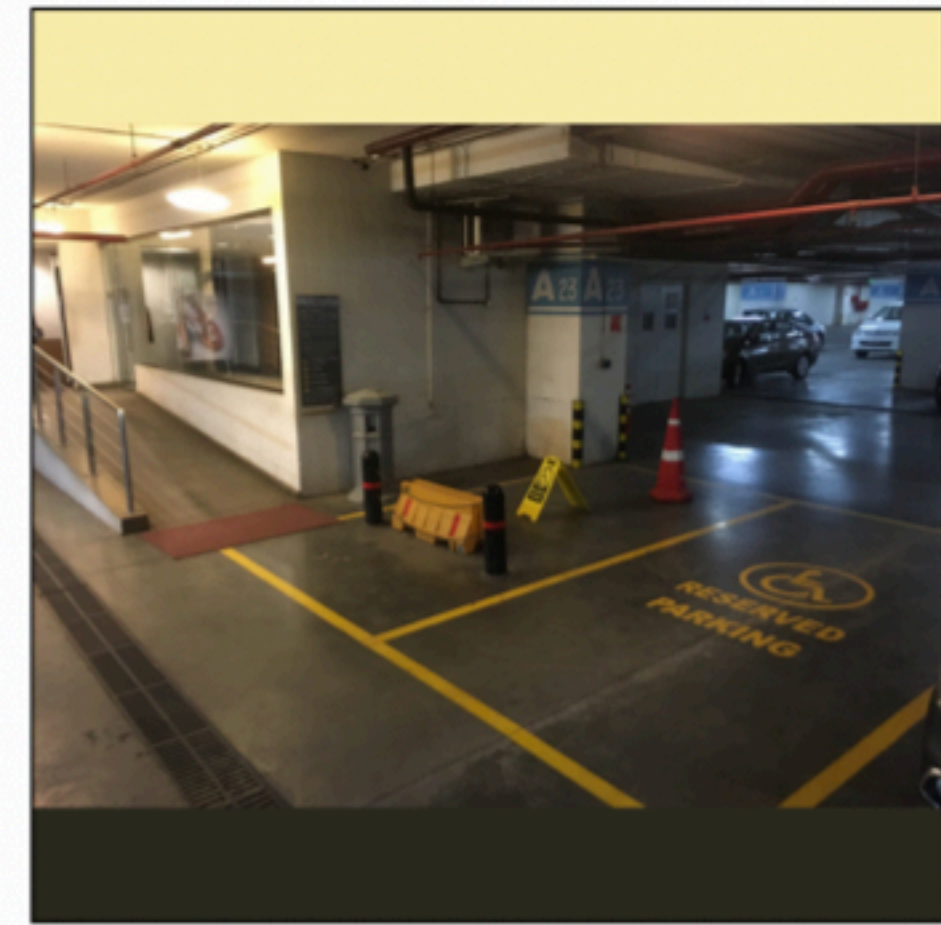
Accessible Parking



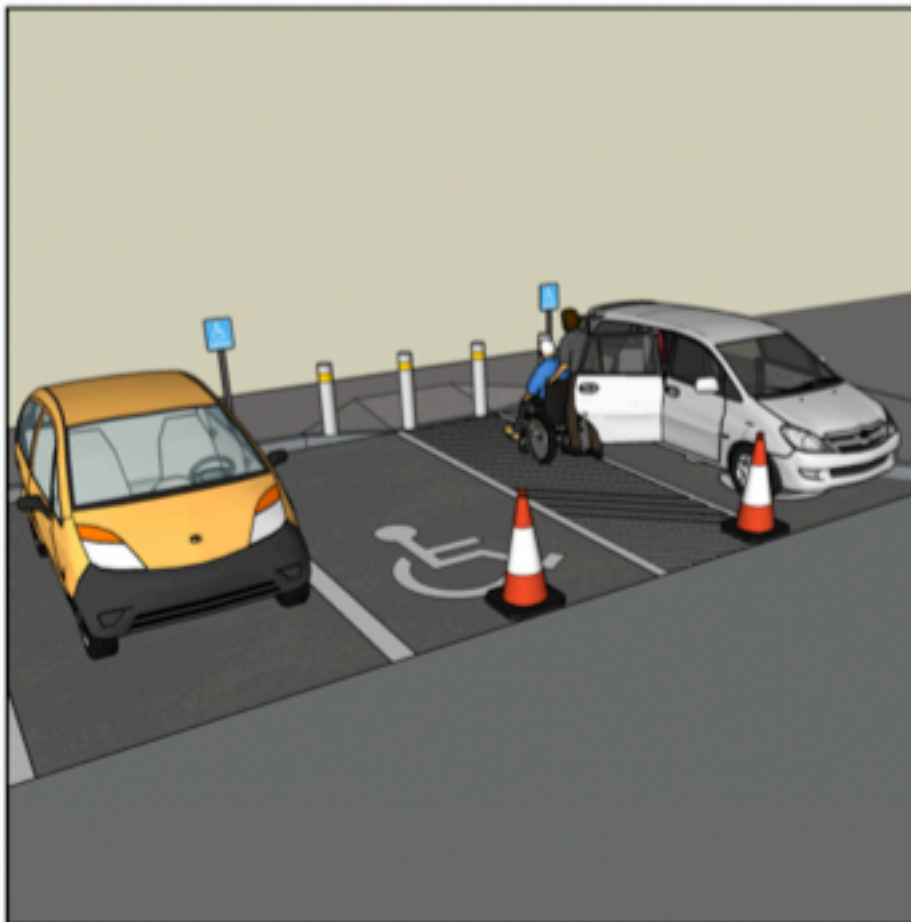
Typical parking arrangement near to entrance.



