



# KOHRANG INDUSTRIAL GROUP

Think Big & Make Your Dreams Reality

## KOHRANG Railway Anti-Vibration Mats



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**KOHRANG INDUSTRIAL GROUP** established in 1986 consists of KOHRANG Lastic, KOHRANG Baspar, KOHRANG Niroom, Gostaresh Fanavari KOHRANG, SAZANDISH, and Pars Bandar companies. Each company has individual attributes in terms of the background, products, services, and type of the activities and the whole group is being managed by the board of directors. The industrial group operates in ten industrial sheds in a lot over 32,000 m<sup>2</sup> located in Oshtorjan industrial town, Isfahan, Iran. The industrial group produces various kinds of rubber, metal, and polyurethane parts to be used in civil, marine, steel, mines, and oil industries. Almost half a century of invaluable experiences, a team of highly skilled, and dedicated and innovative personnel have enabled us to deliver solutions to the most demanding operational and technical challenges requested by the most national and international clients.

**KOHRANG Lastic Company** designs and manufactures heavy and super heavy rubber parts such as structural and seismic isolation bearings (i.e., elastomeric bearings, lead rubber bearings – LRB, and high damping rubber bearings – HDRB), elastomeric expansion joints, various kinds of marine rubber fenders (e.g., cell fenders, cone fenders, V-fenders, D-fenders, shock cells, and so on), frontal frames and its accessories, piggyback saddles, rubber dams, rubber impact protection parts, roller rubber coverings, hot and cold rubber linings of steel and concrete tanks, rubber mill linings, and railway anti-vibration mats.

**SAZANDISH Company** is the Engineering, Procurement and Construction (EPC) projects contractor in the field of steel making plants, materials handling systems, dust cooling and cleaning systems, dry dock gates, floating docks (Pontoon), offshore structures, marine buoys, and bollards.

**Gostaresh Fanavari KOHRANG Company** was established to do research and develop the technologies of polymer and petrochemical industries, and also to manufacture the innovative and modern products of berthing and mooring such as, quick release hooks, capstans, and fairleads.

**KOHRANG Baspar Company** designs and manufactures all types of industrial polyurethane parts such as oil and gas pipeline pigs and the screens for the mining and steel industries.

**KOHRANG Niroom Company** does the engineering, constructing, and commissioning of the industrial plants equipment as well as the oil and gas pipelines.

**Pars Bandar Company** was established to develop the KOHRANG Lastic Company's products to come out with the special rubber parts.



### **KOHRANG Railway Anti-Vibration Mats**

Whether we are talking about trams and metros in a typical urban area or conventional trains or even high-speed rails, each railway project raises specific issues in terms of vibration and noise pollution. The continuous traffic of trains, trams, and subways is a source of many vibrations, whose effects are transmitted through the whole structure of the railway as the tracks, sleepers, ballasts, and sub-layers of the surrounding soil. It is therefore crucial to be able to isolate the railway track, whether to improve the comfort of the residents and extend the life of various components of the railway track, from the rail to the ballast.

KOHRANG Lastic is a manufacturer of highly elastic products and systems for vibration isolation which are made from either natural, synthetic, or composite rubber and polyurethane as well. KOHRANG has developed a range of products to be installed under different components of a railway track that significantly improve the vibration and acoustic performance of the track and also reduces the maintenance costs of its super- and substructure.



## What we do?



### **VIBRATION & NOISE CONTROL**

*Protecting people and buildings from harmful vibration and noise*

KOHRANG railway anti-vibration mats solves the ground-borne vibration and air-borne noise problems by isolating the track. The mats protect nearby structures from vibration annoyances caused by rail transport systems such as tramways, light rail systems, subways, metros, main lines, and high-speed lines. Attenuation of rail induced vibrations and noises would be achieved by decoupling the track from the surrounding environment using the resilient KOHRANG mats.



### **TRACK STRUCTURE PROTECTION**

*Protecting all components of super and substructure of the railways*

KOHRANG railway anti-vibration mats protect the track superstructure against dynamic forces and also extend the life of the ballast stones by reducing attrition. Thereby the mats enhance overall ballasted track performance while significantly reduce the maintenance costs.

