

# Sliding Gate -Self-Supporting STF 600



Impact-Resistant, Containment Level 121 kN

## **SLIDING GATE - SELF-SUPPORTING STF-600**

**Impact-resistant self-supporting sliding gates-STF-600/121 kN** are an ideal solution for securing access areas of sensitive properties, where next to the protection against unauthorised entry the entering by lightweight motor vehicles should be prevented. Due to the lateral slide opening of the gate leaf along a fence or wall, the passage area is not limited. The sliding gate **STF-600/121 kN** can be delivered hand-operated for low-traffic security sectors and power-operated in dead man's or self-locking control. Because of its type related high weight the powered version is always equipped with a frequency-controlled drive in order to prevent the mechanical overuse of the power unit by smooth starting and braking.

The centrepiece of the gate **STF-600/121 kN** is its rigid continuous beam, which is arranged at the bumper bar height of a pickup truck. In combination with two rigid thrust bearings, it can absorb the dynamic impact energy of a 2.5-ton pickup truck at a speed of 50 kilometres per hour running into an accordingly dimensioned foundation. The statistic equivalent load is 121 kN. The remaining gate construction with frame, gate filling and climb over protection serves the protection against people entering unauthorised. A popular version is the parallel arrangement of the gates in the form of locks (opposite-facing) in order to allow a protected security area. The gates can be controlled by all common access control systems and are predestined for plant, military base, airport and public access areas with the highest security level.

**The impact-resistant sliding gate STF-600/121 kN** was statically calculated according to the valid Eurocodes DIN EN 1991-1/NA and 1993-1/NA.

### **Attributes:**

- reliable securing of outdoor areas and open-air grounds with a high security level against impact by lightweight vehicles
- proven reliability and high production stage with far more than 20 manufactured units
- compact design with low space requirements
- modular and optimised construction for export in containers
- smooth starting and braking at the end positions in power-operated systems
- clear optics by vandalism proof integration of all power unit components
- power emergency release not exposed but integrated into the drive post and therefore tamper-resistant
- 60% duty cycle, industrial standards
- various options, for example: extending to a lock

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Use for vehicle separation with concurrent protection against persons entering unauthorised, especially in areas that are vulnerable:

- authority facilities
- industrial plants and power plants
- military facilities
- supply facilities
- airports (access aviation security area)

## Versions / Names:

**STF-600 – hand-operated:** sliding gate, self-supporting, static equivalent load 121 kN

**STF-600– power-operated:** sliding gate, self-supporting, static equivalent load 121 kN

## Geometrical Key Figures:

	STF-600/121 kN-6000	STF-600/121 kN-7000
opening width	6000 mm	7000 mm
variable gate height	2000 to 3650 mm	2000 to 3650 mm
ground clearance	50 mm	50 mm
lateral opening space	9200 mm	10700 mm
rail profile	self-supporting 200 S	self-supporting 200 S
frame, reinforcement	RT* 120/80, ST* 80	RT* 120/80, ST* 80
filling	RT* 30/20	RT* 30/20
twin portal	RT* 200/100 + IPE 200 mm	RT* 200/100 + IPE 200 mm
impact bar reinforced	minimum 400/200 mm	minimum 400/200 mm
drive motor (optional)	3x230/400 V, 50 Hz, 1.5 kW self-locking gear, magnetic brake, frequency converter	3x230/400 V, 50 Hz, 1.5 kW self-locking gear, magnetic brake, frequency converter
opening time	approx. 24 seconds (without braking)	approx. 28 seconds (without braking)

\* RT = rectangular tube, ST = square tube

The sliding gate **STF-600/121 kN** is manufactured as an assembly unit consisting of gate leaf, guiding post, slam post, drive unit, control, safety and operating components. The **gate leaf** is welded torsion-resistant and dimensioned according to the static requirements. The gate extension ensures the optimal intake of the static loads. The gate filling is welded in between upper and lower beam. In the opening area the gate leaf is guided by two spherical step and roller bearings inside the lower beam. These adjustable roller sets are equipped with ball bearing mounted and maintenance-free polyamide rollers and ensure the smooth running and the exact adjustment of the gate. Thus, the gate is also guided off the floor in

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the opening area. Specially designed roller blocks of Type S that are characterized by a high load-bearing strength while having a low rolling resistance are used on STF-600.

The **gate guide** consists of a twin portal made of steel tube profiles with a rainproof head plate and a lateral roller guide with 2 guide rollers on adjustable V2A bolts.

The **slam post** also consists of a twin portal made of steel tube profile with a rainproof head plate, an entry fork and a guide shoe.

**Electrical drive:** The three-phase motor (230/400 Volt, 50 Hz) for industrial continuous operation is combined with a maintenance-free, low-noise worm gear which runs in an oil bath. The three-phase current geared motor, which is built into a separate lockable **control cabinet**, is equipped with a slip clutch. The locking functions via the self-locking worm gear and a magnetic brake. A sprocket and an adjustable and spring-loaded draw-bench chain which is attached to the gate leaf provides the driving force. The control (24 V) consists of a microprocessor control, including a proximity limit switch. A key switch **Open/ Close** with **Emergency-Stop** button is attached inside the control cabinet.

**Easily accessible components:** All components necessary for the operation are accommodated safely in the drive gate post, which simplifies the assembly, commissioning and maintenance significantly.

**Control:** Microprocessor-control unit and frequency converter

**Mains connection:** three-phase 3x230/400 V, 50 Hz, **Control voltage:** 24 V DC

**Power consumption:** approx. 1.5 kW (without accessories), duty cycle: 60 %, class 3

**Protection class:** IP 54

**Control functions of the power-operated version:**

- **Gate-Stop** as well as **Gate-Open** and **Gate-Close** (self-locking) between the end positions
- remote operability which is secured by floating contacts
- serial transfer of status signals of the gate statuses **Gate-Open**, **Gate-Closed** and **Collective Alarm**
- all gate typical components are connectable and controllable in various logics

**Power failure/ Damage:** By releasing the slip clutch in the profile cylinder locked drive post a manual operation is possible.

