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GABION

Welded Wire Mesh

GABION BOX

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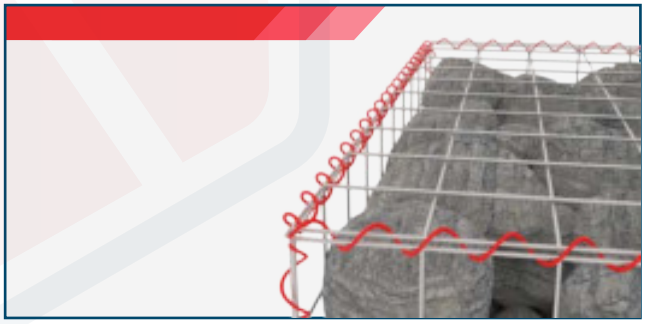
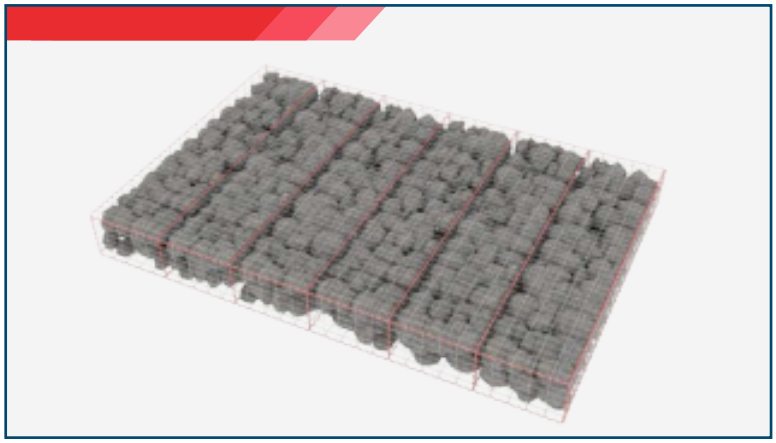
Welded Wire Mesh

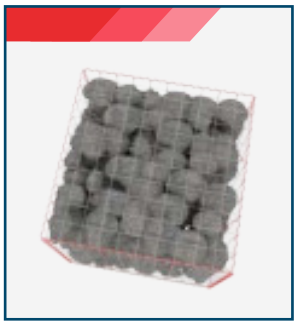
A welded mesh gabion is a rigid, box-like structure constructed from steel wires welded at every intersection where longitudinal (horizontal) and transverse (vertical) wires meet. This welding process creates a uniform grid pattern with precise, stable openings. The welded panels are assembled into containers and filled with stones or other materials for structural or decorative purposes. unlike double-twisted mesh gabions which are highly flexible, welded mesh gabions are relatively stiff and maintain their shape, while still forming permeable, monolithic structures (e.g., retaining walls, channel linings, revetments) when assembled and filled.

Gabion Box

A Gabion Box is a cage or container made from wire mesh, typically filled with materials such as stones, rocks, or concrete. It is used in civil engineering, landscaping, and construction for various purposes, including erosion control, slope stabilization, retaining walls, and decorative structures. Regardless of the mesh type — whether welded or woven — the primary function of a Gabion box remains to provide structural support, enhance stability, and blend with natural environments by allowing water drainage and vegetation growth over time.







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The design and manufacturing of Gabion boxes using welded mesh are governed by two key standards:

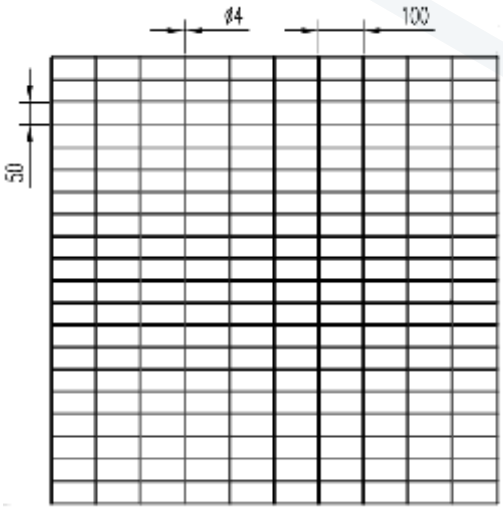
ASTM A974: This standard emphasizes the specifications and coating parameters for Gabions, particularly focusing on coating types and their application.

