



Enabling Farmers to Better Till Their Land

No farmer is pleased when he can no longer properly break up the soil with his disc harrows. That, however, is about to change: Angst+Pfister has developed a special rubber compound for rubber cords, which securely maintain the disc harrows in their working position. Across Europe, enterprises manufacturing agricultural tillage equipment have expressed much interest in it.



For a year, perhaps a little longer, everything appears to be going well. The farmer attaches the harrow to his tractor and drives onto the field to cut and break up the soil. But then the disc harrows no longer firmly attach to their tracks.

Furthermore, the cutting angle and depth seem to fluctuate at random. What happened? The rubber cords inside the swivels of the arms holding the disc harrows have worn out. They are plastically deformed and no longer fulfil their function as spring joints.

“It doesn’t have to be that way”, says Angst+Pfister’s Raphael Friedli. The Senior Engineer specialises in antivibration technology and he organises a meeting together with his colleagues at Laspar Angst+Pfister in Turkey, who are the experts when it comes to the development of new elastomer compounds. Within just a few weeks, the compounding specialists in Bursa, Turkey, create a completely new composition. Which raw rubbers and admixtures they add at which quantities for sure remains their secret. However, tests are showing that their new compound is both weather and UV resistant and that even harsh environments can do it no harm.

Significantly Increased Service Life

Even the ageing process is simulated – not only for the rubber compound, but also for comparative compounds. The new compound manages to outperform every single elastomer mixture it was compared with. In other words: Its service life is several times longer than that of the compound of the rubber cords which had been used in tillage equipment thus far.

„Unparalleled Stability”

It only takes four weeks for the prototype tool to be ready, and then a few days later the prototype of the new rubber cords becomes available as well. The first customer to build them into his disc harrows is surprised by his test results in the 1:1 environment. He calls the stability, with which the disc harrows were now working, “unparalleled”. And he can also expect the rubber cords to remain in shape as spring elements for many years to come.

Customised Shapes Also Possible

Meanwhile, Angst+Pfister’s rubber cords have gone into serial production. Notable manufacturers of agricultural tillage equipment from across Europe have expressed interest – countless of them have already begun using the new product. For the sake of dimensional accuracy, Angst+Pfister does not produce by extrusion but by injection moulding. This production method also allows for customised shapes which deviate from the usually round cross section. For a German manufacturer, for example, Angst+Pfister produces rubber cords with small nubs that make assembly simpler and safer.

Farmers do not need to worry anymore. And should the disc harrows ever come across a rock, they immediately move upward. The new rubber cords absorb the shock, without wearing out too quickly.