

NOVENCO

Novelty Engineered Compounds



Since 1992



WHAT IS NOVENCO COMPOSITE MATERIAL ?

NOVENCO bearing composites are made by infusing reinforcing fibers with thermosetting resins to produce materials with superior properties or characteristics as compared to the individual materials. Most of the composites are formed of two phases; Matrix and Reinforcement. The matrix is continuous phase material and is usually less stiff and weaker in comparison to the reinforcement. It is used to hold the reinforcement together and distribute the load among their enforcement. Reinforcements in the form of fibers, fabric, whiskers, or particulates are embedded in the matrix to produce the composite. They are usually stronger and stiffer than the matrix and provide the primary load-carrying capability of the composite. The combination of special reinforcing materials, such as aramid, carbon, glass, cotton, or synthetic fibers saturated with thermosetting resins aid NOVENCO bearing composites in attaining their performance properties. NOVENCO bearing materials possess excellent wear resistance, high specific strength, good dimensional stability, durability, and long-term resistance to severe chemical environments. The additions of solid friction modifiers such as PTFE, MoS₂, and graphite add to the wear properties and life of the materials, thereby enabling them to be operated at higher speeds and loads.

NOVENCO MATERIAL KEY BENIFITS

NOVENCO bearing materials are rigid polymer composites that have solid friction modifier encapsulated within a matrix. Normal wear at the bearing surface continually exposes new lubricated surfaces, enabling NOVENCO bearing materials to remain self-lubricating throughout its bearing life. NOVENCO bearing materials have boosted the growth of applications throughout all industry sectors, displaying many advantages over metallic bearings. At present, numerous grades are available, each with its own particular chemical and physical properties designed to suit specific requirements.

A few advantages that they offer over traditional bearing materials are:

Low Coefficient Of Friction :-

NOVENCO materials show excellent dynamic frictional properties allowing for higher loads & speed combinations.

High resistance to wear :-

A NOVENCO material provides good wear resistance, and hence displays much longer service life as compared to bronze. It is also less affected by poor lubrication and dirty conditions.

Excellent resilience :-

Great capacity to absorb high shock loading and impact.

Low or free maintenance

High load-carrying capacity :-

NOVENCO bearing materials have a greater load-carrying capacity than many other types in common usage.

This is mainly due to their high compressive strength arising due to the orientation and nature of the reinforcements.

Excellent abrasion resistance :-

NOVENCO materials can be used in environments where abrasive particles are present.

Accept misalignment

Good Chemical resistance

Noise and vibration suppressing characteristics

Reduced wear of mating surface

Light weight :-

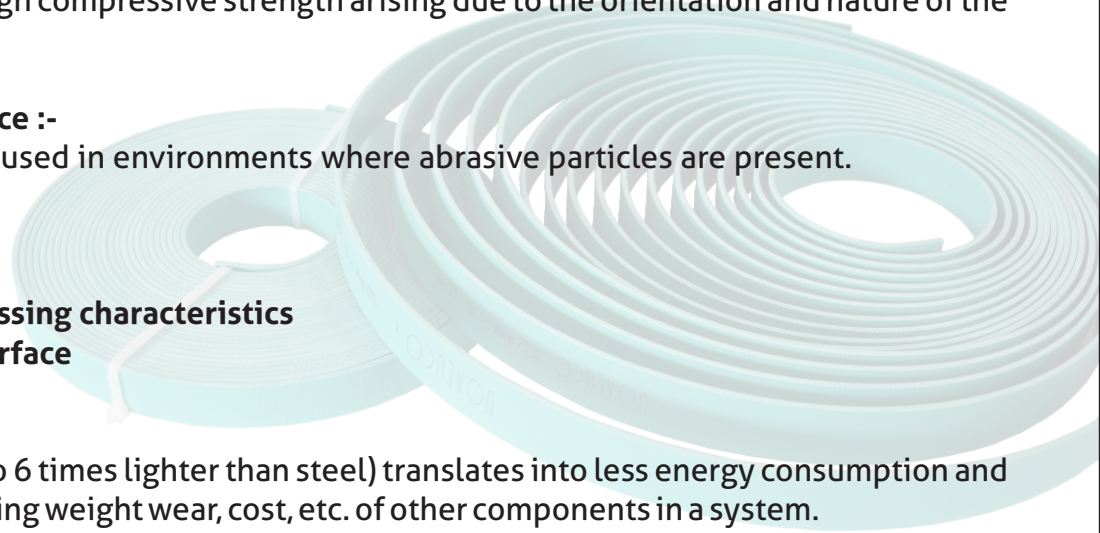
Light weight (as much as 5 to 6 times lighter than steel) translates into less energy consumption and has a cascading effect reducing weight wear, cost, etc. of other components in a system.