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## Base plate serial:

- 300 mm upper edge area with spacious cable entry,
- pairwise arrangement of dowel holes and levelling screws for an optimal perpendicular and flush assembly

## TORWERK– Long-lasting corrosion protection in 4 steps:



The coating thickness is 260 µm, all requirements on corrosion protection stresses according to DIN EN 12944-2- C4 (long protective effect) are met.

## First-class haptics due to:

- a hermetically welded construction
- a surface free of zinc cavities
- welding seams that are ground flatly (mitre corners) after zinc coating
- no warping of the surface because of zinc cavities

## Environmentally friendly procedure:

- no use of solvents
- recycling of oversprays

## Options:

### Colour design/ labelling:

Gate posts and gate leaves are designable in colour tones according to RAL/DB.

### Signaller:

- LED- rotating beacon (serial)
- LED-light - red/ green (optional)
- **Reflexite** contour marking from microprismatic foils with a high reflection value, high visibility even from sharp angles, on the gate's lower beam inside and outside (optional)

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## Safety:

- TÜV approved safety device, self-monitoring, according to European gate standards DIN EN 12978 + 12453 for power-operated gates, consisting of double chamber pressure strips on the main and secondary locking edges and the electronic analysis unit
- 2 light barriers (optional), consisting of sender and receiver in different heights outside between the gate posts as additional security device
- 2-channel induction loop detector

## Climb over protection and accessories:

- serrated band 45 mm high
- steel tips 50 x 10 mm, 50 mm space
- barbed wire in ... rows on vertical holders (approx. 2 m space between holders)

## Control elements:

- key switch **Open-Close** outside and key switch **Open-Emergency Stop-Close** inside (serial)
- radio remote control (optional)
- key switch **On-Off** (optional)
- timer (optional)
- code card reader and other communication systems available on demand

## Design gate leaves:

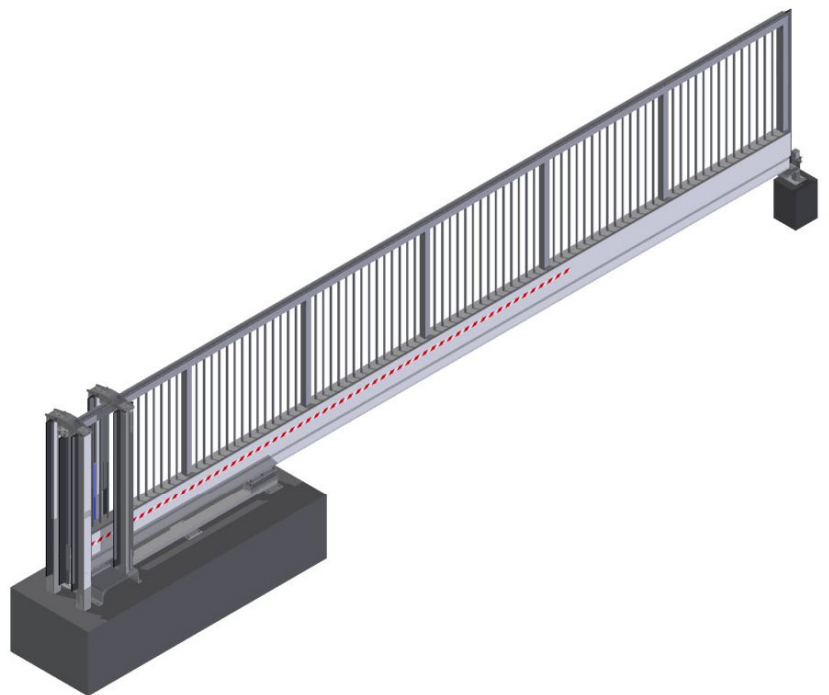
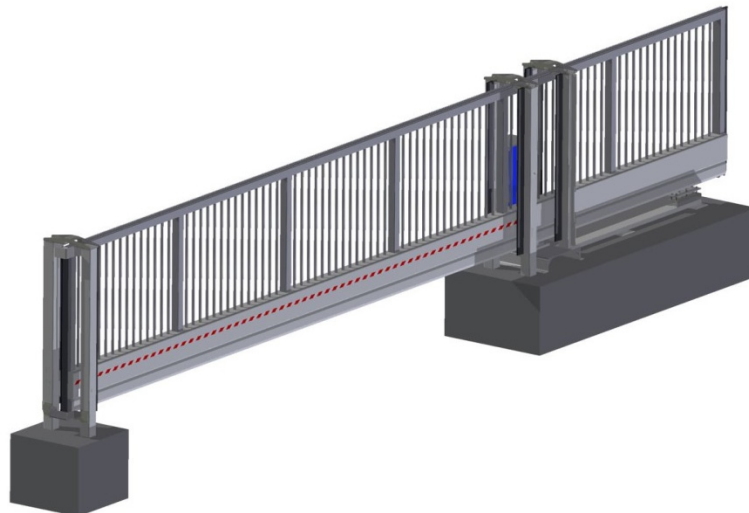
- instead of bar filling, optionally fence type filling, closed sheet metal filling or perforated steel plate filling in a powder-coated version

## Torwerk-assembly service:

Every configured **STF-600/121 kN** is completely pre-assembled at the factory and internally wired and as far as possible connected before it is delivered.

Due to its high weight a higher installation effort needs to be expected

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Construction and Design: Maik Brunner / A. Panek

Electrotechnical Equipment: Stefan Carl / Matthias Martius

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