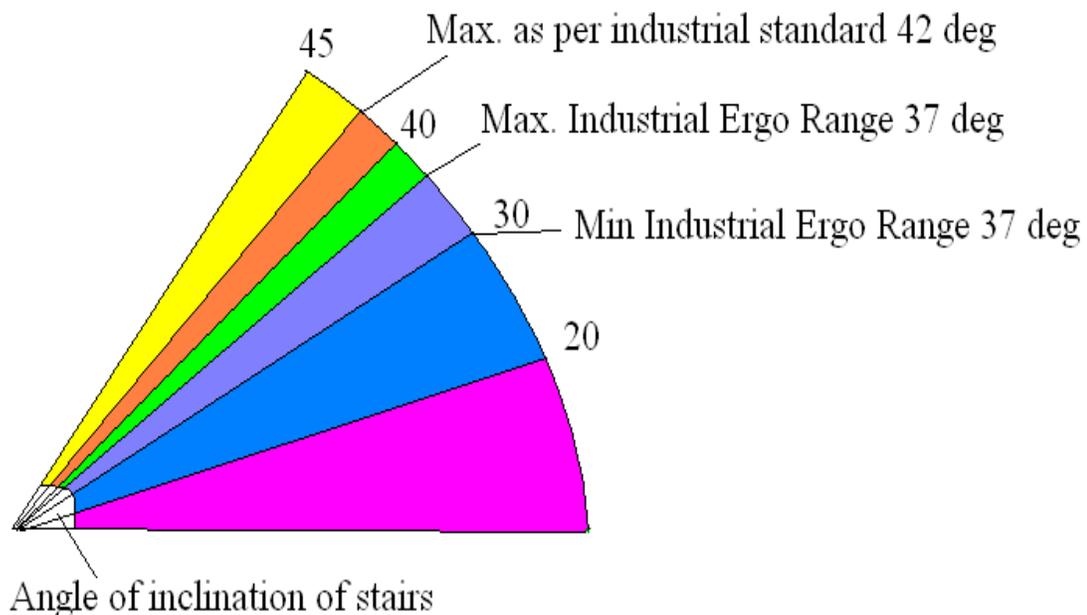


# Use of staircase on daily basis either at home or in industrial premise

Good ergonomically design staircase is essential to improve overall occupational health and safety.

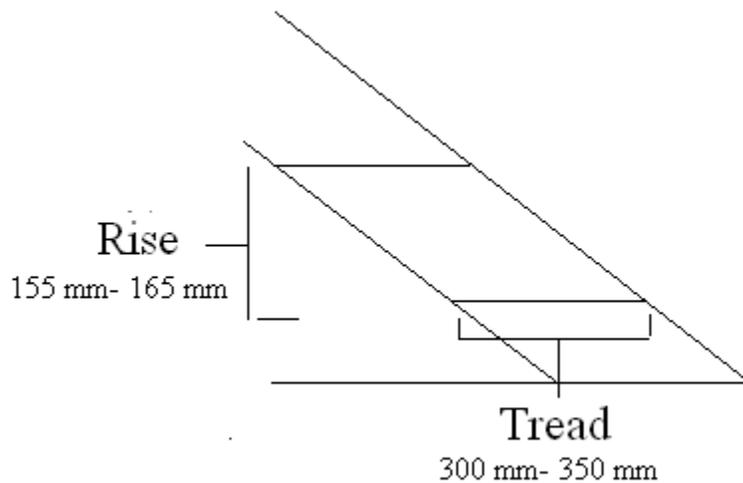
## Update on Ergonomic Staircases

Ergonomic staircases are designed in such a way that it reduces the fatigue while climbing through stairs. It also provides a necessary support to the person walking by provision of suitable hand rails. The staircase must have proper illumination nearby. This helps the person walking on the stairs to have a distinct vision of each step. As per the industrial standards, the following picture represents the requirements of ergonomic stairs with respect to their inclination.



### Angle of inclination for ergonomically safe stairs

Ergonomic staircases should have steps that provide full heel support for all sizes of feet. This helps in relieving pressure on toes thereby providing with negligible fatigue. The rise (height of each step) should be in the range of 155 mm to 165 mm. The tread (width of step) should be in the range of 300 mm to 350 mm.



Rise and tread of ergonomic stairs

### Safety Guidelines:

- 1) Person should ascend and descend normally (not hastily)
- 2) Wider tread automatically supports the heel and reduces fatigue
- 3) Staircase is perfectly safe if you-
  - a) do not run up the staircase
  - b) do not take two steps at a time

### **Common problems found**

- Steep staircases
- Improper hand rails (corroded or broken and improper shape)
- Improper tread (footings) of steps and covered with debris
- Loose foundation
- Staircase corrosion (liquor tanks)

### **Causes of tipping**

- Hand rails not proper
- Treads of shorter width
- Steep staircases
- Improper illumination

### **Recommendations**

- Decreasing the angle of staircases wherever possible
- Provision of anti-slip tread on very steep staircases, where the angle cant be decreased
- Or providing alternating tread stairs
- Providing corrosion resistant coating in corrosion prone areas

## Anti Slip Tread



- Anti slip treads can be used to provide additional grip on the steps which are very steep.
- This may prevent slipping on stairs which are in general slippery in nature.
- These treads can also be used in the areas where there is insufficient illumination as it can be seen in the figure above.

## Alternating Tread Stairs



- A steep staircase can be comfortable while going upward but could be very uncomfortable while coming down. Mostly tipping is caused when people find it difficult to keep their heels properly on the treads while coming down a steep staircase.
- These alternating tread staircases could be used in areas where the staircases are very steep and there is very little area to keep foot firmly on the treads.



- These alternating tread staircases provide ample amount of foot space. So these stairs are very comfortable while coming down as well as while moving up a staircase.