

CE Marking

Declaration of performance No. LSE-CPR-2022-0725
Document attached with
DDT Nr. 614
Of: 11/11/2022
Signature for receipt:
ANNEX TO DOCUMENT 395...

1. Unique identification code of the product-type: **LSE-CPR-2022-0725**
2. Intended uses: **Ledro Steel EcoBox (LSE) welded mesh gabions are intended to be used for earth retention, soil reinforcement, river training, erosion control, freestanding walls and architectural claddings. The use of welded mesh gabions should be outside the influence of corrosive soils and waters containing salt or other chemical substances considered corrosive for steel and steel products.**
3. Manufacturer: **Metallurgica Ledrense Soc. Coop -
Via Ampola 14 - IT - 38067 Ledro (TN)**
4. VVCP system: **System 2+**
5. European Assessment Document: **EAD 200020-00-0102 (march 2017)**
European Technical Assessment: **ETA-17/0059 (07/07/2022)**
Technical Assessment Body: **ETA-Danmark A/S**
Notified body: **N° 1404 - Zavod Za Gradbeništvo Slovenije**
6. Declared performances:

Essential characteristic	Performance
<i>3.1 Basic Works Requirement 1: Mechanical resistance and stability</i>	
Wire diameter	4 mm in accordance with EN 10218-2, Table 1, Tolerance Class T1.
Wire tensile strength and elongation	Wire tensile strength > 500 MPa according to the pt. 3 of the EN 10218-1 with the limitations given in the pt. 7.4 of the EN10223-8 after the cold worked processing: -tensile strength: 641 MPa (average value) -lengthening strength: 7,22% (average value)
Dimension of product, mesh size and connection components	Please refer to Annex A of this document
Corrosion protection	The steel wires are zinc-aluminum alloy coated with minimum 275g/m2 coating corresponding to class A in accordance with EN 10244-2 for class A
Weld shear strength	The average shear strength of four welds selected randomly from one panel shall not be less than 75% of the breaking load of the wire with no single shear strength of weld below 50% in accordance with cl 7.5 EN 10223-8
Tensile strength of gabion/mattress including connections	No performance assessed
Durability	Durability against neutral salt spray strength. The products were subjected to a test with a duration of 1000 hours and showed less than 5% of dark brown rust
<i>3.4 Basic Works Requirement 4: Safety and accessibility in use</i>	
Protection against injury	The gabion poses no obvious risk of injury caused by sharp edges of jut out wires
<i>3.5 Basic Work Requirement 5: Protection against noise</i>	
Airborne sound insulation	No performance assessed
Sound absorption	No performance assessed

The performance of the product identified above is in conformity with the set of declared performances. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

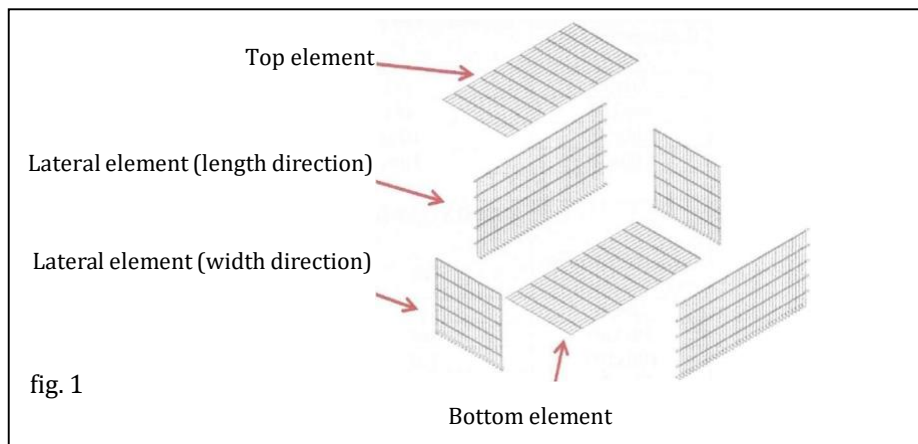
Fabio Tiboni, legal representative

 Ledro (TN), 25/07/2022
 (Place and date of issue)


ANNEX A
Description of the gabions and components

The Ledro Steel EcoBox Gabions have parallelepiped or cube shape. The gabions are composed by, see figure n°1:

