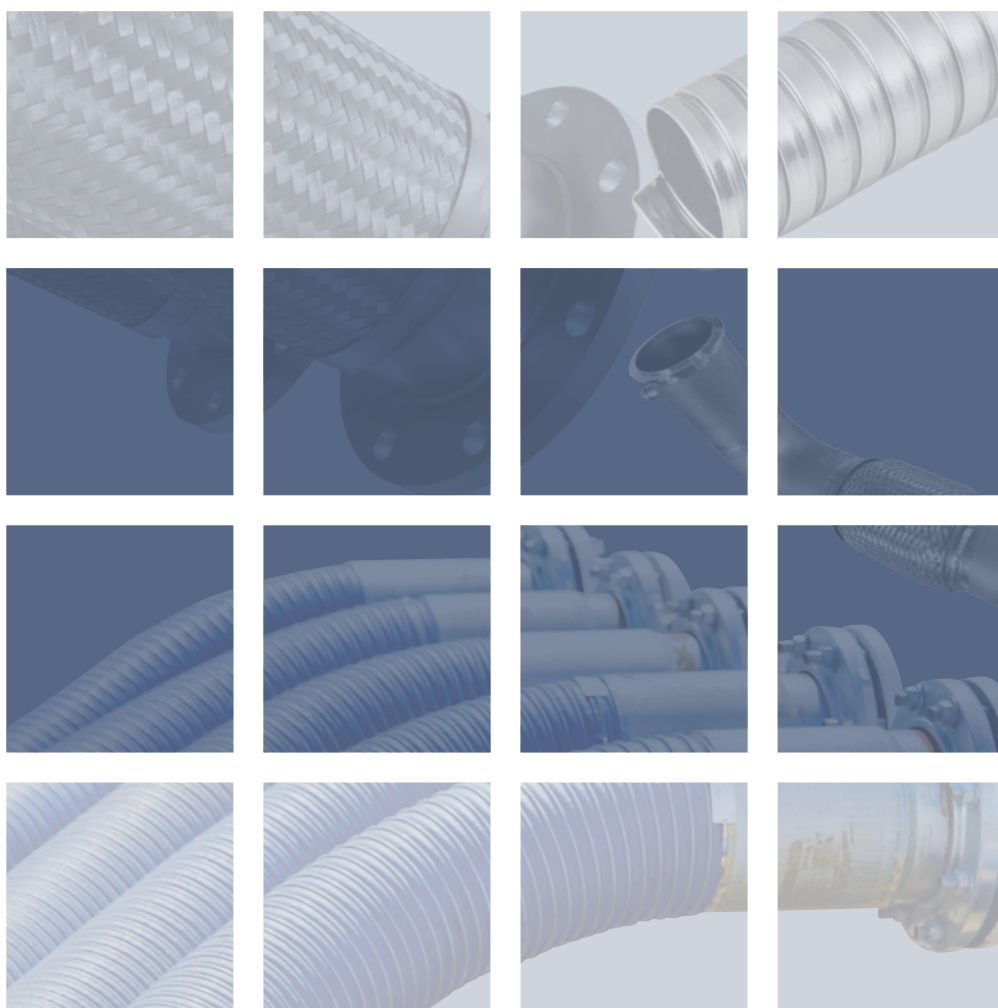


# ATAG

SERVING INDUSTRY SINCE 1947



**FLEXIBLE  
METAL HOSES,  
CRIMPED AND  
COMPOSITE**

# PAST, PRESENT, FUTURE

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**ATAG** is serving industry since **1947** and is constantly growing.

The wide range of products, the three domestic locations, the controlled companies, the large warehouses, the extensive sales network, the increasingly stringent internal workings, the website in constant evolution and a service based on the qualified technical expertise offered by our sales department, are the reasons why our customers rely constantly on ATAG.

In recent years we have incorporated complementary companies, using their great competencies to improve our own skills. An efficient export department, our European resellers and long-standing customers, allow us to have a better knowledge of foreign markets and strengthen our presence beyond the Italian borders.

