

AUTOMATION

Rollon at IREE 2017: The most reliable **linear** solutions for the railway sector

Rollon's products and solutions for the railway sector will be on display in New Delhi, during IREE 2017, the International Railway Equipment Exhibition (planned for 11 to 13 October 2017); the only international event in India for the Railway and its related sectors.



You can find Rollon India Pvt. Ltd. and its solutions for the Railway sector at: IREE 2017- New Delhi - October 11-13 Hall 11 - Stand 44

In the railway sector, the efficiency of transportation and passenger safety enjoy maximum priority. Every part of the train must guarantee excellent reliability and counteract any factors that may have negative consequences (dirt, temperature fluctuations, vibrations, bad weather, and intense, prolonged use of mechanical parts of wagons). The safety concept plays a key role in this regard: a door that does not open can cause a train stoppage that, besides representing a serious problem, turns into an economic loss. Constructors therefore need robust components, able to last for a long time, with low maintenance requirements. In fact, one should not forget that modern trains can travel at very high speeds, which gives rise to significant forces:

components must limit wear as much as possible and guarantee safety. Customiza-

tion is also essential, in order to provide a flexible answer to every design need: often components have to be housed in ever tighter spaces, or integrated with structural parts that may differ from one train to another, even in terms of design.

Rollon's linear and telescopic rails meet all these specifications and are used both inside and outside the train to manage movements for numerous applications. They stand out for their high load capacity, sliding quality, shock and vibration resistance, long lifespan, great rigidity, ease of assembly, and low maintenance. In order to guarantee the utmost conformity to its clients' application needs, Rollon backs up the products shown in its catalog with a high degree of customization, combining various profiles, surface treatments, or material processing, such as hardening and grinding the raceways.

Specifically, induction hardening, which is called for as standard for many linear and telescopic rails, is a procedure that guarantees great resistance to loads and wear over time,



to be continued



providing significant advantages in railway applications. Rollon hardens the rails on raceways to a depth of up to 1.2 mm and a hardness of between 58 and 62 HRC. In addition, in order to guarantee excellent results, Rollon uses carbon steels that are able to provide excellent results during the hardening process.

Rollon provides safety, easy sliding, and long lifespans for an expanding market

The railways is one of the long-standing, established applications for Rollon's linear systems: the types of products most often used in this sector are linear rails and telescopic rails, which come in various straight and curved formats.

Rollon is known on international markets for rails intended for devices used to open and close the external doors on trains. This particularly critical use calls for guaranteed high resistance to fatigue, wear, and vibrations, and very high dependability. Rollon's Compact Rail product handles ejection of the doors and works for more than 1.5 million cycles (opening and closing), working perfectly throughout that time. Compact Rail is a system made using linear rails in cold drawn steel, with induction hardened and ground raceways. The linear rails are fitted with radial ball bearing sliders, also made of hardened steel. Compact Rail has compact dimensions, withstands impurities, and is fast (up to 9 m/sec) and silent. It is easy and economical to install on all surfaces, even if rough, thanks to its capacity to deal with misalignment of up to ± 4 mm.

Sliding, on the other hand, is usually handled by Rollon rails made of cold drawn steel, with induction hardened raceways and ball recirculation or caged ball bearing cursors. This solution ensures a high load capacity, is particularly easy to install, and guarantees optimum operating even in the presence of shocks and vibrations.

The know-how Rollon has acquired in this area, as well as the performance of its products, are also used successfully for applications inside the train, due to the wide array of solutions. Opening and closing of inside doors and fire doors also call for very precise, silent movement systems, that guarantee 500,000 cycles. For this case, Rollon offers its Easyslide rails, with induction hardened raceways and recirculating ball or caged ball bearing cursors, which are also used to adjust the tables in the business area, and the seats inside the wagons. Seat tracks are an interesting case of cross competence: very advanced know-how initially developed for the aircraft industry, which was then transferred to the railway sector as well.

For opening the train's nose cone, the curved doors in the VIP rooms, and toilets for passengers, Curviline is used, the line designed specifically for curved movements, which also guarantees silence and resistance to dusty environments. This type of rail, made using steel galvanized in accordance with ISO 2081, is fitted with one or more cursor(s), and 4 precision steel bearings, lubricated for life.

Finally, the X-Rail Guide range, in AISI 316 stainless steel, stands out for its excellent resistance to corrosion, and is effectively used for moving items associated with drinks and food on board trains, in addition to pull-out tables in economy class. Where these particular requirements do not apply, the Light Rail products are particularly recommended. These are telescopic rails that can carry limited loads and are easy to use. They come in steel and aluminum, and in a wide range of sizes. They are easy to install and have a good load capacity.



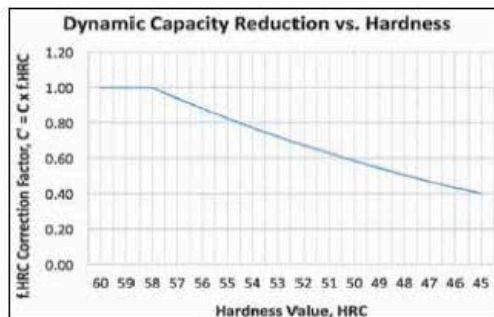
Components treated reach the milestone of 720 hours in saline mist (test done according to the ISO 9227 standard). This result makes them particularly suitable for applications located under the floor of the train, such as extracting the battery housing, and fire-fighting or air-conditioning plants.

The various test phases

Inside a test chamber, the railway samples are covered in a (5%) sodium chloride solution with a pH of 8.5 (at a temperature of 35 °C) by a misting nozzle. The evaluation is done at preset time intervals. The quality of the surface protection is measured based on the test time and the integrity conditions. Trivalent chromium plating, in conformity to the Rhos standards, can be applied to the surface of all types of Rollon linear rails, and acts as a real protective coating / barrier on metal parts, significantly reducing maintenance work and costs. Needs in the railway sector can vary greatly, depending on the type of application and the working environment: for this reason Rollon also offers other types of surface treatments, such as electrolytic galvanizing and chemical nickel plating, always in conformity to current international standards.

SIDEBAR Measuring Hardness value

Hardness is defined as a material's resistance to deformation, indentation or penetration. One of the ways it can be measured is with the Rockwell hardness test, which involves measuring the depth of penetration of an indenter under a large load. Measured on a "C" scale, the value for Rollon's bearings falls between 58 and 62 HRC.



SIDEBAR Rollon Alloy anti-corrosion treatment: 720 hours in saline mist

In recent years, Rollon has invested in researching surface treatments in order to guarantee maximum resistance of their components to corrosion. The Rollon Alloy anti-corrosion treatment is a particularly effective formulation for counteracting humidity, exposure to bad weather, and high thermal fluctuations.

ROLLON®
Linear Evolution

For more information:
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