

TOSCOTEC TT STEELDRYER SALES REACH NEW RECORD HIGH IN 2019.

Toscotec pioneered the manufacture of steel dryer cans in the 1960s, at a time when cast iron dryers still held a dominant market position. After many years of struggle between the steel and cast iron theories, Toscotec's concept is now winning and it is being selected for many dryer section rebuilds around the globe. Toscotec Paper & Board division Head of Sales Enrico Fazio explains how and why.

What makes Toscotec's dryer section rebuild solutions stand out on the global market?

Toscotec has been designing and manufacturing the dryer sections of paper machines since 1960. When the market, only relatively recently, recognized the advantages of the use of steel for the fabrication of dryer cans, Toscotec notably strengthened its leading position as the steel dryers supplier with the greatest experience in the paper industry. Higher energy cost accelerated this market change, causing the shutdown of many cast iron foundries. As a result, our competitors followed in our footsteps by switching to steel. In the last 5 years, we registered a significant sales rise that led to the manufacture of over 100 TT SteelDryers per year. In 2019, we reached the record-breaking figure of over 170 TT SteelDryers under construction in one single year.



To this day, Toscotec has sold more than 1,500 TT SteelDryer across 5 continents since 1960. These are unmatched results at a global level.

What are the advantages of steel vs cast iron?

Back in the 1960s at Toscotec, it all started from the idea that just like other pressure vessel it was manufacturing, such as water boilers, the dryer cans used in the paper industry could be fabricated in steel as well. To a company that was using steel for other heat transfer applications, it came naturally to apply this experience to paper machine dryer cans. The market did not welcome this innovation at first, the market being very conservative and because most people at the time believed that cast iron was the best material for papermaking applications. This myth was definitely debunked, especially recently.

In term of advantages, first and foremost, steel dries paper more efficiently than cast iron. Its mechanical characteristics are superior to those of cast iron and the construction codes of steel pressure vessels allow the reduction of the shell thickness, thereby achieving higher efficiency on

the heat transfer to the surface of TT SteelDryers and to the paper sheet. The heat transfer coefficient of a steel dryer can be 5% to 10% higher than cast iron.

Secondly, for the same dimension, steel cylinders offer a higher drying width than cast iron. This is because the heads of TT SteelDryers are welded to the shell instead of being bolted into the shell as with cast iron dryers. This design allows the paper to get closer to the heads. As a result,

given two cylinders of the same width, one in cast iron and the other in steel, the steel cylinder dries a wider paper sheet than cast iron.

Thirdly, there is no construction restriction on the diameter of TT SteelDryers. We can engineer and manufacture any diameter, based on the specific requirement of the project.

Finally, the fact that we do not use bolts and gaskets between the shell and the heads of the cylinder, eliminates any risk of steam leakage, which is quite typical of cast iron dryers.

How did the concept of TT SteelDryers developed over the years?

Toscotec has been innovating its technology incredibly over the years. Much R&D work has also been devoted to single equipment, such as TT SteelDryers, and thanks to this, we have made great progress in optimizing our manufacturing process, quality control and engineering design. For instance, we introduced a new design, where the dryer's journals are bolted into the heads. This goes into the direction of cutting maintenance cost, because if you have a problem on one of the journals, you can easily replace it without changing anything else.

How has Toscotec P&B division been evolving in the last few years?

Toscotec's P&B division registered a significant growth in the last 5 years. We significantly increased our sales revenues over this period. We owe it to the fact that the market recognized us as the leading manufacturer of dryer sections. We also provide dryer section rebuilds on a turnkey basis, the last order we received from Smurfit Kappa Cellulose du Pin in France for a 6m wide machine is one such example.

These developments led to the addition of new resources in our technical and sales departments. Looking ahead, it is in our DNA to always embrace new challenges and raise the technological bar. We are currently developing the project of a larger and faster paper machine of 9m width. Looking into the future, we are working to further optimize the manufacturing process of TT SteelDryers. Toscotec made the strategic decision of manufacturing all its dryers cans internally, in order to

control the entire construction process, from the supply of 100% certified materials, down to the final quality check of the cylinders. We can certify TT SteelDryers for any country in the world, in compliance with the National Board Inspection codes for pressure vessels, such as ASME, PED, TÜV, CSEI and JIS.

Which key markets are you targeting for P&B at present?

Definitely Europe and Latin America, our traditional markets. North America, where we are already developing a number of projects with top paper groups. We are also working to grow in markets where we see high potential for our technology.

You mentioned the experience you have with turnkey projects, what is Toscotec's definition of turnkey?

Toscotec aims to be a solution provider and not only a machine supplier. If a customer requires a turnkey supply, we have the capability to design, manufacture and install complex technical solutions. So besides the TT SteelDryer, we also make hoods, steam plant, sheet stabilizing systems, and automatic tail treading systems, just to name a few. We also provide services, like erection or/and erection supervision, commissioning and start-up assistance.

The engineering design is completed by our technical department, both for complete paper lines and for rebuilds. Rebuild projects always require the highest level of customization, because they are truly tailor-made to the customer's needs.

Apart from the dryer section in which you are the leading supplier, what other technological solutions are you developing?

In order to become the leading supplier of highly technological rebuilding projects, Toscotec has also developed a series of advanced technological components installed in other sections of the paper machine, including the shoe press TT Xpress. Presently, we are installing TT Xpress with high linear nip load, up to 1,300 kN/m, and mini shoe presses with lower load capacity, up to 600 kN/m. We also provide the TT Transfer, i.e. cutting-edge solutions for tail threading systems using transfer belts.

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