

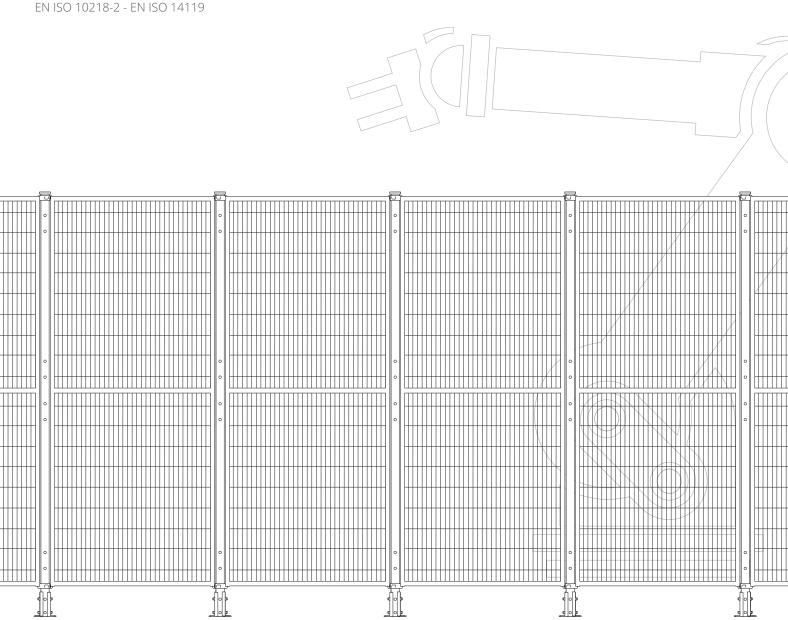


A **Safe** factory is a **Productive** one.

GENERAL CATALOGUE Perimeter Guarding Modular Systems

SAFETY STANDARDS

EN ISO 14120 - ISO 14122-3 - EN ISO 12100 EN ISO 13857 - EN 349 - ISO 13854 EN ISO 10218-2 - EN ISO 14119





EN Standards for safety in working environments

EN ISO 14120 General requirements for the design and manufacture of fixed and movable guards.

5.2.4 - Viewing

Where viewing of the process is required, guards shall be designed and constructed to offer adequate viewing.

5.9 - Machine viewing

Where viewing of machine operation is required through the guard, materials shall be selected with suitable properties (...) or wire mesh is used, this should be of adequate open area and suitable colour to permit viewing.

Viewing will be enhanced if the perforate material is darker than the area observed.

ISO 14122-3 Permanent means of access to machinery. Ladder, step ladder, safety rails.

EN ISO 12100 Basic concepts, general design principles.

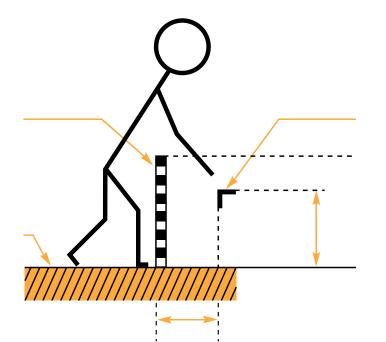
EN ISO 13857 Safety distances to prevent the contact of dangerous areas with upper and lower limbs.

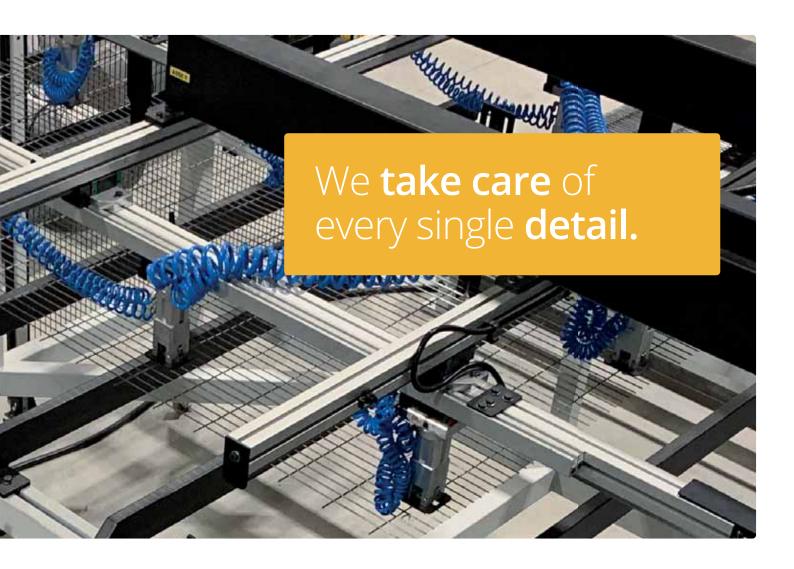
EN 349 - ISO 13854 Minimum gaps to avoid crushing parts of the human body.

EN ISO 10218-2 Industrial handling robots. Safety.

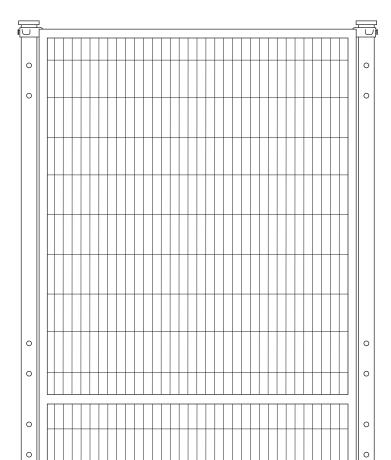
EN ISO 14119 Interlocking devices designed for guards. Design and selection concepts.

2006/42/EC Machinery Directive.





A **Safe** factory is a **Productive** one.



We produce and distribute solutions for the safety of machinery and industrial plants in accordance with EU and international (ISO) directives. **Modular steel barriers and accessories** that become **customized solutions** for our clients all over the world.

The production flow is entirely managed within our facilities, which ensures a high quality that you can see in every detail.

We are always innovating throughout the industry with our exclusive patents, know-how, and ongoing product upgrades.

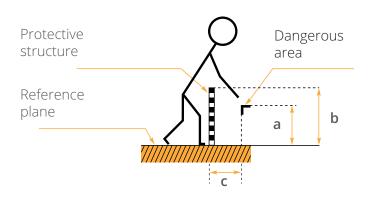
Research, development, design, production, logistics and assistance, Satech is **your reference for safety** in working environments.