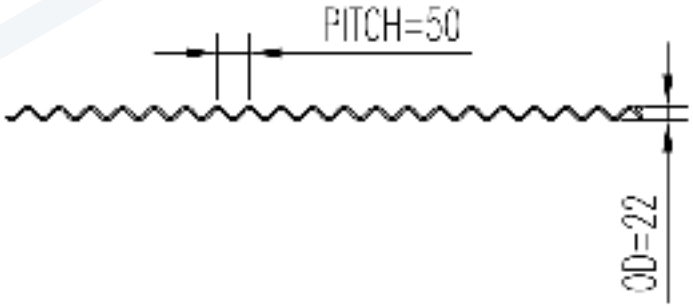
BS EN 10223-8:2013: This standard provides more flexibility, offering clients a wider range of options for Gabion design. It outlines the minimum wire diameter requirements based on the Gabion type and specifies coating parameters according to environmental conditions.

Specifications:

Coating	Galvanized/PVC coating
Wire Diameter	3.0/4mm/5mm
Mesh size	75 x 75 mm/100 x 50mm
Lacing	Spiral coil
Spiral	3.0mm

Spiral internal diameter	20mm
Spiral Pitch	45mm
Fasteners	3.76mm
Stiffeners	3.76mm
Material	Carbon Steel Wire





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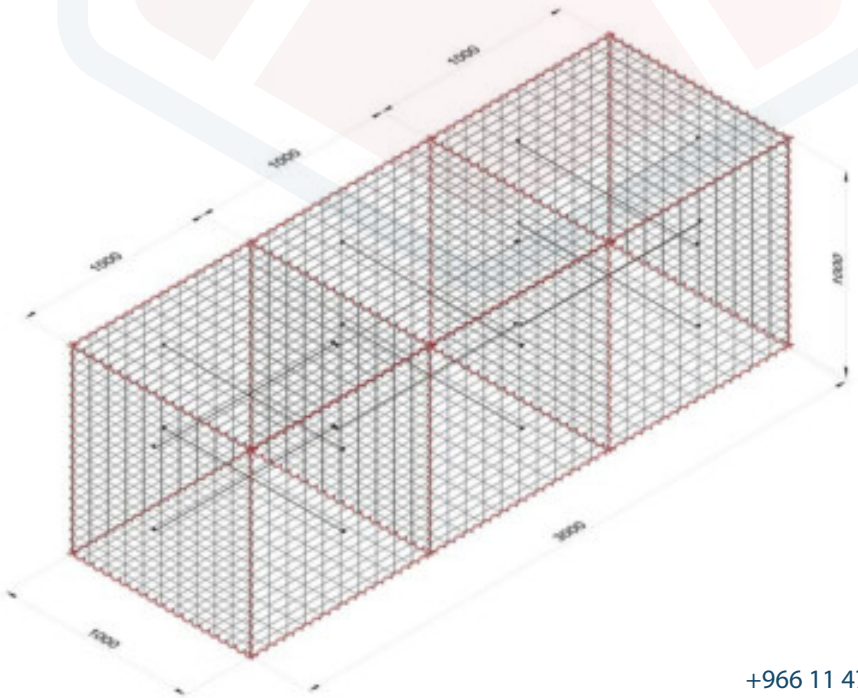
Gabion Welded Mesh Boxes are available in a wide range of sizes to suit your needs. Please note that the overall dimensions may vary depending on the mesh opening size.

- For 100 x 50 mm mesh, the dimensions will be multiples of 100 or 50. For example, you can have a 1000 x 1000 x 1000 mm box, with a possible ±20 mm variation in all dimensions to accommodate spiral adjustments.
- For 75 x 75 mm mesh, the dimensions will be multiples of 75. For instance, a box size of 900 x 900 x 900 mm may have a ±20 mm variation for spiral adjustments.

