

TECHNO MODULE

MODULAR
ELSTEEL
ENCLOSURES



INTRODUCTION

ELSTEEL is a world leader in the design, development and manufacture of modular panel enclosures.

This is built on a strong foundation of 40+ years of operations supported by consistent investment in research and development. Our objective is as simple as our products: To manufacture the world's best enclosures at the best possible price.

ELSTEEL delivers enclosure solutions for every build. Whether it is a small Terminal Box or the largest custom designed distribution panel for an Olympic Size Stadium, ELSTEEL delivers the solution.



You're holding a top of the line quality product in your hands. Made with love and excellence! I hope you will enjoy assembling and using Elsteel products as much as I enjoy manufacturing it for you.

A handwritten signature in white ink, appearing to be 'Fang Logstrup'.

Fang Logstrup
Managing Director





TECHNO MODULE

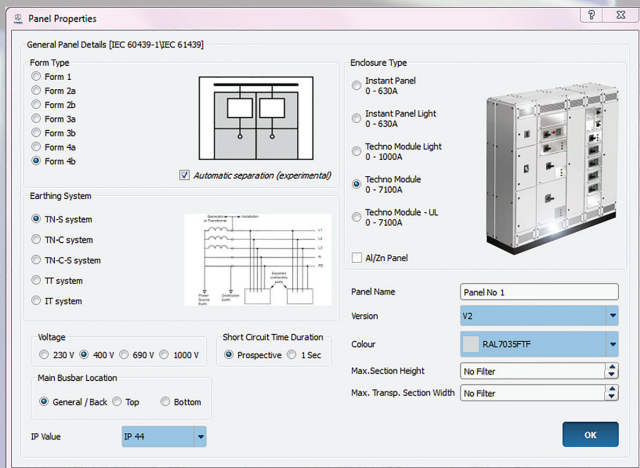
Techno Module is a patented 200 mm grid modular system for the switchboard manufacturing industry, fully type tested in accordance with IEC 61439-2.

It is the result of many years work in research and development and continuous testing at recognised test stations around the world.

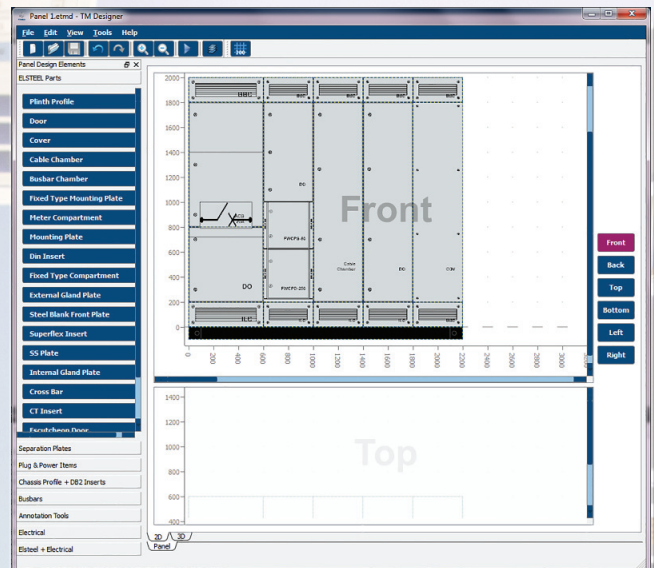
Techno Module is an open system that can accommodate all major brands of breakers, contactors, relays etc.

THE TECHNO MODULE DESIGNER

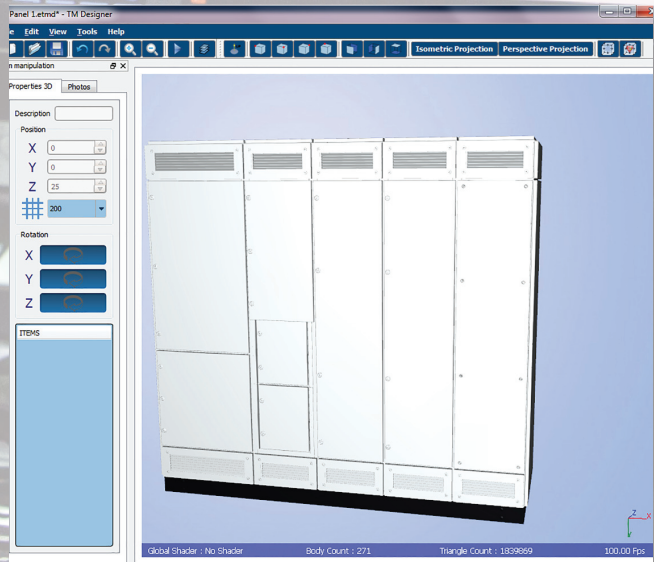
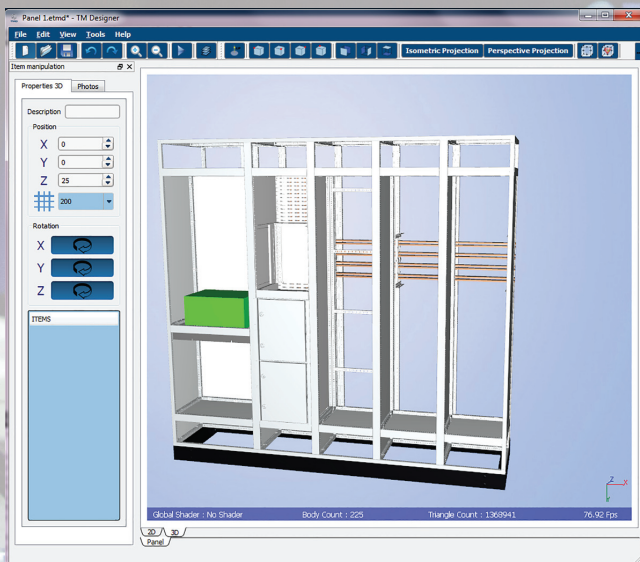
Panel properties