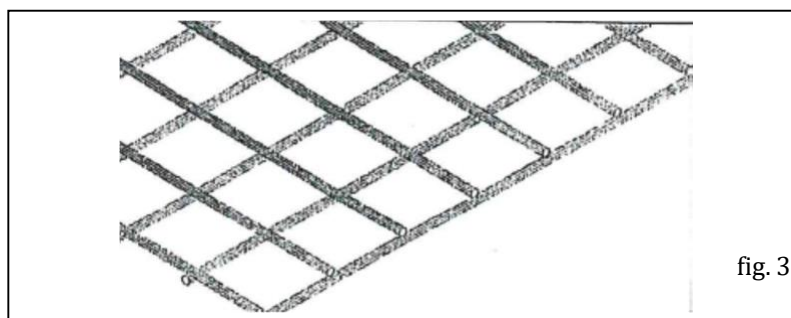
- Bottom element.
- Top element.
- Lateral elements (2 length direction and 2 width direction)
- Internal stiffeners (the number depends by the dimension of the gabions).



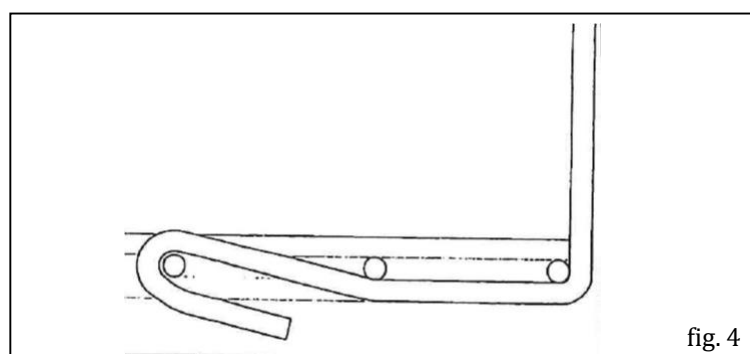
All the elements above are made of:

- LEDRO STEEL ECOBOX: single steel wire of diameter 4 mm for the horizontal direction and single steel wire of diameter 4mm for the vertical direction. See figure n°3.

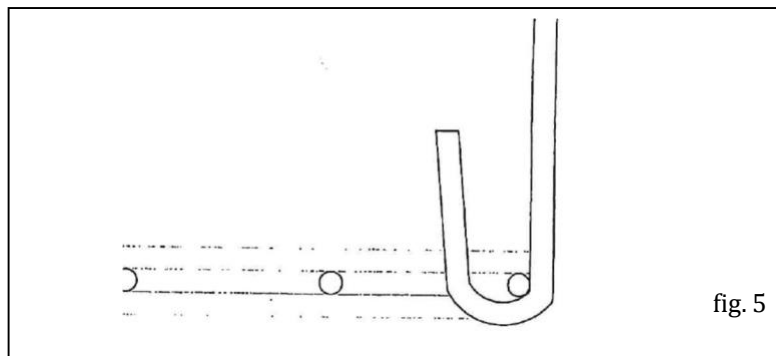
The steel wires are zinc-aluminum alloy coated with minimum 275 g/m² coating for wires with diameter 3.80-4.40 mm and minimum 290 g/m² coating for wires with diameter 5.20-8.20 mm corresponding to class A in accordance with EN 10244-2



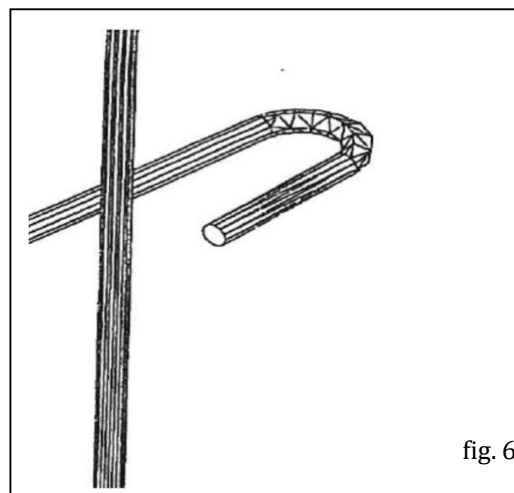
A J-shaped hook, incorporated in the lateral elements, with the bottom element, connects the lateral elements (length direction), see figure n° 4



