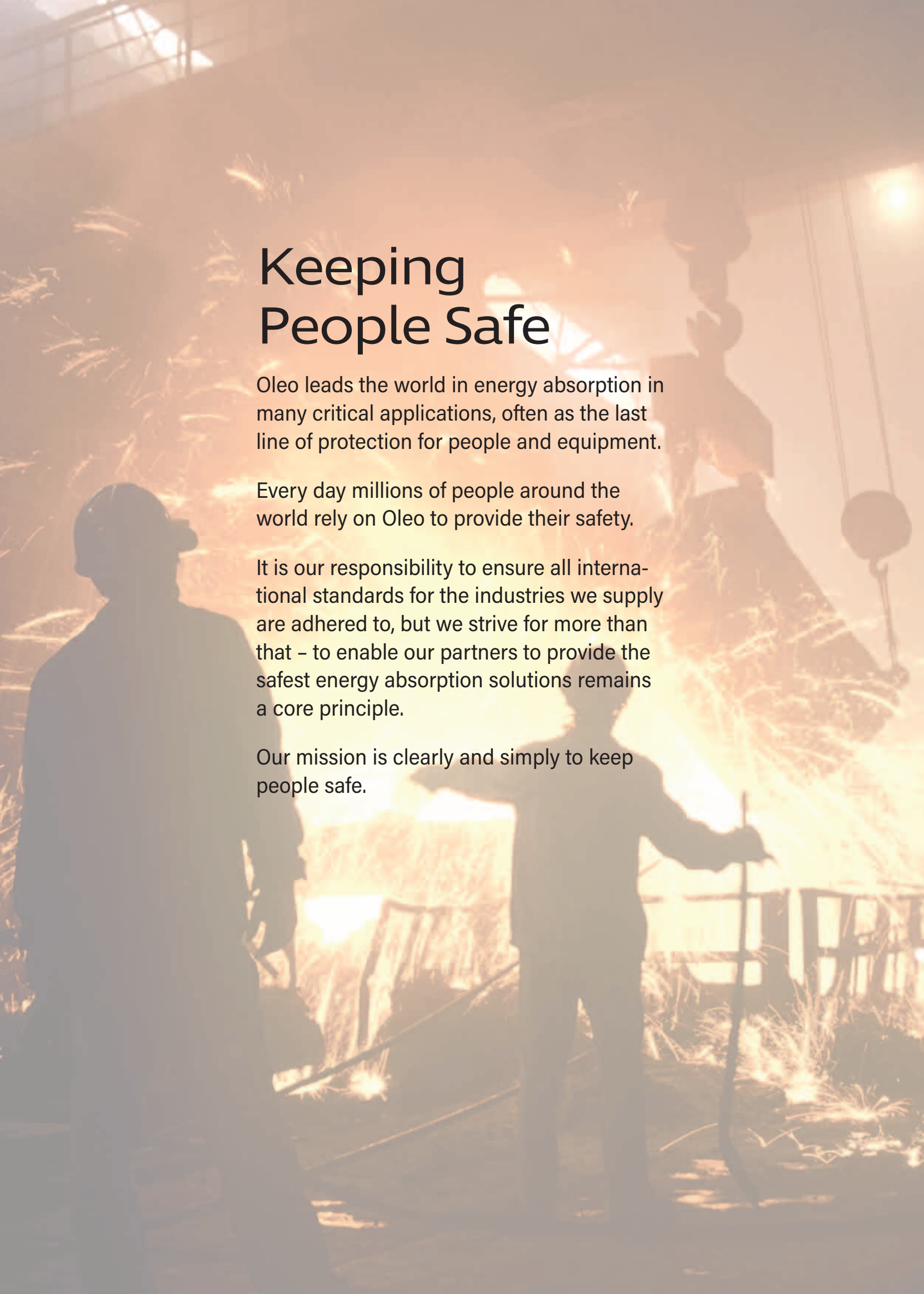
LEADING THE WORLD IN ENERGY ABSORPTION

OLEO INTERNATIONAL

INDUSTRIAL

Gas Hydraulic Buffers

GBR



Keeping People Safe

Oleo leads the world in energy absorption in many critical applications, often as the last line of protection for people and equipment.

