



CASE STUDY

HIGH TEMPERATURES AND COASTAL WEATHER

APPLICATION OVERVIEW:

These indoor cranes work in very high temperatures, while the outdoor cranes withstand severe coastal weather.

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Energy Chain[®] cable carriers prove themselves despite demanding environments

A company supplying steel rails to the international railway industry replaced festoon systems on its indoor and outdoor cranes with Energy Chain[®] cable carriers from igus[®]. The festoons were replaced in order to reduce both maintenance requirements and costs. The new Energy Chain Systems[®] are comprised of igus[®] E4/4 Heavy Duty Series cable carriers, aluminum guide troughs and Chainflex[®] continuous-flex cables. All are extremely well suited to dynamic applications operating in particularly harsh or corrosive environments.

Pouring rain

The robust Energy Chain Systems[®] are installed on 17 outdoor gantry cranes and nine indoor magnetic cranes. Inside the steelworks, steel is exposed to extreme heat and shaped into rails. The outdoor cranes are close to the coast and so must withstand strong winds, salt water splashes, grains of sand and often pouring rain.

The first igus[®] Energy Chain Systems[®] were installed at the English steelworks several years ago and yet downtimes due to maintenance have never been necessary. In contrast, the festoon systems were often in need of maintenance due to corrosion or general wear. This was difficult due to the fact they were difficult to reach. Inspections or necessary repair work were only possible via scaffolding or lift platforms. With the Energy Chain[®] solution, however, regular visual inspections are adequate to ensure the



cable carrier has not been damaged and the cables are still correctly strain relieved.

igus® has replaced the cable trolleys on 17 outdoor gantry cranes with ready-to-install, pre-assembled ReadyChain® cable carrier systems.

igus® E4/4 HD Energy Chain® cable carriers for high loads

The outdoor cranes are equipped with E4/4 HD Energy Chains® from igus®, which feature considerably increased wear surfaces compared to standard chains and optimize both strength and service life. The E4/4 HD is suitable for heavy duty applications in dirty environments (steel, cement, composting plants, harbors, offshore facilities etc.) and over long distances at high speeds. The cable carrier operates quietly and is stable even when subjected to high loads.

Cables: dynamic in the face of extreme environmental conditions

The cable carriers are filled with a Chainflex® cable package adapted for outdoor applications. This consists of CF310 motor cables, CF9 and CF10 control cables and CFLG fiber-optic cables, which have already been used successfully on hundreds of RTG cranes. Using highly abrasion resistant TPE outer jackets makes the cables suitable for harsh environments. They are UV-resistant, can be used at high temperatures between -31 °F and +212°F, and feature a very high resistance to liquid media such as coolant, lubricant, and oil.



Energy Chains® for indoor magnet cranes. The steel rails are exposed to extreme temperatures here during the casting and molding process.

Install and forget

The new cable carrier system was supplied to the steelworks as a pre-harnessed ReadyChain® package. The benefit was that hardly any valuable production time was lost.

An electrical engineer at the steelworks said, "The ReadyChain® system works, is reliable and maintenance-free. Thanks to the level of support given by igus®, any difficulties are taken care of in advance." This is particularly important for 24-hour plants, where productivity is constantly being increased.

“The cable carrier system just had to be installed and now it runs so well that we can almost forget about it.”

Additional product information

[Energy Chain® cable carrier product overview](#)

[E4/4 overview](#)

[Chainflex® cables product overview](#)

More applications

[Energy Chain® cable carrier application examples](#)