

## ABSTRACT

Open manholes are a grave danger to any society. In Pakistan, many open manholes are seen on the roads or foot paths, which lead to accidents or deaths by falling. These manholes are open because thieves and burglars of the city often steal the manhole covers, detach steel from it and sell it for a good price to earn their bread, while the municipalities and other law & regulatory authorities watch in silence. Also, scrap tires made up of non-biodegradable rubber are a major hazard to our environment. These tires are mass produced and once discarded, more than half of them are burnt for fuel, ultimately releasing toxic and harmful gases in the air.

Both the problems mentioned above need addressing, which gives rise to the production of manhole covers using scrap rubber tires. This way, there will be no steel to steal from the cover, while the scrap tires will have a channel of recycling.

In this study, four manhole covers were manufactured by making moulds with scrap rubber tires' tread i.e. contact part only. Those moulds were then filled with Cement-Fly Ash or Cement-Sand Mortars for strength. After curing, the samples were extensively tested and compared with conventional manhole covers made up of concrete and steel for their strength and durability. The manufactured rubber manhole covers proved to be stronger than the concrete ones by a good margin, hence recommended for commercial use.