·WE ARE·
MANUFACTURERS
CERTIFIED

delvalle®

INDUSTRIAL ENCLOSURE SOLUTIONS

ISO12944 CORROSION RESISTANT ENCLOSURES & JUNCTION BOXES

ANTICORROSIVE PRODUCT

comercial@delvalle.es | www.delvallebox.com

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I.21

WE PUT AT YOUR DISPOSAL

We offer over **50 years** providing solutions to demanding customers who require very specific characteristics and behaviour according to the sector and their needs.

WHEREVER YOU GO

We are committed to working closely with our customers, providing them with **exceptional service** and offering an advanced and extensive range of products with very competitive prices.

HIGH STANDARD OF QUALITY AND SERVICES

We only use materials provided by companies who offer the very **highest quality**, suitable and certified products. Our success is due to top quality assurance: ISO 9001, SGS, UL, TÜV, ISO 14000 and ISO45001.

CUSTOMIZE TOTALLY YOUR ENCLOSURE

Our production systems can give custom-made solutions **on demand.** Every colour from RAL chart is available to be personalized. A variety of protection standards thanks to our own painting facilities.

EU

100%
Entirely designed and manufactured in Europe

CONTACT US

Confidentiality, reliability & quality

www.delvallebox.com
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+34 945 601 381

ALSO ONLINE

Please contact our technical sales department

A team of professionals with high experience and ability to solve all your queries

ISO12944 ENCLOSURES & JUNCTION BOXES

The ISO 12944:2018 standard is intended to assist engineers and corrosion experts in adopting best practice in corrosion protection of structural steel with coatings at new construction of industrial panel enclosures. C1, C2, C3, C4, C5 and CX enclosures any of the models in our catalogue

The ISO12944:2018 standard is intended to assist engineers and corrosion experts in adopting best practice in corrosion protection of structural steel with coatings at new construction and repairs. ISO12944:2018 is progressively superseding regional standards to become a truly global benchmark in corrosion control.

Correct application of the anticorrosion coating system is vital in the performance long-term.

The long-term protection against corrosion depends on many factors:

- The design of the structure, the base material and the coating system
- The support and the environment in which it is placed
- The operating environment and maintenance

The Delvalle system has been subjected to extensive testing enclosures such as water condensation.

We are the manufacturer that can guarantee these certifications for your outdoor boxes and cabinetry installations. We have a highly qualified technical team to answer all your questions about the choice and maintenance of your wardrobe.

ISO12944 ENCLOSURES & JUNCTION BOXES

LUXOR SERIES

WALL MOUNTED ENCLOSURE

IP66

Specially designed for automatic meter positioning, machine controls, and offering, where necessary, a smart look, high quality, durability and chemical product resistance

TRIBECA SERIES

IP66

FREE-STANDING ENCLOSURE

Electrical control panel approved for food, chemical, pharmaceutical processing centres, telecommunications and outdoor; designed for machine control meters and where smartness, quality and durability are necessary

TITAN SERIES

MODULAR ENCLOSURE

IP66

Specially designed for maximum flexibility in use. Thanks to its versatility it can be used in the food and pharmaceuticals industries, where hygiene is essential, electrical, industries where total sealing is essential and also in industrial environments

GEO SERIES

IP66

JUNCTION BOX

Specially designed and officially approved for food, chemical, pharmaceutical, transformer and telecommunication industries for use both inside and outside, due to the advantages of high resistance to chemical agents and durability

ISO12944 ENCLOSURES & JUNCTION BOXES

CLASSIFIED ACCORDING CORROSIVE ATMOSPHERE

The ISO 12944-2: 2018 classifies 6 categories of corrosivity for atmospheric environments.