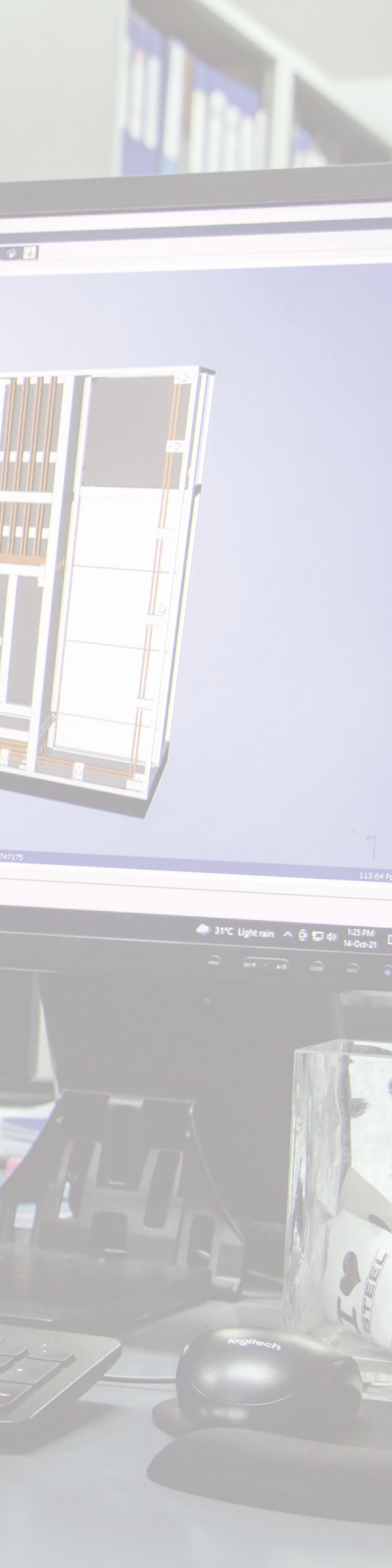


2D view



3D view





The first step in designing a successful distribution board or motor control centre is planning with Techno Module Designer (TMD).

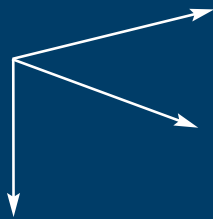
Panel builders spend a lot of time quoting projects with a success rate as little as 5-10%. So in order to save engineers precious time on quoting and allow them more time with the customer, we have created a unique tool. Within 15 minutes you can draw a panel board and get a Bill of Material including copper and electrical items. Its fast and its free!

Another great feature is the software creates 3D drawings for each panel. View in TMD or export into other 3D software packages. You can then plan site wide busbar routes for example.

Spend less time calculating and more time selling.

FRAME WORK

The Techno Module system is modular in steps of 200 mm in all three directions.



That means that there is no limit to the possibilities and positions.

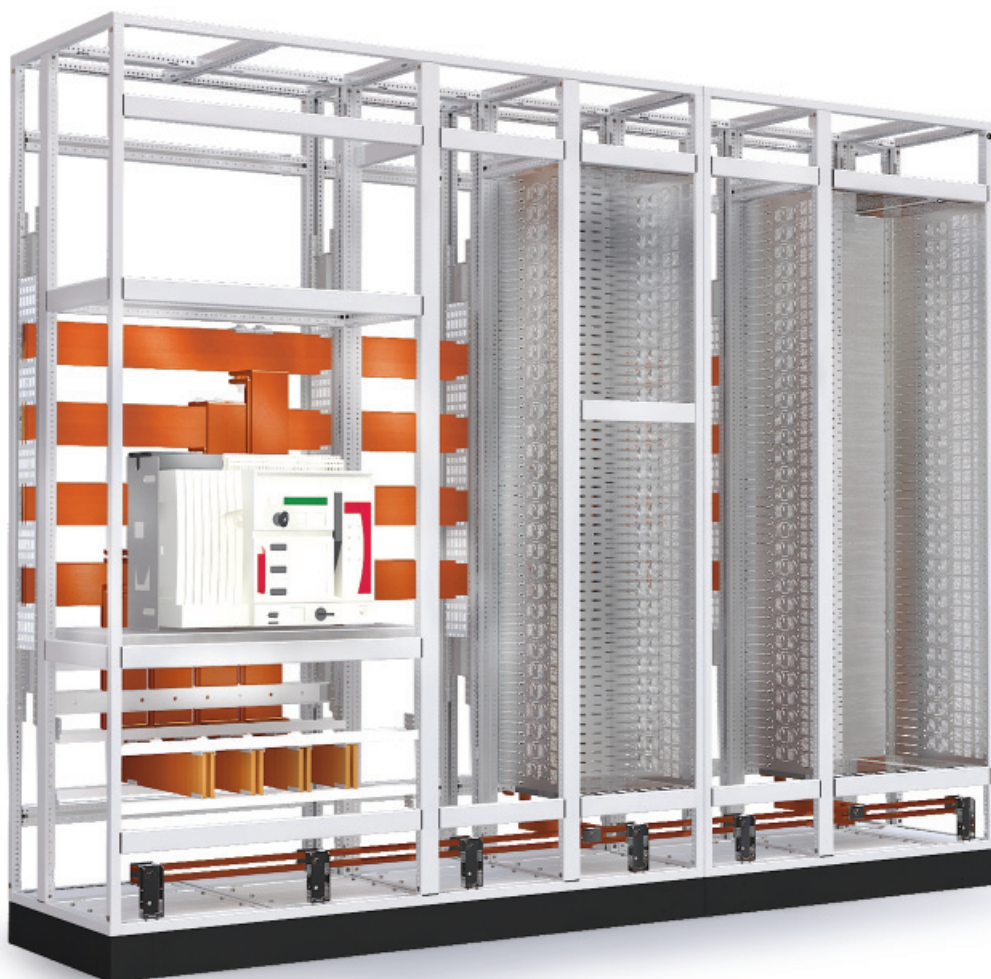
The strong framework is made from 2 mm electro galvanised powder coated steel profile.

It forms a 25 mm grid and can be arranged in an unlimited number of ways.

It rests on a modular base frame which incorporates all facilities for dividing and transportation.



BUSBARS



Busbar systems use standard 'off the shelf' 10mm flat copper bars.

The busbar holders are made from specially formulated, reinforced, self extinguishing plastic and can be mounted in any position within the framework. Top, bottom or middle.

Rated current

I_n = up to 12'000A

I_{cw} = up to 100kA - 3s and 150kA - 1s

Busbar systems and holders have been tested rigorously. Busbar connections are a clamp arrangement that allows the bars to slide during increase and decrease in temperature. This eliminates the risk of lose connections and of debris in your panel.