Coating	Width	Height	Number of cells
1	0.5/1/1.5	0.5/0.7/1	1
1.5	0.5/1/1.5	0.5/0.7/1	1
2	0.5/1/1.5	0.5/0.7/1	2
3	0.5/1/1.5	0.5/0.7/1	3
4	0.5/1/1.5	0.5/0.7/1	4
5	0.5/1/1.5	0.5/0.7/1	5



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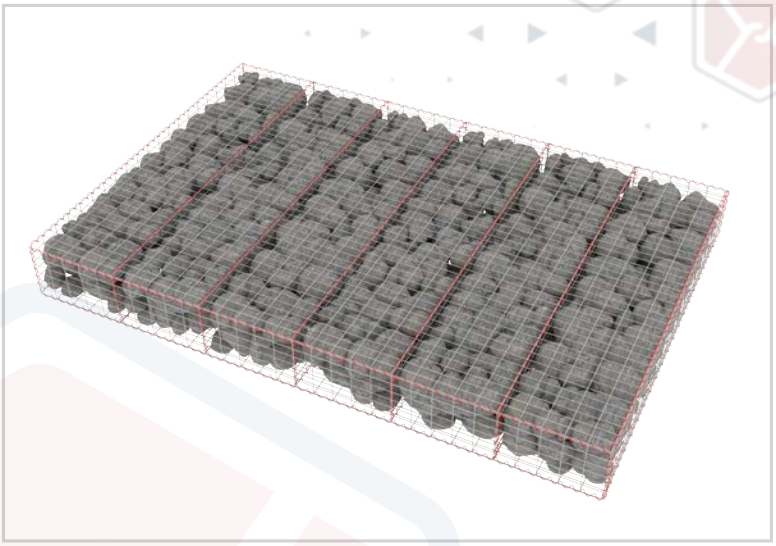
Gabion Mattresses

Definition

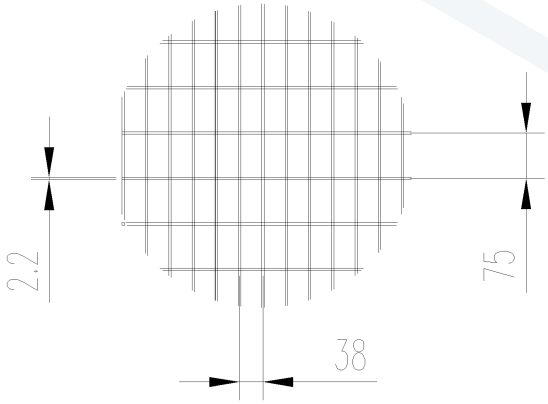
Gabion mattresses, also known as Reno mattresses, are flexible, wire mesh structures filled with stone, used for erosion control, slope stabilization, and channel linings. They can be made from welded wire mesh. Double-twisted mesh offers flexibility, allowing ground adaptation, while welded mesh provides a rigid structure with a flat profile. Both types are corrosion-resistant and promote vegetation growth for long-term erosion protection.

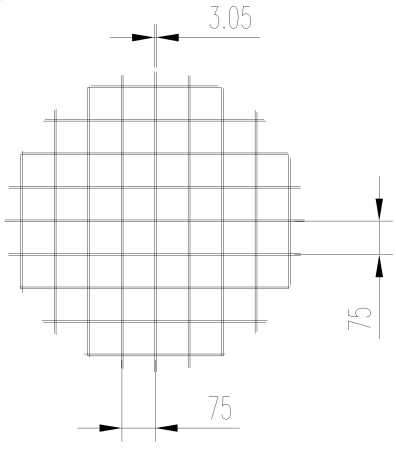


ASTM A974 (Welded Mesh Mattresses)

ASTM A974 governs welded mesh gabions, ensuring structural integrity and consistent dimensions. It requires strong weld shear strength and corrosion-resistant coatings for longevity. This standard is commonly used for gabions in areas requiring a rigid structure with controlled deformation.

Mesh Size	Wire Ø (mm)	Weld Shear Strength	Coating Options
76 x 76	3.05 (galv/PVC)	≥70% of tensile strength	Galv, Zn-5%Al, PVC
38 x 76	2.2 (galv/PVC)	≥70% of tensile strength	Galv, Zn-5%Al, PVC





