



TROAX TEST CENTER



PROTECTING PEOPLE, PROPERTY, AND PROCESSES.

THERE ARE NO
SHORTCUTS
WHEN IT COMES
TO SAFETY

DANGER
UNAUTHORIZED
PERSONNEL
KEEP OUT



PLAYING IT SAFE WORLD WIDE

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TEST CENTER TROAX

WHATEVER YOUR SAFETY NEEDS MAY BE, WE WILL CREATE A SOLUTION THAT MEETS YOUR REQUESTS. OUR MESH PANEL WALL SYSTEMS ARE DEVELOPED, MANUFACTURED, AND MARKETED IN THREE SEGMENTS: MACHINE GUARDING, WAREHOUSE PARTITIONING AND PROPERTY PROTECTION, AND OUR SALES REPRESENTATIVES WILL GUIDE YOU THROUGH THE RULES AND REGULATIONS.

When it comes to safety there are no shortcuts, no compromises and no disregarding of details. Our products are based on hard work, well-founded ideas, and values softer than steel, and since 1955 we have been working on making your world safe.

We develop and manufacture mesh panels to prevent injuries in factories, to secure processes, and to make sure property remains where it belongs.

In all we do, we do our utmost to provide the highest quality, to come up with innovations and to offer the most flexible solutions. Yet, these things would be of little interest if they weren't proven.

Therefore, a crucial part of our development is testing our products thoroughly. This is even a part of our Scandinavian heritage. For generations, safety has been an important topic in every work place, and in any potentially dangerous environment. This has made us well equipped for any unexpected situation, and it might also be the reason why we have decided never to take the easy way out.

We continuously listen to our costumers, and we have tested our products for over 20 years. We aim to be the given choice when you need safe solutions. All in all, we believe in being one step ahead, because that's what safety is all about.



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TEST CENTER TROAX

1,000,000 TIMES

OPEN/CLOSE LIVE TEST WITH TROAX SAFE LOCK

1,600 JOULES

IMPACT TEST SMART FIX SYSTEM

5,000 NEWTON

STATIC HORIZONTAL FORCE TEST FOR ANTI-COLLAPSE SYSTEM

2,500 JOULES

IMPACT TEST STRONG FIX SYSTEM

4,350 JOULES

IMPACT TEST STRONG FIX SYSTEM WITH DOUBLE PANELS

2,500 JOULES

IMPACT TEST ANTI-COLLAPSE SYSTEM

Our Research & Development department carries out tests, using various methods on a regular basis. The tests are performed in our Test Center, and will ensure that our panels are of high quality, and that they are safe and will keep our promises.

Among the methods we use, the energy impact test is the most common. These tests are performed using the pendulum method stated in ISO 14120. This is carried out to verify the impact resistance of our panels and systems. We also perform static force tests, such as pulling tests to verify the strength of our panels and posts. Examples of other tests are burglary tests for our Property Protection systems, functional bonding tests for our Machine Guarding systems and general corrosion tests on our products.

To us, safety is about being one step ahead and we believe in testing our products thoroughly and throughout the whole process – from idea to finished products. We also believe that in our field of business, proper and adequate testing should be mandatory.

800 TESTS TO CHALLENGE OURSELVES

OVER THE PAST DECADES WE HAVE TESTED AND TRIED OUR PRODUCTS MORE THAN 800 TIMES.

SETTING THE STANDARDS – AND SAVING LIVES

WHEN SWEDISH AND INTERNATIONAL STANDARDS REGARDING MACHINE SAFETY ARE REVISED, KIM DAHL, SENIOR EXPERT WITHIN MACHINE SAFETY AT TROAX TAKES MAJOR PART IN THIS WORK.

The more we increase the safety level in our products, the safer people will be at work. Kim Dahl is a senior expert within machine safety at Troax. He is also involved in several Swedish and international technical committees working to enhance standards within this field of business.

“It’s a great asset for Troax as a leading manufacturer of safety panels to be a part of these international committees. We work with standards that will have an effect on our own products and that will enhance our offer to our customers, but we also take part in work regarding safety in general. After all, throughout all of our work, our goal is that no human lives will be lost in workspaces.”

“In the committees, there are several other companies from our field of business, and we have a great collaboration, working towards the same goals even if we are competitors”



At Troax we have a common procedure when testing our products. And it is only because we have signed and agreed on a standard. For the customer, there is great value in all manufacturers testing their products the same way.

