

# HYDROGEN STORAGE SYSTEMS TANKS



## HYDROGEN STORAGE SYSTEMS – TANKS

Rheinmetall's **380 bar Hydrogen Pressure Type IV Tank System** represents a cutting-edge solution for high-pressure hydrogen storage and is also available in other pressure levels upon request. This **system** is designed as a full **plug-and-play** setup, offering seamless integration of tanks, mechanization, and framing components. It is engineered to provide maximum efficiency and reliability in hydrogen storage applications, catering to industries where safety, space optimization, and performance are paramount.

A significant advancement in the system is the incorporation of a new multi-filament vessel winding technology, utilizing state-of-the-art towpreg materials. This technology sets a new standard in tank production, offering significant advantages compared to conventional methods. This technology **reduces winding time by up to 80%**, depending on the size of the tank. Furthermore by optimizing the winding pattern the improved material usage **reduces the need for carbon fiber composites by up to 10%**, while still delivering superior strength and durability. This reduction in materials not only cuts costs but also **increases storage capacity by as much as 5%**, making it a highly efficient solution for hydrogen storage.

Safety is a top priority in the design of this system. To enhance operational safety, the system includes a new and innovative linear fire detection mechanism, which ensures a more secure thermal pressure relief process. This advanced feature provides early detection of potential fire hazards, allowing for safer pressure management and greater overall system security.

In summary, this hydrogen storage system combines technological innovation, material efficiency, and enhanced safety features to deliver a superior solution for modern energy storage needs. Its advanced design and engineering make it an ideal choice for industries looking to adopt more sustainable and reliable hydrogen-based energy systems.

### RHEINMETALL POWER SYSTEMS DIVISION

Within Rheinmetall the Power Systems Division is a system provider for high-quality and innovative (mobility) solutions, control technologies and digital applications for the automotive and energy industries, among others.

With its Business Units and Business Areas, the Division stands for outstanding expertise in the following areas: air management, thermal management, e-mobility and digitalization, hydrogen technology, metallic plain bearings, composite materials and lightweight construction. The Power Systems Division also represents Rheinmetall's global aftermarket activities through the Trade Business Unit.

### CONTACT

#### Power Systems Division

Pierburg GmbH · Alfred-Pierburg-Str. 1 · 41460 Neuss  
[power-systems@rheinmetall.com](mailto:power-systems@rheinmetall.com)