Safety distances

EN ISO 13857, 4.2.2:

Reaching over protective structures



a: height of hazard zone

b: height of protective structure

c: horizontal distance to hazard zone

Table 2							Dime	nsions	in millir	neters
Height of	Height of the protection structure b									
dangerous	1000	1200	1400	1600	1800	2000	2200	2400	2500	2700
area a		Horizontal distance to the dangerous area ${f c}$								
2700	-	-	-	-	-	-	-	-	-	-
2600	900	800	700	600	600	500	400	300	100	-
2400	1100	1000	900	800	700	600	400	300	100	-
2200	1300	1200	1000	900	800	600	400	300	-	-
2000	1400	1300	1100	900	800	600	400	-	-	-
1800	1500	1400	1100	900	800	600	-	-	-	-
1600	1500	1400	1100	900	800	500	-	-	-	-
1400	1500	1400	1100	900	800	-	-	-	-	-
1200	1500	1400	1100	900	700	-	-	-	-	-
1000	1500	1400	1000	800	-	-	-	-	-	-
800	1500	1300	900	600	-	-	-	-	-	-
600	1400	1300	800	-	-	-	-	-	-	-
400	1400	1200	400	-	-	-	-	-	-	-
200	1200	900	-	-	-	-	-	-	-	-
0	1100	500	-	-	-	-	-	-	-	-

EN ISO 13857, 4.2.4.1:

Reaching through regular openings



Table 4 gives **Sr** for regular openings for persons of 14 years of age and above.

The dimension of the opening "e" corresponds to the side of a square opening, the diameter of a round opening and the narrowest dimension of a slot opening.

For openings larger than 120 mm safety distances in accordance with point 4.2.2 shall be used.

Table 4	Dimensions in millimeters				
Part of body	Illustration	Opening	Slot	Safety distance s Square	Sr Round
Fingertip	- Sr.	e ≤ 4	≥2	≥2	≥2
		4 < e ≤ 6	≥ 10	≥5	≥5
Finger up to knuckle joint	\$	6 < e ≤ 8	≥ 20	≥15	≥5
		8 < e ≤ 10	≥80	≥ 25	≥ 20
Hand		10 < e ≤ 12	≥ 100	≥80	≥80
		12 < e ≤ 20	≥ 120	≥ 120	≥ 120
		20 < e ≤ 30	≥ 850°	≥120	≥120
Arm up to junction with	55	30 < e ≤ 40	≥ 850	≥ 200	≥ 120
shoulder		40 < e ≤ 120	≥ 850	≥850	≥850

The bold lines within the table indicate the part of the body which is restricted by the opening size.

a) If the lenght of the slot opening is less or equal to 65 mm, the thumb will act as a stop and the safety distance can be reduced to 200 mm.

EN ISO 13857, 4.3:

Safety distances to prevent access by lower limbs

In general, safety distances should be determined using Tables 1 to 6 for the upper limbs.

When it is not possible to foresee the upper limb access through the opening, it is possible to use the values given in Table 7 to determine safety distances for the lower limbs.

The dimension "e" of openings corresponds to the side of a square opening, the diameter of a round opening or the narrowest dimension of a slot opening.

The values given in Table 7 are independent of whether clothing or footwear is being worn and are applicable for persons of 14 years of age and above. For reaching through openings of irregular shape, see 4.2.4.3.

Table 7	Dimensions in millimeters			
Part of lower limb	Illustration	Opening		distance Sr Square or round
Toe tip	Sr	e ≤ 5	0	0
	1/1/1/	5 < e ≤ 15	≥ 10	0
Toe		15 < e ≤ 35	≥ 80°	≥ 25
Foot	Sr Sr	35 < e ≤ 60	≥ 180	≥80
		60 < e ≤ 80	≥ 650 ^b	≥180
Leg (toe tip to knee)		80 < e ≤ 95	≥ 1100 ^c	≥ 650 ^b
Leg (toe tip to crotch)		95 < e ≤ 180	≥ 1100°	≥ 1100 ^c
		180 < e ≤ 240	not admissible	≥ 1100°

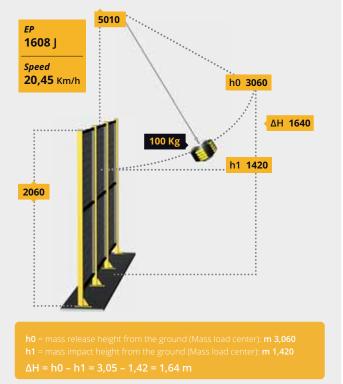
- a) If the lenght to the slot opening is ≤75mm, the distance can be reduced to ≥50mm
- b) The value corresponds to leg (toe tip to knee)
- c) The value corresponds to leg (toe tip to crotch)

Note: Slot openings with e>180mm and square or round openings with e>240mm will allow access for the whole body (see also Clause 1, final paragraph)

EN ISO 14120 Impact Test

Our protections **Series BASIC, STRONG** and **HEAVY** assembled with nuts and bolts has been subjected to severe **dynamic resistance tests from the inside outwards** according to the procedure contained in EN ISO 14120 Standard (Hard body / Pendulum Test).







Disegna free design software



Your safety, in 3 easy steps

Disegna is the free design software dedicated to our clients and distributors which makes it easier to ask for a quote. The simple and intuitive interface is based on the same software used by our technical department and contains the full database of SATECH'S standard products. You can design starting from a blank page or importing your existing layout in a standard format (dwg, pdf, etc ...). You will get the list of the components for the quote in just 3 steps!



Ask for it now! disegna@satech.it

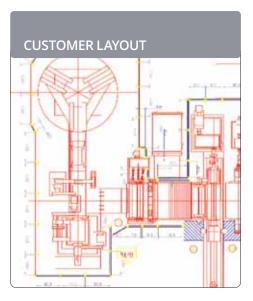


Autocad® and **Inventor®** design

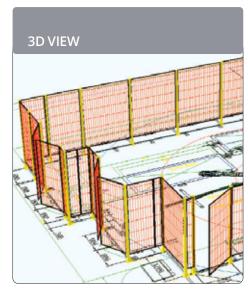
From the client needs to customized design

Our technical department is geared to meet the individual requirements of the clients and provides for **customized protection solutions for all the industry sectors**.