Troax is the only manufacturer of mesh panels on the market with a TÜV Type Approved based on ISO 14120.

“In many aspects, Sweden has the highest safety awareness in the world, which means that Troax’s products will work everywhere”, said Kim Dahl.

KIM DAHL, SENIOR EXPERT WITHIN MACHINE SAFETY AT TROAX.



- » Project leader of the board working with the machine standards ISO 14120 and ISO 13857, which are standards that has a major impact on Troax’s products.
- » Project leader for drafting the standards as a representative for SIS Swedish standard institute and Troax.
- » Chairman of The Swedish Technical committee TC282. Together with some seventy other companies, Troax is also part of SIS (Swedish Institute of Standards).

Would you like to know more about standards in general – or standards regarding Troax’s products in particular – always feel free to contact Kim Dahl to learn more.

SAFETY DOESN'T HAPPEN BY ACCIDENT

THE CORE OF OUR BUSINESS IS TO GUARANTEE YOUR SAFETY. IN ORDER TO REACH HIGHEST QUALITY, WE HAVE DECIDED NEVER TO TAKE ANY CHANCES, SHORTCUTS OR GAMBLE, AND WE PERFORM THOROUGH TESTS ON OUR PRODUCTS TO ENSURE THEIR DURABILITY. WE ARE EVEN THE FIRST MESH PANEL SOLUTION COMPANY IN THE WORLD TO HAVE OUR TEST METHOD ITSELF CERTIFIED BY TÜV.



INDEPENDENT TESTING

We use the organisation TÜV Rheinland to certify our test methods. This is a third-party testing institute, which consists of independent consultants who validate the safety of products and services of all types, in order to protect people and the environment against hazards. TÜV Rheinland has very strict requirements for the approval of a product or service, and their certification is one of the strongest quality marks to be found.

CERTIFIED BY TÜV

We perform impact tests on our product systems including panels, brackets and accessories in our Test Center, using the Pendulum Test Method.

One specific pendulum test method, approved by TÜV Rheinland, has played a significant role in the work resulting in the industry's first standard for anti-collapse systems.



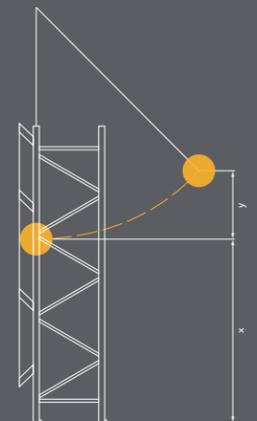
THE PENDULUM TEST METHOD

One purpose with the pendulum test is to document the effect of a high-energy impact test of 2,500 joules on our anti-collapse system with bracket. At the test, a pendulum of 160 kilograms was adjusted so that the impact hit the middle of the mesh in one of the panels. The impact test of 2,500 joules is approximately 160 kilograms at 20.1 km per hour.

The results were good; the anti-collapse system with bracket withstood the impact. There were no penetration and no parts departed. All panels, brackets, and retainers remained attached. The fact that our test method is certified means that our anti-collapse system with bracket has high quality, and most importantly, that you are safe.

2,500 JOULES

In order to simulate a real-life event, the 160 kg pendulum hits the panel at a speed of 20.1 km/h.



MACHINE GUARDING NOW TÜV CERTIFIED

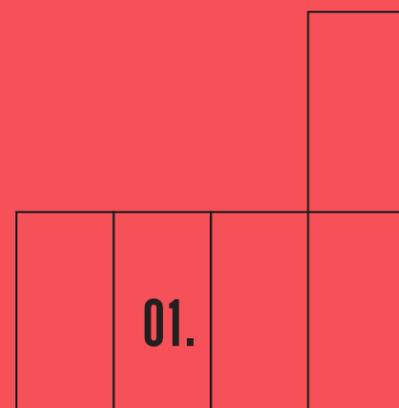
Our Smart Fix system is verified and certified by TÜV Rheinland according to ISO 14120:2015. This certification is the first within the Machine Guarding business.



PROTECTING PEOPLE, PROPERTY, AND PROCESSES

WHATEVER YOUR SAFETY NEEDS MAY BE, WE WILL CREATE A SOLUTION THAT WILL MEET YOUR REQUESTS. OUR MESH PANEL WALL SYSTEMS ARE DEVELOPED, MANUFACTURED, AND MARKETED IN THREE SEGMENTS: MACHINE GUARDING, WAREHOUSE PARTITIONING AND PROPERTY PROTECTION.

