



The new Pujol
Temper Flex
tempering
furnace



Vitrum booth sees **PUJOL** and **EVALAM** shine jointly this year

INTRODUCING TEMPER FLEX

An established Vitrum exhibitor since 1997, Pujol Group graced the trade show in 2023 as with previous editions. This year held added significance, with the company unveiling its groundbreaking Temper Flex furnace - a unique and innovative glass tempering solution born from the technological expertise of Teknokilns Engineering. Catering to the evolving needs of glass professionals, it emphasizes the critical aspects of sustained low energy costs, impeccable optical

quality and adaptability to the ever-changing demands of the industry - including the processing of such technically-intricate glass types as soft-coated and selective glasses.

Temper Flex also distinguishes itself with its exceptional thermal efficiency and minimal energy consumption - an achievement that stems from a profound commitment to advanced engineering. This enables a higher level of insulation in the heating chamber while maintaining half the thickness in comparison with other manufacturers - an

innovation that employs cutting-edge, high-tech materials and permits the use of smaller-diameter rollers while reducing pitch between axes and offering superior planimetry.

For the thermal-heating systems, an advanced high-performance matrix panel system has been incorporated in the upper section. Coupled with integrated resistance design, it delivers impressive thermal efficiency - all thanks to a high-diameter Kanthal rod with elevated power W/cm^2 which ensures rapid heat transfer. Importantly, this

engineering and unique design prevents mechanical deformation of the resistances - guaranteeing a heating equipment lifespan that exceeds 12 years. Pujol further backs this with a five-year warranty - unmatched in the market.

On the lower heating side, Temper Flex employs an entirely innovative and disruptive solution - a ceramic module system with embedded resistances of high density, thermal transfer and mechanical strength. This system, coated with a non-stick glass layer, uniformly transmits heat to



Pujol booth during Vitrum 2023

Prior to concluding Vitrum 2023 with its positive balance in stand visitors, PUJOL was proud to exhibit Temper Flex, an innovative glass tempering solution, while EVALAM showed off its AB-AR – a structural interlayer with high mechanical resistance performance, and especially stable after breakage in environments exceeding 50°C.



the rollers and glass. It not only reduces energy consumption but also enhances speed and energy efficiency, as compared to traditional metal sheet-based resistance protection systems. Moreover, it lowers long-term maintenance costs for sheet replacement and cleaning.

Temper Flex also excels at ensuring the final optical quality of the glass - particularly in wide furnace solutions. Here the secret

lies in the spacing between rollers within the heating chamber, made possible by unique thermal insulation solutions. Smaller roller diameters, closer spacing, and more support rollers minimize optical distortion to unmatched levels.

For those who're after higher performance, the Temper Flex-IR models offer an optional high-efficiency convection system that injects preheated air at 500°C into the heating chamber. This

feature, present in the Temper Flex-Proconv Series, enhances flexibility, speed and quality while enabling tempering of various glass types - including layered, low emissive, selective and coefficient 0.01 glass.

Throughout the tempering process, Temper Flex places utmost importance on product quality and its effects. Extensive engineering optimization, including an efficient sectional ventilation system, reduces

anisotropies in the glass, thereby ensuring optimal planimetry, especially for glass exceeding 2.5 metres in length. Furthermore, this technical solution enables the use of a single turbine, improving efficiency and planimetry quality while reducing overall furnace length and associated electrical power and installation costs.

As for process regulation and control, Temper Flex is equipped with user-friendly

programming and a supervision system - simplifying operation for furnace operators. A large 55-inch screen monitors temperature across furnace sections, defines thermal profiles and scans glass surface temperatures upon exit. Additionally, it facilitates the registration and storage of process data, enabling operators to track each workload and create a recipe base for different glass types and loading provisions.

Temper Flex also includes the Pujol e-Connect system as standard - enabling remote process traceability, assistance and production control. In sum, Temper Flex offers a compelling package: low production costs, minimal maintenance, high-quality tempered products and exceptional production flexibility.

SHOWCASING AB-AR EXCELLENCE

At Vitrum Evalam presented AB-AR - a structural interlayer developed to enhance post-breakage security when using tempered glass. AB-AR boasts outstanding mechanical resistance, especially in environments exceeding 50°C. This makes AB-AR a unique solution for regions that have consistently high temperatures throughout the year. Notably, AB-AR's high-temperature stability sets it apart from other



structural interlayers introduced in recent years, which often lose their declared properties a Tg of only 36°C. AB-AR eliminates such limitations and risks in applications - particularly in areas with extreme temperatures. AB-AR serves as a technical interlayer laminated between glass, combined with Evalam EVA (ethylene vinyl acetate). That

combination produces compositions which are 50 percent lighter than glass alone whilst maintaining identical strength and enhanced safety. This makes AB-AR an optimum solution for various structures, including glass façades, structural windbreaks, walkable floors, stairs, ceilings and railings - as well as high-impact security situations.

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