Collaborations and agreements with international prestige partners enable us to offer our country products and solutions that are already appreciated and well established in Europe, and to stimulate our research into improved solutions for the Italian industry.

# FLEXIBLE METAL HOSES, CRIMPED AND COMPOSITE



**Flexible Metal Hoses**



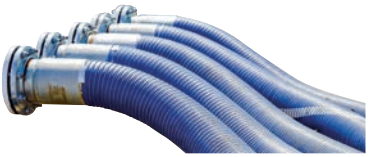
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**Crimped Flexible Metal Hoses**



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**Composite Hoses**



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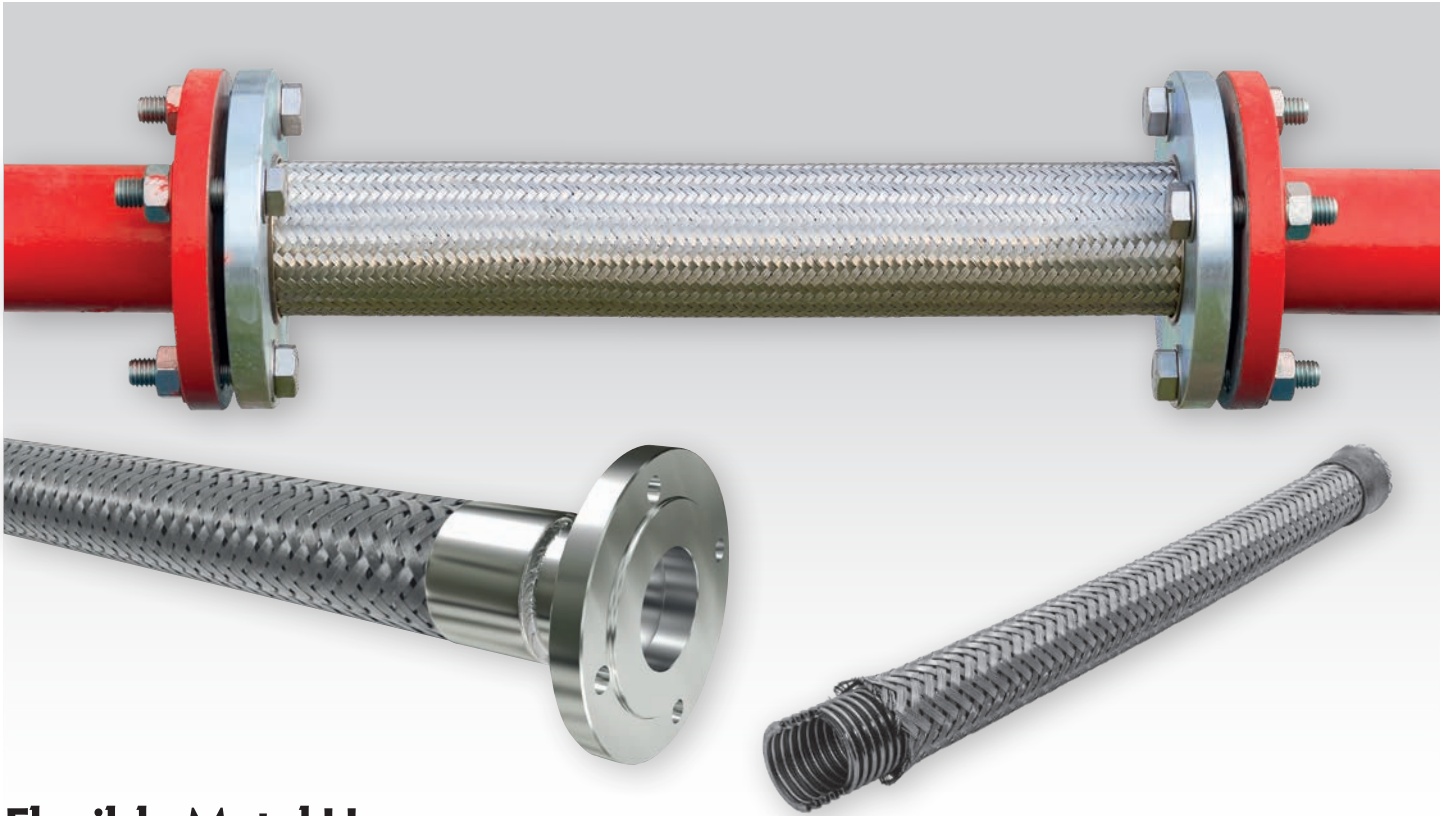
## Flexible Metal Hoses

