



**RENO MATTRESS PLUS**  
2.2 POLIMAC®

**Reno Mattresses Plus** are units manufactured from double twisted hexagonal woven steel wire mesh type 6x8, made of PoliMac® coated steel wire. The base, diaphragms, front, end and sides of the units are manufactured from one continuous panel of mesh; the base is folded onto itself at regular intervals to form double diaphragms that are secured with spirals at the production facility. To secure a tighter packing of the filling stones and improve the hydraulic performances of the mattresses, the units are supplied together with vertical ties (X-Ties) connecting the base panel to the lid and to be installed on the site. Units are produced in compliance with The Construction Products (Amendment etc.)(EU Exit) Regulations 2020 on the basis of UKAD 200019-00-0102 and UKTA -0836-22/0019.



RENO MATTRESS PLUS PERFORMANCES			6x8 2.2 PLUS HT POLIMAC®
<b>Physical Properties</b>			
Steel wire diameter (int. / ext.)	EN 10218-2	mm	<b>2.20 / 3.20</b>
Selvedge wire diameter (int. / ext.)	EN 10218-2	mm	<b>2.70 / 3.70</b>
Galmac C2 coating	EN 10244-2	Class	<b>Class A</b>
<b>Mechanical Performances</b>			
Maximum allowable shear stress <sup>(1)</sup>	EAD 200019-01-0102		<b>445 N/m<sup>2</sup></b> <b>h=0.17 m</b> <b>534 N/m<sup>2</sup></b> <b>h=0.23 m</b> <b>637 N/m<sup>2</sup></b> <b>h=0.30 m</b> 
Mesh Tensile Strength	EN 10223-3	kN/m	<b>40 ± 3</b>
Mesh Punching Load	EAD 200019-01-0102	kN	<b>20 ± 1</b>
<b>Durability Performances</b>			
Service life of polymer coating at 25 °C	UL 746B EN 60216-8	Years	<b>&gt; 125</b>
SO <sub>2</sub> corrosion resistance	ISO 6988	Cycles	<b>&gt; 28</b>
Salt Spray (5% DBR)	ISO 9227	Hours	<b>&gt; 25,000</b>
UV resistance (@ 2,500 hours) <sup>(2)</sup>	ISO 4892-3	%	<b>&lt; 25</b>
Abrasion resistance in dry conditions	EAD 200019-01-0102	Cycles	<b>&gt; 300</b>
Abrasion resistance in wet conditions	ISO 22182	Weight loss	<b>&lt; 2 %</b>
Brittleness Temperature	ASTM D746	°C	<b>&lt; -35</b>
Corrosion Spread (@ 2,500 hours)	 ASTM A975	<b>Corrosion length less than a mesh opening</b>	
<b>Environmental and Sustainability Properties</b>			
Global Warming Potential (GWP <sub>100 yrs</sub> )	EN 15804	kgCO <sub>2</sub> equiv / Kg product	<b>&lt; 2.00</b>
Leachate Test	EPA 6020B	µg / L	<b>Lower than the limits set by regulations <sup>(3)</sup></b>
PFAS in Water Test <sup>(4)</sup>	EPA 537.1	ng / L	<b>Not detected</b>
Smoke toxicity	ISO 5659-2, EN 17084	<b>Index of toxicity CIT<sub>E</sub>(8) &lt; 0.10</b>	
Environmental Harmlessness	M GEOK E:2016	<b>Environmentally Uncritical</b>	



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Download the digital model for free on bimstore or on [maccaferri.com/BIM](https://maccaferri.com/BIM)