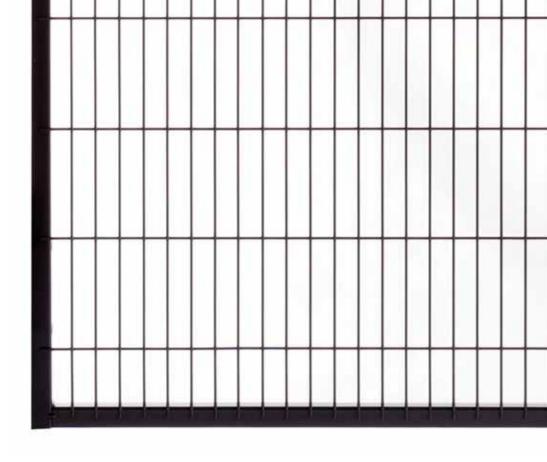
A customized **Autocad®** design application allows us to get **maximum optimization choosing the modular components** used in the layouts. Our designs are saved in **STEP and PDF-3D** format, ensuring a full compatibility with your IT standards.











Satech **Systems** to each his own

We manufacture and market different protection systems, each designed for specific needs. To receive complete documentation of our product lines, please contact us at:

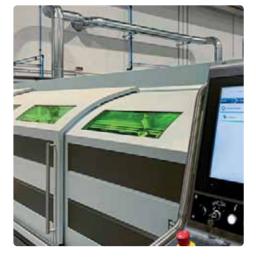
info@satech.it

Manufacturing quality and european standards

High quality materials and total control of the entire production flow

Each of our protection systems and mounting accessories is entirely **manufactured** within Satech's plant starting from raw materials. A huge stockholding of standard products and integrated logistics allow us to meet any type of request quickly. The high quality materials we use for our systems and fasteners ensure maximum protection and durability, adapting to the most critical conditions of use.

All Satech products are compliant to European and International Standards.



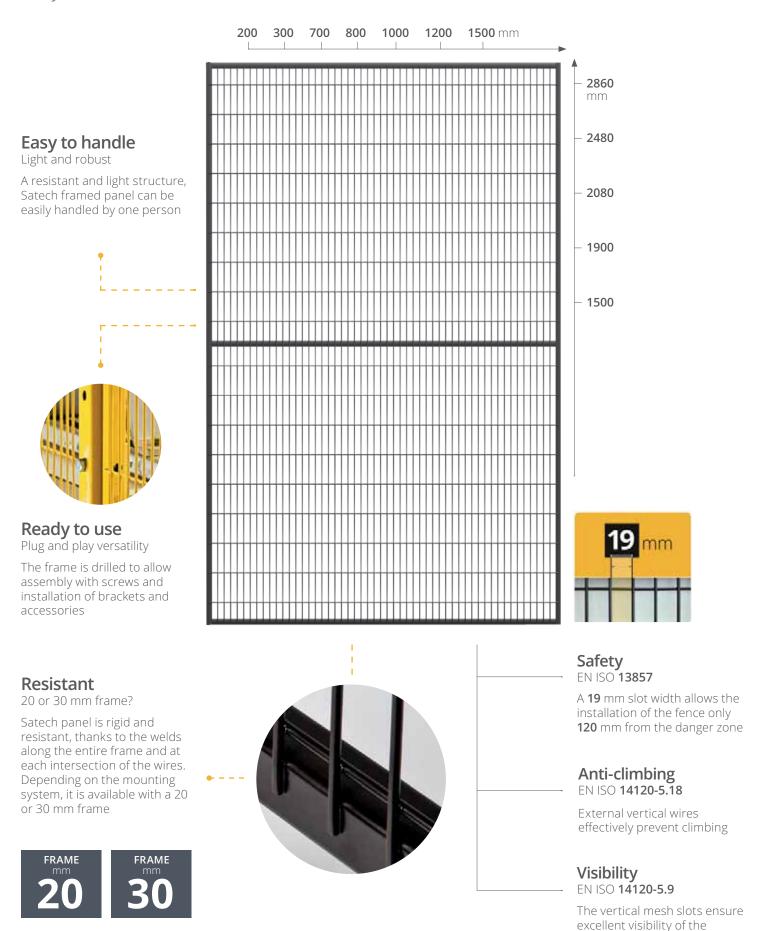






Framed panels

Easy to handle, robust, safe



machinery

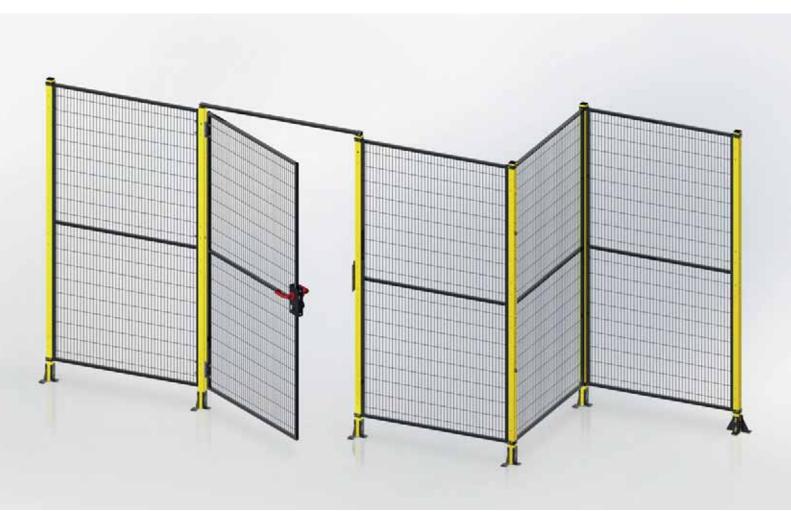
Series **BASIC** Modular Machine Guards

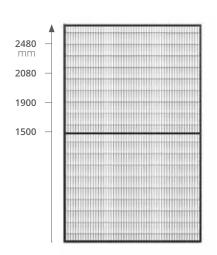


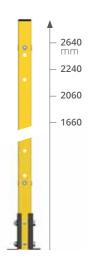


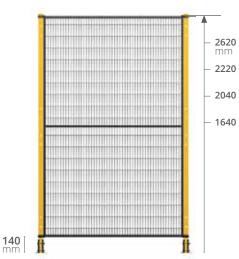


BASIC is the protection and accident prevention system consisting of 40x40 uprights and 20x20 panels with 20x20 frames. It is the standard method used in all guards for plant and machinery.