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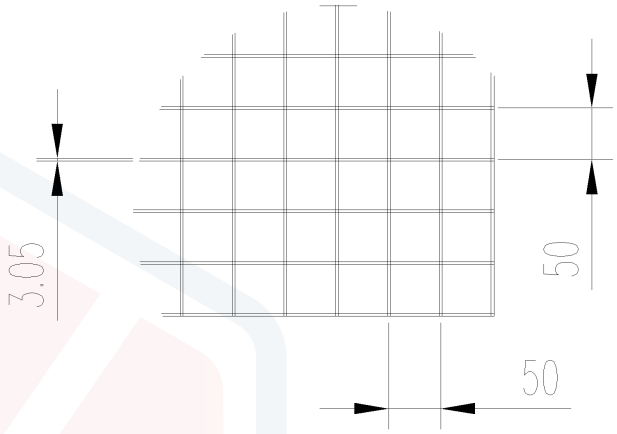
BS EN 10223-8 (Welded Mattresses)

BS EN 10223-8 sets requirements for welded mesh gabions, focusing on wire tensile strength, coating quality, and weld durability. It ensures welded mattresses provide sufficient load-bearing capacity while resisting corrosion. The standard is widely used in infrastructure and hydraulic engineering projects.

Mesh Size	Wire Ø (mm)	Weld Strength	Coating Options
50×50 mm	3.0	≥75% of tensile strength	Zinc, Zn-5%Al, PVC, Stainless Steel
75×75 mm	3.0	≥75% of tensile strength	Zinc, Zn-5%Al, PVC, Stainless Steel



Available Mattress Sizes

Length (m)	Width	Height	Boxes	Standards
2.00	2.00	0.225 - 0.50	4	BS EN 10223-8.
3.00	2.00	0.225 - 0.50	6	BS EN 10223-8.
4.00	2.00	0.225 - 0.50	8	BS EN 10223-8.
5.00	2.00	0.225 - 0.50	10	BS EN 10223-8.
6.00	2.00	0.225 - 0.50	12	BS EN 10223-8.
9.00	1.83	0.15 - 0.30	3	ASTM A974.
12.00	1.83	0.15 - 0.30	4	ASTM A974.

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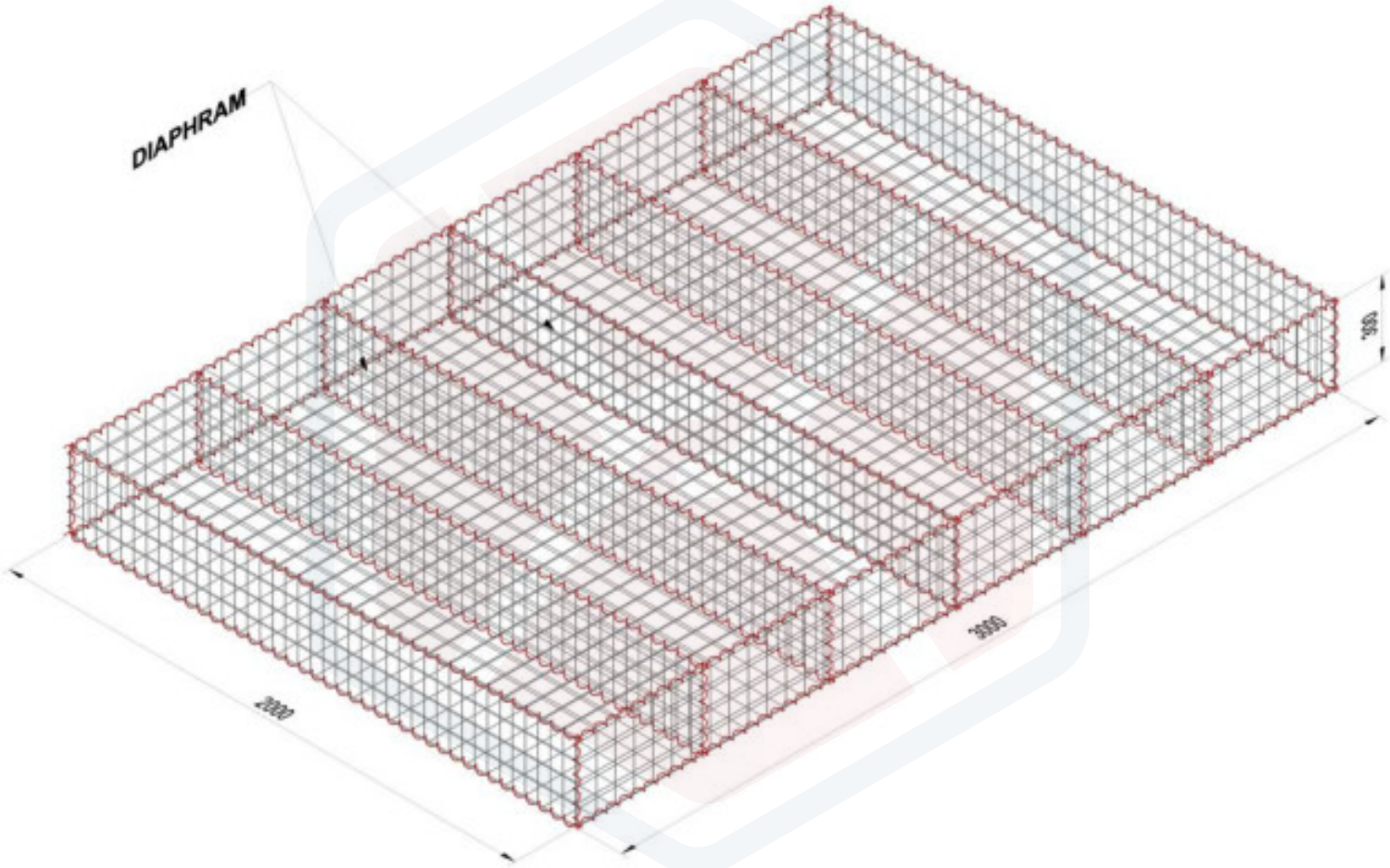

