

X-TIE

3.4/4.4 POLYMER COATED

X-Tie is a pre-formed bracing system made of GalMac® and polymer-coated steel wire, used to secure a tighter packing of the filling stones and improve the hydraulic performance of the Reno Mattress Plus unit, it enables a quick and easy connection of the base panel to the lid during the installation process on the site.

X-Ties enable a faster installation compared to traditional vertical ties made of lacing wire, as their pre-shaped hooks can easily be attached to the base panel; furthermore, due to their robustness and their capability to distribute the forces over a larger wire mesh surface, their density (1 X-Tie per m²) is half that of traditional vertical ties (2 per m²).

X-Ties are made of 2 pre-assembled components: the vertical leg connecting the base panel to the lid and the inclined tie to keep the vertical leg in position during the stone filling operations; the upper part of the vertical leg is eventually fixed to the lid by using 2 C-rings.

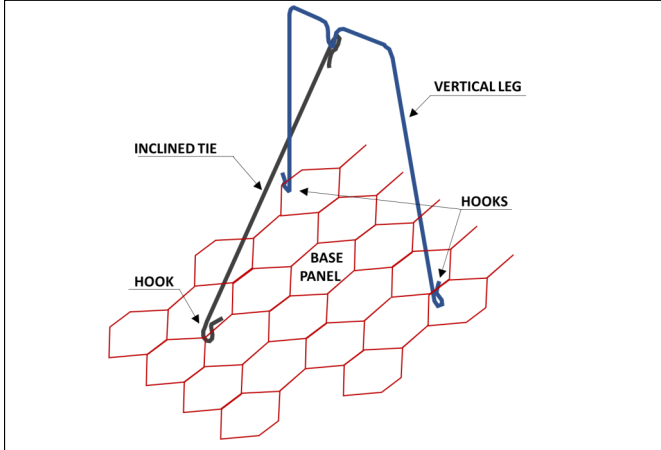
X-TIES PERFORMANCE			3.4 / 4.4
Physical Properties			
Steel wire diameter (int. / ext.)	EN 10218-2	mm	3.40 / 4.40
Galmac coating	EN 10244-2	Class	Class A
Durability Performances			
SO ₂ corrosion resistance	ISO 6988	Cycles	> 28
Salt Spray (5% DBR)	ISO 9227	Hours	> 1,000
UV resistance (@ 2,500 hours) ⁽¹⁾	ISO 4892-3	%	< 25



The **Permissible Shear Stresses** of Reno mattresses have been obtained by full scale flume tests performed at the Engineering Research Center of Colorado State University (USA) following the ASTM D 6460 test methodology. The **design values** depend on installation procedures (use of **X-ties**) and actual stones characteristics (D₅₀, C_u). Use Maccaferri **MACRA software** to effectively utilize the permissible shear stress of Reno mattress in the design of river training works.

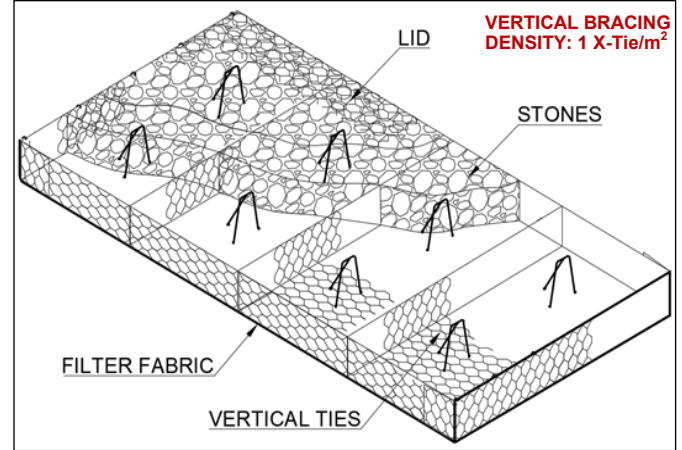


X-Tie geometry



X-Ties dimensions	
Thickness of Reno mattress (m)	X-Tie height (cm)
0.17	17
0.23	23
0.30	30

Installation layout



bimstore

Download the digital model for free on bimstore or on maccaferri.com/BIM

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