ALL OF OUR PRODUCTS HAVE VARIOUS FUNCTIONS AND QUALITIES. THEREFORE, THEY MUST BE TESTED ON THE BASIS OF THE RIGHT CONDITIONS. ALL OF OUR PRODUCTS ARE TESTED USING PROVEN TEST METHODS. THE TESTS ARE PERFORMED BY OUR RESEARCH & DEVELOPMENT TEAM, AT OUR TEST CENTER.



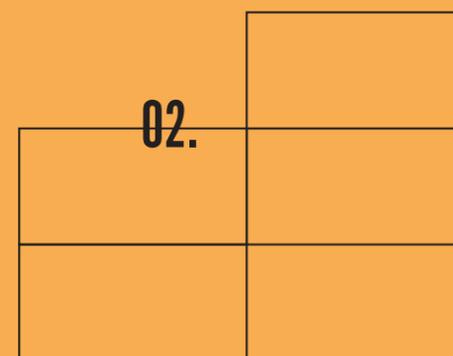
MACHINE GUARDING MAXIMUM SAFETY

Today's modern industry, with its advanced processes, places significant demands on safety. In particular, there is a great need for controlled access for authorised personnel. Our mesh panels are based on a carefully developed modular system which also includes special adaptations.

Troax's panels for machine guarding in mesh, full steel and polycarbonate, offer maximum protection for machines and maximum safety for people. Our world-class products, such as the strong mesh panels, the quick release Rapid Fix system and the Safe Lock solution have been developed to make your machine guarding safe and smooth.

Within Machine Guarding, the tests are made in accordance with ISO 14120:2015, Annex C. In this standard it is clearly mentioned how the test should be carried out – however, there are no indications on how many joules a machine guard should withstand. This is up to the risk analysis to be produced for each individual machine together with its machine protection.

After every test, a report is written. The thorough documentation describes the specific combination of machine protection, and how many joules the protection has been tested for – and what this equals in weight and speed.



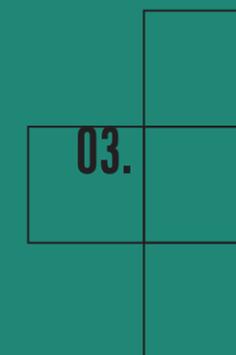
WAREHOUSE PARTITIONING SAFE HANDLING

There are several dimensions to the safety of your material handling and logistics. Our world-class products, such as mesh panel partitions, mesh shelves and anti-collapse systems, have been developed to make your material handling safe and easy. The core of our warehouse partitioning products are made from wire mesh, and will improve any logistics environment, from large distributions centres to areas that need to be protected, such as data centres.

Troax is a supplier to all types of industry – from traditional manufacturers that require large scale flows and volumes through their factories, to facilities with high bay storage and retail storage.

Our anti-collapse system prevents any risk of spillage from pallets in warehouse storages. The system has been created for safe handling and storing of goods in logistics environments of any size, including automated warehouses.

After several simulations and various calculations, we have developed a pendulum test method that simulates a falling pallet with a force of 2,500 joules. Troax's goal and intention is to achieve a Swedish and/or International standard that is similar to our own testing procedure, which is type-approved by TÜV Rheinland.



PROPERTY PROTECTION LONG-LASTING SOLUTIONS

Mesh panels have many advantages, and property owners choose Troax storage systems for storage areas for tenants, partly because they provide good light and ventilation, but mostly because they offer a high level of protection against vandalism and break-ins.

FLEXIBLE SAFETY SYSTEMS

Troax Classic

An excellent choice of mesh partition for storage spaces in apartment buildings that already have exterior protection or where there is a low risk of tampering.

Troax Medium

A mesh partition system for storage spaces in apartment buildings where there needs to be a reasonable level of protection against uninvited guests.

Troax Safe

Our highest security level for Property Protection is Troax Safe. The system together with the padlock door UX500 is certified by SBSC. The system is tested and approved according to the requirements of SSF 1990-06-30 / B. In the test, a list of tools – crowbar, hammer and chisel, for example – are used and the door must stand a specific time without being forced.

