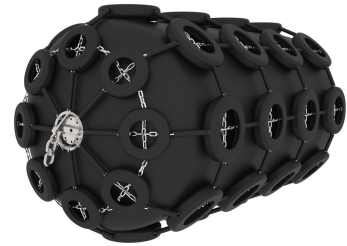


NANHAI PNEUMATIC FENDER

Rubber Material Specifications

NANHAI is the international leading pneumatic fender manufacturer with 20 years in pneumatic fender production. NANHAI Pneumatic Fender design and manufacture according to ISO 17357-1:20147 "Superior Guarantee, Supreme Guard"



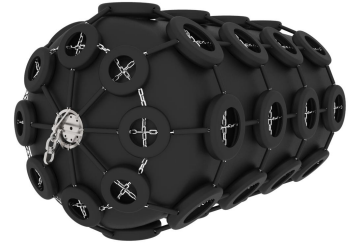
Test Item	Outer Rubber	Test Methods
1. Before Aging	-	-
1.1 Tensile Strength	18 Mpa or More	ISO 37:2011
1.2 Elongation	400% or More	ISO 37:2011
1.3 Hardness	60±10 (Durometer Hardness Type A)	ISO 7619-1:2010
2. After Aging	Air Oven Aging, 70°C±1°C 96h	ISO 188:2011
2.1 Tensile Strength	Not Less than 80% of the original property	ISO 37:2011
2.2 Elongation		ISO 37:2011
2.3 Hardness		ISO 7619-1:2010
3. Tear	400N/cm or More	ISO 34-1:2010
4. Compression	30% (70±1°C, 22hours) or less	ISO 815-1:2008
5. Static Ozone Aging Test	No Cracks after elongation by 20% and exposure to 50 pphm³ at 40°C for 96h	ISO 1431-1:2012

NOTE: Above data are the minimum performance requirements for rubber materials of NANHAI.
Please contact us for specific performance parameters.

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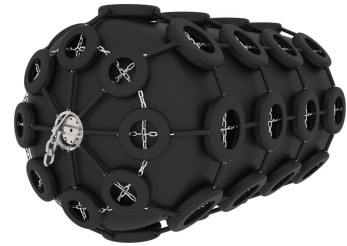
Test Item	Inner Rubber	Test Methods
1.Before Aging	-	-
1.1 Tensile Strength	10 Mpa or More	ISO 37:2011
1.2 Elongation	400% or More	ISO 37:2011
1.3 Hardness	50±10 (Durometer Hardness Type A)	ISO 7619-1:2010
2.After Aging	Air Oven Aging,70°C±1°C 96h	ISO 188:2011
2.1 Tensile Strength	Not Less than 80% of the original property	ISO 37:2011
2.2 Elongation		ISO 37:2011
2.3 Hardness		ISO 7619-1:2010
3.Tear	No requirement	ISO 34-1:2010
4.Compression	No requirement	ISO 815-1:2008
5.Static Ozone Aging Test	No requirement	ISO 1431-1:2012

NOTE: Above data are the minimum performance requirements for rubber materials of NANHAI.
Please contact us for specific performance parameters.

NANHAI PNEUMATIC FENDER

Synthetic Tyre Cord Specifications

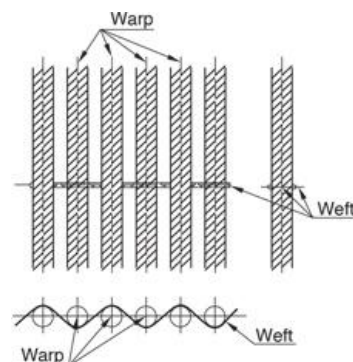
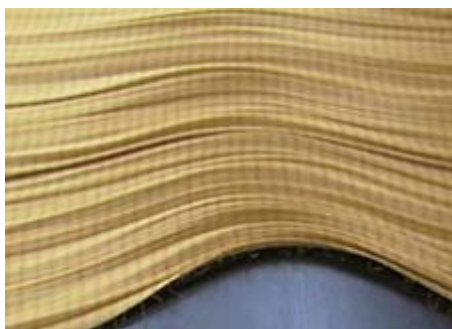
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The terminology "synthetic tyre cord layer" used in this part of ISO 17357 refers to tyre cord made of synthetic fibers. Synthetic tyre cord layers, commonly used in tyres, have been proven to provide strong efficient reinforcement layers in fenders. Each single layer is coated with rubber compound on both sides as well as in between synthetic tyre cord threads, hence isolating all cords from each other.

As contact between synthetic tyre cord threads does not occur, synthetic tyre cord has the advantage over other reinforcement materials, such as canvas fabric of reducing friction and wear between cord threads during compression, bending, and stretching, and also greatly improves fatigue resistance, endurance life, and pressure-holding performance.

Synthetic Tyre Cord Requirements			
Test Item	Unit	Warp	Weft
Density	Ends/inch	24	2
Tensile Strength	N/mm ²	20	0,02



NOTE: Above data are the minimum performance requirements for synthetic tyre cord of NANHAI. Please contact us for specific performance parameters.