

The Stripwinding Principle

STRECON is the leading developer and manufacturer of prestressing tool systems, which are manufactured on the basis of the stripwinding principle. The prestressing tool is known as the STRECON container and used for different high-pressure applications.

The stripwinding process

The stripwinding process is performed by a special machine, which fully controls the winding tension of each strip layer during the stripwinding process. The strip material is wound around an inner core of high-alloyed tool steel or tungsten carbide. The strip material has a thickness of 0,1 mm; it is fully elastic up to approx. 2000 MPa, and it can be stressed up to 1% before elongation initiates. In other words, the strip material is a very strong and elastic steel material.

The figure provide a graphic explanation of the difference between a stripwound ring and a normal ring system. As can be seen, the stripwound system offers a constant stress distribution across the full radius of the stripwound body. This feature is unique to the stripwinding technology.

Strip200 and Strip400 materials

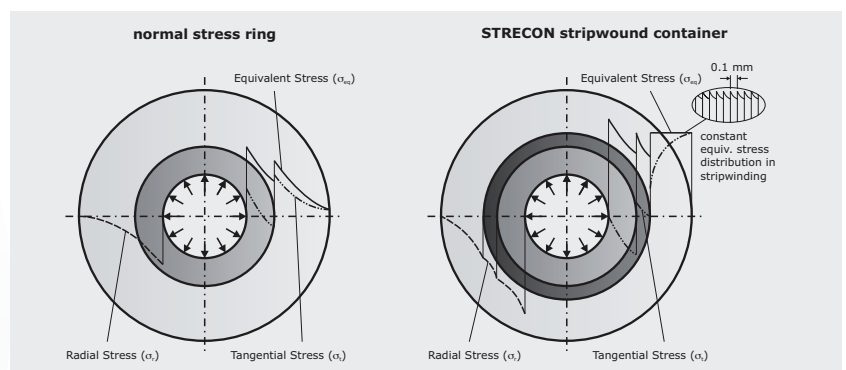
STRECON is using two different strip materials: Strip200, and normally used in applications where the coiled strip section would not exceed 200°C; and Strip400, which is used for applications of higher temperatures but not exceeding 400°C in the coiled strip area. If the coiled strip section will be exposed to higher temperatures than prescribed, the strip material may yield and in such case, it will find a new point of equilibrium. This situation shall normally be understood as the stripwound ring system has lost some of its original strength and inside tool dimensions (ID).

Hundreds or even thousands of strip layers

A prestressing tool made by stripwinding consists of several hundreds or even thousands of strip layers. For example, a STRECON container Ø200 x Ø80 mm would normally have approx. 1000 layers of strip material. Each layer of strip material will be adding to the overall strength of the stripwound tool system, and thus explaining the superior strength compared to a normal compression ring.



The stripwinding process



Comparison of the equivalent stresses of a normal compressing ring with the prestressing tool system made by stripwinding