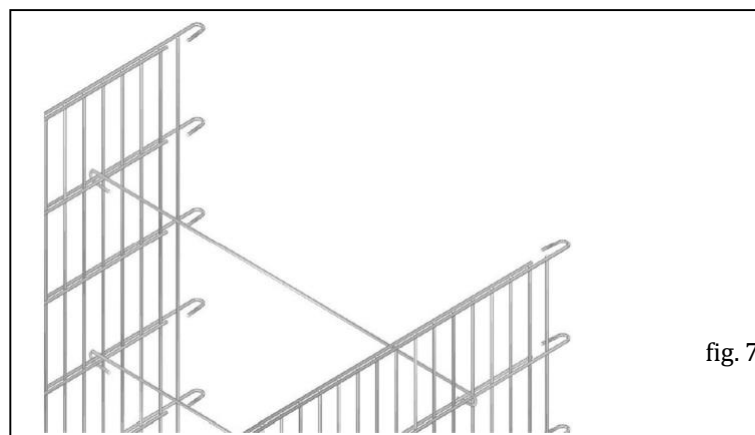
A U-shaped hook, incorporated in the lateral elements, with the bottom element, connects the lateral elements (width direction), see figure n° 5.



The lateral elements (length and width direction) are connected each other by a U hook, incorporated in the lateral elements (length direction), see figure n°6.



The stiffeners connect the lateral elements two-two with the following rule: length – length and width – width, in number and positions in according with the instruction given by the manufacturer, mainly in function of the dimensions of the gabions. See figure n° 7 as an example.



All the hooks and stiffeners are designed to given stability and structural resistance at the gabions for the movements and placement phases, and ensure the monolithic behaviour of the gabions.

The gabions are delivered in the following sizes.

Commercial name (H x L x W)	Ecobox (8) Nominal Dimensions (mm)		
	H	L	W
100 x 100 x 50	1015	1010	510
100 x 100 x 100	1015	1010	1005
50 x 100 x 50	510	1010	510
50 x 100 x 100	510	1010	1005
100 x 200 x 50	1015	2015	510
100 x 200 x 100	1015	2015	1005
50 x 200 x 50	510	2015	510
50 x 200 x 100	510	2015	1005
50x150x50	510	1515	510
50x150x100	510	1515	1005
100x150x50	1015	1515	515
100x150x100	1015	1515	1005
50x100x75	510	1015	760

The elements of the gabions are described below:

Commercial name	Ecobox (4) Nominal Dimensions (mm) TOP ELEMENT	
	W	L
50 x 100	489	992
100 x 100	993	992
50 x 200	489	1976
100 x 200	993	1976
50 x 150	489	1490
100 x 150	993	1490
75 x 100	758	992
75 x 150	758	1490
	758	1976

Commercial name	Ecobox (4) Nominal Dimensions (mm) LATERAL ELEMENT LENGTH	
	W	L
50 x 100	499	1009
100 x 100	1002	1009
50 x 200	499	2013
100 x 200	1002	2013
50 x 150	499	1510
100 x 150	1002	1510

Commercial name	Ecobox (4) Nominal Dimensions (mm)	
	LATERAL ELEMENT WIDTH	
	H	W
50 x 100	497	993
100 x 100	1004	993
50 x 50	497	495
100 x 50	1004	495
75 x 50	751	495
75 x 100	751	993
Commercial name	Ecobox (4) Nominal Dimensions (mm)	
	BOTTOM ELEMENT	
	H	W
50 x 100	489	992
100 x 100	993	992
50 x 200	489	1976
100 x 200	993	1976
50 x 150	489	1490
100 x 150	993	1490
75 x 100	758	992
75 x 150	758	1490
75 x 200	758	1976

STIFFENERS	
	6 mm FOR BOTH PRODUCTS: LEDRO STEEL BOX & ECOBOX
Commercial name	Nominal mm
500	520
750	782
1000	1021
1500	1524
2000	2021

MASH		
	ECOBOX (2) Nominal Dimensions (mm)	
Commercial name (MxN)	M (vertical)	N (horizontal)
60 x 60	65	65