Good dimensional stability

Freedom from interface welding

Design flexibility :-

As opposed to metals, NOVENCO materials can be tailored to give exacting performance characteristics.



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NOVENCO MATERIAL APPLICATION



Earthmoving equipment

Front end loader arm bushes, pivot point bushes, idler wheel bushes in a tracked vehicle, pile driving pads.



Offshore & Marine

Stern tube bushes, rudder stock bearings, pulley block bushes, overhead crane bushes & guide pads, mooring, roller bushes, deck crane bushes & bearings.



Hydraulics

Cylinder piston & rod wear rings, Clevis pin bearings.



Agriculture

Harvester bushes, tractor kingpin bushes.



Heavy transport

Bogie / trunnion / pivot bushes and thrust washer, bushes for spring shackles.



Steel/Aluminum manufacturing

Cartwheel bush, conveyor wear pads and slide plates, crust breaker cylinder bushing, conveyor roller, and bearings



Automotive Industry

Conveyor bushes and bearings, degreasing line bushes and wear pad.



Paper/Textiles Production

Stenter blades, doctor blades conveyor rollers and bearings, squeeze roll bushes, and wear pad.














Water/Sewage treatment

Pump bearing, weir bearings/wear rings/ seal rings/ sluice gate bearings for hydro power, effluent slinger thrust bearing.

Other applications

- Material handling equipment
- Food processing
- Railway industry
- Chemical industry
- Mining



Product information						
PROFILE	CODE	MATERIAL	TYPE	COLOR	SURFACE	DELIVERED CONDITION (°C)
	NEC 01	HARD FABRIC WITH RESIN	FRPR STRIP	GREEN	SMOOTH	ROLL
	NEC 02	HARD FABRIC WITH RESIN	FRPR STRIP	GREEN	SMOOTH	RING CUT FORM 45 DEGREEE BEVEL
	NEC 03	HARD FABRIC WITH RESIN	FRPR STRIP	GREEN	SMOOTH	SPIRAL
	NEC 01-PT	HARD FABRIC WITH RESIN+PTFE	FRPR STRIP	GREEN	SMOOTH	ROLL
	NEC 04	HARD FABRIC WITH RESIN	FRPR STRIP	RED	SMOOTH	ROLL
	NEC 05	HARD FABRIC WITH RESIN	FRPR STRIP	RED	SMOOTH	RING CUT FORM 45 DEGREEE BEVEL
	NEC 06	HARD FABRIC WITH RESIN	FRPR STRIP	RED	SMOOTH	SPIRAL
	NEC 04-PT	HARD FABRIC WITH RESIN+PTFE	FRPR STRIP	RED	SMOOTH	ROLL
	NEC 07	PTFE, BRONZ FILLED	BFT STRIP	BROWN	SMOOTH	ROLL
	NEC 08	PTFE, BRONZ FILLED	BFT STRIP	BROWN	STRUCTURED	ROLL
	NEC 09	PTFE, BRONZ FILLED	BFT STRIP	BROWN	SMOOTH	RING CUT FORM 30 DEGREEE
	NEC 10	PTFE, BRONZ FILLED	BFT STRIP	BROWN	STRUCTURED	RING CUT FORM 30 DEGREEE
	NEC 11	PTFE, BRONZE FILLED WITH MOS2	TURQUOISE SLIDEWAY	TURQUOISE	ETCHED	ROLL
	NEC 12	COMBINATION OF VIRGIN PTFE +RECYCLED PTFE	PTFE ROD	WHITE	SMOOTH	1 MTR/1 FT

Guide elements are used to guide pistons and piston rods. Its universal applicability forms the main advantage of this product.

Guide elements permit a simple groove configuration. They prevent metallic contact with the component, can absorb transverse forces, and have good damping characteristics.

APPLICATIONS

The guide elements NEC 08 and NEC 07 are especially suited to light and medium mobile hydraulics as well as stationary hydraulics. The guide strip NEC 01 and the guide rings NEC 02 / NEC 01-PT are used majorly in medium and heavy mobile hydraulics.

Application	NEC 08 / NEC 07 NEC 10/NEC 09	NEC 01 NEC 02/ NEC 01-PT
Injection molding machines	●	
Machine tools	●	
Agricultural equipment	●	●
Standard cylinders	●	●
Material-handling vehicles	●	
Handling tools	●	
Construction machinery		●
Water hydraulics		●

CHARACTERISTICS

NEC 08/NEC 07

-NEC 07 displays great friction and lubricating behavior, and NEC 08 performs remarkably well in this department owing to the special surface structure.

-No stick-slip effect, even at low speeds

-High thermal and chemical stability

-Avoidance of edge loading at the groove edges and ease of assembly thanks to chamfers starting at a groove width of 5.6mm

-Good damping of mechanical oscillations

-First-class wiping effect as well as good embedding of foreign particles

NEC 08

A Non-standard solution that is available on request.