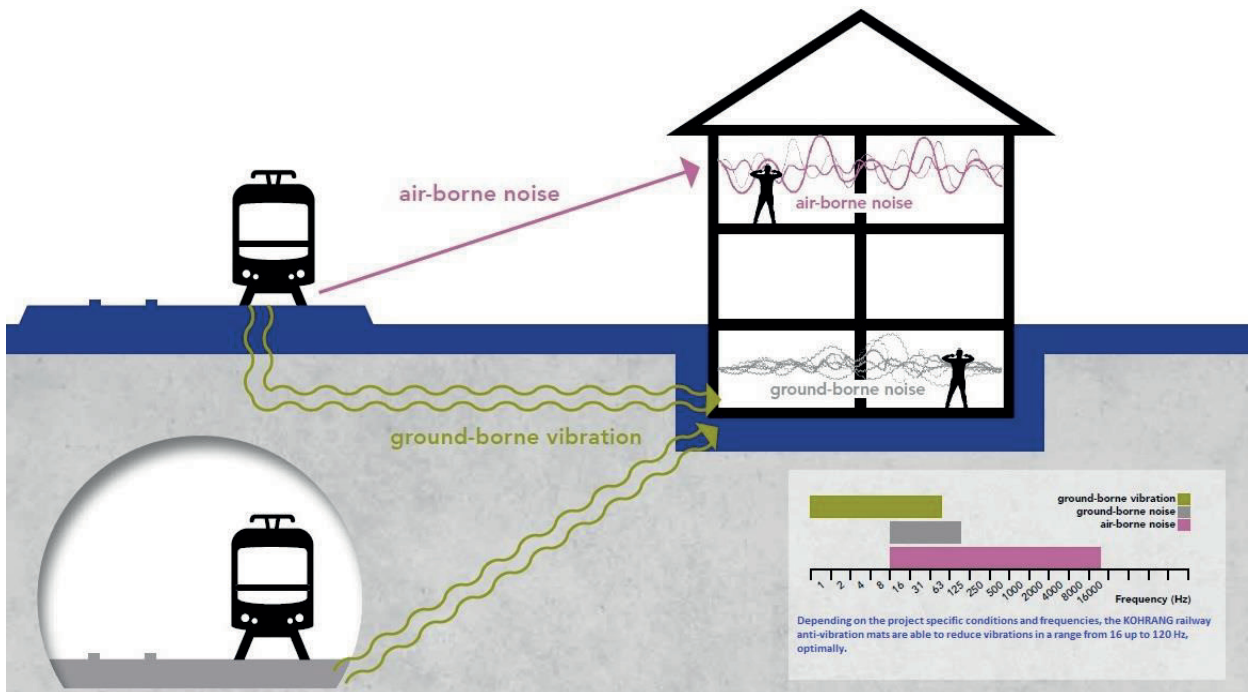
## *Quiet Future* by KOHRANG Railway Anti-Vibration Mats

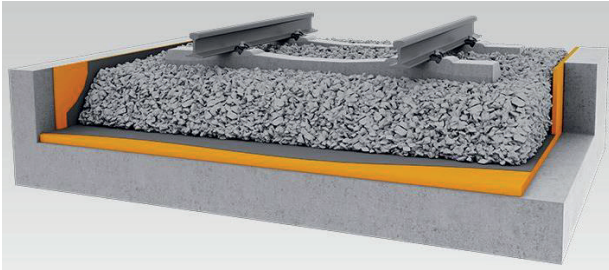
KOHRANG offers:

- *Under Ballast Mats*
- *Sleeper Pads*
- *Baseplate Pads*
- *Rail Pads*
- *Continues Rail Pads*
- *Polyurethane Rail Boots*
- *Crane Rail Pads*



The KOHRANG anti-vibration products are designed to reduce the static and dynamic forces produced by rail traffic, metro, tram, and etc. The products reduce the generated noise and vibration and thus make convenience and protect structures and buildings.