PLUG & POWER

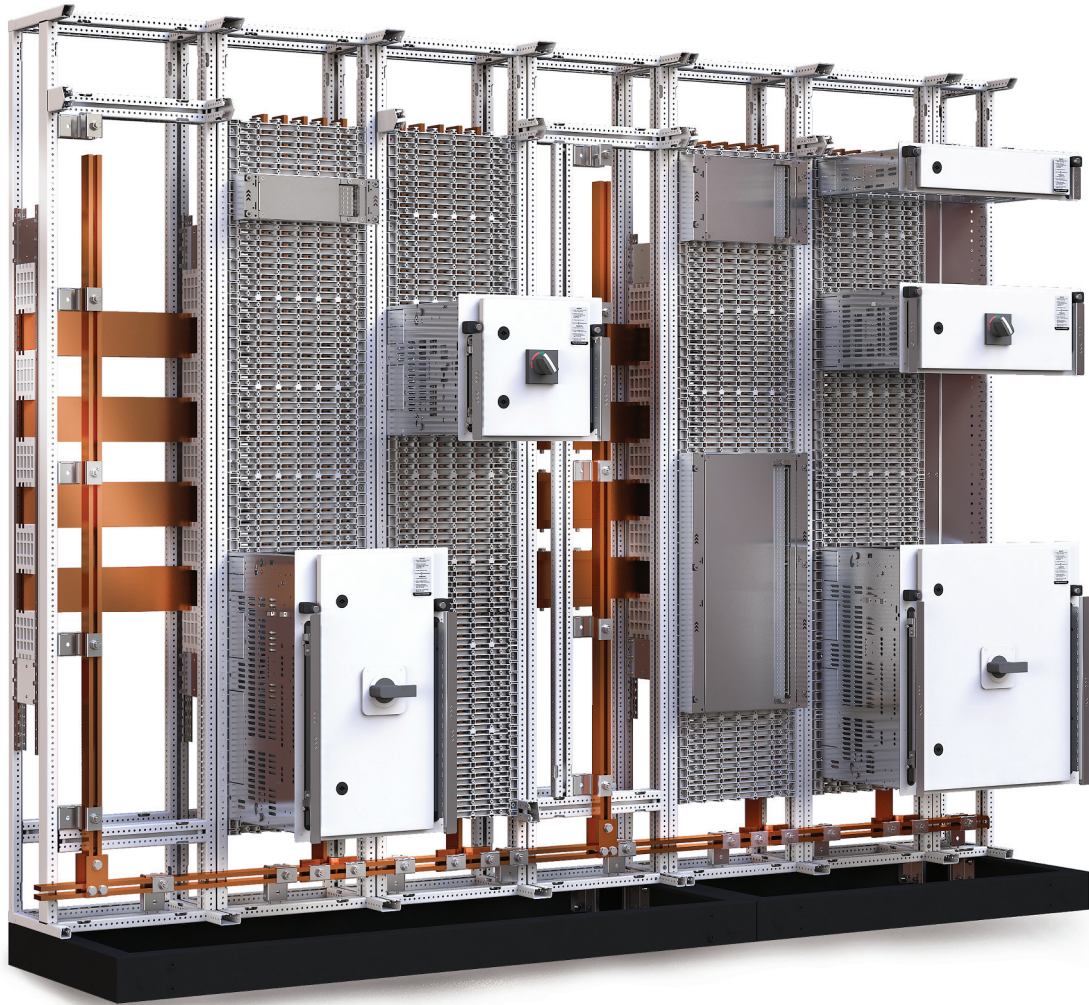
PLUG & POWER system is essential for industries with critical requirements of uninterrupted power supply and high stacking density of installed components.

PLUG & POWER is suitable for both Motor Control Centers (MCC) and Power Distribution Centers (PDC).

Thanks to compliance with the highest safety standards, PLUG & POWER withdrawable units can be rearranged and “swapped-out” while busbars remain live without causing damage or affecting performance of a switchboard.

Excellent performance characteristics of the PLUG & POWER system and extensive range of accessories, you will comply with any project requirements.

Thanks to the high stacking density of our PLUG & POWER system and unit width options, internal component installation availability inside of the unit, you will use your available panel space in the most efficient way.



Patented

PLUG & POWER

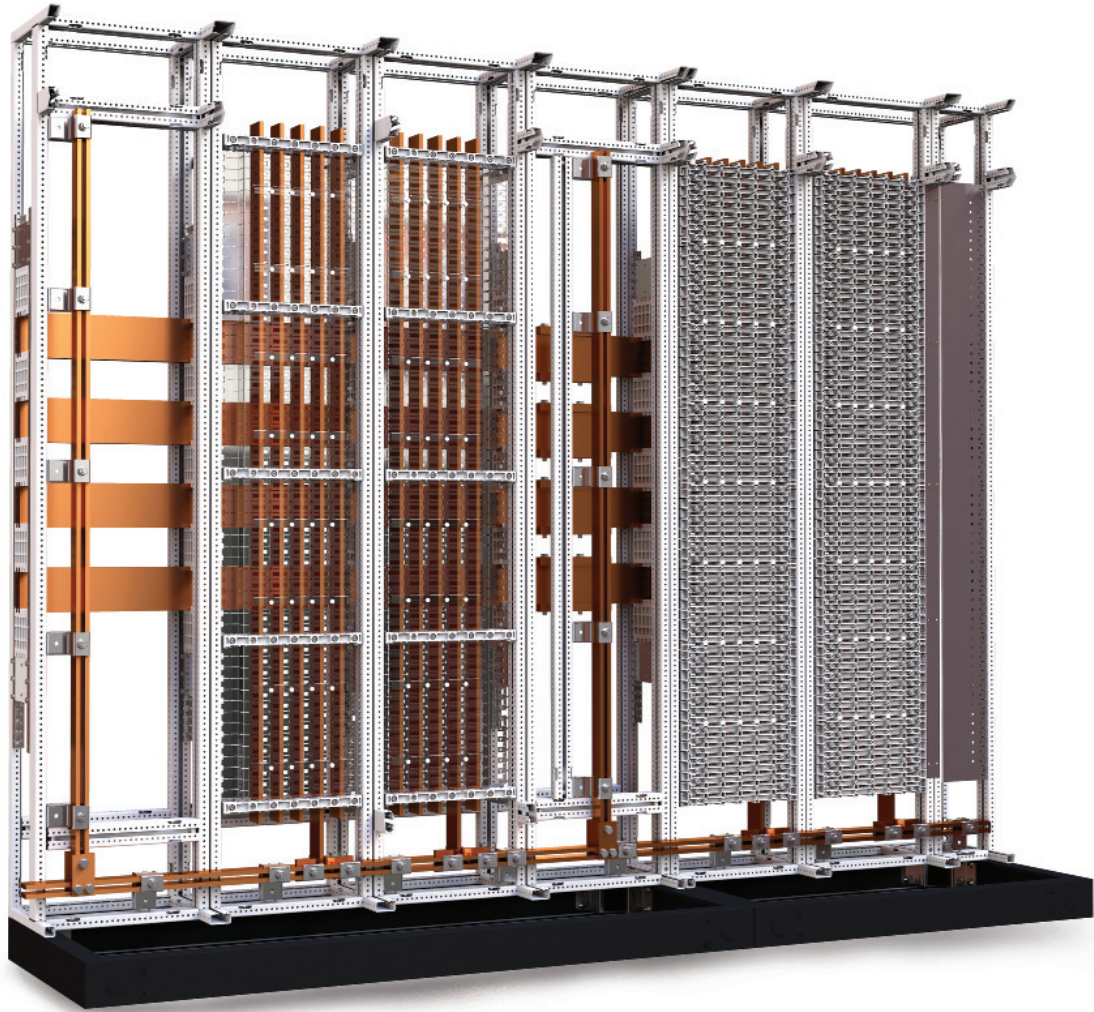
PLUG & POWER busbar systems will help you select the most appropriate configuration for your application.