Carbon-graphite-filled PTFE is the predominant choice for soft counter surfaces, slight rotational movement and water hydraulics

Guide rings for the piston NEC 10 or rod NEC 09 are already guide strips tailored to the desired diameter

NEC 01 / NEC 02 / NEC 01 -PT

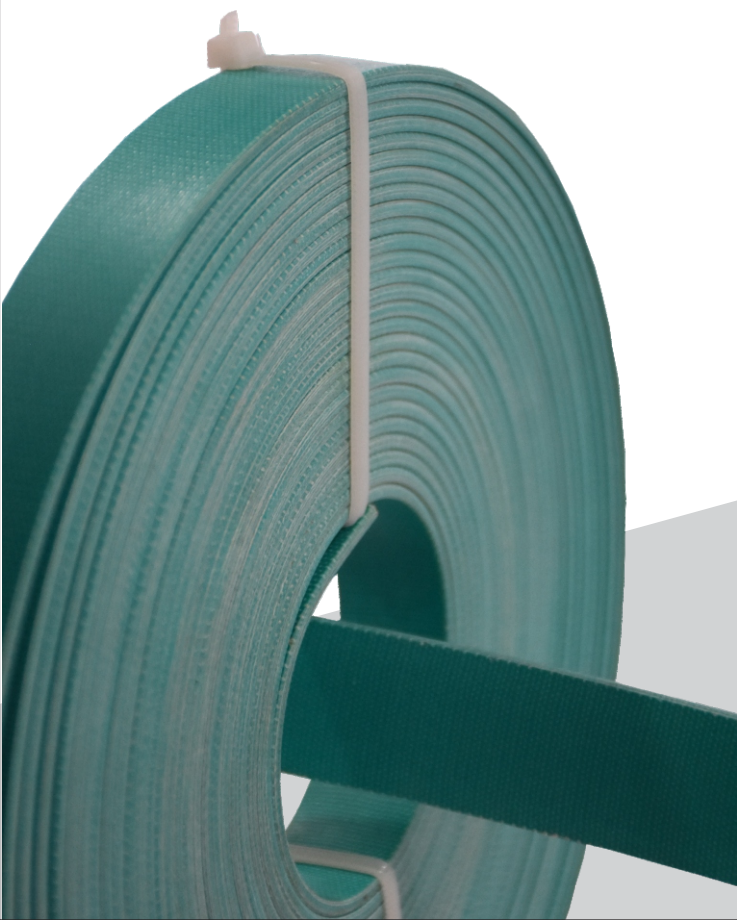
Permit high surface pressures and high transverse forces Remarkable wear characteristics, improved stick-slip effect and frictional and lubricating behavior thanks to PTFE inlay, which aids lubrication

Avoidance of edge loading at the groove edges on account of chamfers on all sizes

Suitable for oil-water fluids (water hydraulics) thanks to no appreciable water absorption, thus

Guide rings for NEC 02 pistons and NEC 01-PT rods are easier to install as compared to the guide strip NEC 01, since they are already machined to the desired diameter

NEC 01 guide strips are available as metered material and prove to be a good choice for larger diameters.



ABOUT NOVENCO WEAR RING

The role of the wear ring is to guide the piston and the rod in a hydraulic cylinder as well as to support horizontal loads and prevent metal-to-metal contact of moving parts.

CHARACTERISTIC OF WEAR RING

- Low coefficient of friction
- High resistance to wear
- Absorbing heavy side load
- Vibration suppressing characteristics
- Design flexibility
- Various application areas
- Easy installations
- High - temperature resistance

Design of Wear Ring

Calculation of the cutting gap for Wear Strip
The length of Wear strip would be calculated by following :

For Pistons

$$L = (D - W) \times 3.092$$

L: Max. Wear ring length

D: Cylinder Diameter (OD of wear ring)

W: Thickness of wear ring

For Rods

$$L = (D + W) \times 3.092$$

L: Max. Wear ring length

D: Rod Diameter

W: Thickness of wear ring

Example :-

- OD: Ø300mm, ID: Ø295mm, Thickness: 2.5mm

The circumference of a circle: 934.15mm

$$- L = (D + W) \times 3.092 = 920\text{mm}$$

Strip Type: Cutting gap = 14mm

Standard cutting gap & type of cutting for Wear Ring:

Bias cut is a standard cutting type. Step cut can be used as a buffer seal by protecting seals from pressure spike. The other type of cutting would be available as per customer request. Table 1. Shows the Standard cutting gap and Figure 1 shows the type of cutting.

