



Made
in Russia

TECNO-FLU

Fluidization IQF Freezing Tunnel made by Tecnopool-R LLC, designed for shock freezing of vegetables, berries, fruits, mushrooms and seafood.



UP TO 10 000 KG/HOUR

The TECNO-FLU Tunnel's capacity of freezing - up to 10,000 kg of vegetables or fruits per hour for up to 5 days without defrosting.



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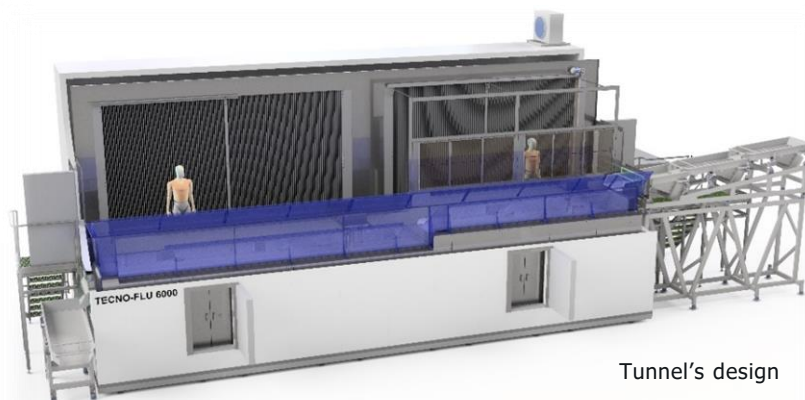
TECNOPOOL-R LLC

Tecnopool-R LLC launched operations in Russia in 2004 and today is recognized as one of the leaders on the domestic market for the production, design, supply, and installation of systems to transport, freeze, ferment, and fluidize food products. We offer the Russian market high-quality equipment that we produce in-house.

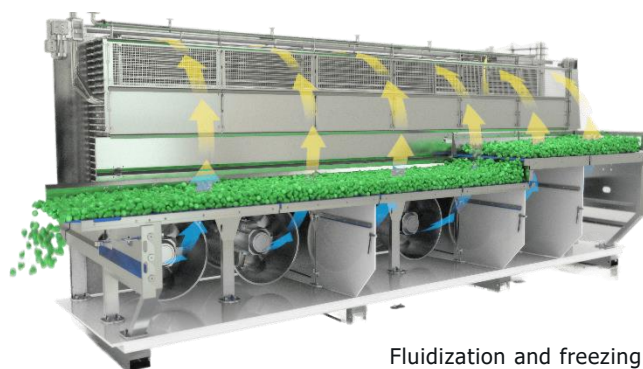
For more than ten years, Tecnopool-R has been using unconventional technological processes for food production, constantly developing, and producing reliable, efficient, and advanced installations with innovative solutions and broad opportunities thanks to our vast experience and developments.

TECNO-FLU – Fluidization IQF Freezing Tunnel made by Tecnopool-R LLC, designed for shock freezing of vegetables, berries, fruits, mushrooms and seafood.

- ✓ Fast freezing
- ✓ Best product quality after freezing
- ✓ Best equipment and components quality
- ✓ Large range of products
- ✓ Up to 120 hours without defrosting
- ✓ Best price and minimum production time



Tunnel's design



Fluidization and freezing process

Product entry zone



Circulating fluidization

Freezing zone
(ice crust formation process)



Gurgling fluidization

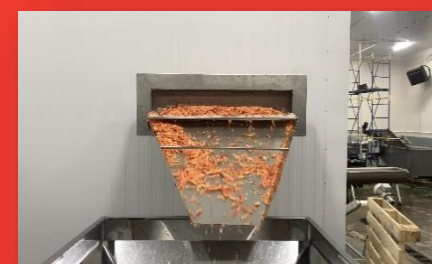
Final freezing zone
(reaching the final temperature inside the product)

