



TECHNOBELL
TECHNOLOGY

CFW MACHINE

Continuous filament winding machine

.....
The CFW Machine is designed for a very high production capacity. It is the ideal solution when the GRP pipes are used for water transmission and distribution, desalination plants, cooling systems in power plants, irrigation projects and sewage.

Technobell CFW production line and technology are distinguished by the following advantages:

- Very high pipe production speeds over 60 m/h resulting in considerable reduction of pipe production cost
- Computer controlled CFW line guarantees stable and high production quality and minimizes the human error factor
- Improved raw materials distribution system guarantees high pipe quality and low waste
- Improved system for diameter change resulting in 40% operation time reduction in full diameter range
- Advanced Know – How, confirmed by long term testing, on raw materials, design of GRP pipes and fittings, testing and application enables our clients to be competitive on the market





Process description

The CFW Machine is designed for the continuous production of GRP pipes. The pipe manufacturing is done on a rotating mandrel assembly with discs, aluminium beams and steel band, sized according to the required pipe diameter. The steel band moves in the axial direction, sliding over the bearings located in the aluminium beams. At the end of mandrel, an exit head guides the steel band into the inner tube of the mandrel.

At the opposite end of mandrel, the steel band is wound onto the mandrel again. The steel band forms a mandrel with a smooth surface simultaneously advancing in the axial direction.

Raw materials are applied simultaneously to the respective mandrel positions depending on production technology. The laminate build-up can be easily performed in compliance with the appropriate design by controlling the amount and position of the various materials applied. After the curing oven, the pipe is automatically cut and calibrated to the required length by a dedicated unit.



CFW Machine types

- CFW1200: 300 – 1,200 mm pipes
- CFW2600: 300 – 2,600 mm pipes
- CFW3000: 300 – 3,000 mm pipes
- CFW4000: 400 – 4,000 mm pipes



.....

Line capacity

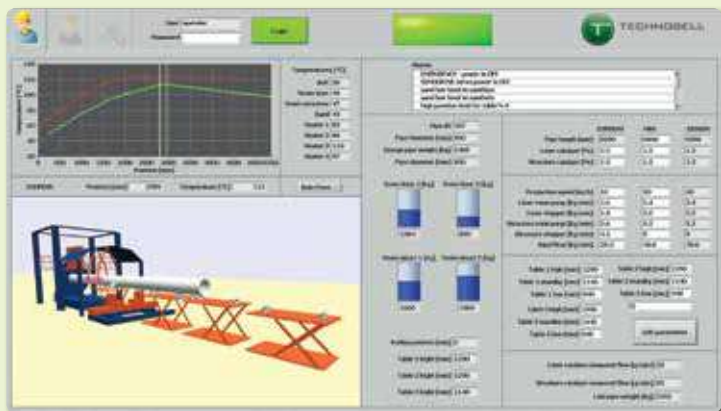
The capacity of the production line is over 200 km/year of DN900 mm PN6 bar pipe (based on 300 production days/year, three shifts).

CFW3000 area and height required

Width = 13 m
Length = 29 m
Height = 7.3 m (under bridge crane)

Utilities requirements

Max. power supply = 3 x 400 V / 50 Hz
Max. installed power CFW3000 = 190 kW
Max. compressed air consumption = 8 bar - 4 m³/min



View on computer display

The CFW Machine is controlled by a advanced PLC controller. This was implemented to achieve high production speeds and at the same time making it more reliable and responsive. Multithreaded closed loops functions are controlling each of the raw materials dosing and control mechanisms, minimizing human error and helping the operator and technologists during production. Connection by back

office applications to check operation logs and production reports is now possible in real-time. This architecture allows remote monitoring and troubleshooting solutions to be provided by Technobell specialists.





.....

Resin mixing room

Double-wall, daily resin mixers connected to heating/cooling system enable accurate temperature control of resins. Mixers are used for mixing resins for pipe liner, structure and topcoat layer. Mixing is achieved by a low speed stirrer. Mixers are equipped with weighting cells. Resin quantity and temperature are displayed and controlled both on local panel and on CFW machine main console.

RMR 3000 main characteristics

Machine operators requirement (workers per shift)

1 machine operator

Resin daily mixer dimension

Diameter: 1,500 mm

Height: 3,200 mm

Utilities requirements

Max. installed power: 12 kW