Both options provide high level of safety against access to hazardous parts (IP2X, complies with finger protection standards).

The busbar arrangement installed within the Mother Board can be equipped with Shutters (optional accessory) which can provide improved level of protection against access to hazardous parts (IP4X, not possible to touch by wire).

A wide range of acceptable busbars from 1×20 till 10×120 mm. Each section can carry up to 2850A @35°C and up to 2500A @50°C.

Wide range of short-circuit withstand ratings from 50-1s till 100 kA-1s.



PLUG-IN UNITS

- Easy and low labour cost to assemble
- Special fixing screws reliably secure unit in the “Connected” position.
- Ergonomic removable handles make installation and removal of the unit easy and quick.
- Various installation options: individual compartment or group installation inside the compartment.
- Unified incoming plugs guarantee reliable connection.
- Side or rear connection of outgoing cables.
- Shutters provide additional protection of your personnel.



* Plug & Power is patented and a registered trade name owned by Elsteel.

WITHDRAWABLE UNITS

- High stacking density: up to 40 units in 600×2000 mm section.
- Unified design of the unit for side and rear cable outgoing connection will reduce variety of stock items, extremely saving time for designers and provide outstanding flexibility for end users.
- “Hot-swap” will extremely minimize your downtime.
- Lockable “Connected”, “Test” and “Isolated” positions guarantee simplicity, safety and reliability of operations.
- Integrated interlock will prevent unit removal in running (onload) condition and provide excellent level of safety for your personnel.
- High rated current: up to 900A.
- High number of auxiliary contacts (up to 84) and options of various digital communication interfaces broaden opportunities for designers, interfacing and end users.
- Interchangeable incoming and outgoing power plugs provide you reliable connection.
- Tin-plated terminals of power outgoing plugs allow to connect Al or Cu cables up to 4×240 mm² per phase.
- Shutters provide additional protection for your personnel.
- Insertion interlock will prevent installation in a wrong compartment.
- With Position indicator you will always know each position of the functional unit.
- Excellent mechanical operation resource: 1000 cycles.
- Lifting brackets will make process of installation or removal of heavy units easy and quick.

FORM 3 + 4

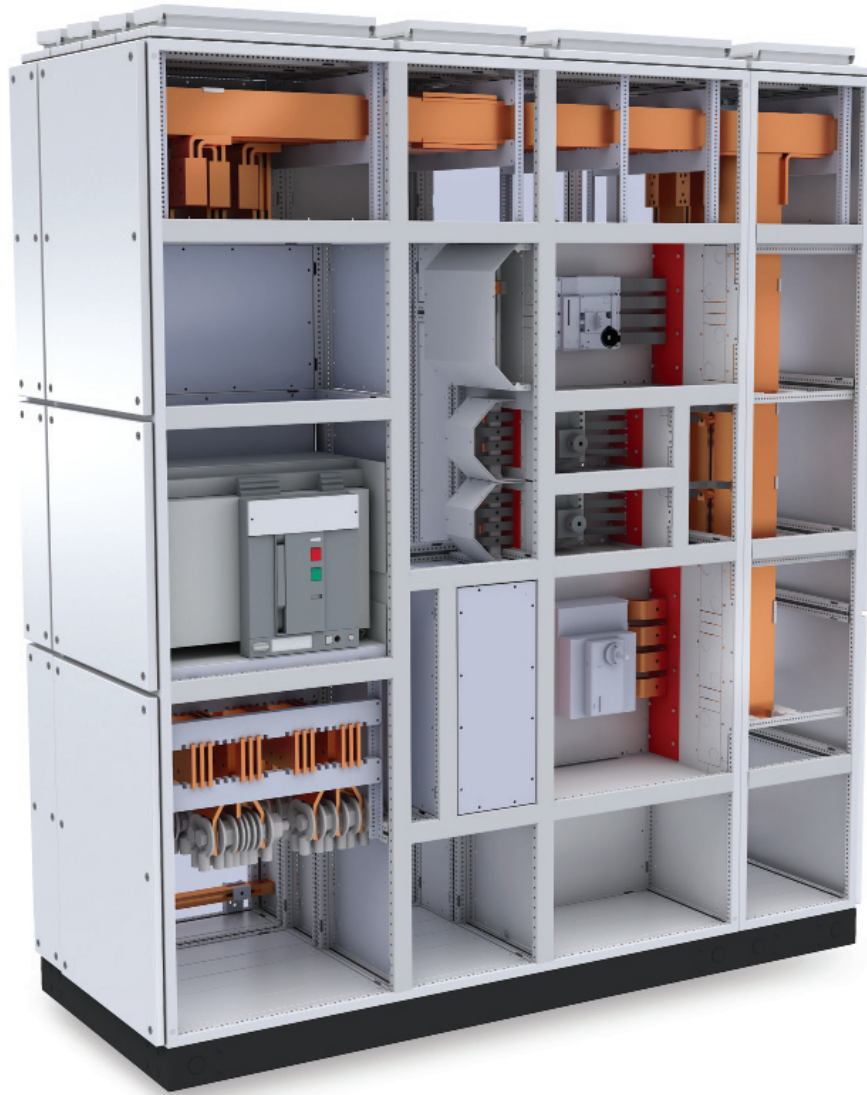
Highest forms of personal safety as well as protection of materials and environment.

When built in accordance with this change to the standard, it is possible to work in one section of the panel while the rest of the panel is still live.