Typical parking arrangement near to entrance.



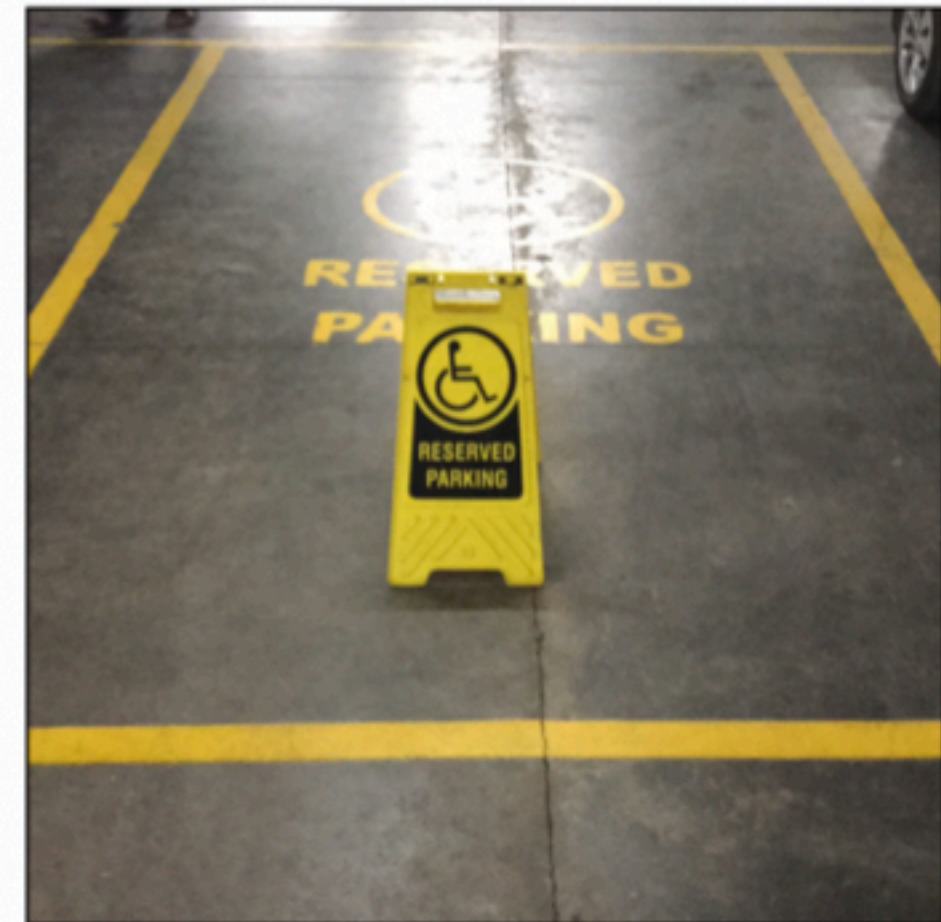
Typical parking arrangement near to entrance.



Typical parking arrangement.



Floor marking with words "reserved".