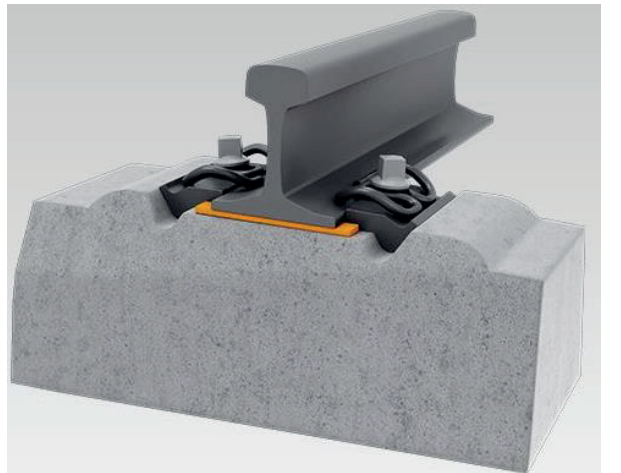
*Under Ballast Mats*



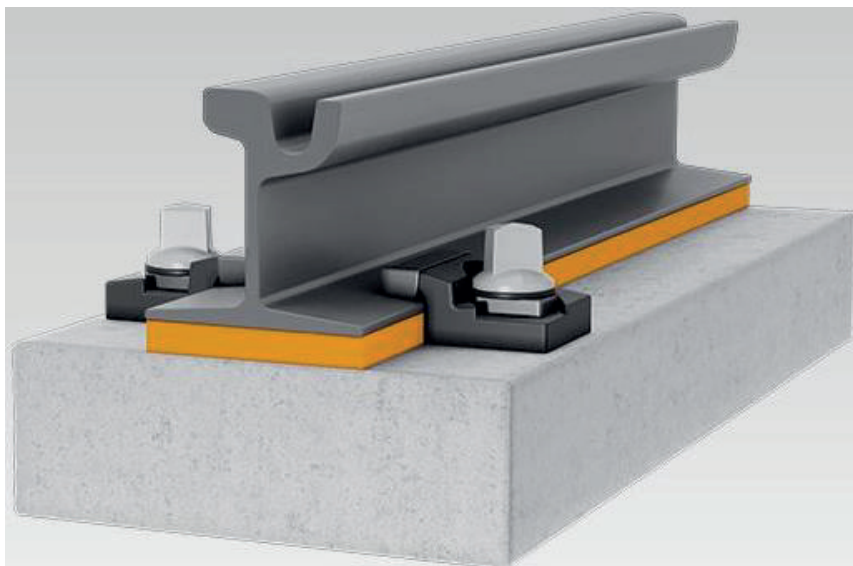
*Sleeper Pads*



*Baseplate Pads*



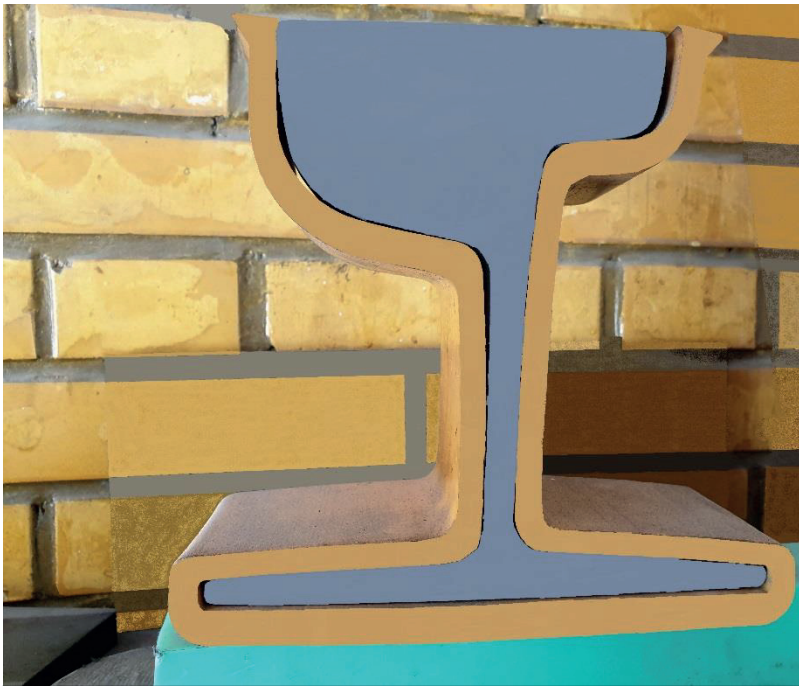
*Rail Pads*



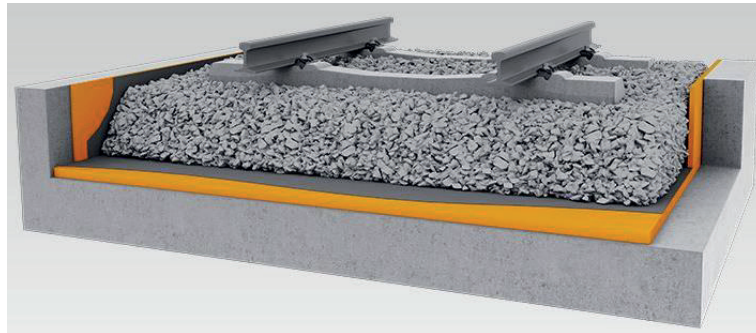
*Continues Rail Pads*



*Crane Rail Pads*



*Polyurethane Rail Boots*



*Under Ballast Mats*



*Sleeper Pads*

### **KOHRANG Under Ballast Mats**

KOHRANG under ballast mats suggest a high level of track elasticity. Reducing secondary air-borne noise and providing vibration protection to preserving the ballast are the reasons for installing the under ballast mats. The appropriate mat type should be selected based on the considered technical vibration requirements. The high effectiveness of KOHRANG mats is based on the adapted dynamic stiffness. They also stand out in terms of quality and economy. The mats are easy to handle and can be installed quickly. The economic and technical performance of KOHRANG mats have been proven well in several projects.