EVERY NEW INVENTION STARTS WITH THE SEARCH FOR A SOLUTION

WE BELIEVE THAT OUR RANGE OF PRODUCTS IS NEVER COMPLETE. WE ALWAYS WORK ON IMPROVING OUR PRODUCTS AND THE REASON IS SIMPLE: WE WANT TO CONTINUE TO FIND NEW SOLUTIONS, DEVELOP NEW IDEAS AND GROW TOGETHER WITH OUR CUSTOMERS. HERE ARE A COUPLE OF EXAMPLES OF INNOVATIONS TAKING US FURTHER IN TERMS OF MAKING YOUR WORLD SAFE.

TROAX INNOVATION CENTER

At first sight, what we do might seem plain, but beyond the visuals, there are decades of knowledge and technical expertise towards improving our products. Throughout the years we have worked on the most intricate and accurate details, to offer products of the highest quality and exceed the safety standards.

We develop our products to suit different contexts and environments all over the world, and our development team is constantly working on new ways to meet our customers' challenges and requirements.

SPEED BOLT

SPEED BOLT IS PERFECT FOR OUR ANTI-COLLAPSE SYSTEM. THE NUT IS INCLUDED IN THE BOLT, WHICH MAKES THE ASSEMBLY A LOT EASIER, FASTER AND MORE EFFICIENT.

EASIER ASSEMBLING FROM THE FRONT



WITHSTANDS 2,500 JOULES

ONLY ONE ITEM

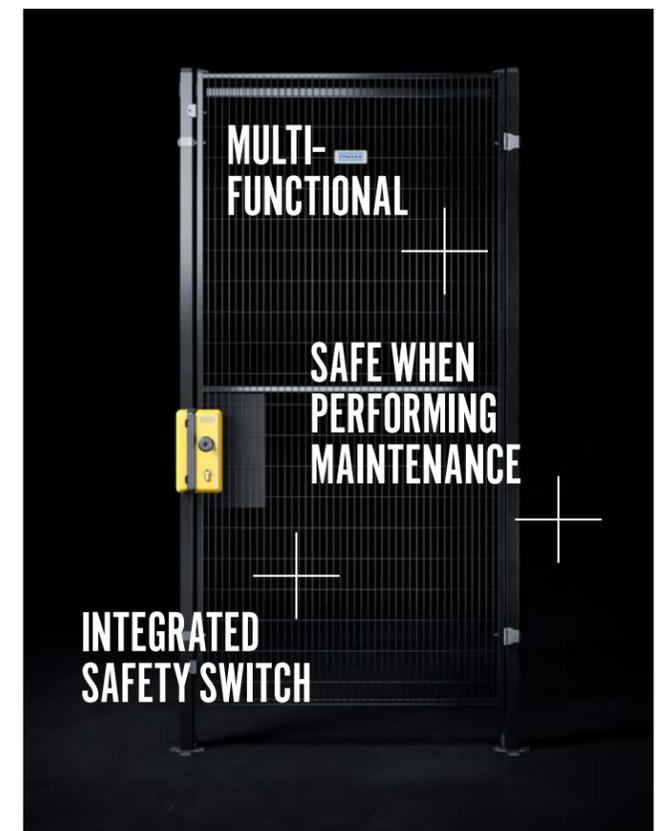
SAFE ESCAPE LOCK

Safe access. Safe Escape. As automated warehouse expands as a field of business, new needs and safety demands will occur. The new Troax Safe Escape Lock is developed in close collaboration with our customers, to help you increase safety on your plant.

INTEGRATED SAFETY SWITCH

MULTI-FUNCTIONAL

SAFE WHEN PERFORMING MAINTENANCE



MAKING YOUR WORLD SAFE SINCE 1955

For more than 60 years, Troax has been developing high-quality metal-based mesh panel solutions, with the vision to meet the demands for safe and secure storage, machine guarding, and warehouse partitioning. Today, Troax is the market leader within this field and our products protect people, property, and processes worldwide.



Troax was founded 1955. Throughout the years, growth has always remained strong in terms of international expansion, products, and sector providing security equipment for industry, storage, and property.

Today we are represented all over the world, and we are continuously developing our operations on all continents.

TROAX – THE ORIGINAL

Over 60 years of experience, energy, and efficiency to improve and develop innovative products, has led us to where we are today – The Original.



MAKING YOUR WORLD SAFE