Traffic cone with words "reserved".

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	Parking Examples	APPROVED	2/3

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Accessible Parking

B-3 DESIGNATED ACCESSIBLE PARKING SPACE

13.2.2 Access Aisle An accessible pedestrian space between elements, such as **parking spaces**, seating and desks, that provides clearances appropriate for use of the elements

13.2.4 Accessible Route A continuous unobstructed path connecting all accessible elements and spaces in a building or facility that may be negotiated by a person with disability using a wheelchair and that is also safe for and usable by persons with other disabilities. Interior accessible routes may include corridors, ramps, elevators, lifts, and clear floor space at fixtures. Exterior accessible routes may include parking, access aisles, kerb ramps, walkways, pathways, footpaths/sidewalks, and ramps.

13.3.3 Key Accessibility Issues

Entering, using and evacuating buildings should be safe and easy for individuals, families and groups which include persons with disabilities. The main considerations are as follows:

13.3.3 2) Designated vehicular parking near the main entrance

13.4 Various key accessibility issues shall be taken into account for ensuring accessibility in built environment in accordance with the provisions given in Annex B in regard to anthropometrics and specific requirements on site planning and development, designated accessible parking space,

Table 7 Key Accessibility Issues

(Clause 13.3.3) i) Equitable approach to a building, for example designated parking, clear pedestrian routes separate from vehicles and cyclists, no steps or obstacles, short distances from parking and public transport, good signage, good lighting and good contrast

Table 8 Minimum Accessibility Provisions in Different Building Occupancies (Clause 13.5) i) Residential

Public housing including low income housing and housing developed by private developers

a) All common and communal areas, such as, approach, entrances/exits, lifts, stairs, lobbies, clubs, religious facilities, parking, sports facilities/parks and recreation areas, etc, and associated sanitary and other facilities therein.

vi) Public transit buildings Bus terminus, airports, railway/metro stations, organized inter-change points/transit junctions, taxi stands. All public areas used by passengers and staff including but not limited to drop off areas, parking, boarding/transfer areas, waiting areas/lounges, custom areas, baggage halls, booking halls, inquiry offices, ticket counters, shops, banks, etc.

(Clauses 10.1 and 10.4) OFF-STREET PARKING SPACES

A-1 The off-street parking spaces shall be as given in Table 9.

B-2.2 Walkways and Pathways B-2.2.1 General

n) Wherever walks cross other walks, driveways, or parking lots, they shall blend to a common level.

B-2.3.3 Width

The kerb ramp shall not be less than **1 200 mm** in width. It shall provide a clearance of at least **800 mm** at the back of the kerb ramp on the footpath (see Fig. 29).

B-2.6.1 Barriers and Hazards

Bollards, short vertical posts generally arranged in a line to guide traffic and protect from vehicle intrusions, shall have a maximum height of **1000mm**. Bollards, where installed within the access route shall have a minimum clear spacing between them of **1000mm** so as to provide clear passage width for movement of wheelchairs.

B-3 DESIGNATED ACCESSIBLE PARKING SPACE

B-3.1 Location of Parking

The designated accessible parking spaces that serve a building shall be located as near as possible to the main entrance, and the distance from the accessible parking space to the main entrance shall not be more than **30m**.

In case the access is through lift, the parking shall be located within 30 m of the lift lobby. Kerb ramp from parking space to an adjacent higher pedestrian path shall be provided in accordance with B-3.6.

Where indoor parking is provided, a suitable passenger lift or separated pedestrian ramp shall be installed to provide access from the parked vehicle to the principal entrance of the building or buildings served by the car parking.

B-3.2 Number of Designated Accessible Parking Spaces

The following minimum requirements concerning the number of parking places shall apply:

a) A minimum of one accessible designated parking space shall be provided in every parking area;

b) For up to **10** parking spaces, one designated accessible parking space shall be provided;

c) For up to **25** parking spaces, two designated accessible parking space shall be provided;

d) For up to **50** parking spaces, three designated accessible parking spaces shall be provided;

e) For up to **100** parking spaces, four designated accessible parking spaces shall be provided;

f) For up to **200** parking spaces, six designated accessible parking spaces shall be provided; and

g) For over **200** parking spaces, six designated accessible parking spaces for 200 parking spaces and one for each additional **100** parking spaces shall be provided.

In specialised facilities such as health care facilities, shopping areas and recreational facilities, a greater number of designated accessible parking spaces should be considered.