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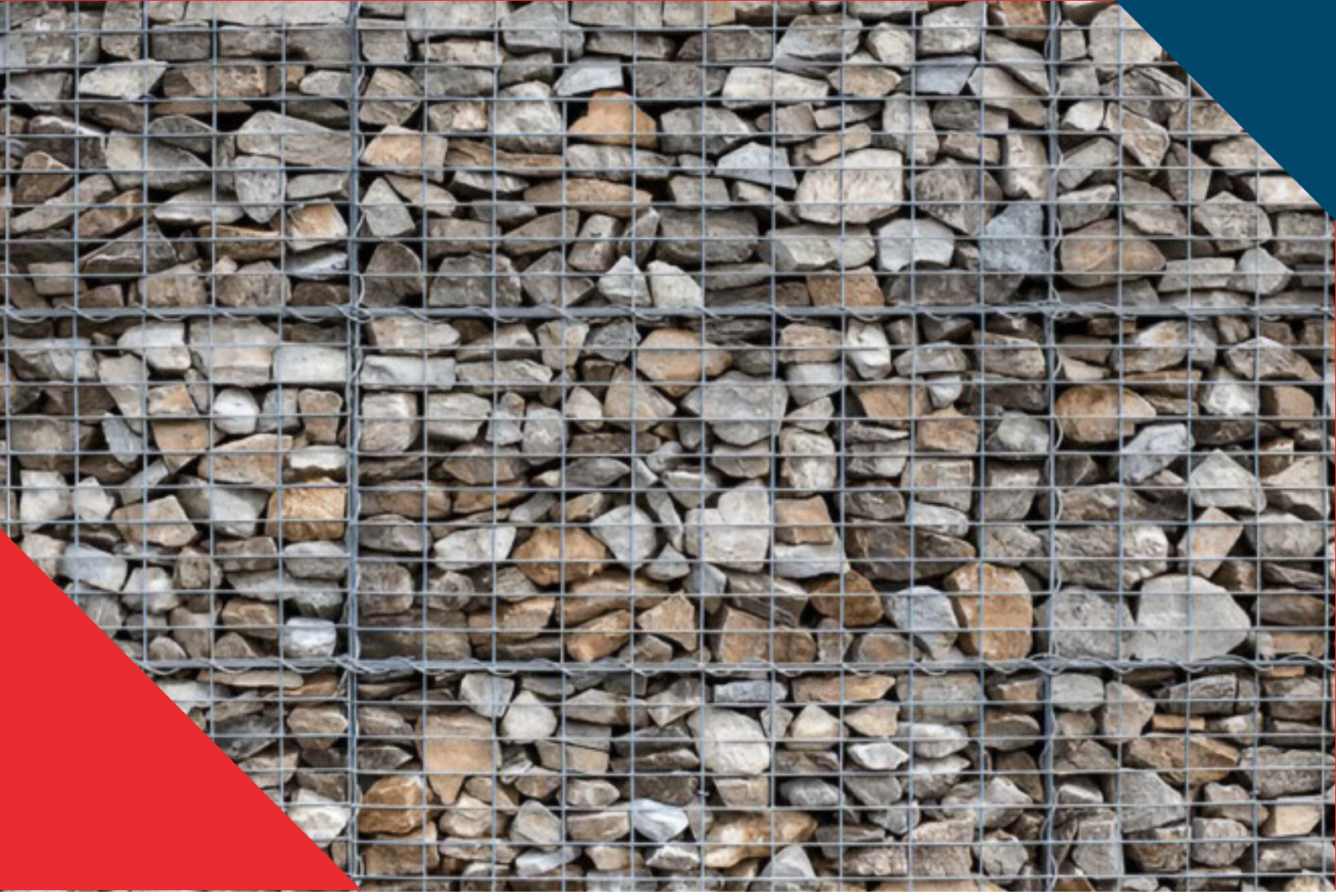

