

Empty enclosures for low-voltage switchgear and control gear assemblies

General requirements

Field of application

Demands for testing the enclosures to be used as part of the switchgear assemblies for voltages of less than 1000 V alternating current and 1500 V direct current

- **Static loads:** test 1.25 maximum admissible load during 1 hour
- **Lifting:** applicable to enclosures with lifting accessories
- **Axial loads of metal inserts:** 500 N for 10 seconds for M8 inserts
- **IK code:** test according to standard IEC 62262 with pendulum impact tester. After testing, the enclosure keeps its IP rating
- **IP rating:** test according to standard IEC 60529. Degree of protection against access to dangerous parts and the penetration of solid bodies and against the penetration of water
- **Thermal stability at a temperature of 70 °C:** 7 days
- **Resistance to heat:** ball test at 70 °C ⁽¹⁾
- **Resistance to abnormal heat and to fire:** glow wire test according to IEC 60695-2-10 and IEC 60695-2-11 ⁽¹⁾
- **Dielectric strength:** 5000 V ⁽¹⁾
- **Protection circuit continuity** ⁽²⁾: resistance not to exceed 0.1 ohm
- **Weather resistance:** duration 500 h (cycle: rain 5 minutes + UV lamp 25 minutes)
- **Corrosion resistance:**

For indoor enclosures:

- 6 cycles of 24 hours of the damp heat test at 40 °C and relative humidity of 95%
- 2 cycles of 24 hours of the salt mist test at 35 °C

For outdoor enclosures:

- 12 cycles of 24 hours of the damp heat test at 40 °C and relative humidity of 95%
- 14 cycles of 24 hours of the salt mist test at 35 °C

⁽¹⁾ Information required for enclosures made from insulating material

⁽²⁾ For metal enclosures

SS304 vs SS304L / SS316 vs SS316L

- The lower carbon “variants”(L) were established as alternatives to the standard carbon range grade to overcome the risk of inter-crystalline corrosion (weld decay)
- Higher resistance to corrosive attacks from weather agents
- Lower-carbon variation with a 0.03% maximum carbon content that eliminates carbide precipitation due to welding

Designation	
X5CrNi1810 X2CrNi1811	304 304L
X5CrNiMo1712 X2CrNiMo1713	316 316L
Chemical Composition%	
C(0.08 max) Mn(2) P(0.45) S(0.03) Si(1) Cr (18-20) Ni (8-10.5) C(0.03 max) Mn(2) P(0.45) S(0.03) Si(1) Cr (18-20) Ni (8-12)	
C(0.08 max) Mn(2) P(0.45) S(0.03) Cr(16-18.5) Ni(10.5-13.5) Mo(2-2.25) C(0.03 max) Mn(2) P(0.45) S(0.03) Cr(16-18.5) Ni(11.5-14.5) Mo(2.25-3)	



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RANGERNEWS

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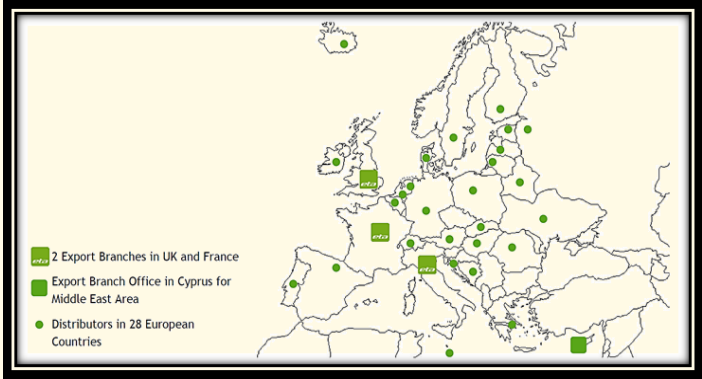
P. 4
IEC EN62208/
SS304 vs SS304L
SS316 vs SS316L



「意達」

is an established company in Italy specializing in the manufacturing of enclosure solutions for industrial and electronic applications since 1978