Every day millions of people around the world rely on Oleo to provide their safety.

It is our responsibility to ensure all international standards for the industries we supply are adhered to, but we strive for more than that – to enable our partners to provide the safest energy absorption solutions remains a core principle.

Our mission is clearly and simply to keep people safe.

BULK MATERIAL HANDLING STACKER

Industrial

Industry around the world depends upon Oleo's technology to deliver security to its people and equipment.

Oleo industrial buffers provide effective energy absorption solutions for a wide range of applications including dockside cranes, steel mills, mines and rail infrastructure and has a presence in all major ports worldwide. Together with its network of distributors, Oleo can offer a complete consultancy service including after sales support.

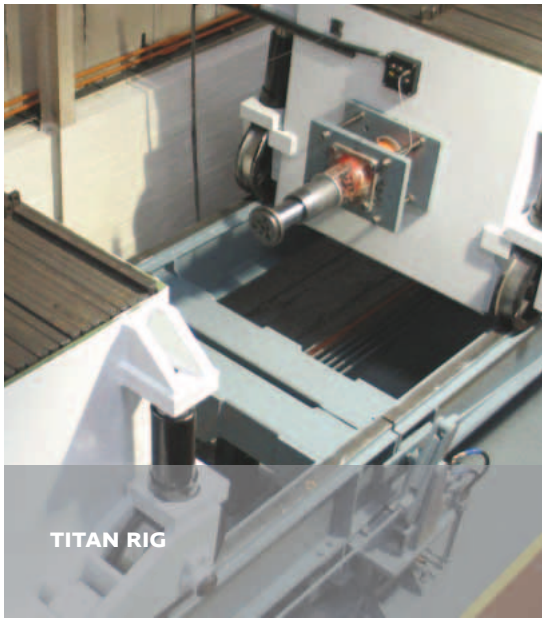
What sets the Oleo gas hydraulic buffer above all other energy absorbers is its ability to dissipate over 95% of the impact energy, leading to controlled deceleration of moving equipment, whatever the speed of impact, keeping forces to a minimum and absorbing and dissipating virtually all the energy.

INDUSTRIAL SIMULATION TOOL

Simulation

Oleo has been developing its computational modelling of impact scenarios since the early 1980s and now has a dedicated team which continues to enhance these mathematical models and the supporting software.

The power of this simulation tool has now been made available to everyone online through the Simulator on Oleo's website, allowing the quick and optimal selection of buffers for numerous industries and collision scenarios. In addition, any user can have the internal characteristics of the buffer designed specifically for their project in seconds to minimise the stress an impact will place on their equipment.



TITAN RIG

Test and Validation

The mathematical model used for each buffer product range has been validated in advance within Oleo's in-house test facilities.

These facilities are accredited to act independently of Oleo in accordance with ISO/IEC 17025: 2005 General requirements for the competence of testing and calibration laboratories (UKAS accreditation number 7778) in order to ensure the highest quality standards.

A full suite of environmental testing is also used to test the quality of Oleo's plunger plating, paint finish and bellows.

EASY, ONLINE ORDERING

E-commerce

All industrial buffers can be bought directly through Oleo's website via a fully-featured e-commerce system.

Buffers can be selected with any desired configuration options using Oleo's Configurator which provides the relevant price, drawing and CAD file data in advance of ordering.

There is full integration with Oleo's Simulator which allows standard or bespoke buffers chosen this way to be ordered immediately or at a later date.

