Features required in special wheel chair accessible bus for Sandnya Sanwardhan Sanstha, Nagpur-440015

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The concept of this special bus is for a student with multiple disabilities who cannot use the wheel chair by himself. He gets in to the wheel chair in his home. His parent carries him to the nearest pick up point. At this pick up point his wheel chair itself gets hoisted in to the bus. This wheel chair then taken to the specific slot by the bus attendant and gets locked in to the floor of the bus. On reaching the Sandnya Srushti school campus, the wheel chair is taken out with student seated in it. He further goes to his class on the same wheel chair & attends the school for the whole day and is back in the evening on same wheel chair. This whole drill is meant to eliminate the need of physically handling the disabled student. This is to give due dignity to these less fortunate students who are not self advocates.

There are 4 distinct parts of this special bus to be designed:

1] Body of the bus.
3] Floor of the bus with locking device.
4] Wheel chair hoisting in built device [Hydraulically operated].

Proposed bus to be built on Eicher bus chassis model 10.90 L
Wheel base -- 5165mm
FOH -- 1080mm
ROH -- 3099mm
Overall length --9344mm
Overall width --2160mm
Overall height --2750mm

1] Proposed number of wheel chairs to be accommodated --14-15
2] 2 seats for attendants.
3] Hydraulic built in platform lowering & lifting arrangement
4] Lowered platform should come to ground so as to roll on the wheel chair with student.
5] During the lifting of the platform, door should get closed automatically & the process should be visible to the driver since he will have the control for the lifting device.
6] Once inside, wheel chair should get locked in the respective slot.
7] Locking of wheel chair in the floor of the bus should be easy enough for the attendant to use but should be sturdy enough to last for long time like 10 to 15 years.
8] This locking device should be compatible with RTO rules.
9] Space for firefighting equipment.
10] Space for school bag.
12] Wheel chair access should be on left side i.e. opposite driver side.

**Wheel chair design and features:**
1] Wheel chair should be sturdy structure.
2] Wheel chair should be compatible with normal bus seat as per RTO safety regulations.
3] Wheel chair should be usable on hard and moderately soft ground.
4] Weight of wheel chair should be reasonable, so that parent of the students can carry it inside home { on 1st or 2nd flr. }.
5] Wheel chair will have two cross adjustable seat belt for safety.
6] Detachable head rest
7] Wheel breaks

Dimensions of wheel chair:
For normal height&weight 8seats
1] Inner width --- 16 inch
Total length front to back 36 inch
Seat to foot rest 16 inch
For younger group 8
2] inner width --- 13 inch
Rear wheel dia -- 23 inch
Front wheel dia -- 10 inch