- Manufacturing from sheet steel, stainless steel AISI304L/ AISI316L, extruded Aluminium
- Fully automated plants
- Leading-edge machinery and advanced laser welding technology
- New laser welding in optical fibre
- Innovative painting plant
- Unique logistic centre and automatic warehouse
- Total quality system (UNI EN ISO9001:2008 procedures)
- Custom possibilities (special sizes, painting, holes and cut-out etc.)
- 4 manufacturing units, 2 branches (office + warehouse) abroad in UK and France, 1 branch office in Cyprus for Middle East area
- Presence in more than 40 countries worldwide



ETA in Europe



ETA in Worldwide



Headquarters and manufacturing unit in Canzo—Italy



Manufacturing unit and logistic centre in Albavilla—Italy

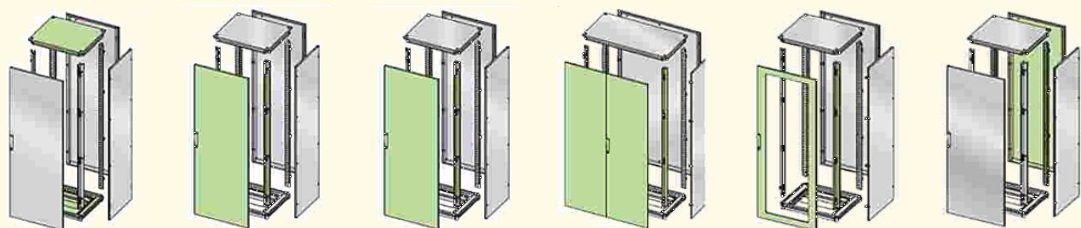


Facility for custom products in Asso—Italy

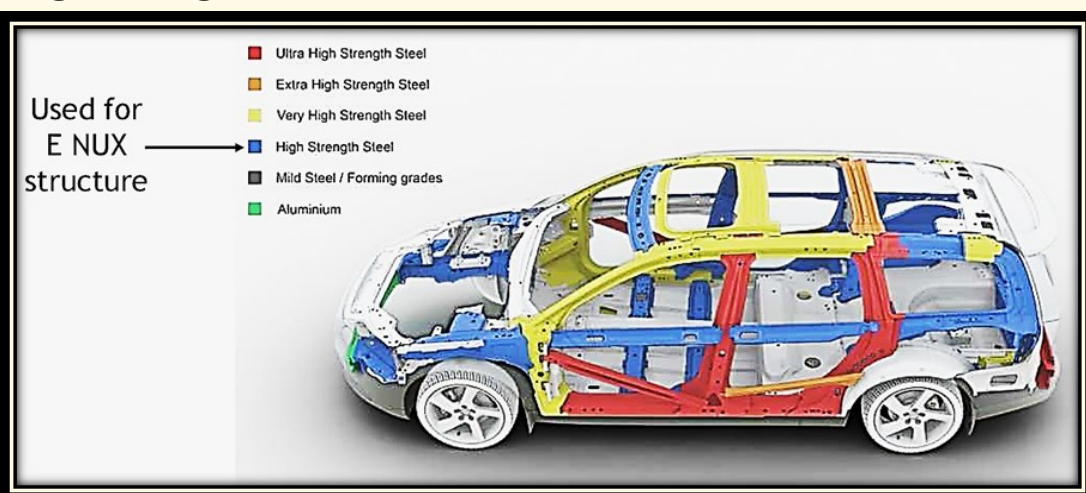


2011 Innovations - E NUX

- Over 90 standard dimensions in mounted or flat-pack version, full range of complementary accessories for multiple dimensions
- Can be simply assembled with 8 screws only, due to the exclusive orthogonal joint made of special steel
- New laser welding technology in optical fibre
- Sturdy uprights closed with continuous welding
- Sturdy structural upright made of high-resistance (**high strength**) sheet steel with closed symmetric profile
- The bottom consists of one single welded piece manufactured from high-resistance (**high strength**) sheet steel
- Colour of door, rear panel and side panel in RAL7035, roof, handle and plinth in RAL5020



High Strength Sheet Steel



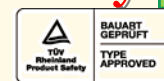
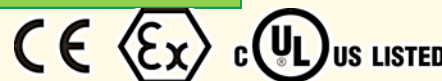
High yield strength micro alloyed structural steel (HSLA - High Strength low alloy) for cold working. (EN10268)

- Optimal mechanical features
- Reduction of the thickness and weight in use
- Minimum yield point (as raw material already)
- Suitable for structures stressed by shock or efforts