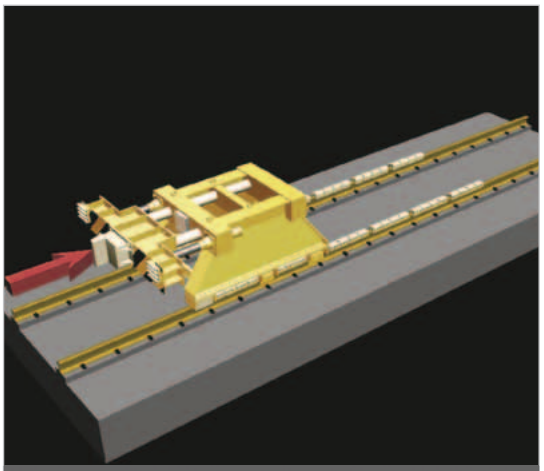
RESEARCH AND DEVELOPMENT
IS A CONTINUOUS PROCESS

Research and Development

Our purpose is to provide the highest levels of protection against harm or injury: Keeping People Safe.

We pride ourselves on being innovative in response to both industry standards and customer demands. Providing technological industry standards and solutions which can be optimised to suit any customer specific requirements.

Continuous investment in research and development, state of the art technology and modern manufacturing processes has made Oleo leading experts in energy absorption.

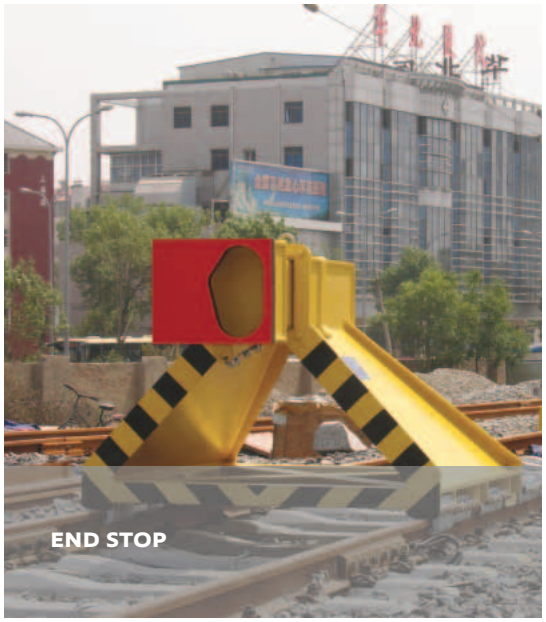


DESIGN AND ANALYSIS

Consultancy

Consultancy is a growing part of Oleo's business – we are regularly undertaking work producing energy absorption solutions for customers including simulation, design, analysis and testing services.

For more information on consultancy services please contact us.



END STOP

Infrastructure

Oleo has extensive experience in delivering complete end stop solutions globally for use on depot and mainline; including sliding friction end stops, hydraulic friction end stops, fixed end stops, hydraulic systems with concrete base foundations and bespoke applications.

With the ability to simulate full impact scenarios based on accurate train data, Oleo are the experts in supplying the most reliable and efficient solutions to the industry.

Products selected using Oleo's Simulator and Configurator can be purchased immediately using our E-Commerce platform on the Oleo website.

Giving you what you want, when you want it.

CONVENIENCE AT YOUR FINGERTIPS

CARGO SHIP LOADING AT CONTAINER TERMINAL

Ports and Docks

The rapid growth in global container traffic since the millennium has incentivised more numerous, heavier and faster operating cranes, which has also required an increase in the supporting energy absorption capacity to protect them.

Ports and docksides are home to some of the largest mobile machinery in industry and so a mechanical failsafe for high energy overtravel scenarios is therefore essential to remove the risk of substantial damage to equipment and disruption to these vital trade hubs.

Oleo buffers have been used worldwide on port cranes for decades and with its wide array of buffer ranges there is a suitable selection for any size of crane or trolley, including when substantial wind loading must be considered. The buffers are fitted with plunger corrosion protection as standard, with increased protection available for more severe marine environments and can also be supplied pre-painted with a marine finish. Protective bellows suitable to the local climate are also available where necessary, as well as safety cables for elevated trolley buffers.

All main types of dockside cranes have a requirement for buffers:

- Ship-to-shore (STS)
- Rail mounted gantry (RMG)
- Rubber tyre gantry (RTG)
- Luffing

Steel Mills

Steel mills are a challenging environment in which buffer durability isn't a preference but a requirement.

Modern steel mills have always included buffers as part of the required technology in their plants in order to protect their end product and other equipment and also prevent downtime.