O.D. of Wear ring	Cutting(Z)
ØD 25	1.0mm
26 Ø 100	2.0mm
ØD 101	2.5mm

Table 1. - Standard cutting gap

Mechanical Properties

Properties		Units	Grades	
			NEC 01/NEC 04	NEC 01-PT/ NEC 04-PT
Compressive Strength	At Failure (Temp. 23°C)	MN/m ²	425	425
	At Yield (Temp. 23°C)	MN/m ²	108	108
Compressive Strength	At Yield (Temp. 23°C)	MN/m ²	80	80
Shear Strength		MPA	80	80
Hardness	Rockwell	HRM	100	100
Material Swell in water ¹⁾ (% wall thickness)		%	0.08	0.08
Maximum sliding speed		m/s	1.0	2.0
Temperature	Maximum	°C	120	120
	Minimum	°C	-40	-40
Coefficient of linear thermal expansion	Normal to laminate	10 ⁻⁵ /°C	7 ~ 8	7 ~ 8
	Parallel to laminate	10 ⁻⁵ /°C	5 ~ 6	5 ~ 6

1) 24 hours immersion at 20 °C water (2.5mm wall thickness)



INSTALLATION SPACE AND MOUNTING

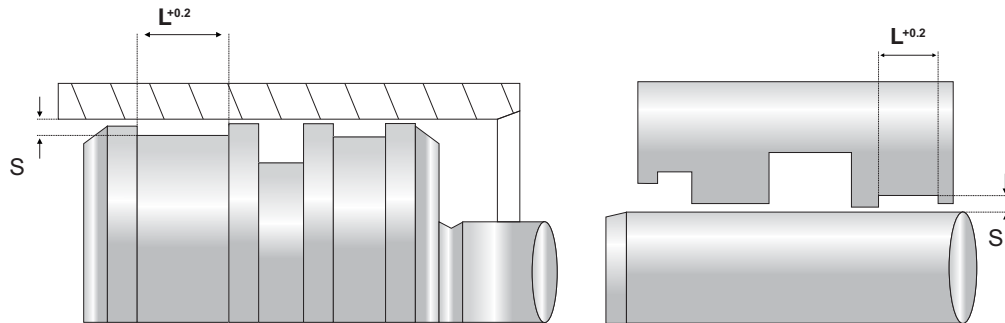
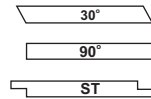
Guide elements can be easily mounted in closed grooves in accordance with ISO 10766. Guide strips NEC 08, NEC 01 and NEC 07 must be cut to length so that clearance is available for the joint.

The following formulas are used to determine the stretched length L1

- Piston guide ring $L1 = 3,11 \times (\varnothing D - S) - 1,0$
- Rod guide ring $L1 = 3,11 \times (\varnothing d + S) - 1,0$

Possible cut forms:

- 30° = better pressing force distribution and ease of mounting
- 90° = and ease of mounting
- ST = rotation/oscillation



MEDIA RESISTANCE

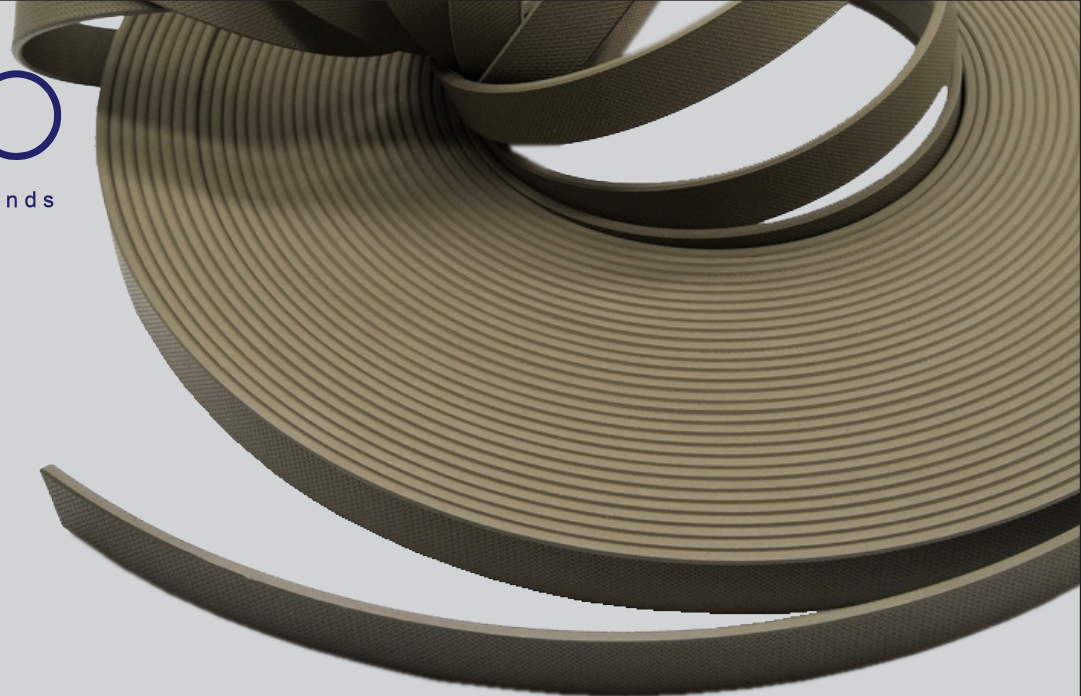
- Hydraulic oils in accordance with DIN 51524 section 1-3
- Petroleum-oil based-lubricating oils, greases
- Flame retardant hydraulic fluids HFA, HFB, and HFC in accordance with VDMA 243170,2d