CORROSIVITY CATEGORY		EXAMPLES OF TYPICAL ENVIRONMENTS IN TEMPERATE CLIMATES		MASS LOSS PER M² / THICKNESS LOSS (after the first year of exposure)			
CATEGORY	DURABILITY	OUTDOOR	INDOOR	CARBON STEEL		ZINC	
				LOST OF DOUGH (g/m²)	LOST OF THICKNESS (µm)	LOST OF DOUGH (g/m²)	LOST OF THICKNESS (µm)
C1	Very low		Heated buildings with clean atmospheres: offices, shops, schools, hotels,...	≤10	≤1,3	≤0,7	≤0,1
C2	Low	Atmospheres with low level of pollution. Mainly rural areas	Unheated buildings where condensation may occur: warehpuses, depots, sports halls,...	>10 a 200	>1,3 a 25	>0,7 a 5	>0,1 a 0,7
C3	Medium	Urban and industrial atmospheres, moderate sulphur dioxide pollution. Coastal areas with low salinity	Production rooms with high humidity and some air pollution: food-processing plants, laundries, breweries, dairies,...	>200 a 400	>25 a 50	>5 a 15	>0,7 a 2,1
C4	High	Industrial areas and coastal areas with moderate salinity	Chemical plants, swimming pools, coastal ship and boatyards	>400 a 650	>50 a 80	>15 a 30	>2,1 a 4,2
C5	Very high	Industrial areas with high humidity and aggressive atmosphere and coastal and offshore areas with high salinity	Buildings or areas with almost permanent condensation and with high pollution	>650 a 1.500	>80 a 200	>30 a 60	>4,2 a 8,4
CX	Extreme	Overseas areas with high salinity and industrial areas with extreme humidity and aggressive atmosphere and tropical and subtropical environments	Industrial areas with high humidity and aggressive atmosphere	>1.500 a 5.500	>200 a 700	>60 a 180	>8,4 a 25

Additionally, 4 other immersion environments are defined.

CATEGORY	ENVIRONMENT	EXAMPLES OF ENVIRONMENTS AND STRUCTURES
IM1	Immersion in sweet water	Riparian facilities and hydroelectric plants
IM2	Immersion in the sea or brackish water (without cathodic protection)	Port areas with structure such as containment doors, locks, docks and overseas structures
IM3	Buried in soil	Buried tanks, steel piles and steel pipes
IM4	Immersion in the sea or brackish water (with cathodic protection)	Buried structures with cathodic protection

ISO12944 ENCLOSURES & JUNCTION BOXES

DURABILITY

Remember, when selecting the most cost effective system for your project, durability does not equate to a guarantee time. Durability relates to the performance duration of the coating system before first major maintenance. Regular minor maintenance should always be anticipated in order to achieve the required life to first major maintenance. After exposure, the coating is evaluated reflecting in a life expectancy of:

- Low durability (L) up to 7 years
- Medium durability (M) from 7 to 15 years
- High durability (H) from 15 to 25 years
- Very high durability (VH) over 25 years

SURFACE PREPARATION

The standard defines the degrees of preparation of the surface, but not the condition of the substrate prior to preparation:

- Sa: abrasive blast-cleaning
- St: cleaning with hand or power tools
- Fl: cleaning with flame
- Be: acid pickling

The standardised grades in ISO 8501 are:

GRADE OF PREPARATION	CLEANING SYSTEMS	ESSENTIAL FEATURES OF PREPARED SURFACES
Sa 1	Light blast-cleaning	When viewed without magnification, the surface shall be free from visible oil, grease and dirt, and from poorly adhering mill scale, rust, paint coatings and foreign matter*
Sa 2	Thorough blast-cleaning	When viewed without magnification, the surface shall be free from visible oil, grease and dirt, and from most of the mill scale, rust, paint coatings and foreign matter1. Any residual contamination shall be firmly adhering
Sa 2½	Very thorough blast-cleaning	When viewed without magnification, the surface shall be free from visible oil, grease and dirt, and from mill scale, rust, paint coatings and foreign matter. Any remaining traces of contamination shall show only as slight stains in the form of spots or stripes
Sa 3**	Blast-cleaning to visually clean steel	When viewed without magnification, the surface shall be free from visible oil, grease and dirt, and shall be free from mill scale, rust, paint coatings and foreign matter1. It shall have a uniform metallic colour
St 2	Thorough hand and power tool cleaning	When viewed without magnification, the surfaces shall be free from visible oil, grease and dirt, and from poorly adhering mill scale, rust, paint coatings and foreign matter*
St 3	Very thorough hand and power tool cleaning	Very thorough hand and power tool cleaning. As for St 2, but the surface shall be treated much more thoroughly to give a metallic sheen arising from the metallic substrate
Fl	Cleaning with flame	Rolling scale, rust, paint coatings and foreign matter are eliminated. Any remaining residue should be presented, only, as a discoloration of the surface (shades of different colors)
Be	Acid pickling	The lamination scale, rust, paint coatings and foreign matter are completely eliminated. Paint coatings must be removed before acid pickling by suitable means

(*) It is considered that the lamination scale is weakly adhered if it can be removed without effort with a spatula or cutting instrument that detaches it.
(**) This degree of surface preparation can only be achieved and maintained under certain conditions that can not be achieved on site.