Oleo buffers are ideally suited to all of these applications because of their renowned durability and reliability and because they offer the industry-required options of high temperature seals and dust-protective bellows. This allows them to be repeatedly impacted even in the hottest and dirtiest of environments.

The applications within steel mills that require energy absorption include:

- Overhead & gantry cranes
- Billet endstops
- Rope-breaking dampers
- Ladle (transfer) cars

STEEL MAKING PLANT OVERHEAD CRANE

SMALL STACKER RECLAIMER

Mining

The mining and bulk material handling industry with its use of heavy equipment, includes a variety of applications which require energy absorption protection to safeguard equipment and people in emergency impacts, as well as other applications which use damping as part of their normal operation.

The particle-laden air that the buffers must work in requires robust shielding so that they can operate correctly at a moment's notice and repeatedly.

All Oleo buffer ranges can be fitted with dust-protective bellows to allow the buffers to repeatedly stroke without particles getting inside the unit and this extends its lifetime. Oleo's simulation software can be used to select buffers for applications with rotational movement as well as linear movement and so amongst others can be used for:

- Stackers/reclaimers
- Wagon train dumpers
- Wagon train indexers
- Transfer cars

STACKER CRANE

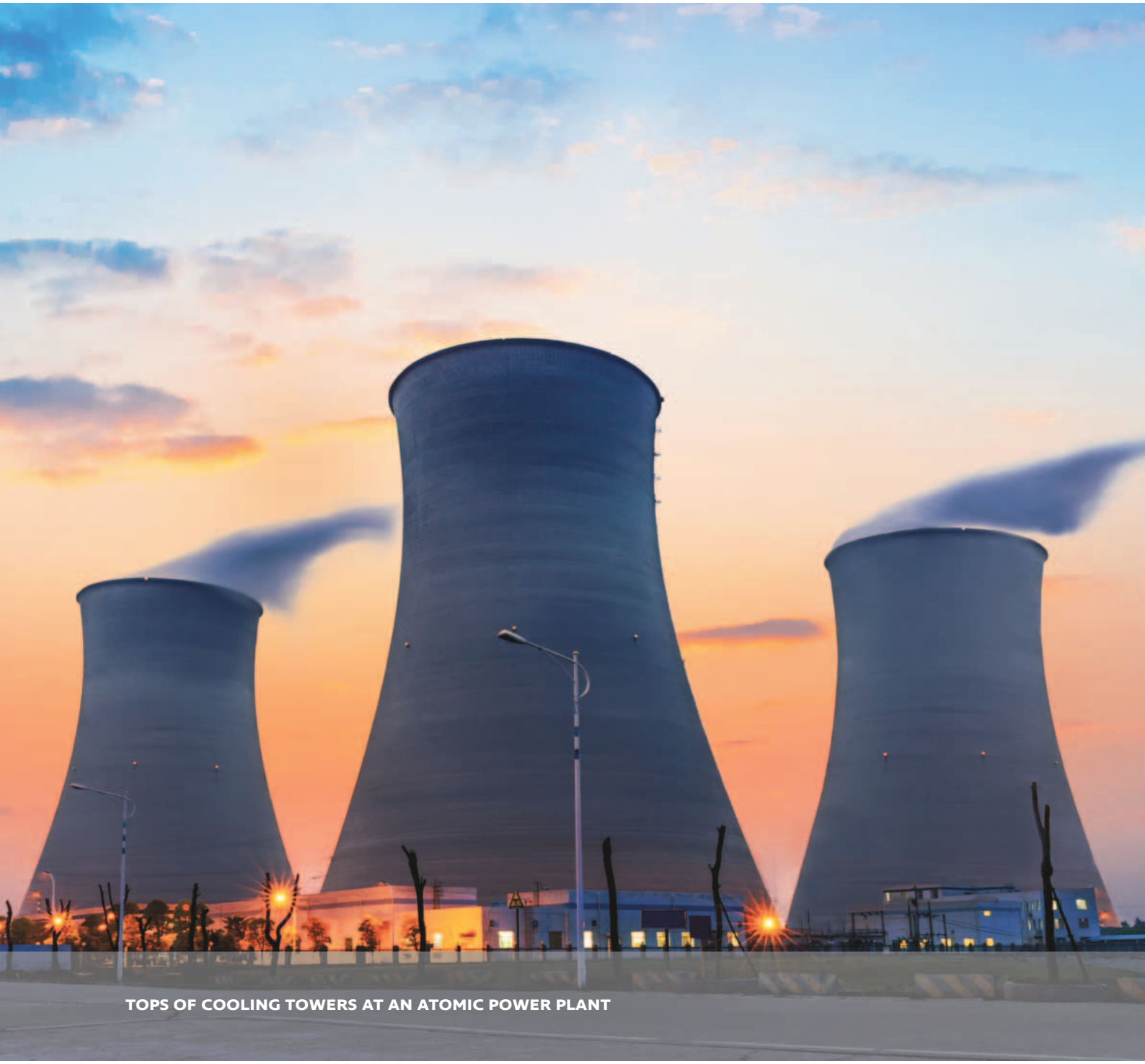
Warehousing

Making efficient use of space in the warehousing industry is fundamental in the selection of all equipment.

Warehousing uses long buffers for the stacker cranes of its automatic storage and retrieval systems (AS/RS) in order to meet the strict requirements for protecting transported products as they slow down during a normal operation or emergency buffer impact. Since length is at a premium for an industry in which space optimisation is key, Oleo specially optimises the internal characteristics of the buffer wherever possible to reduce the size of the buffer required and therefore keep installation length to a minimum.

Energy

The public service that the energy sector provides makes equipment reliability essential.
The energy sector brings particular demands, whether it is the use of single failure proof (SFP) overhead cranes in the nuclear industry for which reliable overtravel buffers are essential or whether it is for dampers being used in devices for harnessing wave power – part of the next generation in energy production. The low maintenance requirement of Oleo buffers is a big advantage in all of these cases due to the savings it allows on labour time.



