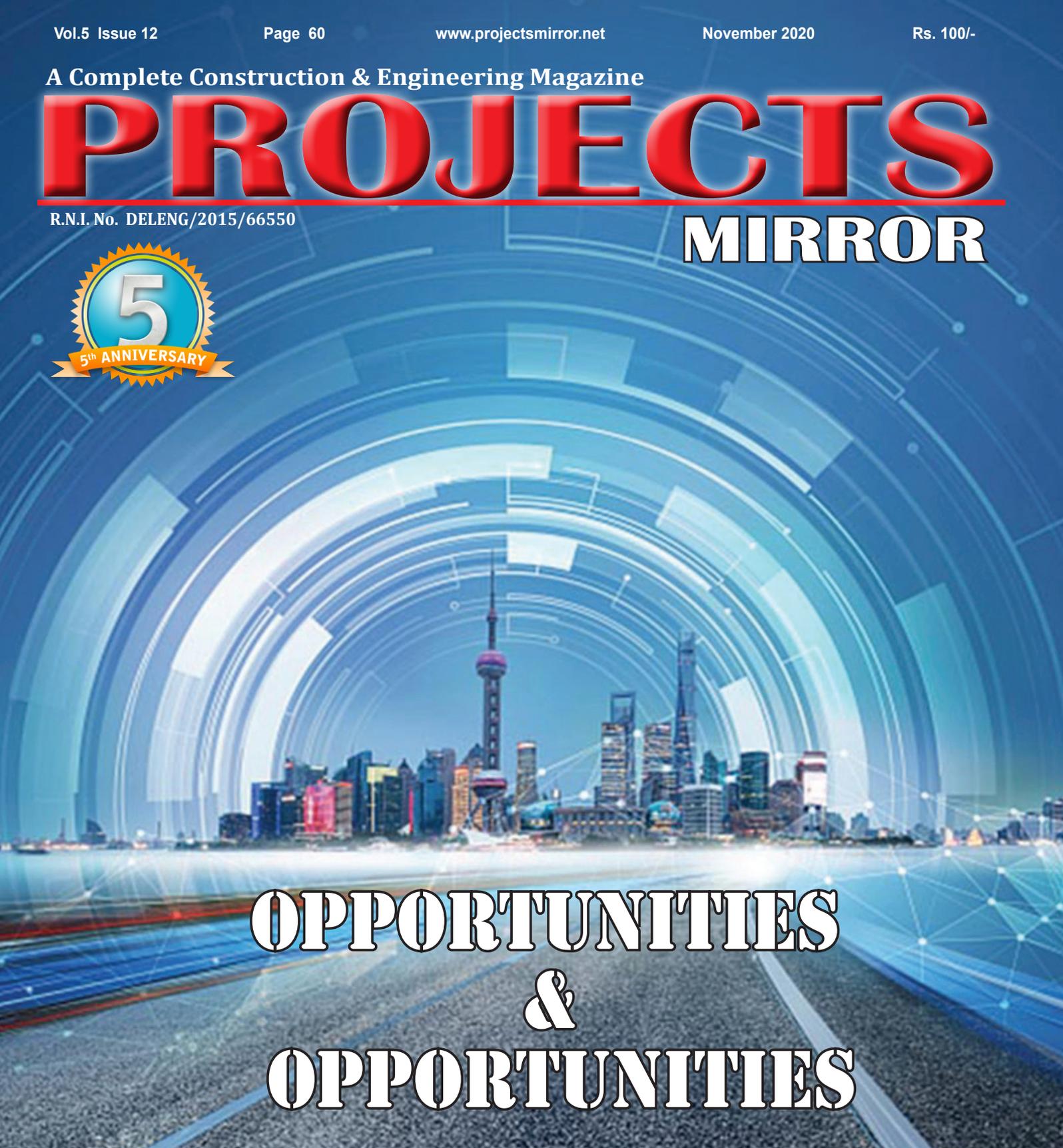


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# PROJECTS

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# MIRROR



# OPPORTUNITIES & OPPORTUNITIES

## INTERVIEW



Mr. Harssha Shetty, CMO of Hindustan Zinc Limited

## CASE STUDY



Pump station solves chronic flooding, Boosts quality of life in Semarang, Indonesia