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Double Twisted Wire Mesh

GABION BOX

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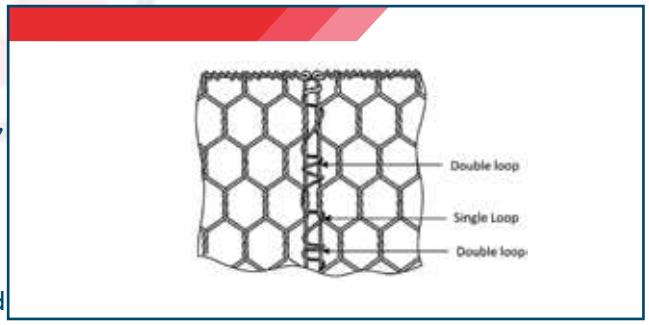
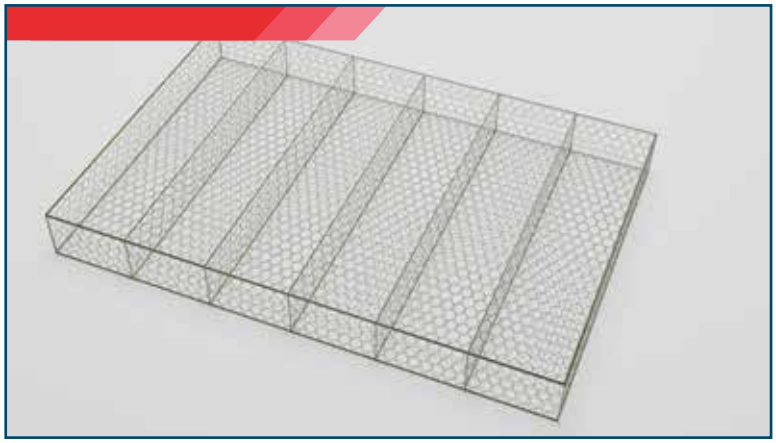
Double Twisted Wire Mesh

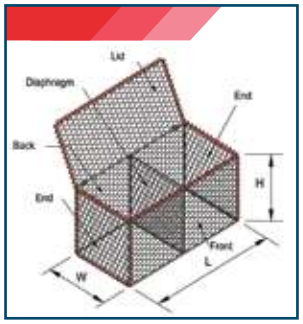
A double-twisted wire mesh gabion is a flexible, cage-like structure manufactured from steel wires that are woven together using a continuous double-twist process. This weaving method creates a stable grid pattern with uniform, hexagonal openings. These woven panels are assembled into containers and filled with stones or other materials for structural or decorative applications. Unlike rigid welded mesh, the double-twisted design is highly flexible, allowing the structure to adapt to ground movement and settle without losing integrity, while remaining a permeable, monolithic structure for channel linings or retaining walls.

Gabion Box

A Gabion Box is a flexible cage or container made from double-twisted wire mesh, typically filled with materials such as rocks, stones, or concrete. Hitech Steel Industries provides these for use in civil engineering and landscaping projects, including slope stabilization, erosion control, and the construction of retaining walls. The primary function of the double-twisted Gabion box is to provide essential structural support and enhance stability. They are designed to blend with natural environments by facilitating water drainage and supporting vegetation growth over time.