Heights: 1500, 1900, 2080, 2480 mm **Bases:** 200, 300, 700, 800, 1000, 1200,1500 mm

Baseplates: assembled, with 3 or 4 anchoring points or welded (as an option)
Heights: 1660, 2060, 2240, 2640 mm

Colours:

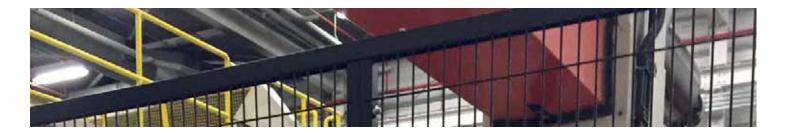


Overall protection height: **1640** ~ **2620** mm









Practical

BASIC is easy to be assembled with a patented clamp or with nuts and bolts as an option



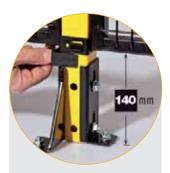


The **Patented Clamp** allows easy reinstallation of the guard after it has been removed for nonroutine maintenance

EN ISO 14120 6.4.4.1 b.



BASIC system can also be assembled with traditional/captive nuts and bolts



NEW

CLAMP SPACER

The convenient spacer for a quick and correct placement of the lower clamp according to the current Regulation for minimum floor clearance EN ISO 13857

Captive Retained fastenings

Both fastening systems feature a captive fastener according to **EN ISO 14120** and **2006/42/EC** - Machinery Directive

Versatile





ASSEMBLED OR WELDED BASEPLATE

BASIC system posts are available with adjustable assembled baseplate or welded baseplate as an option





CUTTING KIT

provides a quick and easy adaptation of the panels and allows the adjustment of the guard perimeter on site

Impact test EN ISO 14120



BASIC system assembled with nuts and bolts has passed the severe dynamic resistance tests according

to the procedure contained in **EN ISO 14120** Standard (Hard

body / Pendulum Test) up to **1600J**



ISO Compliance

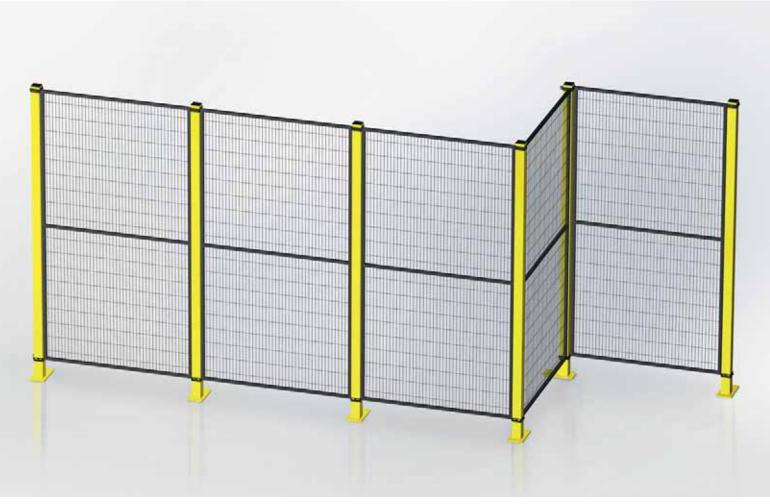
BASIC complies with the following EUROPEAN and INTERNATIONAL STANDARDS: EN ISO 14120; EN ISO 12100; EN ISO 13857; EN ISO 14119; EN ISO 10218-2

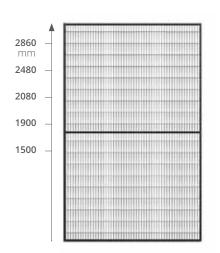
Series **STRONG** and HEAVY Modular Machine Guards

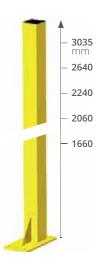


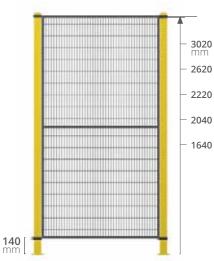


STRONG is the protection and accident prevention system consisting of 60x60 mm posts and 20x20 mm framed panels (or **30x30 mm** in version **HEAVY**) designed for heavier applications.









Heights: 1500, 1900, 2080, 2480, 2860 (1900+960) mm

Bases: 200, 300, 700, 800, 1000, 1200,1500 mm

Baseplates: welded, with 4 anchoring points

Heights: 1660, 2060, 2240, 2640, 3035 mm

Overall protection height: 1640 ~ 3020 mm

Epoxy-polyester powder (for internal use only)

Colours:









Robust



High resistance steel Uprights – 60x60 mm with reinforcement ribs



Generously-sized baseplates (100 x 200 x 8 mm) ensure maximum stability

Version **HEAVY 30 mm frame** ensures greater rigidity and impact resistance





Practical



The Patented
Clamp allows easy
reinstallation of the
guard after it has been
removed for nonroutine maintenance

EN ISO 14120 6.4.4.1 b.



STRONG system can be assembled with **traditional/captive nuts** and bolts as an option

Captive Retained fastenings

Both fastening systems feature a captive fastener according to **EN ISO 14120** and **2006/42/EC** - Machinery Directive

Versatile







CUTTING KITprovides a quick and easy adaptation of the panels and allows the adjustment of the guard

perimeter on site

Impact test EN ISO 14120



STRONG system assembled with nuts and bolts has passed the severe dynamic resistance tests ac-

cording to the procedure contained in **EN ISO 14120** Standard

(Hard body / Pendulum Test) up to **1600J**



ISO Compliance

STRONG complies with the following EUROPEAN and INTERNATIONAL STANDARDS: EN ISO 14120; EN ISO 12100; EN ISO 13857; EN ISO 14119; EN ISO 10218-2