Internal separation plates prevent foreign objects or particles from transferring from one section of the panel to another (resulting in a short circuit in a compartment that may be live). This prohibits the whole panel from becoming contaminated and complete panel damage.



ARC FAULTS



Arc Filters have been included in the design of the separation plate. Once you install the standard chimneys your enclosure is arc safe.

With arc filters fitted, flames, gases or solid objects are prevented from escaping from the front or side of the panel, where the operator may be standing.

Permissible short-circuit current under arcing conditions

$I_{p\ arc} = \text{up to } 100\text{kA} - 500\ \text{ms @}415\text{V}$

$I_{p\ arc} = \text{up to } 65\text{kA} - 300\ \text{ms @}690\text{V}$

TESTING + FINISH

Each and every panel is tested by the panel builder/integrator in accordance with specifications from the Constructors Manual, and the routine test specified in IEC 61439-1, before shipment.

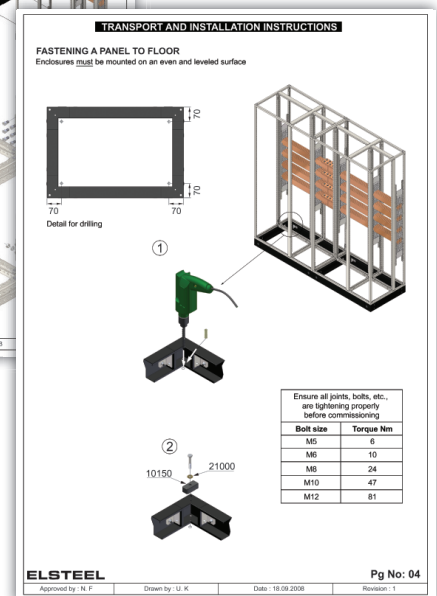
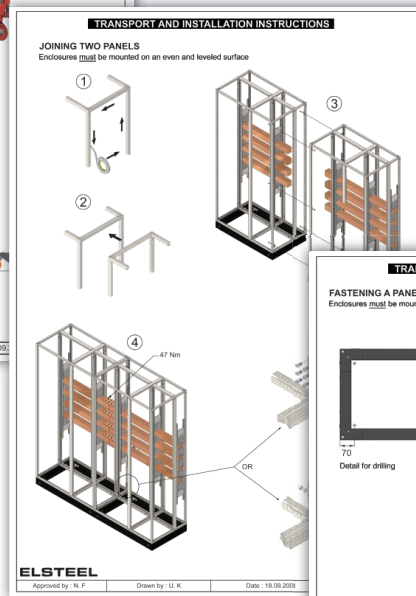
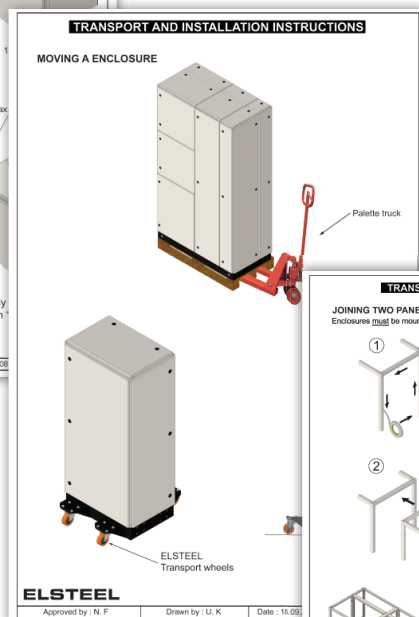
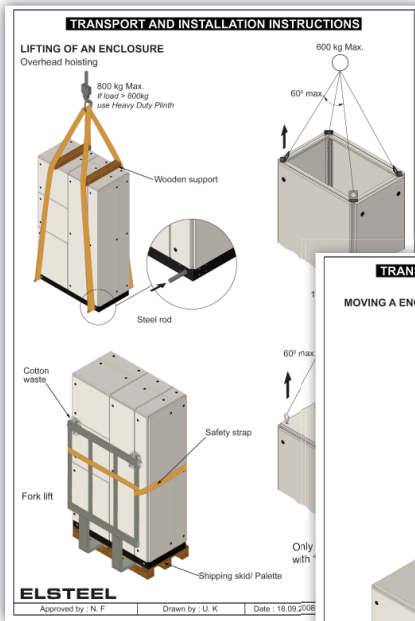
The surface of the panel is powder coated in RAL 7035 fine textured finish. It's easy to maintain and will look 'as new' for many years.

Phosphated and chrome-passivated pretreatment makes the panel suitable for tough climates and conditions. Degree of protection up to IP55.

After commissioning, the panel is easily expanded and breakers or motor starters can be removed or fitted.



INSTALLATION COMMISSIONING



Every ELSTEEL enclosure is tested in accordance with IEC 61439-1, not only at the test station but also by the panel builder. Instructions are delivered with each panel explaining in detail how to safely transport and install the panel.

CERTIFICATION

Elsteel Techno Module System is certified as per IEC and UL standards by independent certification authorities.



Elsteel Techno Module System is fully type tested as per IEC 61439-1, IEC 61439-2 and IEC TR 61641 with the following brands.



