Full steam ahead

Feel the difference: The upgraded DS1 *ultra* steam hose with significantly improved flexibility

With its durability, robustness, and reliability in usage, the Semperit DS1 has been one of the top products in the application of steam hoses over the past years. The focus for the next generation of our well established DS1 hose was now clearly on **improved performance** in terms of **flexibility** in handling and **resistance to superheated steam**. Based on these targets the new Semperit **DS1 *ultra*** was thus developed.

The new version Semperit **DS1 *ultra*** is extremely **user friendly** due to its **highly increased flexibility**. This quantum leap in flexibility can be felt immediately while using the hose and very little effort is required to bend it. This important attribute represents a major deciding factor for the end user.

The new design & key characteristics

With consistent innovation and technical expertise, the Semperit **DS1 *ultra*** has undergone **major further developments**. By redesigning the multiple hose-layers, the **resistance to superheated steam was improved** and the **flexibility significantly increased**. The bending radius is now ~20% smaller than the former version DS1 as well as the bending force has reached a new level with a reduction of ~35%. At the same time the resistance to saturated steam and hot water was maintained at the original best-in-class performance.

REDUCED BENDING FORCE & RADIUS
INCREASED FLEXIBILITY

The temperature range of the **DS1 *ultra*** is up to +210°C (saturated steam), respectively up to +230°C (superheated steam). It is constructed with **2 braided layers** and with a **zinc plated** reinforcement. Using zinc instead of brass provides a major advantage towards competitors as it is more **corrosion resistant** and more **resilient towards saturated steam**. Thus, the hose with zinc-coated wires retains its compressive strength longer.

Another advantage is the direct connection to our **HOSE WIKI APP**. The **DS1** *ultra* is marked with a QR code which leads directly to valuable product and additional relevant information. These encompass e.g. the product datasheet, supporting documents, certificates, saturated steam table, safety instructions, contact information and more features. The QR code is scannable directly from the hose by any mobile device and therefore provides a quick and easy accessibility for all hose users.

Try to scan the QR code with your phone now!

Order & Delivery

Semperit offers the new **DS1** *ultra* in the **dimension range** from **DN13 to DN50**. Samples can be requested via our customer service team.

Available dimensions and lengths:

- 13 x 6   in 60m
- 19 x 7   in 60m
- 25 x 7,5   in 40m
- 32 x 8   in 40m
- 38 x 8   in 40m
- 50 x 9   in 40m

Available on request with a minimum order length of 600m:

- 16 x 6   (in 40m or 60m)
- 19 x 6   (in 40m or 60m)

For more detailed information and to place your orders, get in touch with our customer service team. Further technical details can be found in the saturated steam table and are described in the respective datasheet on our website.

"Expert Talk"

Special application challenges

Working with steam always requires high safety during usage. Hoses for the transport of steam are designed according the **EN ISO 6134**, which defines many criteria such as safety factor of 10:1.

Steam is used in various industries, either for cleaning and processing or for energy-transport. In any case its mandatory for a good steam-hose that the steam gets transferred without any performance-loss from the generator to the place of use, even over greater distances. Therefore, only materials which withstand high temperatures and pressure rates are used.

In the **chemical and petrochemical industries** steam is used as a process and heat-transfer medium. During cold seasons steam is used to **heat up wagons**, to increase the viscosity of the content (e.g. mineral oil) for easier emptying. It can also be used for **de-icing train tracks and switches**, or even for temporary **heating in buildings** during construction in the winter months. For the **food industry** steam is an important medium for cleaning and sterilization to fulfill highest hygienic requirements.

The main intention is to always use **saturated steam** only. In practice, however, two other conditions also might occur and should be considered: **Hot water** (the temperature is too low for the pressure) and **overheated (dry) steam** (the present temperature is too high for the pressure).

Saturated steam at 18bar /210°C is already a major stress for rubber compounds. Hot water (condensation water) and superheated steam, however, represent an even greater stress.

Overheated (dry) steam is very critical because it fetches the missing moisture from its environment (hose). This dissolves various components (mostly plasticizers) from the compound and makes the rubber compound hard and porous until it cracks. Therefore, it is important to prevent steam (or water after cooling) from entering the hose compound. If the water content is too high the so called **popcorning effect** can occur. In this case, the water trapped in the rubber compound is heated with steam to such an extent that it becomes gaseous, significantly increases its volume, and causes rubber parts to pop open like popcorn (see picture).

Gerhard Mahlfleisch (Product Manager, Semperflex Industrial):
"With the appropriate compound design, including the formulation and manufacturing process, the risks of the popcorning effect can be reduced to a minimum. **The Semperit DS1 *ultra* fulfills this perfectly**."