### **KOHRANG Sleeper Pads**

KOHRANG sleeper pads while providing the vibration protection, preserve the ballast under the tracks and thus extend the service life of the track. They are applicable for high-speed tracks and the tracks with high axle loads. The installation of KOHRANG sleeper pads takes place quickly regardless of the weather and with minimal line interruptions. These pads have proven themselves well for switches, crossings, transition areas, and expansion compensation.





*Baseplate Pads*



*Rail Pads*

### **KOHRANG Baseplate Pads**

Modern railway lines are increasingly built as slab track systems and highly elastic KOHRANG baseplate pads provide good enough elasticity for such tracks. The pads would be installed between the grooved baseplate and the concrete support slab. The KOHRANG elastomeric baseplate pads control the load-distributing function of the rails and deduct the vibrations due to wheel and track irregularities. Deflection of the rail head during train transmission can be reduced by adapting the suitable stiffness distribution of the baseplate pad. KOHRANG has successfully met the specific requirements of projects with various high-speed lines.

### **KOHRANG Rail Pads**

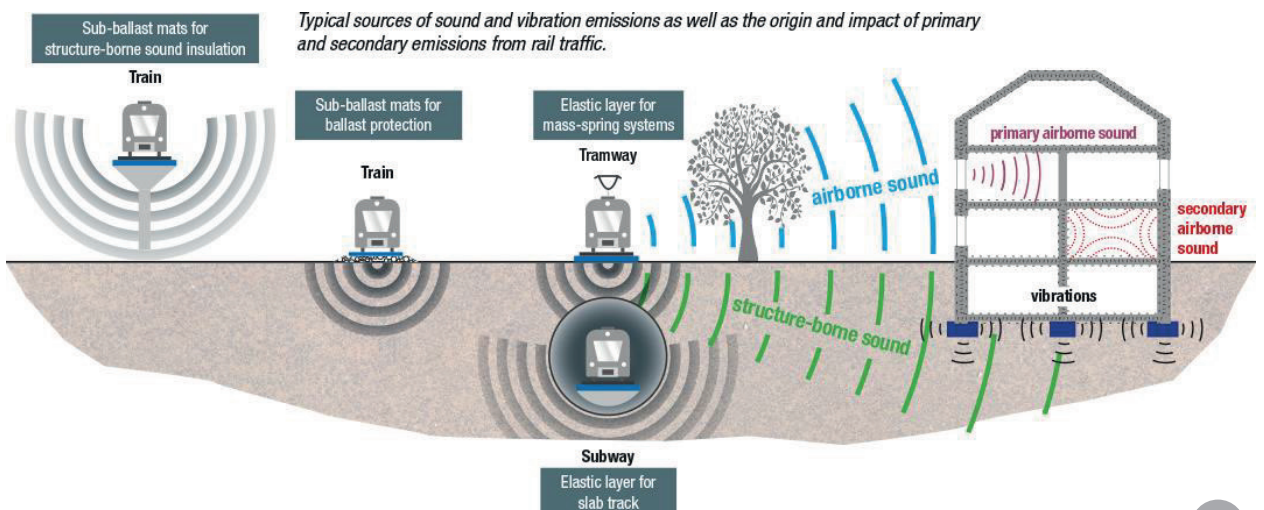
The KOHRANG elastomeric rail pads would be placed directly under the rail base. These pads with a defined stiffness, increase the elasticity of the ballasted tracks. The pads provide the passengers comfort and protect the superstructure. The increased elasticity has a positive effect on the wearing of superstructure components and rolling stock. KOHRANG Lastic offers a full range of rail pads in various designs and stiffness.



*Continues Rail Pads*

### KOHRANG Continues Rail Pads

The KOHRANG continuous elastomeric rail pads would be used to compensate for installation-related height differences. This economical application can be realized using the continuous rail pads developed by KOHRANG. Appropriate selection of a material ensures that the stiffness and deflection of the rails would be precisely defined in advance.