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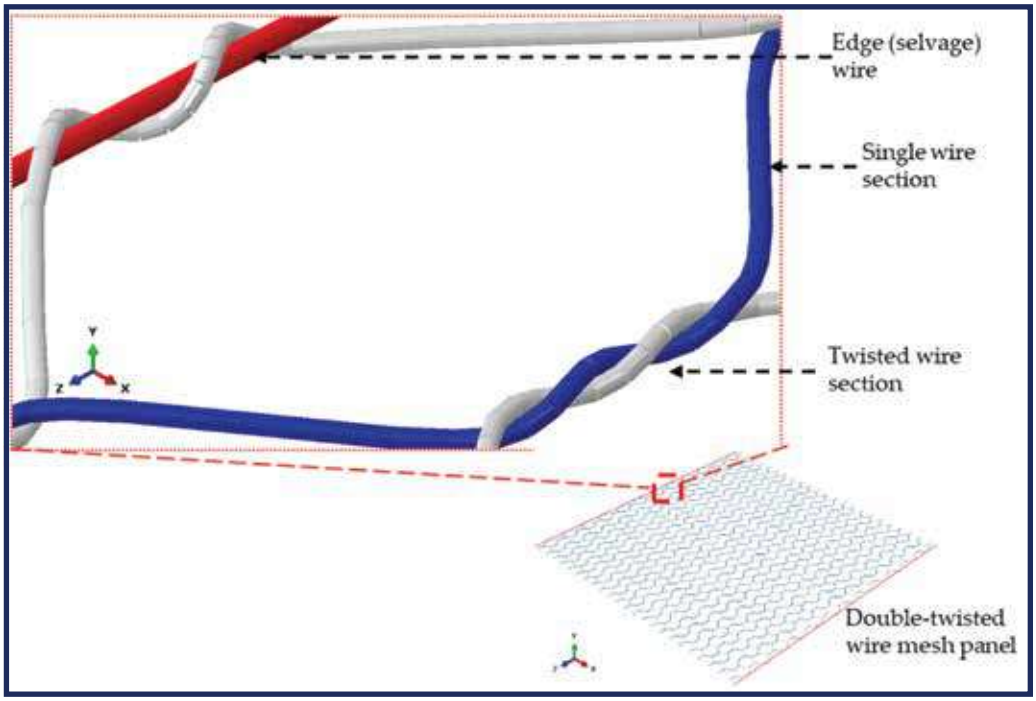
BS EN 10223-8:2013: This standard provides more flexibility, offering clients a wider range of options for Gabion design. It outlines the minimum wire diameter requirements based on the Gabion type and specifies coating parameters according to environmental conditions.

Specifications:

ASTM 975			
Characteristics	Gabion-Metallic	Gabion-PVC	Gabion-Mattress
Mesh Type	80 x 100	80 x 100	60 x 80
Mesh Opening	83 x 114	83 x 114	64 x 83
Wire Diameter	3.05	2.7	2.2
Selvedge Wire (mm)	3.8	3.4	2.7
Lacing Wire (mm)	2.2	2.2	2.2
Fastener	3mm	3mm	3mm
Stiffener	2.2/3.8	2.2/3.8	2.2/3.8
Coating	Style 1 (Zinc), Style 2(Zn-5%ALMM), Style 4(Aluminium)	Style 3(PVC over Zinc)	Style 1 - Style 4



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BE EN 10223-3:2013

Mesh Size	Wire Diameter (mm)	Type of Product
50 x 70	2.0	Mesh in Roll
60x80	2.0	Mesh in Roll/ Mattress
	2.2	
	2.4	Mesh in Roll
	2.7	Mesh in Roll/ Gabions
80x100	2.2	Retaining Structure
	2.4	Mesh in Roll/ Gabions
	2.7	Retaining Structure Gabions
	3	Mesh in Roll/ Gabions
	3.4	Mesh in Roll/ Gabions
100x120	2.7	Mesh in Roll