Series GREEN FAST and GREEN FAST DP

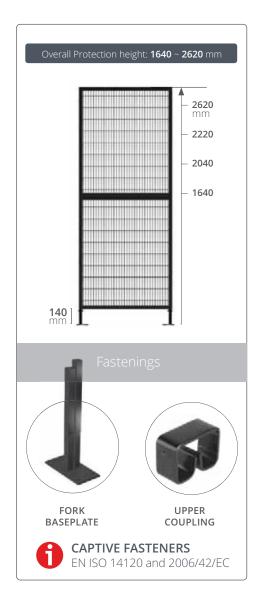
FRAME mm 30

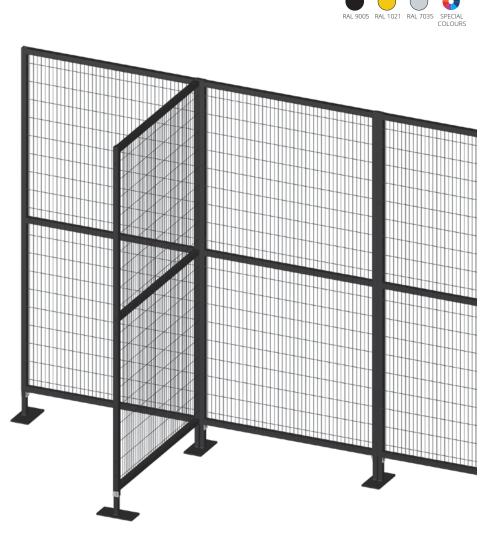




Modular Machine Guards

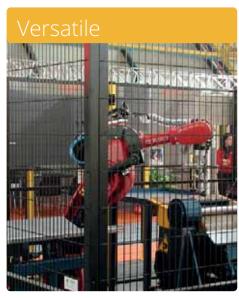
GREEN FAST is the **patented** guarding system **without posts** which features **self-supporting panels with 30x30 or 20x20 mm** (**version GREEN FAST DP) frames**, baseplates with locking fork and upper flexible coupling. **GREEN FAST** is designed to achieve **easy and fast assembly**, strength and a wide range of height adjustment.







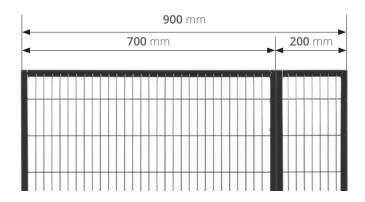


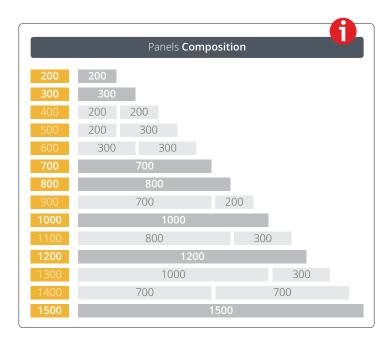


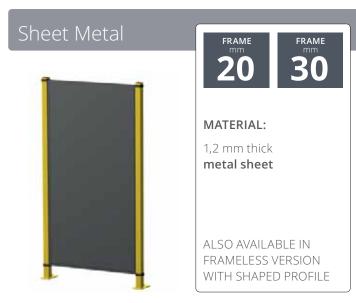
Panels

Satech **Modularity** 7 standard sizes, endless possibilities

The modular composition of 7 standard widths allows you to obtain all the intermediate dimensions with a progression of only 100 mm.

