

# TRM PILING SYSTEMS FACTSHEET

Tall structures



## Wind farm Poysdorf, Österreich

- + Pile type TRM 170, wall thickness 9.0 with grouted pile shoe TRM 250
- + Foundation depths between 12 and 20 m
- + Maximum loads 900 kN compression and 320 kN tension
- + 14 „Vestas V90“ turbines with 2 MW each (total 28 MW)
- + Plant produces 67 million kilowatt hours of electricity per year
  - annual consumption of 17,000 households
- + Implementation in 2005 and 2007

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## Initial Situation

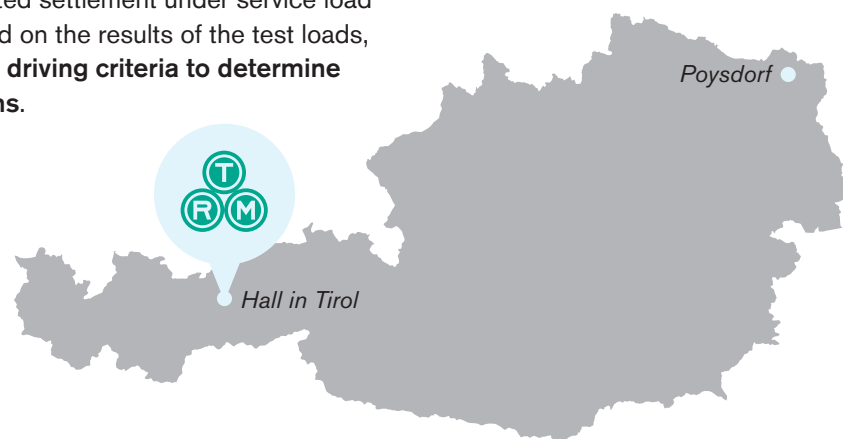
The foundation stone for the **Poysdorf wind farm** was laid in 2005 when 9 wind turbines were built. The first expansion stage took place in 2007 with 5 more turbines of the same type. Since then, the plant has been steadily expanded and is now the **largest wind farm in Lower Austria**. The Green Electricity Act 2012 was the decisive **basis for**

**this positive development of wind energy in Austria**. By the end of 2022, 1,371 wind turbines with a total capacity of 3,573 MW were generating **clean and environmentally friendly electricity** for around 2.3 million households; that is **more than 50 percent of all Austrian households**.



Wind turbines are founded on TRM ductile iron piles.

**Prior to the driving work, 3 pile test loads were carried out.** The evaluations showed an **average load capacity of 1,700 kN with very consistent results despite varying pile lengths**. The expected settlement under service load is approx. 6.0 mm. Based on the results of the test loads, the soil expert **specified driving criteria to determine the required pile lengths**.





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## Deep foundation

The **Vesta V90 wind turbine** with 2 MW has a total weight of 328 tonnes and a hub height of 105m. The 3 rotor blades have a diameter of 90m. In order to erect these **large structures**, a **foundation is needed that can absorb compressive and tensile forces and adapts precisely to the ground conditions.**

The three-layer soil structure of locally very heterogeneous subsoils required, according to the expert, a **driven pile system with variable lengths**, which also allows a conclusion to be drawn about the load-bearing capacity of the piles.

For this reason, the **TRM Piling System** was chosen. The foundation was built with **TRM 170/9.0 grouted ductile driven piles** with a **TRM 250 pile shoe**. In accordance with the tender, the piles were installed in **lengths between 12 and 20 m.**



Driving of the grouted ductile iron piles



Granular subbase with connection of the tensile reinforcement to the foundation



Reinforcement of the foundation

**Do you have any questions?** Our experts will be happy to advise you.