Elsteel Techno Module System is certified for marine applications by



| Enclosure type | Breaker brand | Standard | Rated current of the assembly, I _{NA} | Date of issue | Certificate No. |
|---------------------|------------------|---|--|----------------|-----------------------|
| Techno Module | ABB | IEC 61439-2 ed 1.0 2009-01 | 800 A | August 2010 | IPH-3345.2091256.0969 |
| Techno Module | ABB | IEC 61439-2 ed 1.0 2009-01 | 800 A | September 2010 | ASTA-17545 |
| Techno Module | ABB | IEC 61439-2 ed 2.0 2011-08 | 1250 A | October 2014 | DEKRA-2174125.102 |
| Techno Module | ABB | IEC 61439-2 ed 1.0 2009-01 | 1600 A | August 2010 | IPH-3345.2091255.0986 |
| Techno Module | ABB | IEC 61439-2 ed 1.0 2009-01 | 1600 A | September 2010 | ASTA-17544 |
| Techno Module | ABB | IEC 61439-2 ed 2.0 2011-08 | 1600 A | October 2014 | DEKRA-2174125.101 |
| Techno Module Light | ABB | IEC 61439-2 ed 3.0 2020-07 | 1450A | May 2022 | DEKRA-2254507.100 |
| Techno Module | ABB | IEC 61439-2 ed 1.0 2009-01 | 2300 A | August 2010 | IPH-3345.2091254.0982 |
| Techno Module | ABB | IEC 61439-2 ed 1.0 2009-01 | 2400 A | June 2011 | IPH-3457.2100397.1032 |
| Techno Module | ABB | IEC 61439-2 ed 1.0 2009-01 | 2500 A | September 2010 | ASTA-17543 |
| Techno Module | ABB | IEC 61439-2 ed 1.0 2009-01 | 2500 A | June 2011 | IPH-3457.2100397.0221 |
| Techno Module | ABB | IEC 61439-2 ed 1.0 2009-01 | 2500 A | August 2011 | ASTA-18050 |
| Techno Module | ABB | IEC 61439-2 ed 2.0 2011-08 | 2500 A | January 2013 | ASTA-18741 |
| Techno Module | ABB | IEC 61439-2 ed 2.0 2011-08 | 2500 A | October 2014 | DEKRA-2174125.100 |
| Techno Module | ABB | IEC 61439-2 ed 2.0 2011-08 | 3200 A | January 2013 | ASTA-18740 |
| Techno Module | ABB | IEC 61439-2 ed 1.0 2009-01 | 3400 A | August 2010 | IPH-3345.2091253.0999 |
| Techno Module | ABB | IEC 61439-2 ed 1.0 2009-01 | 4000 A | September 2010 | ASTA-17542 |
| Techno Module | ABB | IEC 61439-1 ed 1.0 2009-01 & IEC 61439-2 ed 1.0 2009-01 | 4000 A | September 2010 | IPH-3345.2091252.1010 |
| Techno Module | ABB | IEC/TR 61641: ed 3.0 2014-09 | 4000 A (415V) | April 2022 | DEKRA-2254512.01-AOC |
| Techno Module | ABB | IEC/TR 61641: ed 3.0 2014-09 | 4000 A (690V) | April 2022 | DEKRA-2254512.02-AOC |
| Techno Module | ABB | IEC 61439-2 ed 1.0 2009-01 | 6300 A | September 2010 | ASTA-17541 |
| Techno Module | ABB | IEC 61439-2 ed 3.0 2020-07 | 6200 A | July 2024 | DEKRA-2289670.101 |
| Techno Module | ABB | IEC 61439-2 ed 3.0 2020-07 | 6200 A | June 2022 | DEKRA-2254503.100 |
| Techno Module | ABB | IEC 61439-2 ed 3.0 2020-07 | 10000 A | September 2022 | DEKRA-2256032.100 |
| Techno Module Light | General Electric | IEC 61439-1 ed 2.0 2011-08 & IEC 61439-2 ed 2.0 2011-08 | 1000 A | December 2013 | IPH-1819.2130777.0451 |
| Techno Module | General Electric | IEC 61439-1 ed 2.0 2011-08 & IEC 61439-2 ed 2.0 2011-08 | 2500 A | December 2013 | IPH-1819.2130776.0500 |
| Techno Module | General Electric | IEC TR 61641 ed 3.0 2014-09 | 2500 A | August 2015 | IPH-02996-15-0516 |
| Techno Module | Hager | IEC 61439-2 ed 3.0 2020-07 | 1300 A | July 2024 | DEKRA-2289670.03-AOC |
| Techno Module | Hager | IEC 61439-2 ed 2.0 2011-08 | 2000 A | January 2016 | DEKRA-2184741-101 |
| Techno Module | Hager | IEC 61439-2 ed 2.0 2011-08 | 3200 A | January 2016 | DEKRA-2184741-100 |
| Techno Module | Hager | IEC 61439-2 ed 3.0 2020-07 | 6100 A | July 2024 | DEKRA-2289670.04-AOC |
| Techno Module | LSiS | IEC 61439-2 ed 2.0 2011-08 | 1600 A | February 2017 | DEKRA-2195091-100 |

For more certifications and latest updates please see www.elsteel.com

| Enclosure type | Breaker brand | Standard | Rated current of the assembly, I _{na} | Date of issue | Certificate No. |
|----------------|---------------------|---|--|---------------|-----------------------|
| Techno Module | LSIS | IEC 61439-2 ed 2.0 2011-08 | 2500 A | February 2017 | DEKRA-2195091-101 |
| Techno Module | LSIS | IEC 61439-2 ed 2.0 2011-08 | 4000 A | February 2017 | DEKRA-2195091-102 |
| Techno Module | Mitsubishi Electric | IEC 61439-1 ed 2.0 2011-08 & IEC 61439-2 ed 2.0 2011-08 | 3200 A | May 2018 | NSC-171212-00004 |
| Techno Module | Schneider Electric | IEC 61439-2 ed 1.0 2009-01 | 400 A | July 2011 | ASTA-18047 |
| Techno Module | Schneider Electric | IEC 61439-2 ed 2.0 2011-08 | 400 A | June 2012 | ASTA-18361A |
| Techno Module | Schneider Electric | IEC 61439-2 ed 1.0 2009-01 | 800 A | July 2011 | ASTA-18048 |
| Techno Module | Schneider Electric | IEC 61439-2 ed 2.0 2011-08 | 800 A | June 2012 | ASTA-18363A |
| Techno Module | Schneider Electric | IEC 61439-2 ed 1.0 2009-01 | 1600 A | December 2010 | IPH-2633.2100582.0704 |
| Techno Module | Schneider Electric | IEC 61439-2 ed 1.0 2009-01 | 1600 A | January 2011 | ASTA-17864 |
| Techno Module | Schneider Electric | IEC 61439-2 ed 2.0 2011-08 | 1600 A | June 2012 | ASTA-18612A |
| Techno Module | Schneider Electric | IEC 61439-2 ed 1.0 2009-01 | 2500 A | December 2010 | IPH-2633.2101351.0729 |
| Techno Module | Schneider Electric | IEC 61439-2 ed 1.0 2009-01 | 2500 A | January 2011 | ASTA-17865 |
| Techno Module | Schneider Electric | IEC 61439-2 ed 1.0 2009-01 | 2500 A | July 2011 | ASTA-18046 |
| Techno Module | Schneider Electric | IEC 61439-2 ed 2.0 2011-08 | 2500 A | June 2012 | ASTA-18362A |
| Techno Module | Schneider Electric | IEC 61439-2 ed 2.0 2011-08 | 2500 A | June 2012 | ASTA-18613A |
| Techno Module | Schneider Electric | IEC 61439-2 ed 1.0 2009-01 | 3200 A | January 2011 | IPH-3467.2100399.0218 |
| Techno Module | Schneider Electric | IEC 61439-2 ed 1.0 2009-01 | 3200 A | February 2011 | ASTA-17615 |
| Techno Module | Schneider Electric | IEC 61439-1 ed 2.0 2011-08 & IEC 61439-2 ed 2.0 2011-08 | 3500 A | November 2012 | ASTA-18868 |
| Techno Module | Schneider Electric | IEC 61439-2 ed 1.0 2009-01 | 4000 A | November 2010 | ASTA-17756 |
| Techno Module | Schneider Electric | IEC 61439-2 ed 1.0 2009-01 | 4000 A | July 2011 | IPH-2633.2100584.0506 |
| Techno Module | Schneider Electric | IEC 61439-2 ed 2.0 2011-08 | 4000 A | June 2012 | ASTA-18614A |
| Techno Module | Schneider Electric | IEC 61439-2 ed 3.0 2020-07 | 6300 A | July 2024 | DEKRA-2289670.100 |
| Techno Module | Siemens | IEC 61439-2 ed 2.0 2011-08 | 2000 A | February 2017 | ASTA-20468 |
| Techno Module | Siemens | IEC 61439-2 ed 1.0 2009-01 | 3200 A | February 2011 | ASTA-17909 |
| Techno Module | Siemens | IEC 61439-2 ed 2.0 2011-08 | 4900 A | February 2017 | ASTA-20467 |
| Techno Module | Siemens | IEC 61439-1 ed 2.0 2011-08 & IEC 61439-2 ed 2.0 2011-08 | 5740 A | February 2017 | IPH-04104-16-0506 |
| Techno Module | Terasaki | IEC 61439-2 ed 2.0 2011-08 | 1300 A | August 2017 | DEKRA-2197839.100 |
| Techno Module | Terasaki | IEC 61439-2 ed 2.0 2011-08 | 2000 A | June 2012 | DEKRA-2148971.101 |
| Techno Module | Terasaki | IEC 61439-2 ed 2.0 2011-08 | 3200 A | June 2012 | DEKRA-2148971.100 |
| Techno Module | Terasaki | IEC 61439-2 ed 2.0 2011-08 | 6100 A | August 2017 | DEKRA-2197839.101 |