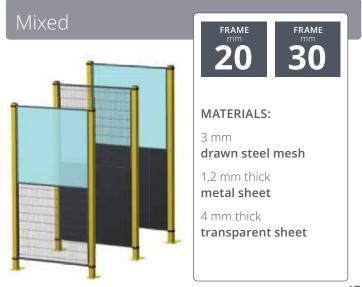


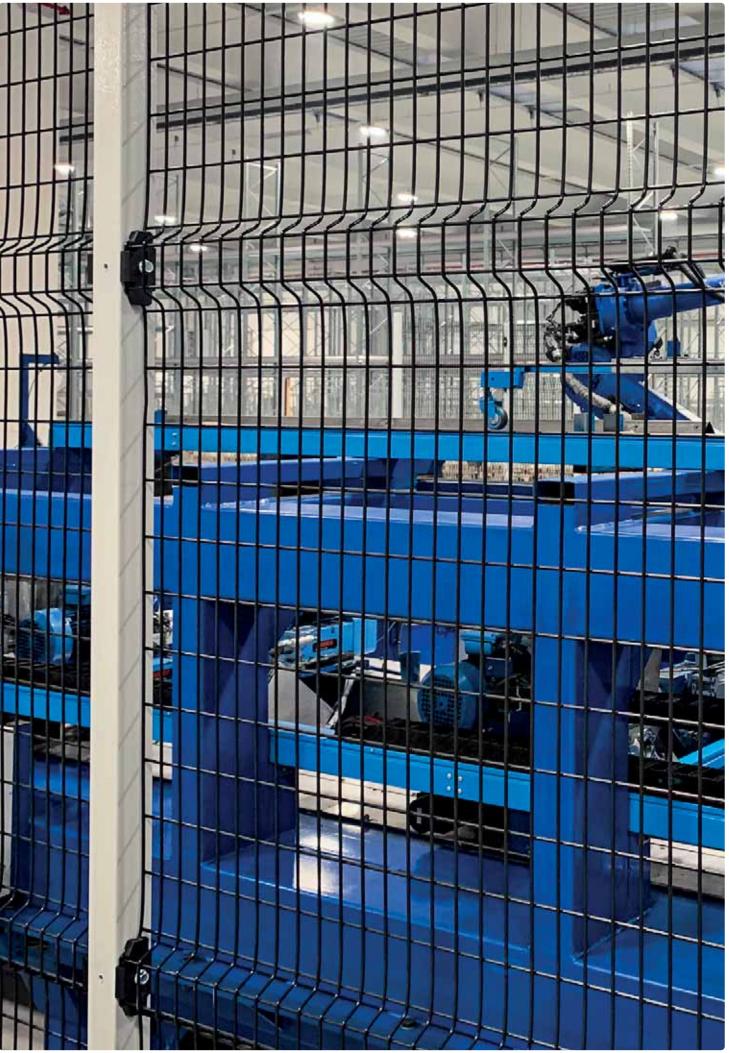






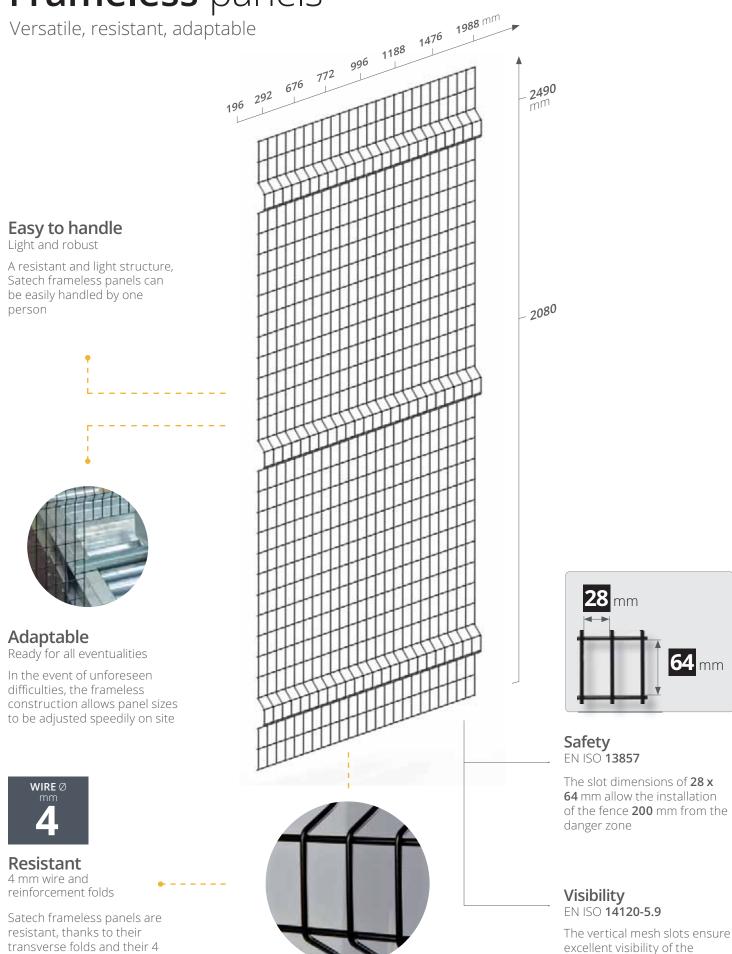






Frameless panels

mm steel wire shaped mesh



machinery

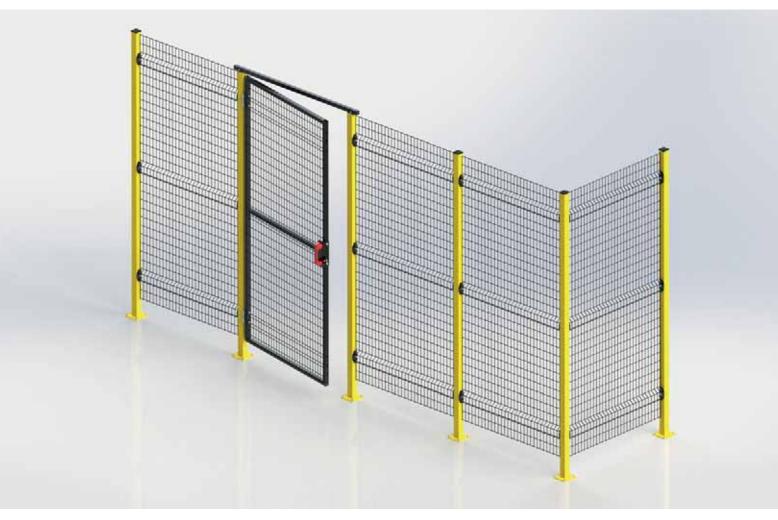
Adapta**Guard**Modular Machine Guards

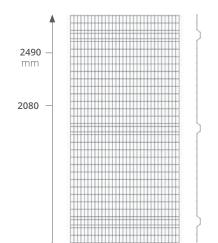


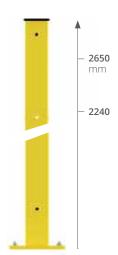


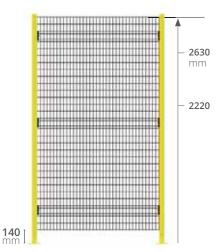


AdaptaGuard fast and efficient installation is achieved by simple, easy-to-use connectors which fit securely to the uprights, while the layout can be easily configured to suit the machinery and available space.









Panels

Heights: 2080, 2490 mm

Bases: 196, 292, 676, 772, 996, 1188, 1476, 1988 mm

Posts

Baseplate: welded, 120 x 120 x 8 mm, with 4 anchoring points

Heights: 2240, 2650 mm

Epoxy-polyester powder (for internal use only)

Overall protection height: **2220** - **2630** mm











Robust



Wire – 4 mm drawn steel, high tensile strength



Greater stability is achieved by connecting the panels to the uprights at the position of the reinforcement ribs



High-thickness baseplates $(120 \times 120 \times 8 \text{ mm})$ ensure maximum stability



50 x 50 mm posts with "Flow Drill" holes allow a quick and easy mounting



Impact test EN ISO 14120

Adapta**Guard** has passed the severe dynamic resistance tests according to the procedure contained in **EN ISO 14120** Standard (Hard body / Pendulum Test) up to **1600J**

Practica



High-strength nylonfibreglass fasteners are ergonomically shaped to facilitate quick and easy assembly of the system



An adjustable baseplate (available **as an option**) allows to level the ground bearing of the posts to uneven floors

Adaptable



Captive Retained fastenings

The fastening system features a captive fastener according to **EN ISO 14120** and **2006/42/EC** - Machinery Directive

ISO Compliance

Adapta**Guard** complies with the following EUROPEAN and INTERNATIONAL STANDARDS: **EN ISO 14120**; **EN ISO 12100**; **EN ISO 13857**; **EN ISO 14119**; **EN ISO 10218-2**



Doors

Hinged Doors

40 50

Standard single leaf hinged door. The movement is achieved by means of two hinges and a door stop, which is provided with a new generation supermagnet.