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EXAMPLES OF ENVIRONMENTS

These environments are based on experiments that have measured the rate of metal loss for uncoated steel. The classification of environments applies to structural steel exposed to ambient (less than 120°C) conditions.

C1 - Shop

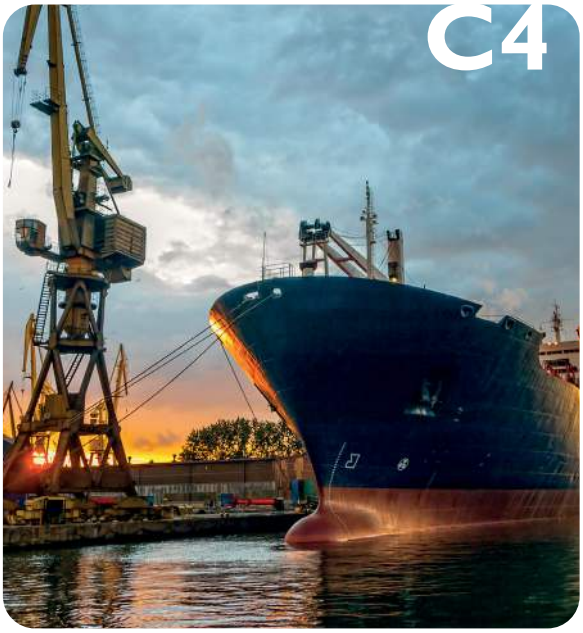
School, offices, shops, hotels,...

C2 - Warehouse

Warehouses, sports halls,...

C3 - Food factory

Food processing plants, laundries,...



C4 - Ports

Chemical plants, coastal ship, swimming pools,...

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C5 - Gantry cranes

Industrial areas with high humidity and aggressive atmosphere and coastal and offshore areas with high salinity

CX - Sea offshore wind farms

Overseas areas with high salinity and industrial areas with extreme humidity and aggressive atmosphere and tropical and subtropical environments

FOR MORE INFORMATION CLICK HERE

CUSTOMIZED ENCLOSURE SOLUTIONS DELVALLE

Delvalle has more than 50 years of experience using the latest technology to implement and obtain the most innovative products on offer to all our customers. Delvalle is an ideal partner, combining an advanced and wide range of products at very competitive prices.

The customized manufacture of all electrical enclosures and cabinets Delvallebox is carry out with the most advanced technical methods and with the precision and consciousness of a craftsman. This makes the difference from competitors and is the best way to gain our customers´ trust.
In Delvallebox we bear in mind that customers perceive the quality very clearly. In every product (for instance, in the cabinets here presented) safety and useful solutions are what customers value most.

STAINLESS STEEL INDUSTRIAL ENCLOSURES

OUTDOOR ELECTRICAL ENCLOSURES

GLOBAL ELECTRICAL SOLUTIONS FOR URBAN AREAS

GALVANIZED STEEL ELECTRICAL ENCLOSURES

SLOPED ROOF
ENCLOSURES - HYGIENIC

ATEX INDUSTRIAL ENCLOSURES

INDUSTRIAL ENCLOSURES IP66, IP67, IP68 AND IP69K

Buy direct from manufacturer of custom made IP66, IP67, IP68 and IP69K heavy duty industrial and waterproof electrical enclosures AISI 304L and 316L made by standard IEC 60529. Delvalle has tested all sizes and dimensions of waterproof enclosures according to EN 60529:2018. All weather resistant enclosures are more than simply rainproof, they meet a minimum of Nema 4X and IP66, IP67, IP68 and IP69k requirements to ensure your electronics are protected. From Juntion boxes to industrial enclosures, Delvalle weatherproof enclosures offer a wide range of sizes and styles to keep your project waterproof.

CABLE GLANDS FOR
ELECTRICAL ENCLOSURES

CLIMATE CONTROL
COOLING FOR ENCLOSURES

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Contact us, we will be available at any time