DIMENSIONS

NEC 01/NEC 04

WIDTH (mm)	THICKNESS (mm)							
	2	2.5	3	3.3	4	4.5	5	6
5.6	2	2.5	3	3.3	4	4.5	5	6
8	2	2.5	3	3.3	4	4.5	5	6
9.5	2	2.5	3	3.3	4	4.5	5	6
9.7	2	2.5	3	3.3	4	4.5	5	6
12.5	2	2.5	3	3.3	4	4.5	5	6
14.8	2	2.5	3	3.3	4	4.5	5	6
15	2	2.5	3	3.3	4	4.5	5	6
16.3	2	2.5	3	3.3	4	4.5	5	6
16.5	2	2.5	3	3.3	4	4.5	5	6
19.5	2	2.5	3	3.3	4	4.5	5	6
20	2	2.5	3	3.3	4	4.5	5	6
24.5	2	2.5	3	3.3	4	4.5	5	6
25	2	2.5	3	3.3	4	4.5	5	6
29.5	2	2.5	3	3.3	4	4.5	5	6
30	2	2.5	3	3.3	4	4.5	5	6
35	2	2.5	3	3.3	4	4.5	5	6
40	2	2.5	3	3.3	4	4.5	5	6





PTFE BEARING TAPE

NOVENCO produces, Tight Tolerance, PTFE Bearing Tape that is designed to eliminate scoring in Hydraulic and pneumatic cylinder applications by preventing metal to metal contact. Our Bronze Filled PTFE compound provides great light-duty, low friction performance.

NOVENCO possesses the expertise to make the best quality skived PTFE products in the market today. Precision crafted in to rolls; our Bearing Tapes are made with the latest skiving

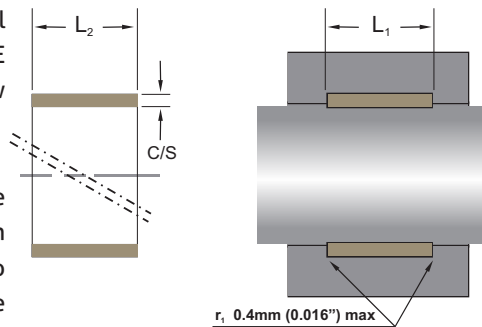
–Technologies and premium selection of Raw materials. Our Bearing Tapes can be produced from 0.063' up to 0.125' thick (from 1.5 to 4mm), in widths from 0.25' upto 2' (from 3 to 49.8mm).

Contact NOVENCO for more details, or to place an order for our Tight Tolerance, Bronze Filled, PTFE Bearing Tape. Your equipment will thank you!

The process of ordering is very simple- just select a Thickness (C/S) and the Width (L2). Don't forget to double check your Groove Width for clearance (L1). The roll length will be determined by the Thickness(C/S).

The data provided is based on laboratory testing and is proposed to technical designers as possible and useful advice. Deviations from the values in di cated may occur, but they do not constitute themselves either detriment of quality or reason for rejection.

BRONZE FILLED



PTFE Bearing Tape - Inch

Thickness (C/S)	Roll Length
-0.0013	
0.063"	40 MTR
0.094"	25 MTR
0.125"	20 MTR

Width (L2)	Groove (L1)
+ .0007-.010	+ .0207-.000
0.250'	0.260'
0.375'	0.385'
0.500'	0.510'
0.625'	0.635'
0.750'	0.760'
1.000'	1.010'
1.250'	1.260'
1.500'	1.510'
1.750'	1.760'
2.000'	2.010'

* 1.5 mm C/S only

** 2 & 2.5 mm C/S only

PTFE Bearing Tape - mm

Thickness (C/S)	Roll Length
0.01-0.05	
1.5	40 MTR
1.6	40 MTR
2	35 MTR
2.5	25 MTR
3	20 MTR
3.17	18 MTR
up to 10 mm	