B-3.3 Signage for Parking

Signage for designated accessible parking spaces shall meet the following requirements:

a) International symbol of accessibility shall be displayed at approaches and entrances to car parking to indicate the provision of accessible parking lot for persons with disabilities within the vicinity.

b) Directional signs consisting of arrows combined with the international symbol of accessibility shall be placed along the route leading to the accessible parking lot (see Fig. 36).

c) Directional signs shall also be displayed to direct persons with disabilities to the accessible parking lot at points where there is a change of direction, or where the location of the accessible parking lot is not obvious or is distant from the approach viewpoints.

d) Accessible parking lot shall be identifiable by the International Symbol of Accessibility placed vertically. The signs shall not be obscured by a vehicle parked in the designated lot.

e) A vertical sign shall be provided, and to make it easily visible, the sign shall be at a minimum height of **2100mm**. This height is to ensure that the sign does not get hidden behind large vehicles in the parking (see Fig. 37).

f) International symbol of accessibility shall be clearly marked/painted on the floor surface of the designated accessible parking lot for drivers/riders with disabilities only. The symbol painted on the designated lot shall comply the following:

1) A square with dimensions of at least **1000mm** but not exceeding **1500mm** in length;

2) Located at the centre of the parking lot; and

3) Colour of the symbol shall be in contrasting colour scheme of blue and white (see B-24.2.16 and Fig. 105).

B-3.4 Car Park Entrance and Parking Controls

The car park entrance shall have a height clearance of at least **2600mm**.

If payment machine is provided, it shall provide all control at the height between **800mm** and **1000mm** (see B-7).

Access to the machine shall be level along an accessible route and easy to operate. The machine shall be located so that it does not create a hazard or barrier for persons with disabilities.

B-3.5 Accessible Car Parking Space Dimensions and Surface Requirements

The accessible car parking space shall meet the following requirements:

a) The minimum width of the parking space for a car shall be **3900mm** and the minimum length shall be **5400mm**. This minimum width includes the transfer area beside the car with a minimum of **1500mm**.

b) Two accessible parking spaces with one shared transfer area are widely used and shall have a minimum width of **6300mm** (see Fig. 38).

c) It shall have a firm, level surface without aeration slabs.

d) Wherever possible, it shall be sheltered.

e) The transfer zones, both on the side and the rear should have yellow or white cross-hatch road markings (see also Fig. 38).

f) The designated accessible parking spaces shall be located on a gradient not greater than **1:50**, throughout its length and its width.

g) The accessible route of **1200mm** width shall be provided for wheelchair users to pass behind vehicle that may be backing out (see Fig. 39).

h) Parking space along the footpath/sidewalk For road side parking of an accessible van, the minimum dimensions shall be **9000mm x 2400mm** with a kerb to access the nearest footpath/sidewalk (see Fig. 40).

i) Van parking with auxiliary movable ramps

j) The size and design of accessible vehicles may vary as some are fitted with ramps or hoists at the side or at the rear. The minimum width of the accessible parking space for a van shall have at least the same dimensions as for car parking spaces (see Fig. 37). Transfer areas between spaces may be shared.

For multi-purpose vehicles with hoists or lifts, more space is needed; at least an additional **2400mm** area beside the van and/or at the rear of the van may be required. The dedicated parking space in this case shall be **4800mm wide and 9000mm long** (see Fig. 38 and Fig. 40 for different types of designated parking spaces).

As an alternative, a parking space of **2400mm wide x 9000mm** in length along a footpath may be used, provided the footpath is at least **2400mm** wide as shown in Fig. 39.

B-3.6 Kerb Ramp from Parking Space to an Adjacent Higher Pedestrian Path

The kerb ramp should be located in close proximity to the designated accessible parking area connecting the accessible path of travel to the main entrance.

The kerb ramp width should be a minimum of **1000mm**.

The gradient of the kerb ramp should consider the requirements in B-2.3. Kerb ramps shall have a slip-resistant surface. The accessible path to the kerb ramp can be marked with hatching painted on the road surface to prevent people from parking in this area (see Fig. 38).

B-24.2.16 Graphical Symbols

The following accessible graphical symbols shall be used to denote particular components of a facility. The following facilities for disabled persons shall be marked as:

a) Those relating to people with mobility impairments, 1) car parking places (parking places, garages):