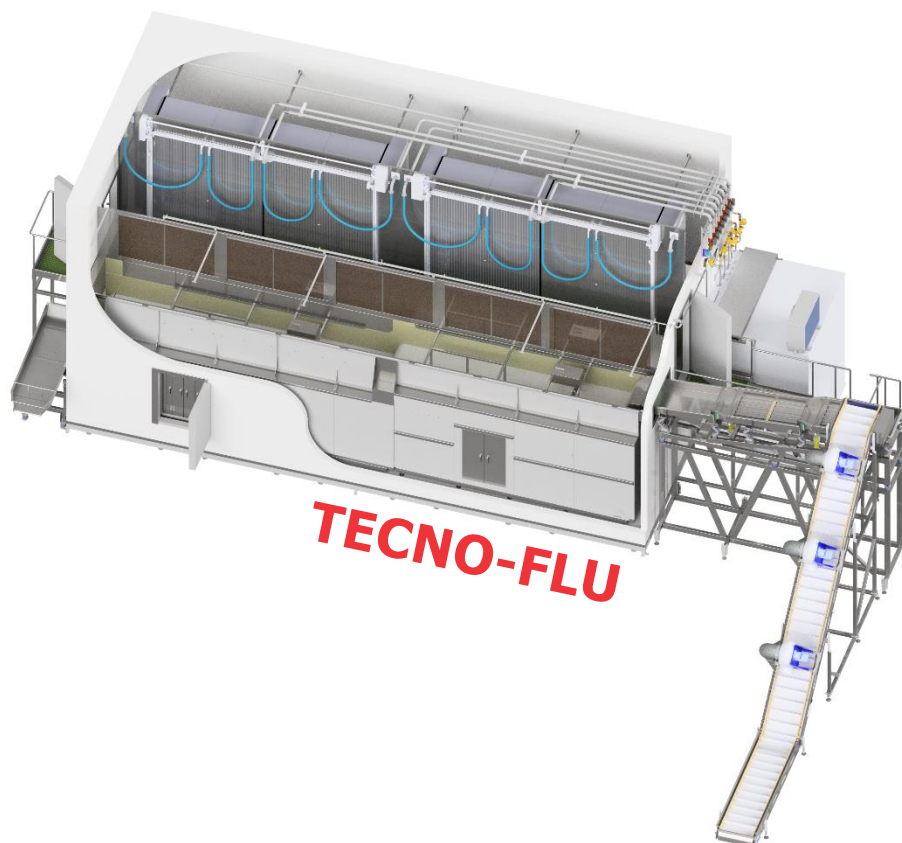


Fixed fluidization



- ✓ **The fluidization tunnels always come fitted with conveyor-type product feeding systems, such as:** Z-shaped vane conveyor with a receiving sink which receives the product from the production line and lifts it to the tunnel inlet level. This conveyor is equipped with special fans which blow over the product and blow off any excessive moisture after the product washing / parboiling. Downstream of the Z-shaped conveyor the product is fed to a vibrating table where vibration uniformly distributes the product in a thin layer on the conveyor part of the tunnel.
- ✓ **Heat-insulating chamber of the fluidization tunnel (cabinet)** is made of fire-resistant sandwich panels PIR 120 mm. The inner lining is always made of stainless steel, the outer lining is made optionally of either stainless steel also, or galvanized steel painted with a special composition of any RAL color. At the inlet side a stainless steel frame is located for entry to the tunnel and maintenance of the inlet section (Z-shaped loading conveyor and vibration table). The flooring composition: reinforced flooring (PIR 120 sandwich panel pie, moisture-resistant plywood, Hyperdesmo waterproofing, special inserts for the equipment supports, stainless steel welded trough with heated walkways and drains). Also the chamber interior includes frame structures for heat exchange units (evaporators), a platform for maintaining all essential equipment assemblies, conveyor wire mesh fencing necessary to prevent any product loss. A stainless steel gravity slide hopper is installed at the tunnel chamber outlet for feeding the product for packing (into boxes/sacks or packing machine loading conveyor hopper).
- ✓ **Plastic perforated plates** (acetal) a interconnected as a puzzle and driven in shuttling movement. The framework material is stainless steel. The minimum service life is 5 years. The tunnel is equipped with a frequency converter enabling stepless regulation of the movement speed and freezing duration change for each product separately. High-efficient servodrives are used as are motors.
- ✓ **Evaporators (heat exchange units)** of special modification manufactured in accordance with the fluidization tunnel design. Different aluminium fin spacings (always variable) are provided at different tunnel sections. The unit and tray are defrosted using electric heaters and/or hot gas and/or water. It's possible to add special option – FROST REMOVAL SYSTEM (FRS), which contributes to the operation of the equipment without defrosting up to 5 days.
- ✓ **Special-purpose high-pressure/centrifugal fans (turbines)** with a set of diffusers and differential pressure sensors for uniform distribution of air flow over the blow-over area. The fan motors are equipped with a frequency converter for stepless regulation of the rotation speed, which ensures high-quality freezing of various product types.
- ✓ **Control system** of the tunnel consists of a PLC and a control touchpad, dedicated equipment control software (for freezing, defrosting, cleaning process, etc.). The automation is equipped with multiple equipment and service personnel protection systems. The control cabinet housing is optionally made of stainless steel and has the required IP rating.
The fluidization tunnel is also equipped with a **CCTV system** with freezing process monitoring video cameras installed inside the heat-insulating chamber and allowing to monitor the process while being outside.





TECNO-FLU



FREEZING TEMPERATURE
(-35 °C to -40 °C)

FREEZING DURATION
(5 to 20 min)



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Possible refrigerant: R717; R744; R22; R507. (PUMP\DE) (Temperature in cabinet = -35C...-40C)

TECNO-FLU Model	500	1000	1500	2000	3000	4000	5000	6000	8000	10000
Capacity based on peas (kg\hour)	500	1000	1500	2000	3000	4000	5000	6000	8000	10000
Inlet temperature (+20C) Outlet temperature (-18C)										
Freezing tunnel plate (Width, in mm.)	1000	1000	1000	1000	1200	1200	1200	1200	1200	1200
Freezing tunnel dimensions (LxWxH, in mm.)	5000x 4000x 4250	7000x 4000x 4250	8000x 4000x 4250	9000x 4000x 4250	9000x 5000x 5250	10000x 5000x 5250	11000x 5000x 5250	12000x 5000x 5250	14000x 5000x 5250	16000x 5000x 5250
Required refrigeration (kW)	85	155	225	290	450	540	650	740	985	1270
Required electric power (kW, 3x380V/50 Hz)	35	50	65	80	95	110	125	140	170	220
Required water during washing (l\min)	80	100	150	200	200	300	300	400	400	500
Temperature (+15C) Pressure (2 bar) Duration 40-60 min.										
Required air for Frost Removal System (FRS) (l\sec)	100	100	100	150	150	150	200	200	200	250
Temperature (-40C) Pressure (4 bar)										

With **FRS option** TECNO-FLU freezing tunnel can work without defrosting up to 5 days (normally 20-36 hours).