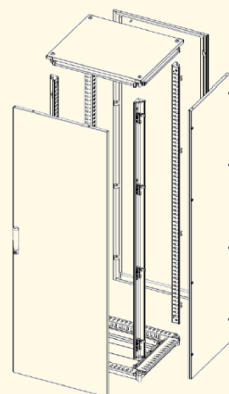
F.E.M. Fine Element method

F.E.M. is a numerical technique for finding approximate solutions of partial differential equations as well as integral equations. The method is to split a "body" into a very large number of small basic elements of particular type (mesh). To each element are applied the elementary equations that define the physical phenomenon studied.

	PULLING	TWISTING	BENDING
1.5mm thickness Standard sheet steel	950N	11.5N*m	650 N
1.2mm thickness High-strength sheet steel	1,250N	15 N*m	820 N

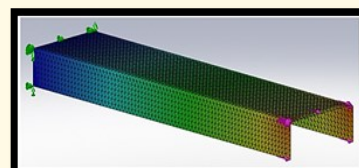


research
design
sustainability
functionality
flexibility
strength

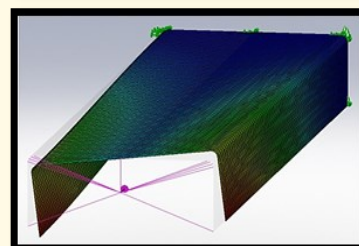


E NUX

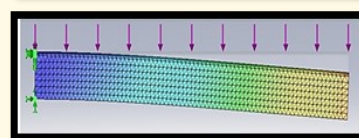
Pulling



Twisting



Bending



ATB 8 Series

- Material available in **Sheet Steel, SS304L/SS316L**
- Available in **Blank Door, Double Blank Door** and **Plexi Door**
- Size from **600x1600x400** to **1600x2000x400**
- Protection Rating: IP66 complying with IEC EN62208; EN60529 (IP55 for Double Door)
- Impact Resistance IK10 complying with IEC EN62208; EN50102

ST Series

- Material available in **Sheet Steel, SS304L/SS316L**
- Available in **Blank door, Double Blank Door** and **Plexi Door**
- Size from **200x300x150** to **1200x1200x300**
- Protection Rating: IP66 complying with IEC EN62208; EN60529
- Impact Resistance IK10 complying with IEC EN62208; EN50102
- Main accessories: **Inner Door, Rain Canopy**

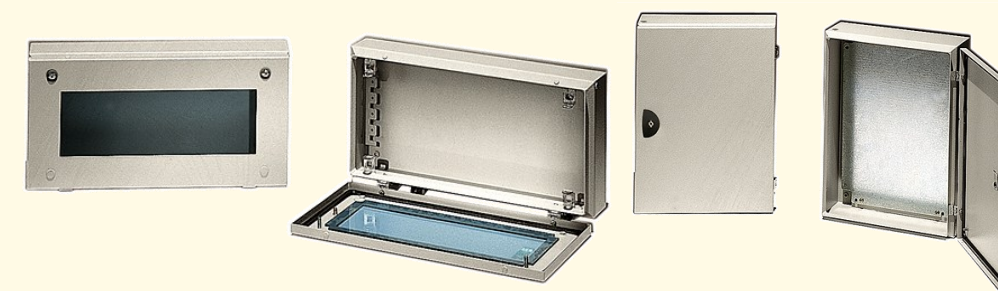


CS Series

- Material available in **Sheet Steel, SS304L/SS316L**
- Available in **Blank Door** and **Double Blank Door**
- Size from **600x1200x400** to **1200x1400x400**
- Protection Rating: IP55 complying with IEC EN62208; EN60529
- Impact Resistance IK10 complying with IEC EN62208; EN50102

SD Terminal Box

- Material available in **Sheet Steel, SS304L/SS316L**
- Available in **with/without** Gland Plate, **with** Lid or Door
- Size from **150x150x80** to **800x400x120**
- Protection Rating: IP66 complying with IEC EN62208; EN60529
- Impact Resistance IK10 complying with IEC EN62208; EN50102



* For any enquiries, please contact our sales department. For further information, please visit our showroom or require a copy of the ETA product price catalogue, product overview or catalogue.

