

ROAD MESH™

Road Mesh™

Road Mesh™ is manufactured from hexagonal woven wire mesh Mesh Type 80 commonly referred to as double twist mesh as per SANS 1580:2005 (Table 1). A transverse rod is woven into the mesh at 160 mm intervals (Figure 1). Road Mesh™ is a unique bi-directional heavy duty bound layer reinforcement used in pavement structures. Road Mesh™ has a three dimensional structure allowing the bound layer material to envelope each continuous wire strand, ensuring interlock occurs, and therefore optimum and immediate load transfer from the aggregate to the reinforcement.

Road Mesh™ can be used in the bound layers of new or rehabilitated pavements to provide solutions for crack reflection, asphalt fatigue and surface rutting. The depth of the Road Mesh™ within the layer will depend on the design.

The steel wire used in the manufacture of Road Mesh™ is heavily zinc coated according to SANS 675:1997. The properties for the mesh are shown in Table 1. The properties of the wire and transverse steel rods are shown in Table 2. The strength characteristics of Road Mesh™ are shown in Table 4.

Road Mesh™ is manufactured and supplied in lengths as shown in Table 3. When specifying Road Mesh™ in the tender documents or bill of quantities, please refer to Table 5.

Installation

Road Mesh™ is placed on a prepared surface of existing concrete or asphalt, newly placed hot mastic asphalt (HMA) or one recently milled. Road Mesh™ is deployed so that the curvature of the mesh is in contact with the road surface (Figure 3). Following deployment, a rubber tyred roller is used to remove the inherent curvature of the mesh.

A minimum of the first 4 m of each roll mesh should be securely fastened to the existing surface with nail anchors placed every square metre by power actuated device (Figure 4). Overlaps of 300 mm transversely and 150 mm longitudinally are recommended. Depending on the condition and type of surface it may be required to place a tack coat or priming layer. Road Mesh™ is placed within the bound HMA layers approximately 50 mm to 300 mm below the final surface. The HMA layer is rolled and compacted as per normal specifications. For further information on the installation of Road Mesh™ please refer to the [Installation Guide](#) for Road Mesh™.

Wire

All tests on wire are performed prior to manufacturing the mesh.

- Tensile strength:** The wire used for the manufacture of Road Mesh™ has a tensile strength between 350-575 N/mm² according to SANS 675:1997.
- Elongation:** Elongation is not less than 10% in accordance with EN 10223-3. Tests are carried out on a sample at least 30 cm long.
- Adhesion of zinc:** The adhesion of the zinc coating to the wire is such that, when the wire is wrapped six turns around a mandrel having four times the diameter of the wire, it does not flake or crack when rubbed with the bare fingers, in accordance with SANS 675:1997.
- Ductility:** The ductility of the zinc-coated wire is such that when the wire is wrapped at least eight times around a wire having the same diameter of the test specimen at a rate not exceeding 15 turns per minute and then unwrapped at the same rate, it does not show any sign of fracture of the underlying steel wire in accordance with SANS 675:1997.

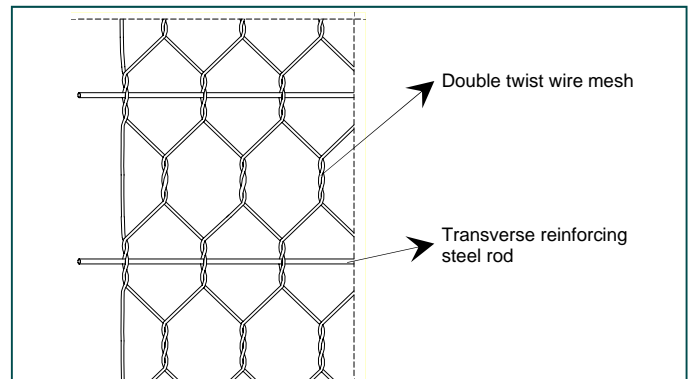



Figure 1

STANDARD MESH-WIRE			
Mesh Type 80	b	Tolerance (mm)	OD Wire Ø (mm)
Type L	80	-4 +10	2,5
Type L1	80	-4 +10	2,2



MESH TOLERANCE
The tolerance on the opening of mesh "b" being the distance between the axis of two consecutive twists according to SANS 1580:2005.

Table 1

PROPERTIES OF WIRE AND TRANSVERSE STEEL RODS					
Designation	Wire Type	Wire Diameter (mm)	Tolerance (mm)	Quantity of Zinc (g/m ²)*	Tensile Strength* (N/mm ²)
Type L	Mesh	2,5	±0,08	260	350-575
	Steel Rod	4,4	±0,1	290	
Type L1	Mesh	2,2	±0,08	245	350-575
	Steel Rod	3,9	±0,1	290	

* According to SANS 675:1997

Table 2



Figure 2

STANDARD ROAD MESH™ SIZES (Mesh Type 80)		
Designation	Roll Length (m)	Roll Width (m)
Type L	25 or 50	3,0
Type L1		3,5
		4,0
Tolerance : Length : ±3%; Width : ±b. All dimensions are nominal.		

Table 3



Figure 3

STRENGTH CHARACTERISTICS OF ROAD MESH™			
Designation	Bitumen Adhesion Strength (kN/m)	Transversal Resistance (kN/m)	Longitudinal Resistance (kN/m)
Type L	10	50	39
Type L1	10	35	32

Table 4



Figure 4

BILL OF QUANTITIES					
Item No	Description	Unit	Quantity	Rate	Amount (R)
1	ROAD MESH™ (Double twist hexagonal wire, Mesh Type 80 to SANS 1580:2005). (Including material and delivery).				
1.1	Type L - (2,5 mm mesh wire, transversely reinforced with 4,4 mm steel rods and all to Class A Galvanised). Length x Width	m ²			
1.2	Type L1 - (2,2 mm mesh wire, transversely reinforced with 3,9 mm steel rods and all to Class A Galvanised). Length x Width	m ²			
2	Installation of Road Mesh™ (Including unrolling, two passes with a pneumatic roller and fixing).	m ²			
3	FIXING NAILS AND SCREWS:				
3.1	Hilti Nails	No.			
3.2	Hilti HPS Screws	No.			

Table 5