Our metal hoses are designed to operate under extreme conditions (chemical, food, energy, steelmaking, OEM), ensuring high resistance to corrosion and **elevated temperatures**. Essential for the transport of critical fluids, they act as dynamic components that absorb vibrations and compensate for thermal expansions, offering reliability and safety tailored to each system.



The Corrugated Flexible Metal Hose is **ideal** for steam, gas, and solvents in the pharmaceutical, food, and petrochemical applications. Our hoses provide both mechanical and thermal protection. Construction excellence is guaranteed by rigorous testing and **international certifications** (PED, ASME, ATEX, MOCA) ensuring perfect system integration. They are manufactured in **AISI 321** or **AISI 316L**, and reinforced with one or two **external braids** in **AISI 304L** or **AISI 316L**. For critical applications, we also develop customized solutions using **special alloys**, based on dedicated technical analysis.

## FLEXIBLE METAL HOSES



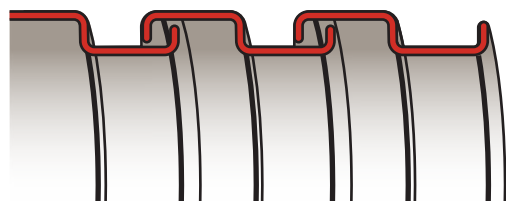
### Flexible Metal Hoses



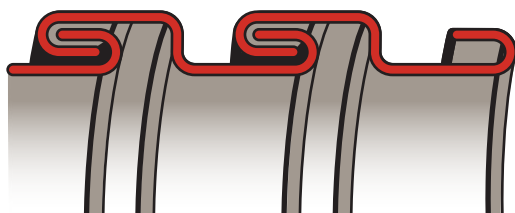
The type of end connection is welded using **certified processes** that ensure perfect structural integrity and sealing. We offer maximum flexibility in end fittings: from **standard components** (flanges, swivel female connectors, nozzles, quick couplings, and more) to **custom solutions** based on customer design, supported by ATAG's decades of experience. Additional performance enhancements are available, including **thermal protections, anti-abrasion spirals, anti-pullout cables,** and other **engineered solutions**. Each component is designed to maximize structural resistance and meet **specific environmental requirements**.

## Crimped Flexible Metal Hoses

**Crimped hoses** are a specific type of flexible metal hose made from a steel strip wound and tightened (**crimped**) in a spiral. This technology differs from other flexible metal hoses, such as corrugated and/or convoluted hoses, and presents distinct technical characteristics.