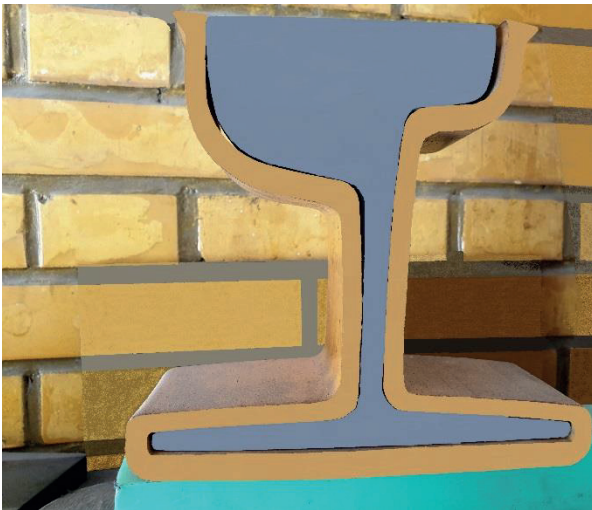




*Crane Rail Pads*

### **KOHRANG Crane Rail Pads**

KOHRANG crane rail pads are available for use in light, moderate, and severe crane services. Crane rail pads have been designed to provide a significant reduction in beam and rail stresses. At the same time, the rail pads are able to improve wheel load distribution on the crane rail and reduce the rail maintenance. KOHRANG crane rail pads' surface is unique and allows the rail to contract and expand, improving the lateral rigidity, and wear resistance of the rail pad under high service loads. The crane rail pads have been shown to provide up to a 40% reduction in runway and rail stresses, while also reducing structure-borne noise and vibration.



*Polyurethane Rail Boots*

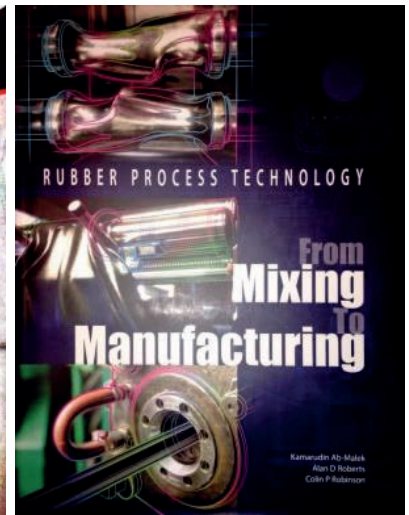
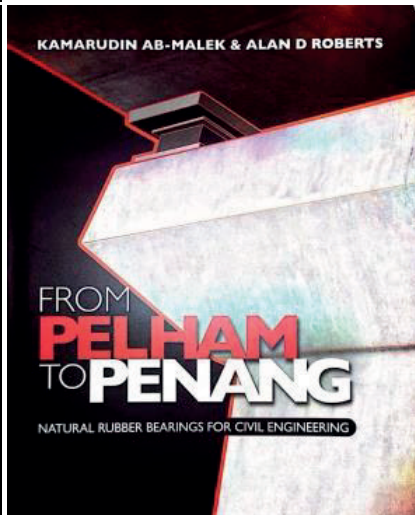
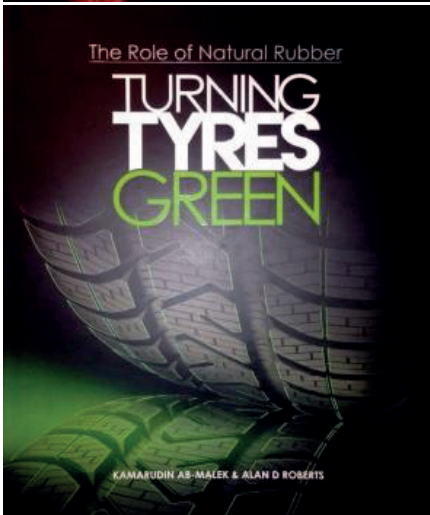
### **KOHRANG Polyurethane Rail Boots**

KOHRANG polyurethane rail boots are used to absorb vibration, reduce noise, and provide electrical isolation. The rail boots are made from polyurethane materials designed to meet the demanding needs of the railroad industry. KOHRANG polyurethane rail boots deduct the amount of noise generated by rail traffic. They also dampen vibration that can lead to excessive maintenance costs. The rail boots reduce damage caused by road traffic and fasteners used to secure the boot to the rail. The boots are designed for easy installation to reduce time and cost.



**KOHRANG Senior Advisor**

*Dr. Kamarudin Ab-Malek is the former Chief Executive Officer of the Tun Abdul Razak Research Center at Brickendonbury, Hertford, UK. He has wide experience of the use of rubber in engineering components, particularly in rubber-steel laminated bearings for bridges and buildings to be protected against earthquake tremors. He has written so many research papers and articles on rubber science and technology. He was also the Fellow of the Academy of Sciences Malaysia.*





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