Width (L2)	Groove (L1)
0.01-0.20	0.525-0.00
3	3.2
3.8	4
5.4	5.6
5.6	5.8
6	6.25
8	8.25
9.5	9.75
9.7	10
10	10.5
11.8	12
12.7	13
14.5	15
14.8	15
15	15.5
19.5	20
19.8	20
20	20.5
24.5	25
24.8	25
25	25.5
29.5	30
30	30.5
34.8	35
49.8	50
50	50.5
up to 100 mm	Accordingly

PTFE RODS & TUBES



Novelty Engineered Compounds

NOVENCO produces PTFE Rods and Tubes in a wide range of sizes, colors, and PTFE materials (Poly tetra fluoro ethylene), including our NEC 12 Rod or Tube is a low friction product that is inert to most liquids and corrosives, and is also non-contaminating, making it the perfect material for use in applications where metals and alloys would corrode quickly. Capable of withstanding temperatures from 328°F up to +500°F. NEC 12 can handle a vast range of environments and is thus, used regularly in high temperature applications.

While NEC 12 Rods and Tubes are mostly white in color, they can also be made from blended materials to meet customer application requirements. Adding a filler will generally color the Rod or Tube to match the filler, but other custom colors can also be obtained. However, custom colors must be requested prior to fabrication. Certain fillers or colors may affect the physical properties of the material. Please inform us if testing of a certain blend is required.

NOVENCO stocks a wide range of molded and extruded tubes and rods, in virgin PTFE + Recycled PTFE as well as blended compounds which help us to ensure fast and efficient service. We usually stock rod made of a combination of virgin PTFE + Recycled PTFE.

NEC 12 (Virgin PTFE)			
Properties	Unit	Method	Typical Value
PHYSICAL-MECHANICAL			
Density	g/cm ³	ASTM D792	2.14 - 2.18
Hardness - Shore D	points	ASTM D2240	51 - 60
Tensile strength - CD	Mpa	ISO 527	≥ 20
Elongation at break - CD	%	ISO 527	> 200
Compressive Strength at 1% deformation- CD	psi	ASTM D695	580 - 725
Deformation under load at room temperature after 24 hours at 13.7 N/mm ² - CD	%	ASTM D621	14 - 17
Permanent deformation as above after 24 hours of rest at room temperature- CD	%	ASTM D621	7 - 8
Deformation under load at 260°C, after 24 hours at 41 N/mm ² -CD	%	ASTM D621	
Permanent deformation as above after 24 hours of rest at room temperature-CD	%	ASTM D621	7 - 8
Impact strength Izod	J/m	ASTM D256	153
TRIBIOLOGICAL			
Dynamic coefficient of friction	/	ASTM D1894 ASTM D3702	0.06
Wear factor K	/	ASTM D3702	2.900
PV limit at 3 m/min at 30 m/min at 300 m/min	N/mm ² •m/min	/	2.4 4.2 5.7
THERMAL			
Service Temperature (min-max)	°F	/	-328 / +500
Thermal expansion coefficient (linear) 25 - 100°C	10 ⁻⁵ in/in/°F	ASTM D696	6.625 - 7.206
ELECTRICAL			
Dielectric strength (specimen 0.5 mm thick)	KV/mm	ASTM D149	≥ 40
Dielectric Constant at 60 Hz and 106 Hz	/	ASTM D150	2.05 - 2.10
Volume Resistivity	Ω • cm	ASTM D257	10 ¹⁸
Surface Resistivity	Ω	ASTM D257	10 ¹⁷

CD- Cross Direction

The data we are herewith providing are all based on laboratory testing and are proposed to technical designers as possible and useful advice. Deviations from the values indicated may occur, but they do not constitute themselves either detriment quality or reason for rejection.



EXTRUDED RODS

Diameter (mm)	Tolerance (mm)	Length (mm)	Tolerance (mm)
4	+0.3-0.3	305/1000/2000	+20-0
5	+0.3-0.3	305/1000/2000	+20-0
6	+0.3-0.3	305/1000/2000	+20-0
8	+0.4-0.4	305/1000/2000	+20-0
10	+0.4-0.4	305/1000/2000	+20-0
12.5	+0.8-0.8	305/1000/2000	+20-0
15	+0.8-0.8	305/1000/2000	+20-0
18	+0.8-0.8	305/1000/2000	+20-0
20	+0.8-0.8	305/1000/2000	+20-0
25	+1.2-1.2	305/1000/2000	+20-0
28	+1.2-1.2	305/1000/2000	+20-0
30	+1.6-1.6	305/1000/2000	+20-0
32	+1.6-1.6	305/1000/2000	+20-0
35	+1.6-1.6	305/1000/2000	+20-0
38	+2.0-2.0	305/1000/2000	+20-0
40	+2.0-2.0	305/1000/2000	+20-0
45	+2.0-2.0	305/1000/2000	+20-0
50	+2.0-2.0	305/1000/2000	+20-0
55	+2.6-2.6	305/1000/2000	+20-0
60	+2.6-2.6	305/1000/2000	+20-0
65	+2.8-2.8	305/1000/2000	+20-0
70	+2.8-2.8	305/1000/2000	+20-0
75	+3.2-3.2	305/1000/2000	+20-0
80	+3.2-3.2	305/1000/2000	+20-0