TOPS OF COOLING TOWERS AT AN ATOMIC POWER PLANT

AMUSEMENT PARK DROP TOWER RIDE

Fun Rides

While thrill-seekers have benefitted from the elaborate ways fun ride designers have created to fling their bodies around, there has naturally become a role for energy absorption to play in controlling some of this energy.

In the case of some drop tower rides, gas hydraulic buffers are used in normal operation to cushion against uncomfortable jolts to the paying passengers and to also adapt to emergency situations when a brake fails, in which case it is able to absorb this extra energy in the same controlled manner. Oleo buffers are optimised for the mass that is impacting them no matter what velocity they are being impacted at – no manual alteration of the buffer is required. This means that for any given impact velocity, the peak forces that are experienced by the passengers will always be the minimum that they can be.

End Stops

On the rare occasions a train fails to stop or slow down sufficiently on a mainline, depot or test track, the risk is that it collides with or overrides the end of the platform/line.

With train velocities increasing and a greater emphasis on the importance of passenger safety and rolling stock protection, end stops are an essential component of any new rail project. With over sixty years of experience within the rail industry, Oleo has an in depth understanding of train performance though train running and impact simulations, ensuring efficient and effective end stop solutions are provided to the industry in the event of a train failing to stop. By dissipating the impacting energy through friction clamps, gas hydraulic buffers or a combination of both, each solution is optimised to provide the lowest deceleration rates whilst maintaining minimal installation distances.

FIXED HYDRAULIC RAIL END STOP

DOUBLE LEAVED BASCULE BRIDGE

Bespoke

Gas hydraulic buffers can apply to a wider array of applications than the traditional uses or industries they are supplied to.

Oleo has a depth of experience in working together with customers on specific or less common applications to find a buffer selection that will meet all the needs of their specification. For companies who are confident with buffer selection, Oleo will make available the use of its powerful and speedy simulation software to allow quick iteration in the design process, backed up by the dependable data this outputs. Yet Oleo's team of experienced applications engineers who have a deep understanding of the fundamentals of energy absorption will always be available to provide as little or as much guidance as required.

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