

Australian Distributor: **Stahl Trading Pty Ltd** 2/4 Richmond Road Homebush West NSW 2140 AUSTRALIA
Phone: 02 9746 5389 Fax: 02 9746 5380 Email: sales@stahltrading.com.au Internet: www.stahltrading.com.au



INTRODUCTION

Golik Holdings is a leading manufacturer of steel wire, strand and rope products and construction materials with operations spread throughout Hong Kong and China.

Our Tianjin PC strand plant was established in 1993 and is equipped with two sets of state-of-the-art, low-relaxation strand production lines, with annual capacity of 80,000 – 100,000 tonnes of steel strand, 30,000 tonnes of prestressed steel bar and 40,000 tonnes of steel wire.

LR strand is manufactured in accordance with Australian Standard AS/NZS 4672.1 and 4672.2 *Steel Prestressing Materials*.

We manufacture both normal grade and EHT grade LR strand for the prestressed and post-tensioning concrete market.





QUALITY

Golik LR strand is manufactured in accordance with Australian Standard AS/NZS 4672 *Steel Prestressing Materials, Part 1 – General and Part 2- Testing*.

Golik strand is manufactured under a comprehensive NATA-approved quality management system which satisfies the requirements of ISO 9001:2000. The Tianjin plant holds ACRS Third Party Accreditation (**Certificate No 80601S**) for certified quality compliance of prestressed strand to AS/NZS 4672.

Golik Holdings has its own fully-equipped, NATA-certified testing laboratory (**Certificate No CNAS – LC3210**) covering tension tests and relaxation tests.

PROPERTIES

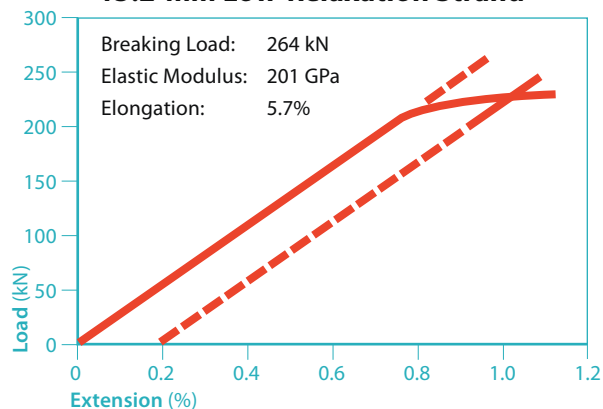
ELONGATION PROPERTIES - Typically Golik LR strand has an elongation of 5–6.5% AS/NZS 4672 specifies a minimum elongation of 3.5% over a gauge length of 500 mm.

YIELD STRENGTH – For both normal grade and EHT grade the yield strength is not less than 0.85 times the Minimum Breaking Force shown on our Data Sheet (Page 3).

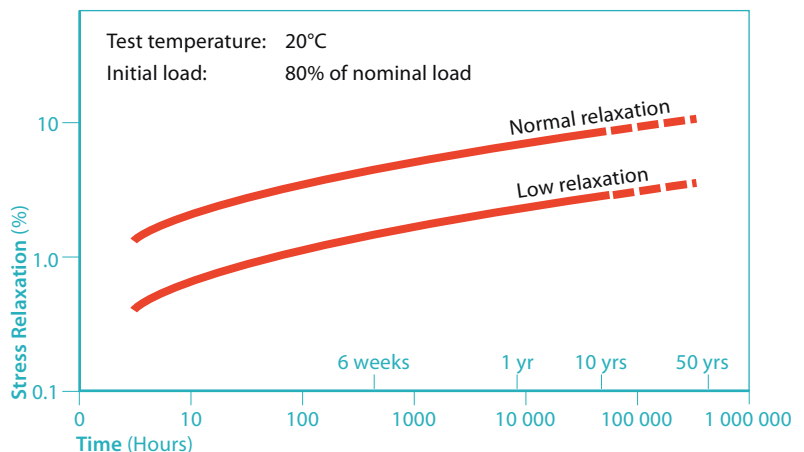
STRAND DIAMETER - Strand diameter is closely controlled within a tolerance of ± 0.4 mm.

RELAXATION PROPERTIES – Golik strand is routinely tested in its ACRS-approved, temperature-controlled, rigid-frame relaxation tester housed in its own NATA-approved testing laboratory. Typical relaxation values of our LR strand after 1000 hrs at an initial load of 80% on minimum breaking load are 1–1.5%. AS/NZS 4672 specifies 3.5%.

Typical Load/Extension Curve for 15.2-mm Low-Relaxation Strand



Typical Relaxation Curve for 12.7-mm Low-Relaxation Strand





DATA SHEET

Dimensions, Masses and Tensile Properties of GOLIK Strand

Property	Nominal Diameter (mm)			
	9.5	12.7	15.2	15.2 EHT
Minimum Breaking Force (kN)	102	184	250	261
Minimum 0.2% Proof Load (kN)	102	184	250	261
Minimum Elongation 500 mm GL (%)	3.5	3.5	3.5	3.5
Nominal Area (mm ²)	55	98.6	143	143
Nominal Mass (kg/km)	432	774	1122	1122
Nominal Length (m/t)	2315	1292	891	891
Approx Modulus of Elasticity (GPa)	195	195	195	195

Packing Details for Above Strand Sizes

Coil OD (mm)	1200–1300
Coil ID (mm)	800
Coil Width (mm)	750
Coil Weight (tonne)	3.0 nominal
Lay (or Helix)	Right Hand

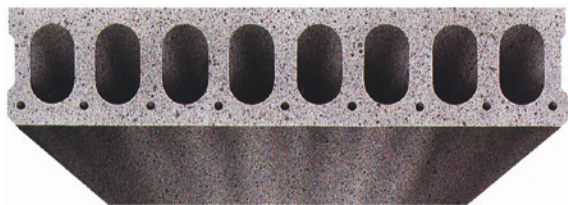




RECOMMENDATIONS

Storage and Loading

Coils of prestressed strand should be stored above ground, preferably in an enclosed building away from moisture and other corrosive influences. Care should be taken during handling to and from storage areas to ensure coils are not damaged by such practices as dragging across concrete floors. When handling and storing it is very important to avoid abrasion and corrosion damage or any situation where coils can be nicked, all of which may lead to sudden and unexpected failure of the strand during or subsequent to stressing.



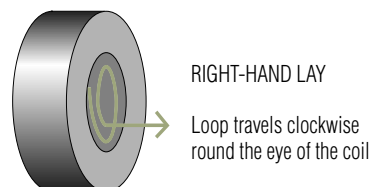
Safety

Prestressing tendons are different from steel reinforcement bars, both as a material and in their application. Certain precautions and procedures must be adopted when using them and reference should be made to Australian Standard AS 3600 *Concrete Structures* for recommendations.



Usage of Strand

Centre pulling of strand is the most common and convenient way of paying off from a coil. It is important in handling strand to ensure that it is pulled from the coil in the correct manner. Since the strand acquires a twist for each loop removed from the coil, a swivel should be used to enable this twist to be relieved thus avoiding kinking and looping. The strand should pay off around the circumference of the coil, so that the helix of the strand tends to tighten and not unravel. The inner end of the strand must be started so that the strand will be drawn off from the face where the inner end is secured and the loop should pay off in a clockwise direction.



Strand should not be reshaped by heating or welded as such activity will impair its mechanical properties. However strand can be cut by using disc cutters or oxyacetylene.

