

Rolling Barrier System: An Innovative concept for safety and the reduction of the road accident a Review

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Abstract: The Tremendous increase in road mishaps has become a cause of concern for the government. The government has been always trying to come up with the latest technology available to overcome the situation of road accidents every year lakhs of people become part of accident and many of them lose their lives. So to overcome this situation a small manufacturing company of Korea came with an innovative concept of Roller Barrier. Our study aims is to find the effectiveness of the RB and understand the characteristic (strength of barriers, corrected Direction of the running Vehicle) of Roller Barrier. Roller Barrier works on the principle of conversion of shock energy to rotational energy. It is a long pipe which contains urethane rings. The roller barrier satisfies the guidelines of the ministry of construction and transportation. The roller barrier can be used on curved road section medians etc. in this paper the efficiency of roller barrier over different types of barrier has been discussed.

Keywords: Accidents, Government, Highways, Tremendous, Rolling Barrier, Urethane, Rotational Energy, Shock Energy.

I. Introduction

In the year 2014 total 489400 accidents took as compared to 501423 in the year 2015. A rise of 2.5% increase in road accidents was observed. A total of 139671 people in 2014 and 146133 people in 2015 died in road accidents it was a 4.6% increase the road accidents are the cause of human error, the road. Accidents are generally due to Over Speeding, Drunken Driving, and Distraction to the driver, Over Taking etc. Most of the Road user is familiar with the general Safety measures but it is due to the causality of road users accidents take place. To control road accident a small Korean manufacturing company came up with an innovative concept of roller barrier. Roller barrier is a long pipe which contains urethane rings. the urethane ring looks like an erected abacus, the roller barrier works on the principle of conversion of shock energy to rotational energy. The barrier corrects the vehicle direction and prevents the vehicle from overturning and crossing the barrier.

II. Barrier

Barriers areas known as guard rails or longitudinal barriers or traffic barriers, barrier keeps the vehicle within the road boundary preventing it from colliding with obstacles such as boulders, trees building walls, sign supports, bridge abutments.

Rolling Barriers

- a) This consists of both flexible property and semi-rigid property barrier stiffness.
- b) They are different in mechanism than other types of barriers also reduces hazards or accidents.

III. Literature Review

1. G.Udayakumar et al. In his research paper he suggested idea of flexible median divider with use of polymer material for reducing the risk level of accidents on the median divider on researching on the topic he suggested a new flexible barrier he also used ANsys engineering simulation software he suggested that the use of PVC barrier instead of Rcc barrier he worked on parameter like flexibility collision input reduction cost effective.
2. Guido Bonin et al has suggested the use of road safety barrier in his paper he suggested the use of road safety barrier with lightweight concrete elements, by replacing conventional concrete with short elements lightweight concrete in his paper he categorized types of accidents. He suggested that the roller barrier is only the solution to reduce road accidents on the expressway
3. Nagadarshan Rao B J In his paper suggested the use of roller barrier instead of the conventional barrier system. in the year 2015 there was 2.5% increase in total road accidents and 3.2% accidents on the highway, in

this paper he evaluated the property of roller barrier like crash cushioning and correction of the vehicle running direction. The said in his paper that the new idea is replacing the conventional barrier with roller barrier.

4. Muhammad Farhan In this paper the use of roller barrier with Indian perspective has been discussed he said that in 2016 4, 80,652 accidents took place 1,50,785 deaths caused he suggested that soon the developing countries like India need to not only grow in economy but also focus on the life safety he suggested that RB will safeguard the life of humanity as the implementation other countries like having from their result.

5. Kim et al In his paper, he stated that the longitudinal barrier help in reduction of accidents by 50% in a year. When the strength performance test was done on 8-ton truck and a passenger protection test on 1.3-ton car the barrier satisfied the guidelines of installation and managing of road safety.

6. Rao. Et al In his paper, he stated that in 2015 1347 accidents took place and 400 deaths took place he said that 57 accident take place every hour he said RB saves lives and prevent damage to the vehicle and said roller barrier are future of road safety and management.

7. Reddy et al In his paper said that 1.25 million people die due to road accidents he suggested that the installation of the guardrail in the road can minimize large no of accidents.

8. Wadekar et al In his paper, he stated that in 2017 14500 accidents took place in which 1400 death took place in which 1400 death took place he suggested that the developing countries like India should implement the use of shock absorbing roller barrier.

9. by Kyung-Whan Kim

In this paper, he stated that in 2001 3,638 traffic accidents took place on the freeway of Korea. He studied the effectiveness of roller barrier and crash cushioning characteristic. He calculated the difference between the roller barrier and conventional barrier he verified the crash cushioning and required the strength of barrier by a mathematical equation. From his study, he suggested the suitable road section for implementation of roller barrier

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In this paper he analyses and proposes the impact behavior of 2 new safety barrier system to raise impact energy absorption he concluded that crash attenuator damage to vehicle and motorist he said that lamellar and rubber roller elements should replace simpler deformable damper.

IV. Conclusion

The accidents are the cause of a human error or natural phenomenon. There are various types of barrier to having individual characteristics. Roller barrier is exceptionally different from all from other types of barrier. Roller barrier provides more safety as compared to other types of barrier. The idea is about installing the barrier on steep hills, dangerous curve section of road, at national highways so that we can stop accidents. from the above explanation of barrier and test values, roller barrier have high priority in terms of safety strength and result .life is precious than the vehicle, when we overlook roller barrier it saves life as well it prevents damage to a vehicle. Roller barrier should be strictly implemented on highways. Roller barrier is the innovative concept of future technology in road safety and management.

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