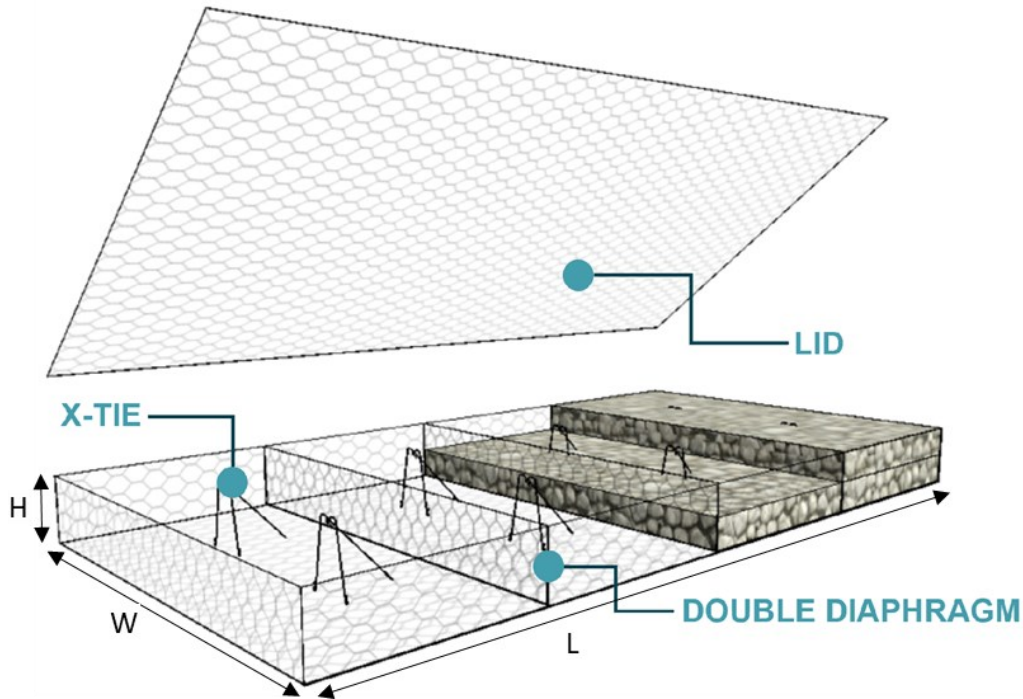


UKTA-0836-22/0019



0836-CPR-24/F7078

## Reno Mattress Plus



Reno Mattress Plus sizes			Accessories (*):
Length (m)	Width (m)	Height (m)	
3**	2** - 3	0.17 - 0.23 - 0.30	Stainless Steel C-Rings: <ul style="list-style-type: none"> <li>• Diameter: 3.00 mm</li> <li>• Tensile strength &gt; 1,550 MPa</li> <li>• Pull-apart strength &gt; 2.0 kN</li> <li>• Max spacings: 200 mm</li> </ul>
4	2 - 3	0.17 - 0.23 - 0.30	
5	2 - 3	0.17 - 0.23 - 0.30	
6**	2** - 3	0.17 - 0.23 - 0.30	
Sizes and dimensions are nominal. Tolerances of $\pm 5\%$ of the length, width and $\pm 2.5$ cm of the height shall be permitted (**) Standard product in the UK & Ireland			(*) The accessories are NOT included, unless explicitly mentioned in the price offer. For additional details, see the installation manual.

### DESIGN THE CHANGE

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 ( $D_{50}$ ,  $C_u$ ). Use Maccaferri **MACRA software** to effectively utilize the permissible shear stress of Reno mattress in the design of river training works.

- (1) Full scale flume tests performed at the Engineering Research Center of Colorado State University (USA) following the ASTM D 6460 test methodology; actual design values depend on stones characteristics ( $D_{50}$ ,  $C_u$ ) and installation conditions (correct use of X-Ties, placement of the units on the bed or on the sloped bank).
- (2) UTS/elongation @ break of the base compound after 2,500 hrs exposure to QUV-A do not change more than 25% from initial test results.
- (3) Test preparation in accordance with EPA 1312; The presence or not of 31 different metals were analysed in the leachate. Regulations: (a) Water Framework Directive 2000/60/EC; (b) CCME Water Quality Guidelines for the Protection of Aquatic Life, Freshwater; (c) U.S. EPA National Recommended Water Quality Criteria (Aquatic Life, Freshwater), 2006.
- (4) The presence or not of 28 different PFAS were analysed. The PFOS and PFOA were not detected at <2 ng/L, while other PFAS and their derivatives were also not detected between <2 ng/L and < 4 ng/L.

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