NECESSARY INTERNAL RODS

Gabbia model		N. Stiffeners	Stiffeners size		N. Stiffeners	Stiffeners size	Positionment
GABBIA	50 X 50 X 50	2 PZ.	50 CM.				
GABBIA	100 X 100 X 100	4 PZ.	100 CM.				
GABBIA	100 X 100 X 50	2 PZ.	100 CM.				
GABBIA	100 X 50 X 100	2 PZ.	50 CM.	+	2 PZ.	100 CM.	
GABBIA	100 X 50 X 50	1 PZ.	50 CM.	+	1 PZ.	100 CM.	
GABBIA	150 X 100 X 100	4 PZ.	100 CM.	+	2 PZ.	150 CM.	
GABBIA	150 X 100 X 50	2 PZ.	100 CM.	+	1 PZ.	150 CM.	
GABBIA	150 X 50 X 100	4 PZ.	50 CM.	+	2 PZ.	150 CM.	
GABBIA	150 X 50 X 50	2 PZ.	50 CM.	+	1 PZ.	150 CM.	
GABBIA	200 X 100 X 100	6 PZ.	100 CM.	+	2 PZ.	200 CM.	
GABBIA	200 X 100 X 50	3 PZ.	100 CM.	+	1 PZ.	200 CM.	
GABBIA	200 X 50 X 100	6 PZ.	50 CM.	+	2 PZ.	200 CM.	
GABBIA	200 X 50 X 50	3 PZ.	50 CM.	+	1 PZ.	200 CM.	
GABBIA	100 X 75 X 50	1 PZ.	75 CM.	+	1 PZ.	100 CM.	
GABBIA	150 X 75 X 50	3 PZ.	75 CM.	+	1 PZ.	150 CM.	
GABBIA	200 X 75 X 50	3 PZ.	75 CM.	+	1 PZ.	200 CM.	
GABBIA	100 X 75 X 100	2 PZ.	75 CM.	+	2 PZ.	100 CM.	
GABBIA	150 X 75 X 100	4 PZ.	75 CM.	+	2 PZ.	150 CM.	
GABBIA	200 X 75 X 100	6 PZ.	75 CM.	+	2 PZ.	200 CM.	
GABBIA	50 X 50 X 100	4 PZ.	50 CM.				

**Instructions and information for
the proper movement, storage, transportation, assembling and laying. ETA
17/0059**

Section 11 paragraph 6 of UE 305/2011 Regulation

1. **Usage destination of the product:** the gabion is destined to be used for earth retention and soil reinforcement, river training, erosion control, freestanding walls, architectural claddings.
2. **Handling:** The gabion cannot be moved full, the 6 panels that compose it will have to be moved singularly. During the operation of movement, lifting and transport of panels must ensure their integrity avoiding impacts, tears or other sources of damage. All the operations have to be performed according to the indications of D.lgs. 81/08 and subsequent updates.
3. **Lifting:** The gabion cannot be lifted full, for practical purposes the 6 panels of which it is composed must be lifted individually. The panels must be hoisted, on appropriate wooden platforms, by machines equipped with a load-securing device such as, for example, a hook. To the sealing device, steel chains or ropes, equipped with adequate lifting accessories, able to withstand the stresses induced by the weight of the manufactured articles, must be fixed jointly, respecting the directive 2006/42 / EC. All operations must be performed in compliance with the provisions of Legislative Decree 81/08 and subsequent updates.
4. **Transportation:** The gabion cannot be transported full; the 6 panels of which it is composed must be transported individually. During transport, the individual components of the gabions must be placed on appropriate wooden platforms, positioned in a stack and secured to the vehicle with suitable cables, in compliance with the regulations governing the safety of transport and those of the Highway Code.
5. **Storage:** The storage of the individual panels making up the gabion must take place placing them in piles made up of successive layers resting on wooden platforms. The heap-laying surface must be levelled and compacted. All operations must be performed in compliance with the indications of d.lgs. 81/08 and subsequent updates.
6. **Lying in place:** for the lying-in place, gabions have to be positioned in plan and in assess as verified from the general planner of the structures (Law 5/11/71 n 1086- norm3/9) without exceeding the permitted loads. All the operations have to be performed according to the indications of D.lgs. 81/08 and subsequent updates.
7. **Use and maintenance:** eventual information about the use and maintenance has to be edited by the general planner of the structures, in the maintenance plan of the work, and from the safety coordinator, in the work file. it is however necessary that the use and maintenance of the gabion are appropriate to the intended use of the project, without exceeding the admissible loads.
8. **Instruction for the correct assembling of the gabions:** gabions are made by 6 panels that have to be connected with the specific hook they are equipped with. For assembling details, references should be made to the complete information available with a simple request to Metallurgica Ledrense Soc. Coop. Are available at the following link: www.ml-ita.com