

Composites for reefers

Cargoshell BV has announced a reefer container design using its composite container concept. Cargoshell had previously introduced a folding container and a standard dry container design using composite material. In 2012, its non-folding container design received CSC certification from Germanischer Lloyd in Hamburg.

Speaking with *WorldCargo News*, inventor René Giesbers said tests of the dry container identified that the composite material had very high insulation properties, and he began developing a reefer version, which is now patent-pending.

Using Cargoshell's composite panels for walls, ceiling and doors, together with its own design "T" panels for the floor, Cargoshell claims it can reduce the weight of a reefer box by 300-350kg. The insulation property of the material, added Giesbers, is actually superior to a standard reefer container construction, with a K value of <0.3 compared to 0.4 for a conventional reefer box, without requiring any increase in wall thickness.

The Cargoshell design includes a new floor construction that retains the "T" profile for air circulation, while being lighter and

much easier to clean. Composite material also prevents internal condensation, and does not corrode or attract fungus.

As to how the composite material will hold up in the field, Giesbers said concerns that composite panels could break, rather than dent, on impact are unfounded. During tests for the CSC certification, the container was subject to the "wrecking test" with a 15t load, and it performed very well. In particular, it is able to deform under load and then return to its original shape. Damage, however, will inevitably occur, and Giesbers said it has

developed a protocol for repairs.

The biggest concern about composite materials is their high cost. As noted in this issue of *WorldCargo News* (p31), the price of a 40ft reefer body has fallen this year, and is now around US\$9,000, but Giesbers said Cargoshell is competitive in today's market. Furthermore, when total cost of ownership is considered, composites deliver a much better return, as they are better insulated and easier to maintain, he added. They also have a 25% lower carbon footprint and do not reflect wireless signals.

The next step is to have a reefer shell CSC tested and certified. As for bringing the concept to market, Giesbers said Cargoshell has no plans to manufacture con-



Using the increased strength of composite material, Cargoshell has redesigned the doors and T-floor for its reefer box design

tainers itself, and does not want to license the technology to container manufacturers. Instead, it is looking to sell the intellectual

property rights to the whole Cargoshell portfolio. This includes the folding, standard dry, and reefer designs.

Ryan Key twistlock removal safety device scoops award

Invented in Australia by Andrew Ryan, the Ryan Key twistlock removal safety device has won a *Lloyd's List* Global Shipping Award for Innovation of the Year.

The Ryan Key is a simple, low-cost wedge-shaped hand tool that is inserted over the release wires or under the collars of a twistlock, to ensure it disconnects fully from the container to be lifted. It prevents snagging and misalignment of the twistlock, and allows a hoisted container to move freely and safely.

A jammed twistlock can be a very dangerous situation. Crane drivers often attempt to free the twistlock by moving the hoist and trolley. If the container does not become free, stevedores have to enter the area to remove the twistlock manually. When released, the load can shift sudden-

ly, causing serious harm, including crushing or injuries resulting from falling from height.

The Ryan Key was invented as a direct result of Andrew Ryan's time as a stevedore, where he saw, first hand, a fatal incident involving a jammed twistlock. His personal recounting of that incident, and how it can be avoided by the simple tool he subsequently invented, delivers a powerful message.

To be an effective safety tool, however, the Ryan Key needs to be backed up with proper training and a safety culture that ensures proper procedures are in place to put the device in the hands of stevedores that need them. To this end, Andrew Ryan has formed Venteuryan, an Australian company that will partner with container logistics compa-

nies to match the Ryan Key with training and consultancy services that address productivity, safety and risk mitigation.

In this way, the company believes, it can ensure the Ryan Key becomes "an integral part of everyday operations at the coal face" and achieve a more efficient and safe workplace.

Over the last 18 months, the tool has undergone minor modifications to improve production and operability and has now completed trials in six Australian container terminals.

The first trials outside Australia are now underway with DP World at its home port of Jebel Ali. The *Lloyd's List* award follows a considerable list of workplace safety awards in Australia, including two awards from Asciano.

Wilhelmsen sounds alarm on disposable cylinders

Wilhelmsen Ships Service (WSS) has called for a ban on disposable coolant cylinders because they are virtually the only container used for counterfeit refrigerants.

Although no incidents involving accidents caused by counterfeit refrigerants have been reported since 2011, insurance mutual TT Club believes R-40, which can explode when exposed to air, is present in around 0.2% of the global reefer fleet, equivalent to 2,500 reefers. "However, other counterfeit refrigerant mixtures, such as those containing R-50, R-744, R-22 or R-170, are also considered unsafe, so the number of reefers affected could be far higher," stated Wilhelmsen.

The company believes the main reason counterfeits continue to circulate is because of the continued existence of disposable

cylinders. "These cylinders are the container of choice for the counterfeiter," said Sverre Jacobsen, technical product manager, refrigeration at WSS, and the company wants them banned.

"If the legitimate refrigerant suppliers no longer provided refrigerants in disposable cylinders, the counterfeiters would be out of business," he said, noting that WSS does not offer refrigerants in disposable cylinders. "We don't support their use and we believe a worldwide ban is far overdue."

Disposable cylinders were banned in the EU in 2007, and in Canada, India and Australia, but are still used elsewhere. WSS is concerned the F-Gas regulations will tighten the supply and increase the cost of R-134a, resulting in greater use of counterfeit substitutes, facilitated by the lack

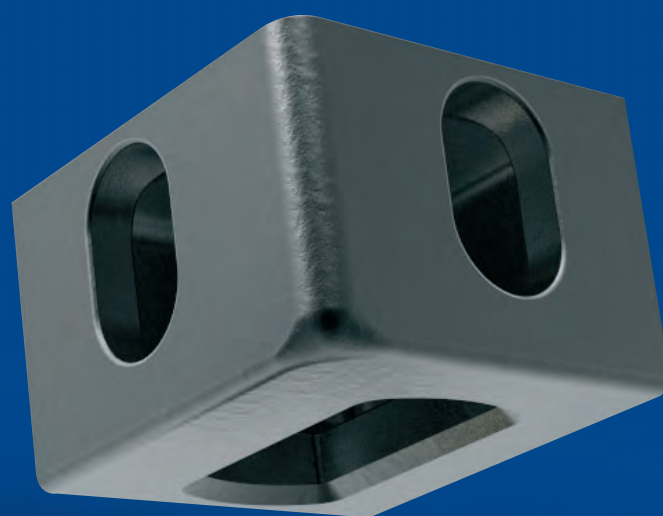
of a ban on disposable containers.

"In the absence of a global ban, it is up to operators to use common sense, coupled with a healthy dose of scepticism," said WSS. Jacobsen recommends that operators only purchase refrigerants supplied in refillable, re-usable, traceable cylinders. "For operators who insist on using disposable units, they should make sure a reputable company, which has been audited and approved by a licensed manufacturer, is supplying their refrigerants," the company added.

Refrigerants offered below the market price should immediately arouse suspicion. "It may be a cliché, but you really do get what you pay for. So if you want a safe, consistent, and authentic refrigerant, you must be willing to pay for it."



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