Diameter (mm)	Tolerance (mm)	Length (mm)	Tolerance (mm)
85	+3.6-3.6	305/1000/2000	+20-0
90	+3.6-3.6	305/1000/2000	+20-0
95	+3.6-3.6	305/1000/2000	+20-0
100	+4.0-4.0	305/1000/2000	+20-0
105	+4.0-4.0	305/1000/2000	+20-0
110	+4.0-4.0	305/1000/2000	+20-0
115	+4.0-4.0	305/1000/2000	+20-0
120	+5.0-4.0	305/1000/2000	+20-0
125	+5.0-4.0	305/1000/2000	+20-0
130	+5.0-4.0	305/1000/2000	+20-0
135	+5.0-4.0	305/1000/2000	+20-0
140	+5.0-4.0	305/1000/2000	+20-0
145	+5.0-4.0	305/1000/2000	+20-0
150	+5.0-4.0	305/1000/2000	+20-0
160	+5.0-4.0	305/1000/2000	+20-0
170	+5.0-4.0	305/1000/2000	+20-0
180	+5.0-4.0	305/1000/2000	+20-0
190	+5.0-4.0	305/1000/2000	+20-0
200	+6.0-3.0	305/1000/2000	+20-0
210	+6.0-3.0	305/1000/2000	+20-0
220	+6.0-3.0	305/1000/2000	+20-0
230	+6.0-3.0	305/1000/2000	+20-0
240	+6.0-3.0	305/1000/2000	+20-0
250	+6.0-3.0	305/1000/2000	+20-0

* G400 PTFE GRADE A
According to standard BS6564

G200 PTFE GRADE B
According to standard BS6564

G405 PTFE +
25% Glass Fiber

G412 PTFE + G415 PTFE +
15% Graphite 25% Soft Carbon

G412 PTFE +
40% Bronze + 2% Carbon

G453 PTFE +
25% Carbon + Graphite



WHAT IS A NOVENCO TURQUOISE SLIDWAY?

Slidway is a proprietary formulation of PTFE material impregnated with bronze and friction reducing additives.

WHAT DOES A NOVENCO TURQUOISE SLIDWAY DO?

- Reduces friction and wear
- Reduces damage caused by mechanical problems
- Increases accuracy
- Extends machine life
- Saves energy

HOW DOES A NOVENCO TURQUOISE SLIDWAY LINEAR BEARING SYSTEM WORK ?

By providing self-lubricating, low coefficient of friction linear bearing surface between two metal interfaces, NOVENCO Turquoise slidway is normally attached to the moving surface by a bonding method.

The Slidway bearing moves with the work table or tool holder along the steel or cast iron mating of the tool way. The static and dynamic friction of NOVENCO Turquoise slidway is nearly the same on both cast and hardened or soft steel ways.

APPLICATIONS :-

Planers, milling machines, SPMs, sharpeners, horizontal & vertical boring machines, hydraulic & pneumatic power presses, press brakes, all types of grinders, radial drills, automatic screw machines, gear hobbers, gear shapers, multi-spindle automats, broaching machines, CNC machines and machining centres.

NOVENCO Turquoise slidway is the solution you have been looking for to reduce the effects of friction on your machine tool's accuracy. It is applicable both for new designs and while rebuilding guideways.

The results conform to the machine tool manufacturers & re-builders specifications.

ADVANTAGES :-

The advantages of NOVENCO Turquoise slidway tape bearings in comparison with traditional solutions are:

Coefficient of Friction: NOVENCO Turquoise slidway has the lowest coefficient of friction as compared to other guiding materials. It is self-lubricating with an unlimited shelf life

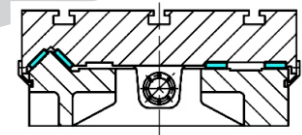
Wear: NOVENCO Turquoise slidway has outstanding wear resistance and is recommended for mating with surfaces having a Hardness (BHN) of 180-220 with a Roughness (mm) of $Ra < 0.6$

Contact Pressure: At contact pressures up to 11 N/mm² it is comparable to other guiding materials and additionally has excellent vibration and damping properties

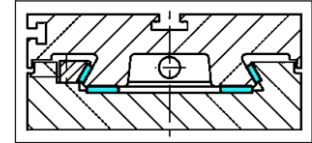
Stability of Dimensions: NOVENCO Turquoise slidway will not swell or shrink. Its inert property assures the stability of dimensions

Mounting: NOVENCO Turquoise slidway is secured to the metallic guide elements by bonding. The etched side of the tape is easily bondable with a conventional 2-pack industrial adhesive

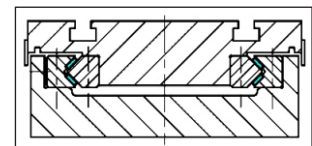
Designs.