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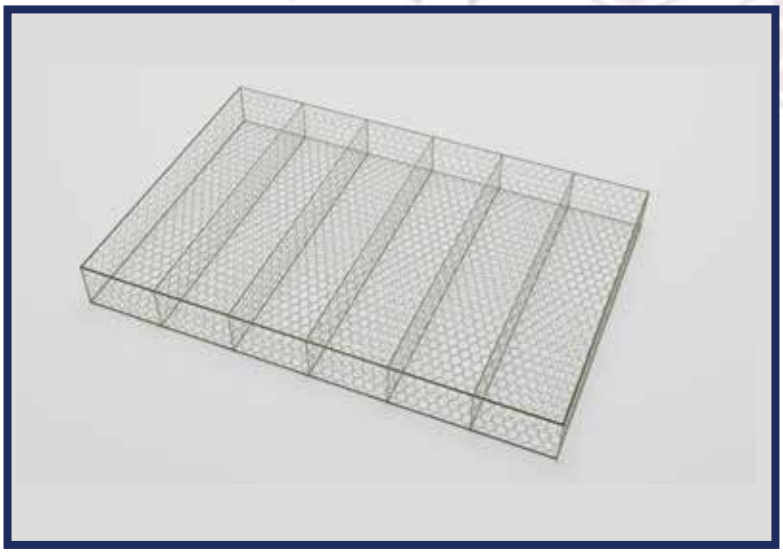
Gabion Mattresses

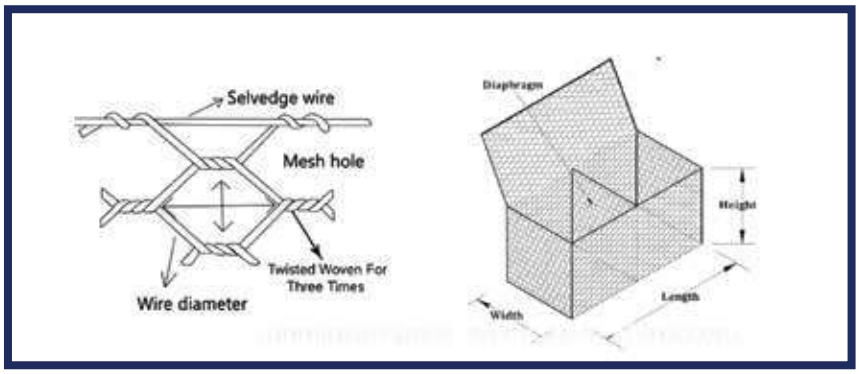
Definition

Gabion mattresses, also known as Reno mattresses, are flexible, wire mesh structures filled with stone, used for erosion control, slope stabilization, and channel linings. They can be made from welded wire mesh. Double-twisted mesh offers flexibility, allowing ground adaptation, while welded mesh provides a rigid structure with a flat profile. Both types are corrosion-resistant and promote vegetation growth for long-term erosion protection.



Wire Specifications

Wire Diameter to Selvedge Wire Diameter	
Mesh Wire Diameter (mm)	Slvedge Wire Diameter(mm)
2	2.4
2.2	2.7
2.4	3
2.7	3.4
3.0	3.9
3.4	4.4
3.9	4.9



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Accessories	
Accessories	Wire Diameter(mm)
Lacing	2.2
Fastner	3
Bracing Tie	2.2/3.0

Available Types

ASTM 975

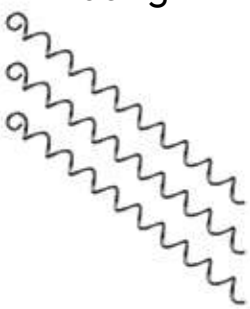
In the construction and engineering sectors, the durability and performance of gabion products are enhanced through specialized coatings. These coatings not only improve resistance to environmental stressors such as corrosion, UV exposure, and salt spray but also ensure the structural integrity of products under various loading conditions. The following tables detail coating parameters by product type as defined by two major standards—ASTM A975 and BS EN 10223-3

The ASTM standard emphasizes parameters like coating mass and tensile strength for gabion boxes and mattresses.

Coating	Style	Standard
Galvanized	Style 1	ASTM 641 Class 3
Zn-5% Al	Style 2	ASTM A856 Class 3
PVC	Style 3	ASTM 975 (0.5mm Thickness)
Al	Style 4	ASTM A809

Bracing Tie

Lacing



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