

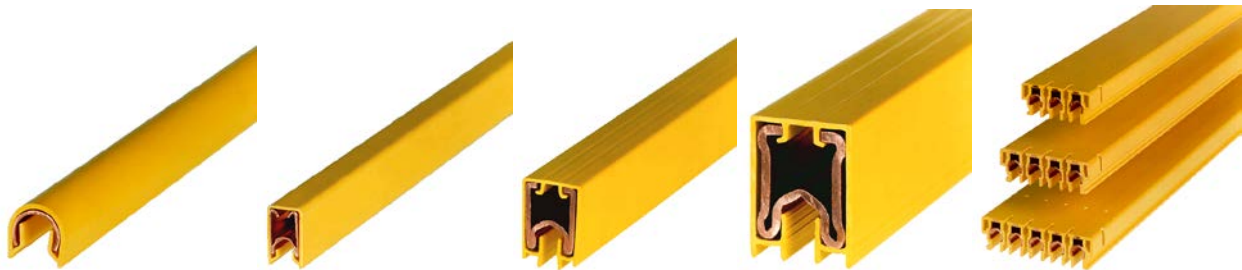
## Conductor rails

For all Copper rail applications

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## 1 Conductor rail surface

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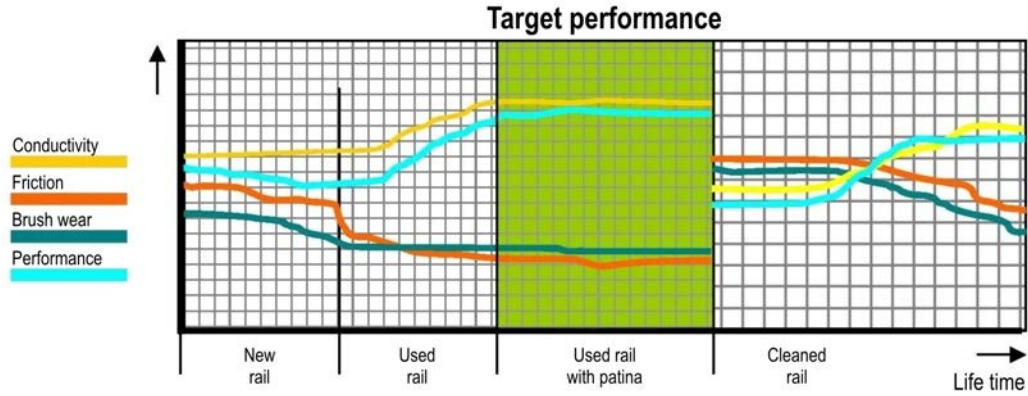
The condition and performance of a conductor rails system are depending of the running surface quality. The conductivity and friction characteristic are depending of the conductor surface status. To use the rail system it is important to know some basics about the technical basics of the conductive system.

A raw surface after a cleaning with sand paper or a surface with oxide has low performance and high friction and brush wear. Also an unused copper shinning surface does not offer the best performance. The best performance offering a used conductor rail, with patina on the brush runs way.

This steel blue to black shinning surface is build up by an electromechanical and electrochemical process. The patina is a material change into the copper rail surface with is needed to reduce friction or vibration free running free conditions and also reducing brush and rail wear. This polished and hardened material surface has also a very good transfer resistance and higher bandwidth than a rail without patina or oxide and must not be removed!

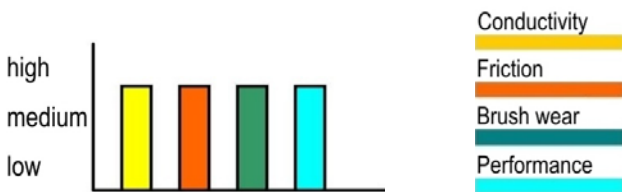
Conductor rails

For all Copper rail applications

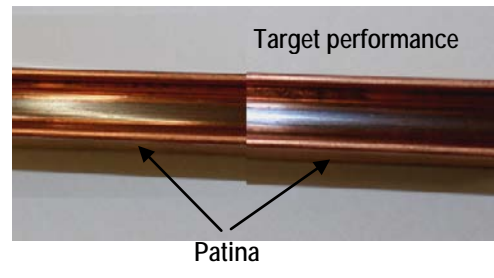
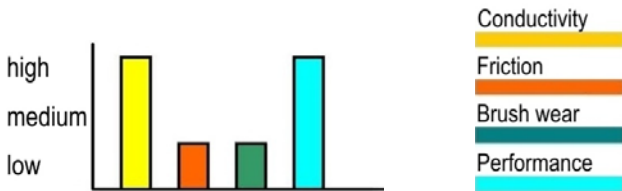


Status of the conductor rail surface:

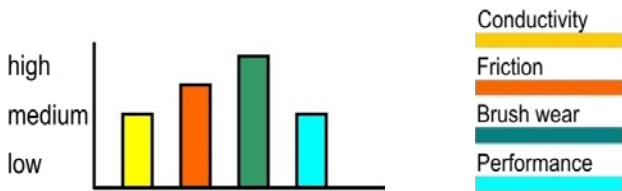
a) New unused copper rail (shinning polished surface)



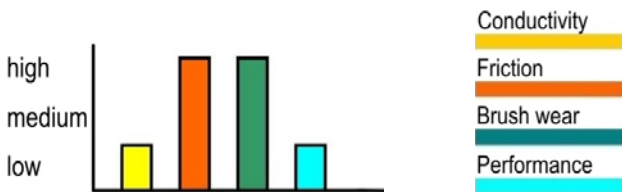
b) Conductor rail with patinated surface (with steel blue to black shinning polished surface-line)



c) Cleaned copper rail (copper coloured rail with scrub marks)



d) Copper with oxide formation (brown to green raw surface)



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## 2 Cleaning

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The conductor rail surface should be only cleaned for following purpose:

- Removing of loose and adhere dust, dirt, fibers and chips (paint brush and vacuum cleaner or temporary use of cleaning brushes mounted onto the collector arms).
- Removing of contaminants (textile cloth and if needed approved cleaner liquid), see instructions in "WV0800-0001-E Cleaning of conductor rails".

**Do not remove the patina!**

**Remarks:** Use only sand paper to remove burning marks or hard contaminants. Use only fine sand paper > 180 and for the finish min. 400 grid paper.

Use only approved cleaner (see instructions in "WV0800-0001-E Cleaning of conductor rails"). Do not use degreasing spray like engine cleaner or brake cleaner! This can be increase the wear and friction by removing the lubrication from the carbon material.