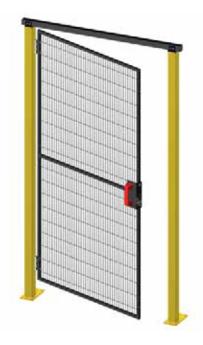
Folding Doors

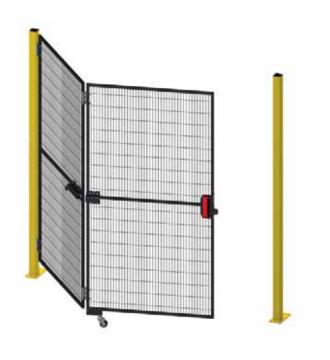
POST mm 40

POST mm 50

FOST mm

A folding-hinged door designed to reduce the dimension of the open door. Once the bolt is released, the two leaves fold over one another, reducing the overall size.





AVAILABILITY:

- SINGLE
- · DOUBLE

OPENING:

from **700** to **3.000** mm

AVAILABILITY:

- · SINGLE
- · DOUBLE

OPENING:

from **1.400** to **6.000** mm

Door in a box everything you need, in a box

Satech framed panels can be easily converted into doors, the panel becomes the door leaf, while the other components are supplied "all in a box".

In Satech "Door in a box" you will find the hinges, the lock and a standard handle. Depending on how the hinges and the lock are mounted, the door can be right or left-handed.

The door can also be adapted to specific safety requirements, (i.e. with panic or interlocked locks).



Sliding Doors

With guides

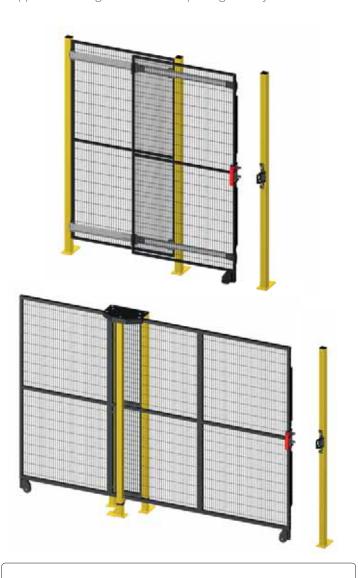
Post Post Post Post Mind 60

Sliding doors suspended on upper guides or with lower guides compatible with the pressure loads exerted by the forklift tires.



With open passage 40 50 60

Sliding doors with low-friction telescopic guides or with sliding panels suspended on robust structures. The absence of any upper or lower guide leaves the passage totally free.



AVAILABILITY:

- · SINGLE WITH UPPER GUIDE
- · OPPOSED WITH UPPER GUIDE
- · ALTERNATE WITH DOUBLE UPPER GUIDE
- · DOUBLE ALTERNATE WITH DOUBLE UPPER GUIDE
- · SINGLE WITH LOWER GUIDE
- · OPPOSED WITH LOWER GUIDE

OPENING: from 700 to 3.000 mm

AVAILABILITY:

- SINGLE WITH TELESCOPIC GUIDE TX
- OPPOSED WITH TELESCOPIC GUIDE TX
- · SINGLE 2.0
- OPPOSED 2.0
- SINGLE 3.0
- OPPOSED 3.0

OPENING: from 700 to 6.000 mm

Special Doors

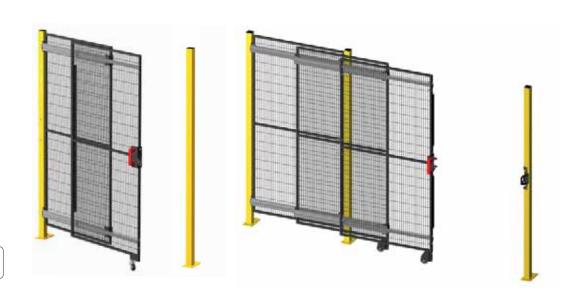
Horizontal, vertical, hybrid and up-and-over customized doors manually operated, electric or pneumatic

Hybrid and multistage

Satech hybrid doors combine a rotation and a sliding movement of the panels. They are specifically designed for the plants where is required a large opening and a reduced overall dimension in open position.

The multistage doors are available in manual or pneumatic drive versions and are specifically designed for very large openings.

OPENING: up to **15** mt (multistage)







Powered **Doors**

Satech doors can be equipped with electromechanical or pneumatic motors



MECHANICAL











Simplicity and functionality

Padlockable bolt locks, key locks with fixed knob or handle, panic lock with push-pad or emergency panic bar, Satech mechanical locks are made with **superior quality components** and integrate perfectly with our panels.

MECHANICAL with integrated Safety Switch





D-FenceLock: durability and reliability

Satech D-FenceLock with integrated Safety Switch is **entirely made of metal** for greater robustness and durability in harsh environments. The Safety Switch actuator is kept in position by a **self-centering system** which ensures maximum operational precision. Its **panic release** allows the emergency opening from inside and a **padlockable hold-open device** prevents accidental lockups by unauthorized personnel. The mounting bracket with **integrated handle and anti-effraction plate** allows direct mounting on both the hinged and the sliding doors panels.

INTERLOCKED











Maximum protection for operators and processes

The interlocked locks activate a machine stop command in case of door opening. This **prevents the start of the dangerous machinery functions** until the door is closed and / or the restart control is restored.

We partner with leading manufacturers to provide you with the most suitable solutions based on your risk analysis.

Accessories

A full range of accessories ensures maximum versatility and customization options

MICROSWITCHES AND DEDICATED BRACKETS

Microswitches, mounting brackets specific for all the locks and electric locks brands, customized brackets

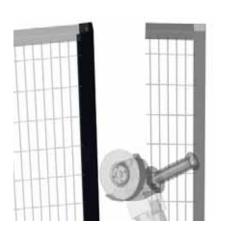






COMPLEMENTARY FITTINGS

Cutting kits, inserts with door, cable ducts, bracings, backplates for ground fixing, leveling shims, mounting accessories

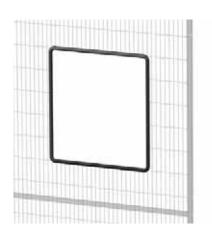






FINISHINGS

Rubber profiles, fixed and adjustable angular joints, fixing plates for warnings anti-tampering devices for doors and locks