Simple Crimped



Double Crimped

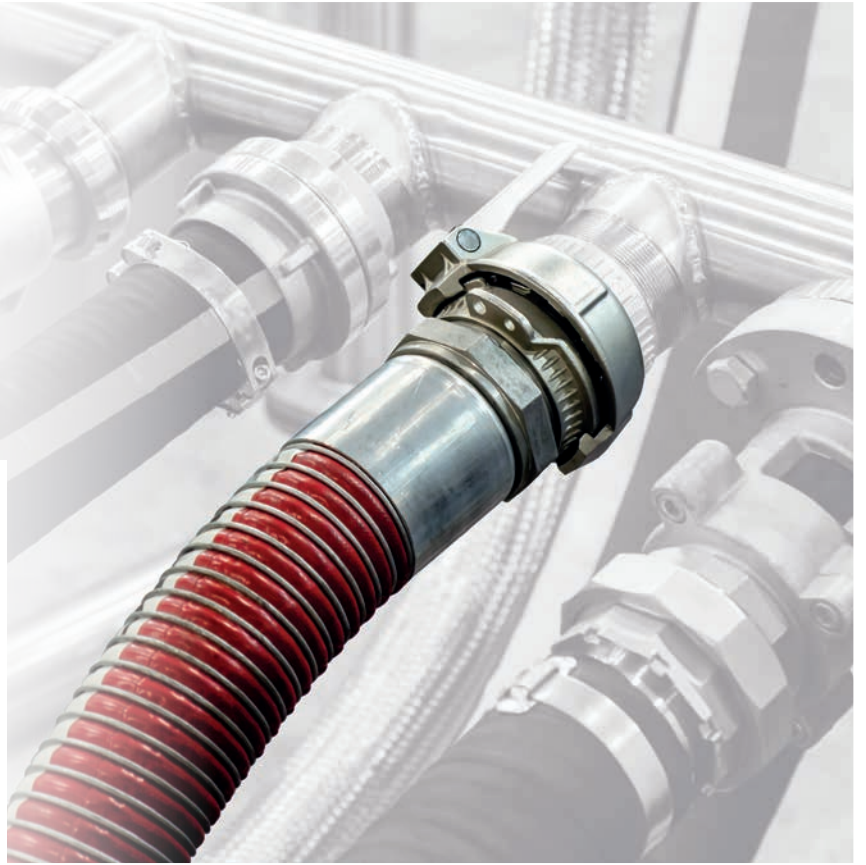
Crimped hoses are divided into two categories: **Simple Crimped** and **Double Crimped**, the difference being primarily structural. The Double Crimped version offers higher mechanical strength and stability compared to the Simple version. Both types require the use of gaskets inserted between the spirals (rubber, copper, fiberglass, cotton) to ensure pressure tightness, as their construction involves intentional discontinuity in the metal structure, required for specific applications. Crimped hoses offer several technical advantages: high flexibility even in large diameters, axial expansion and compression capability, and good resistance to impact, vibration, and bending. The double crimped version further increases rigidity and durability. Made of stainless or galvanized steel, they can operate at temperatures reaching several hundred degrees Celsius, depending on material and sealing elements. Versions without gaskets are used as mechanical protection for electrical cables or pipes, while those with gaskets are used for conveying air, powders, granules, exhaust gases, furnace ventilation, and high-temperature fumes.



# CRIMPED FLEXIBLE METAL HOSES

## Composite Hoses

**Composite flexible hoses** are a highly efficient solution for fluid transfer in the chemical and petrochemical industries, as well as in service and transport sectors. The unique multilayer construction makes them extremely safe when handling **aggressive substances** at varying temperatures, including high ones, and pressure conditions, while maintaining excellent flexibility.



They are made from combinations of films, fabrics, and reinforcing spirals that form a unique assembly. Different layers (polypropylene, polyethylene, polyester, or PTFE) are not bonded or vulcanized but carefully arranged and locked between two spirals, one internal and one external, forming a flexible, resistant, and impermeable aggregate. In practice, the internal spiral pushes the structure outward, while the external spiral locks the layers inward. This results in a hose that is **lighter, stronger,** and **more durable** than equivalent single-material hoses. Key advantages include light weight, corrosion resistance, high mechanical strength, and improved heat dissipation from the conveyed fluid. They are mainly used in the energy sector for gas transfer (methane or other industrial gases), in the chemical industry for aggressive substances transfer, and in aerospace, marine, and automotive applications such as fuel transfer and rapid refueling systems (in flight, in competitions). In summary, **composite hoses combine the advantages of multiple materials:** lightness, strength, durability, and corrosion or impacts resistance, making them a modern alternative to traditional steel or plastic hoses.



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