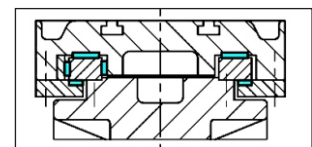
Flat Tapered Guideway



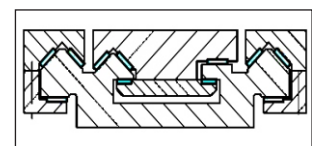
Dovetail Guideway



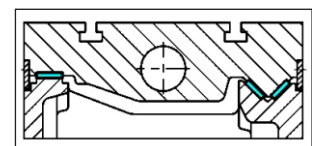
V-Guideway



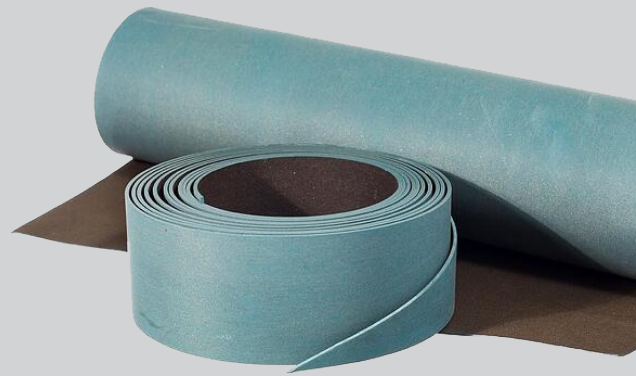
Flat-Guideway



Double V-Guideway



Flat V-Guideway



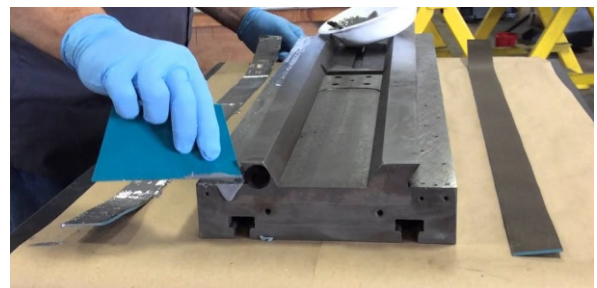
SPECIFICATIONS

PROPERTY	ASTM TEST METHOD	UNITS OF MEASURE	VALUE	
			Metric	English
Tensile Strength to break at 73° F	D 1457	MPa (PSI)	13.7	(2,000)
Elongation to break at 73° F	D 1457	%	168	(168)
Specific Gravity at 73° F	D 792	-	3.1	(3.1)
Deformation under load (73° F, 2000 PSI, 24 hrs.)	Refer to Deformation Graph			
Flexural Strength	D 790	Mpa (PSI)	96.5 (14,000)	
Water Absorption	D 570	%	0	(0)
Coefficient of Linear Thermal Expansion	D 696	m / m °C (in / in / °F)	10.8 x 10 ⁻⁵	(6 x 10 ⁻⁵)
Working Temperature Range		°C (°F)	-218 +260	(-360 +500)
Limiting PV		MPa-m/min (PSI-FPM)	53	(25,000)
Colour			Blue / Grey	

CHARACTERISTICS

CHARACTERISTICS	DESCRIPTION UNITS	VALUES
1. Coefficient of Friction		
(a) Trace Lubrication	Static Dynamic	0.073 0.068
(b) Flooded Lubrication	Static Dynamic	0.062 0.059
2. Allowable Bearing Pressure	kgf / cm ²	up to 115
3. Self Lubricity	Yes	
4. Min. Sliding Speed without Stick-slip	mm / min	0.01
5. Vibration Damping Property	Yes	
6. Machinability of Material	Can be milled or ground or scraped	
7. Mating Surface Requirements	Hardness (BHN), Surface Roughness (mm)	180 - 220, Ra < 0.6
8. Availability of the Material	Thickness (mm)	0.8,1.0,1.6,2.5,3.2 and 4.0
9. Shelf Life	No Limit	
10. Engineering Costs	Extremely Low	

Operating conditions for LUBRING Slideway gibs and other sliding applications	
PV factor	up to 1.7 N/mm ² x m/s
Specified Load	up to 20 N/mm ²
Sliding Speed	up to 2 m/s
Operating Temperature	from -260° to +260° C



NOVENCO

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