## REPORT



India Will Spend Over INR 37Tn a Year to Accommodate Population by 2030 - Report

## PRODUCT NEWS



THE NEW 57", BKT'S GIANT TIRE: HERE IS EARTHMAX SR 468

# DEP MeshWorks ensures technologically superior Tyre Modeling

- Mesh modeling tools apply to motorcycle tyres, passenger car tyres, and off-road tyres

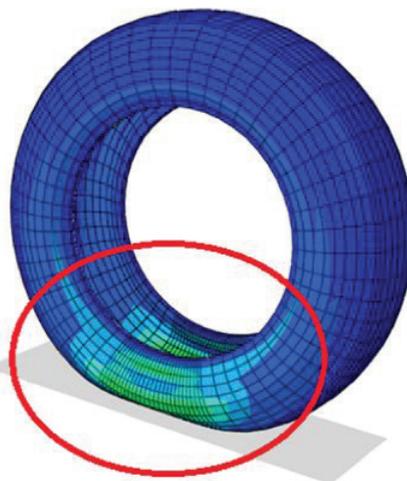
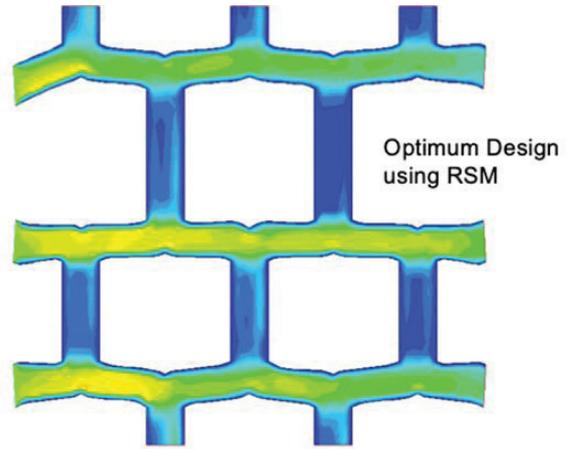
Tyre treads are made with Grooves and Rib features with different height and width due to which building hex mesh is a challenging task along with the need of matched nodes at the interfacing segments. This takes several hours to model and requires expertise in modeling. The Hex Meshing Tool for Tyres from DEP MeshWorks makes this task automated and easy to execute.

Detroit Engineered Products (DEP) offers a unique platform known as MeshWorks to assist the mesh model the 2D structure of the tyre and this 2D model can be used for analysis. Once satisfied with the 2D analysis results, the 2D model can be converted to a 3D model. Calculations like applying the inflation pressure on the valve of the tyre and applying the load of the vehicle on the tyre to analyse the contact patch can be done in the 3D model. Additional simulations on the 3D model like driving simulations can be applied. Morphing and parametrization techniques play a crucial part in tyre performance optimizing the thread pattern to weather all conditions while ensuring that it has an ideal breaking behaviour.

DEP MeshWorks enables rapid hex mesh modeling with a high level of automation. It can generate a good quality mesh with minimal user inputs and the task can be performed by an engineer and doesn't require a meshing expert. DEP MeshWorks mesh modeling tools apply to motorcycle tyres, passenger car tyres, and off-road tyres.

Radha Krishnan, Founder & President, Detroit Engineered Products said, "The complexity of rubber is due to its non-linear nature and this involves expertise and understanding that few companies possess. Tools and methods to model this complex structure are significantly different than those of metals. Factors like depth of the groove of the tyre, rib thickness, structure, block and cut sections are critical as companies reevaluate the tyre

tyre, etc." Essentially, there are two components that affect the tyre behaviour- the tyre structure itself, and the air around it.



design. Besides, the tyre specifications are different depending on the type - passenger car, motorcycle, off-road

The tyre design has to be such that it can withstand varied weather conditions of summer, winter and monsoons.

The way a tyre interacts with the road, affects its behaviour, and it passes that directly to the body of the car, and in turn the passengers. Hence automakers and tyre manufacturers work heavily in the tyre design area to get the specifications accurately, keeping in mind the passengers safety and comfort.