For more certifications and latest updates please see www.elsteel.com

TECHNICAL SPECIFICATION

GENERAL DATA

| | | |
|-------------------------------|-----------|---|
| Installation | | Indoor |
| | | Outdoor ¹ |
| Mounting possibilities | | Floor standing |
| | | Wall mounting |
| Colour | | RAL 7035 Fine Textured (Standard) Other colours by request |
| Coating | Type | Epoxy Polyester Powder |
| | Thickness | ≥ 60µm |

MECHANICAL DATA

| | | |
|--|----------------------|---------------------------------|
| Service access | | Front only |
| | | Front & Rear |
| Cable entry | | Top |
| | | Bottom |
| Compartments | | Fixed |
| | | Removable |
| | | Withdrawable |
| Degree of protection (IP code) | | Up to IP55 |
| Mechanical impact (IK code) | | IK10 |
| Form of internal separation | as per IEC61439-2 | Up to 4b |
| | as per BS EN 61439-2 | Up to 4 Type 1-7 |
| Mechanical operation | Techno Module | 1000 cycles |
| | Techno Module Light | 200 cycles |
| Recommended dimensions of transport section | Length | Up to 2400 mm (can be extended) |
| | Height | Up to 2400 mm (can be extended) |
| | Depth | Up to 2400 mm (can be extended) |

ELECTRICAL DATA

| | | |
|---|------------------------------|----------------------------|
| Rated operational voltage (U_e) | | Up to 1000 V |
| Rated insulation voltage (U_i) | | Up to 1000 V |
| Rated impulse withstand voltage (U_{imp}) | | Up to 12 kV |
| Rated frequency (f) | | Up to 60 Hz |
| Rated current (I_n) | Main busbar | Up to 12000 A @ 35°C |
| | | Up to 10000 A @ 50°C |
| | Functional unit ¹ | Up to 6300 A @ 35°C |
| | | Up to 5650 A @ 50°C |
| Rated short-time withstand current (I_{cw}) | | Up to 120 kA - 1s |
| | | Up to 100 kA - 3s |
| Rated conditional short circuit current (I_{cc}) ² | | Up to 100 kA @ 415 V |
| | | Up to 100 kA @ 690 V |
| | | Up to 100 kA @ 800 V |
| | | Up to 90 kA @ 900 V |
| Pollution degree | | 3 |
| Earthing system | | TN-S, TN-C, TN-C-S, TT, IT |

ELECTRICAL DATA (under arcing conditions)

| | | |
|---|--|--|
| Rated operational voltage (U_e) | | Up to 690 V |
| Rated frequency (f) | | 50 Hz |
| Permissible short-circuit current under arcing conditions ($I_{p,arc}$) | | Up to 100 kA @ 415 V |
| | | Up to 65 kA @ 690 V |
| Permissible arc duration (t_{arc}) | | 500 ms @ 415 V |
| | | 300 ms @ 690 V |
| Arcing class | | C |
| Type of access | | unrestricted access (ordinary persons) |

¹ Outdoor installation is applicable for Stainless Steel Doors and Covers (AISI 304 grade or higher).

² Ratings depend on circuit breaker model and manufacturer. Refer test certificates on www.elsteel.com

BUSBAR HOLDER DATA

| Type | Thermal Class (IEC 60085) | CTI (IEC 60112) | Material Group |
|-------|---------------------------|-----------------|----------------|
| BAH | Thermal Class B | 175 | IIIa |
| SLBH | Thermal Class F | 600 | I |
| UBH | Thermal Class B | 175 | IIIa |
| OMH | Thermal Class B | 175 | IIIa |
| BH | Thermal Class F | 600 | I |
| MAB | Thermal Class B | 175 | IIIa |
| MABHT | Thermal Class F | 600 | I |
| DRHU | Thermal Class F | 600 | I |
| INS | Thermal Class B | 175 | IIIa |
| NEU | Thermal Class B | 175 | IIIa |
| FCSH | Thermal Class B | 175 | IIIa |
| MBO | Thermal Class B | 175 | IIIa |
| RBH | Thermal Class B | 175 | IIIa |

