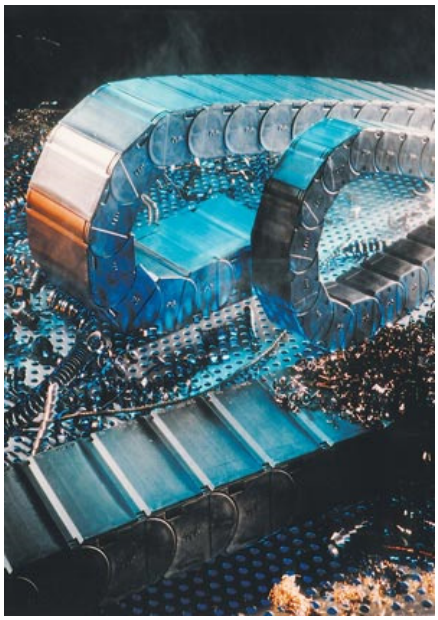
TECHTALK DESIGN ADVICE SERIES

PLASTIC VERSUS STEEL CABLE CARRIERS



Are there still engineers who prefer to use steel cable carriers over plastic? Why is this?

The first cable carriers were made from steel so, as is often the case, the assumption is that the older the technology, the better it is. However, nowadays plastic cable carriers can achieve almost anything steel can. Made from a high performance polymer blend, they offer lower cost, reduced weight and are corrosion resistant.

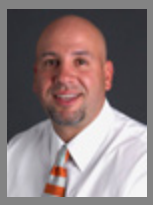
Plastic cable carriers have replaced steel on most types of automated machinery in recent years. This is because plastic cable carriers are lighter weight and so enable a higher number of cycles, faster speeds, and an increase in production throughput. The cost advantage is another reason for the use of plastic cable carriers in this area.

Steel cable carriers still dominate in some industries, such as on boom trucks, and also the steel working and mining industries. This is not to say that plastic cable carriers cannot be used in applications in these environments, but these industries have been slow to change.

What are the advantages and / or disadvantages of each?

Plastic cable carriers are typically superior to steel in that they are low cost, lightweight and corrosion proof. Steel chains typically have a special coating applied to make them corrosion resistant. Alternatively, a stainless steel cable carrier can be used to eliminate corrosion issues; however, these can be very expensive. Plastic already offers a

YOUR CONTACT



Joe Ciringione

National Sales Manager,
Energy Chain Systems®

JCiringione@igus.com

>> Subscribe to e-newsletter

>> Contacts in your location (on-site within 24-48 hours)

>> Request catalogs / free samples

>> myigus

>> myCatalog

igus Inc.

PO Box 14349

East Providence, RI 02914

P. 1-800-527-2747

F. (401) 438-7270

sales@igus.com

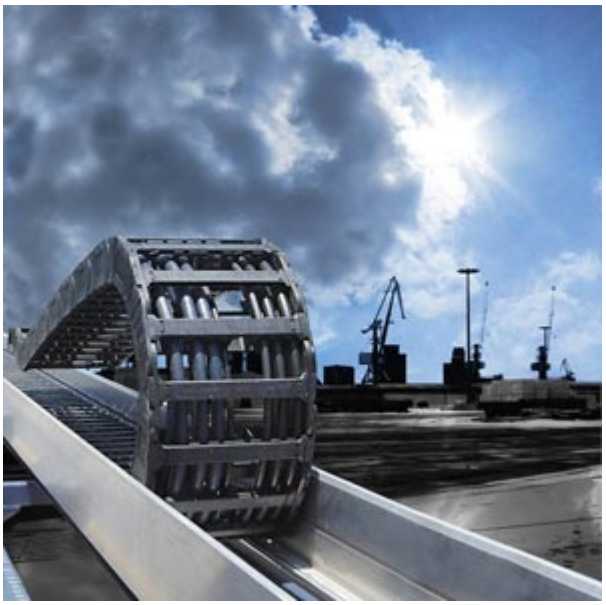
www.igus.com

price advantage over steel cable carriers, and this advantage is even greater when compared with stainless-steel chains.

Plastic cable carriers are also modular - you only need a screwdriver to take them apart. Steel cable carriers, on the other hand, require wrenches and toolkits for disassembly. This means they are not as easy to take apart and replace; whereas with a plastic cable carrier, you can easily replace a link if it becomes damaged or broken.

An additional advantage for plastic cable carriers is that they can glide on themselves in long travel applications. In contrast, a steel cable carrier requires an elaborate support system to support the upper run over longer distances, because they can't slide on themselves.

Can you give an example or examples of a plastic cable carrier being used in an extremely demanding environment?



Plastic cable carriers can be used in offshore applications such as oil rigs, as well as brick plants, coal-burning power plants, road construction vehicles, refuse incineration plants, tunnel drilling machines, steel mills, waste handling, mining, and more. They can handle heavy loads, high speeds and long distances.

One example is a long travel application over 1,447 feet on two ship-unloading cranes at a coal power plant in Malaysia. Plastic cable carriers were installed as a fully pre-harnessed system and supply energy and data to the trolley and cabin. The cranes unload up to 1,500 tons of coal per hour at docking stations on a man-made island situated roughly a mile offshore.

In the USA, Virginia International Terminals operates and maintains six cranes to handle containers and break-bulk cargo in its second largest ship-to-shore terminal. One of these cranes is a 30 year old Paceco crane.

The company had been experiencing wind problems and roller and tow cable failures on all its festoon systems responsible for supplying communications and power from the back of the crane to the operator’s cab. This prompted the terminal operators to replace festoons with pre-harnessed plastic cable carriers, which provide a higher reliability at lower cost.

Why has igus® always only focused on plastics throughout all its product lines?

igus® started out as a plastic injection molder and has made a name for itself based on its goal of making functionally advanced, yet affordable polymer components and accessories. Its extensive

research over the years into triboplastics means we have been able to develop better materials and better products delivering longer life at lower cost than most, if not all, steel-chain alternatives.

What are some of the latest product developments involving plastic cable carriers?

igus® has developed a special material for high temperatures - igumid HT ('HT' for high temperatures) - to withstand hot flying debris, such as metal chips, up to 1,500 degrees Fahrenheit and higher. This was previously only possible with steel chains.

igus® also recently unveiled the largest plastic cable carrier in the world in the form of E4.350 (pictured: right). Energy Chain® E4.350 is wear proof, maintenance free and resistant to seawater and mineral oil. The giant cable carrier was primarily developed for demanding applications exposed to ice, wind, storm, salt water, oil and drilling mud in applications on offshore oil-drilling platforms. E4.350 can move nearly 50 feet up and down, which guarantees any heavy hydraulic cables are protected and guided when a drilling rig is skidded on to an oil platform, or during a drilling head's stroke, for example.

To contact Joe directly about this article, e-mail jciringione@igus.com. For further general information, use the Useful Links below, call us at 1 (800) 521-2747 or e-mail sales@igus.com.

Useful Links

>> Learn more: Energy Chain® cable carriers

>> Energy Chain® Product Finder

>> Request catalog or sample

>> Heavy Duty Plastic brochure: application examples