

Crane Rail Upgrade



In automated material handling systems that require the throughput of an Automated Storage/Retrieval System (AS/RS), business is driven by time-sensitive customer demand and products need to be available and accessible 100% of the time. In those systems automatic Storage/Retrieval (S/R) machines are the keys to fast and accurate material handling.

The speed and accuracy demanded by these types of machines requires that the crane rails are installed with extreme precision as they provide the rolling surface that these machines are guided on. viastore systems has installed thousands of aisles of crane rail, and always achieve the exact standards required.

However, as with any piece of machinery, these crane rails require routine maintenance and eventually replacement. Since the machines travel back and forth on the crane rail thousands of times over the course of a year, the rail surface becomes worn down, many times unevenly.

As the load bearing surface for these large heavy machines, a worn out floor rail may cause a "bumpy" ride that could damage the machine's mechanical or electrical components eventually requiring their repair or replacement.

Warning Signs – recognizing the warning signs when your crane rails are in need of repair or replacement is key. As the crane rail system slowly deteriorates, the S/R machines may begin to lose their accuracy and many other side effects can occur such as those listed below. Early detection and correction of those problems before they escalate can prevent damage to other parts of the machine and/or system.

Anchor Bolts – as the S/R machines repeatedly travel over anchor bolt locations, bolts tend to loosen over time and can begin to pull out of the floor causing misalignment of the rail and, in extreme cases, can come in contact with the moving machine.

Condition – as the crown of the crane rail wears down, more surface area of the wheels is in contact with the rail head causing faster wheel and side guide roller wear. In addition, the locations where the S/R machines stop most often will form a worn spot in the rail leading to further potential issues for the machine.

Gaps between supports – unsupported sections of crane rail between anchors can lead to bending between supports which causes the machine to move back and forth and eventually pull the anchors out of the floor. If the S/R machine undulation back and forth is allowed to continue, structural stresses and cracking of the machines components can also occur.

Resolution – if you replace your worn out crane rails, you can ensure the steady and efficient operation for your machines. viastore systems provides many options for the repair and/or replacement of your crane rails depending upon the size and weight of the machines in combination with the acceleration/deceleration and speeds. The installation tolerance for crane rails used for S/R machines is generally in accordance with FEM 9.831. Thermite welding is also available when required and is a special welding process used for eliminating joints in the crane rail sections providing a continuous, seamless rolling surface.

Choices – viastore systems offers a diverse array of options to correct explicit problems brought about by your crane rail installation and each one can play a part in the systems overall performance and life span of the installation. Some of these options are listed below.



For older crane rail installations that were installed on steel shim packs instead of grout, install cementitious non-shrinking or epoxy grout between the shim packs eliminating any possibility of the crane rail bending between supports.

Replace mechanical expansion anchor bolts with epoxy anchors and self-locking nuts that virtually eliminate the need to retighten the nuts over time and possible extraction of the anchors.

Rail clips should generally be installed in pairs and it is common to have the spacing of the anchors to be a division of the S/R machines wheelbase. This may vary according to the rail type, wheel loading, duty-cycle rating and many other factors that may affect the overall crane rail hardware design.

If you would like a no obligation inspection or your current AS/RS crane rail installation, regardless of the manufacturer and would like to receive a free report with our recommendations and have a quote for repair or replacement, contact viastore systems Customer Service department today at the telephone number or email address listed below.

viastore systems Inc.
4890 Kendrick SE
Grand Rapids, MI 49512
USA
Tel. 616 9773950
Fax 616 9775006
info.us@viastore.com
www.viastore.com