MATERIAL SPECIFICATION

| | |
|-----------------------------|---|
| Base Frame | Mild steel 2 mm Hot dip Galvanized steel 5 mm |
| Corners | Aluminium die casted |
| Corner Bar / Cross Bar | Electro Galvanized steel 2 mm Stainless steel 1.5 mm (AISI 304, AISI 316) Wet grinding (180) |
| Door / Cover | Mild steel 1.5 mm |
| Doors with Window | Mild steel 1.5 mm Tempered Tinted glass 4 mm |
| Door Stabilizer | Mild steel 20×20×1.5 square pipe |
| Flat Cover | Mild steel 1.5 mm Stainless steel 1.5 mm (AISI 304, AISI 316) Wet grinding (180) |
| Mounting Plate | Mild steel 2 mm Alu-zinc 2 mm Hot dip Galvanized steel 3 mm |
| Separation Plates | Mild steel 1 mm (sizes: 2.2, 2.4, 2.6, 4.4, 4.6), all other sizes 1.2 mm Polycarbonate 2 mm |
| Fixed Type Mounting Plate | Alu-zinc 2 mm |
| Group Mounting Plate | Alu-zinc 2 mm |
| Vertical Separation Plate | Alu-zinc 1.5 mm |
| Panel Assembly Kit | Mild steel zinc plated 3 mm |
| Cable Holder | Mild steel 1.5 mm (up to 600 mm) Mild steel 2 mm (above 600 mm) |
| Lifting Eyes | Mild steel zinc plated 3 mm |
| Wall Mounting Brackets | Mild steel zinc plated 3 mm |
| Transport Wheel Holder | Mild steel 3 mm |
| Instant Plate | Mild steel 1.5 mm |
| Busbar Holder | Self extinguishing fibre material / reinforced PC |
| Bracket for Earth Conductor | Mild steel zinc plated 3 mm |

COPPER SPECIFICATIONS

Electrolytic Copper high conductivity OC-ETP 99.98 % JIS H3140 C 1100 Tempered upto half hard.

Slightly round edge (Se) with the radius of the chamfer 1.6 mm with a tolerance of ±0.4 mm.

PAINT SPECIFICATION

1. Standard Paint

Degreasing and Phosphating

- By the spray method at approx. 47°C
- Cleaning and passivating of the surface
- Coating with phosphate (coat thickness approx. 1 µm)

Textured Powder Coating

- Electrostatic coating
- Raw material: Epoxy Polyester
- Can be readily overpainted
- Can be decontaminated
- High mechanical strength
- Good resistance to chemicals and UV rays coat thickness ≥ 70 µm

Smooth Powder Coating

- Electrostatic coating
- Raw material: Epoxy Polyester
- Can be readily overpainted
- Can be decontaminated
- High mechanical strength
- Good resistance to chemicals and UV rays coat thickness ≥ 60 µm

Corrosion resistance in accordance with IEC 62208 clause 9.13.1 and IEC 61439-2 clause 10.2.2.2

Severity test A

- 6 cycles of 24h each damp heat cycling test according to IEC 60068-2-30 (Test Db) at (40 ± 2) °C and relative humidity of 95%
- 2 cycles of 24h each to salt mist test according to IEC 60068-2-11 (Test Ka: salt mist) at a temperature of (35 ± 2) °C

Summary: No signs of rust, suitable for harsh industrial surrounding (Indoor installation)

2. Resistance

The standard coating is resistant to:

- Mineral oils
- Lubricants
- Machining emulsions
- Solvents (briefly, such as during cleaning processes)

The standard coating is suitable for a continuous temperature of -40°C to +90°C.

The standard coating can withstand a continuous temperature of 45°C to 85% RH.

Please Note

If UV resistant powder coating is required it has to be mentioned as a special requirement. The standard coating is not UV Resistant. IP protection categories do not imply that enclosures are suitable for outdoor applications.

3. Overpainting

After careful cleaning and perhaps slight roughening of the surface, the standard coating can be overpainted with Powder coating.

*Powder Coating System : Electrostatic Powder Coating System (ITW Gema – Switzerland)

*Pretreatment System : Five stage, Phosphate free Conversion Coating system (Henkel Germany)

For more certifications and latest updates please see www.elsteel.com

REFERENCES

| Customer | Product | Country |
|-------------------------------------|---------------------------------|--------------|
| Olympic Stadium | Main Distribution Panel | Australia |
| British Aerospace | Main Distribution Panel | Australia |
| Colt Telecom | Techno Module | Belgium |
| NATO Headquarters | Techno Module MCC | Belgium |
| Ministry of Defence | Motor Control Center | Dubai |
| Giga Gold Refinery | 2500A LV Panels | Dubai |
| Jebel Ali Airport | Main Distribution | Dubai |
| Nordbahnhof Berlin | NSHV and GHV | Germany |
| Alcatel Stuttgart | NSHV and GHV | Germany |
| National Hospital | 4000A Switchboard | Iceland |
| Eskifjord Ltd | 2500A Switchboard | Iceland |
| Hyundai Motor India Ltd | Techno Module | India |
| Nokia Mobile Phone Facility Project | Techno Module | India |
| Toyota Kirloskar Motor Pvt Ltd | PCC Panels - Techno Module | India |
| Radisson Hotel | Techno Module/ Form 4 | Jordan |
| Amman East Station | Form 4 Motor Control Center D/O | Jordan |
| Central Bank of Kenya | Main Board/ Sub Boards | Kenya |
| Commercial Bank of Africa | Main Board/ Sub Boards | Kenya |
| Multilinx Factory | Distribution Boards | Maldives |
| SAVANNAH Sugar Estate | Techno Module and MCC | Mauritius |
| Ulvesund Elektro AS | 1600A Main Panels | Norway |
| Power Plant Mar Kraftverk | Motor Control Center | Norway |
| Qatar International Stadium | Distribution Panel | Qatar |
| West Bay Cooling System - Phase 1 | Form 4 Panel 7000A | Qatar |
| SAB Miller Beer Factory | Motor Control Center WWT Plant | Romana |
| Hydro Tech Engineering | Motor Control Center WWT Plant | Romana |
| Esso Deepwater Ltd | Generator Control Panel | Singapore |
| Shangri La Hotel | Techno Module | Singapore |
| Greenpoint Stadium (2010 World Cup) | Techno Module | South Africa |
| Coca Cola Dar Es Salaam | Techno Module | South Africa |
| Barcelona Airport | Form 4 Motor Control Center | Spain |
| Jerez Airport | Form 4 Motor Control Center | Spain |
| Manchester Airport | Form 4 Motor Control Center | UK |
| Nokia | Main Switchboard | UK |
| International Airport Doha | Techno Module MCC | Qatar |
| Fujairah | Techno Module MCC | UAE |
| Brodosplit Shipyard | Marine Panel 6300A | Croatia |

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