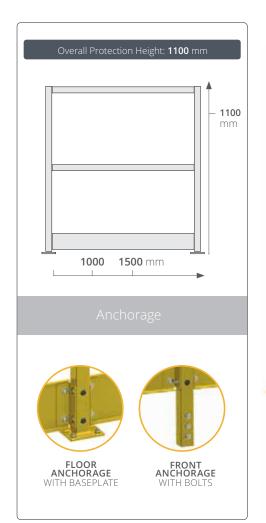
Body**Guard**Fall Prevention System







BODYGUARD is the modular protection system used to prevent personnel falling from galleries and elevated areas or to delimit walkways on the ground. Consisting of **two horizontal tubes and a kick plate** it is assembled with self-centering and self-locking mounting brackets, it is provided with front anchorage for galleries or floor anchorage with baseplate. **BODYGUARD** can be totally disassembled and it is manufactured in compliance to the international standard **EN ISO 14122-3.**











Customized

Production

Panels, doors and accessories made following the client's design in both standard and custom colors

Beside the standard production, we **design and manufacture customized solutions** for every need: panels with **special dimensions and shapes**, viewing ports for inspection or sampling control, manual, electric and pneumatic operated **vertical and up-and-over doors**, support brackets for accessories and safety switches. The guards can also be personalized with the color that best suits your environment.









Pre-assembly Service

Pre-assembly of doors, handles, panels, electrical pre-wiring and verification tests

We can pre-assemble doors, panels, locks, handles, safety switches and the on-board electronics of your guarding system.

These components are delivered **ready to be installed**, allowing you to achieve **significant time savings** for your installers.













After sales service and support

All the assistance you need for the installation of your perimeter guard



EDUCATION PROGRAMME FOR INSTALLERS

Training and support of the assembly operatives are fundamental. The educational plan for the installers of our protection systems consists of **a theoretical stage in our Training Centre and some practical assembly tests** of the most significant components (doors, safety switches, locks). Beside the assembly instructions, the orders are always supplied with the **PDF-3D files** of the layouts.



ASSEMBLY AND INSTALLATION SERVICE

Our network of professional installers can **assemble your perimeter guards worldwide**. Our **mounting experts are trained at Satech Technical Centre**, which is equipped with the full range of products for full-scale assembly.

Stock and **shipping**

Maximum care in packing and photographic documentation of shipments

Our vertical packing system allows for the optimization of shipments and the containment of their cost. Each pallet is meticulously packed by experienced staff. All the components are secured and protected so that nothing can move or get damaged during the shipment. Satech's management software also integrates a traceable control system for shipments. Two high-resolution cameras generate a photographic documentation of the pallets linking the images to the order codes, so that they are available at any time.

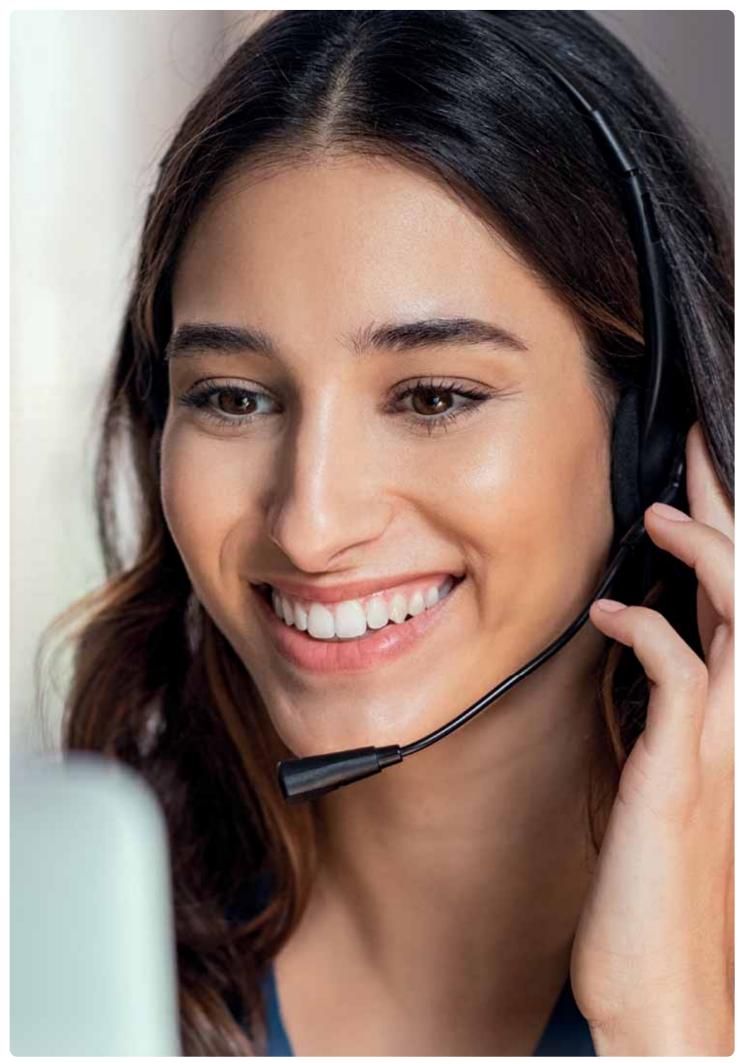












Customer Care

at your side, at all times

Our goal is to build **reliable relationships** that last over time like our products do. Every client can rely on a personal assistant who provides **product brochures**, **real-time updates on order status and shipping**, **administrative documents and advice on the products or on the maintenance** of our perimeter guards.

For more information about our products, please write to:

customer.service@satech.it

SATECH, YOUR GLOBAL PARTNER FOR SAFETY

Safety of personnel working in production environments has been our specialty for over 20 years. Our strengths are compliance to international standards, stock ready modular products and special attention to customer needs.

Our Technical Department designs solutions for the safety and conformity of your industrial machinery, robots and production plants. In over 20,000 sqm of production facility in Bulciago (Italy), an automated line of 5,500 panels per day and a powder coating unit allow us to provide you with a product that is superior in quality.

We are located with 4 subsidiaries and a global distribution network. You can call on us for a new project or a simple integration of an existing one.

Satech guarding systems enable machine operators to work safely and are built to last over time. In our warehouse of over 5,000 sqm we stock 5 different product lines, and even your most specific requirements are met with professional and qualified advice. Satech Special Product Department is always ready to design solutions tailored for your every need.

Your satisfaction is our first priority. Great versatility, complementary systems, a variety of accessories and quotations provided with 2D and 3D AutoCad® and Inventor® drawings. Our commitment is to make your company safer and more productive.



Satech Safety Technology SpA

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