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VULKOLLAN®

VULKOLLAN® in its classic form is a polyurethane elastomer based on naphthalene 1,5-disocyanate Desmodur® 15 (NDI), polyester polyol and special chain extenders. VULKOLLAN® is produced by hot casting.

The raw materials used for VULKOLLAN® are subject to tight specifications and strict quality controls. All licensed processors must follow COVESTRO guidelines for VULKOLLAN® formulations and production processes, otherwise they cannot use the name VULKOLLAN®.

VULKOLLAN® wheels take up to 4 weeks to produce, due to the stabilizing requirements needed. Thus it is important to allow adequate time for any application.



Stated loads shown are for operation under ideal conditions, i.e. the wheel operates infrequently on a smooth surface without axial loading.

Thus load ratings must be reduced for operation under any or all of the following conditions:

- **Frequent use in excess of 45 minutes continuous:**
reduce loadings by 25%
- **Driving applications:**
reduce loadings by 30%
- **Speeds 6-10 kph (3.73 - 6.21 mph):**
reduce loads by 20%
- **Speeds 10-16 kph (6.21 - 10 mph):**
reduce loadings by 30%

Vulkollan® Nomenclature

The number following the work Vulkollan® indicates the content in g Desmodur 15 per 100 g of polyester. The shore hardness increases with the Desmodur 15 content.

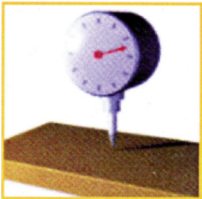
e.g. Vulkollan® 25 = 25 parts by weight of Desmodur 15 to 100 parts by weight of polyester

TYPICAL PROPERTIES*						
Mechanical properties	Test standard	Units	Vulkollan®			
	ISO		18	21	25	9
Shore A/D hardness	868		83/29	89/35	92/36	95/40
Density	1183	Mg/m ³	1.26	1,26	1.26	1.26
Stress at 100% strain	37	MPa	4.3	5.9	8.0	10.6
Stress at 300% strain	37	MPa	7.8	10.4	12.8	15.8
Ultimate tensile strength	37	MPa	50	54	53	42
Elongation at break	37	%	660	700	740	692
Tear propagation resistance	34	kN/m	31	38	54	67
Rebound resilience	4662	%	65	64	62	61
Abrasion	4649	mm ³	37	32	28	26
Taber abrasion (S42/4.9 N)	9352	mg	3.5	4.0	6.1	7.5
Compression set 70 h / 23°C	815					
24 h / 70°C						
Linear coefficient of thermal expansion		%	8	9	10	14

*The figures are intended as guide values for a standard Vulkollan® formulation.

SOLID VULKOLLAN® - MECHANICAL PROPERTIES

VULKOLLAN® can be produced in hardness ranging from about 65 Shore A to about 70 Shore D. The mechanical properties are particularly favorable between about 80 Shore A and 40 Shore D, so these grades of Vulkollan® have the greatest share of the market.



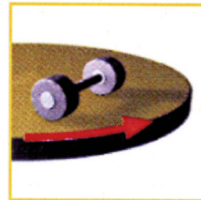
SHORE HARDNESS

Shore Hardness is determined by testing the indentation resistance. The indentation resistance with which the elastomer opposes a spring-mounted needle is measured and displayed on a scale of 0 to 100. Shore A testing is used for softer elastomers. The Shore D scale is preferred from about 90 Shore A.



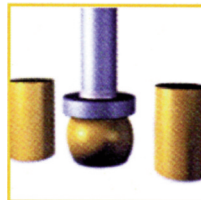
ABRASION

Abrasion is measured by various methods, normally according to ISO 4649 (“abrasion roll”) and ISO 9352 (“Taber”). The elastomer specimens are rubbed with defined grinding media and abrasion is determined by loss of weight or volume. Low abrasion values denote high resistance to wear.



ULTIMATE TENSILE STRENGTH

Tensile Stress is measured on specially shaped test bars in tensile testing machines and is indicated as a function of the strain. Testing is normally at 100%, 300% and a breakage. VULKOLLAN® displays very high strength values. The test bars only tear after elongation to over 7 times the original length. Tensile strength testing is frequently used for quality control.



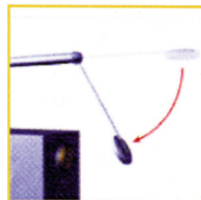
COMPRESSION DEFORMATION

The residual deformation after sustained compressive deformation is measured by determining the compression set. (The test stoppers are deformed to a specific extent at defined temperatures and for defined periods.) Recovery is then determined. Low values denote low permanent set.



TEAR PROPOGATION

Tear propagation resistance is measured by stretching a notched specimen. High tear propagation resistance values denote reliable performance even of damaged parts.



REBOUND RESILIENCE

Rebound resilience is measured with a falling hammer. The higher the rebound, the less energy is absorbed in the elastomer and converted into heat.

VULKOLLAN® LOAD WHEELS



SERIES 178

VULKOLLAN® load wheels

Gray cast iron wheel center with ball bearings (/5). Direct bonded VULKOLLAN® tread (93° Shore A).

Item #	Diameter (mm)	Wheel Width (mm)	Hub Length (mm)	Fixing Length (mm)	Hub Diameter (mm)	Bearing ID (mm)	Load Capacity (kg)
178/100/025/5/15	100	25	25	26	43	15	200
178/100/035/5/12	100	35	40	40	42	12	300
178/100/040/5/15 B*	100	40	45	42	45	15	350
178/100/040/5/15	100	40	45	42	45	15	350
178/100/040/5/25	100	40	45	45	54	25	350
178/100/050/5/20 B*	100	50	50	54	-	20	450
178/100/050/5/25-1	100	50	50	54	-	25	450
178/100/050/5/25-2	100	50	50	48	-	25	450
178/125/040/5/15	125	40	45	45	42	15	450
178/125/040/5/20	125	40	45	43	60	20	450
178/125/050/5/20	125	50	50	54	59	20	560
178/125/050/5/25-1	125	50	50	54	59	25	560
178/125/050/5/25-2	125	50	50	48	59	25	560
178/125/070/5/25	125	70	70	74	65	25	660
178/150/035/5/25	150	35	35	39	62	25	450
178/150/050/5/20	150	50	50	54	61	20	660
178/150/050/5/25-1	150	50	50	54	61	25	660
178/150/050/5/25-2	150	50	50	48	61	25	660
178/150/080/5/25	150	80	72	78	65	25	900
178/160/040/5/20	160	40	45	49	61	20	550
178/160/050/5/20	160	50	60	60	65	20	700
178/160/050/5/25	160	50	50	48	70	25	600
178/180/050/5/25	180	50	50	48	66	25	800
178/200/050/5/20	200	50	60	64	65	20	1.000
178/200/050/5/25	200	50	60	64	65	25	1.000
178/200/050/5/30	200	50	50	48	86	30	840
178/200/060/5/25	200	60	60	60	65	25	760
178/200/080/5/25-1	200	80	80	84	70	25	1.400
178/200/080/5/25-2	200	80	78	78	95	25	1.400
178/200/080/5/30	200	80	78	78	85	30	1.400
178/200/080/5/35	200	80	80	78	82	35	1.460
178/250/050/5/25	250	50	60	64	67	25	1.100
178/250/050/5/30	250	50	50	48	83	30	1.100
178/250/060/5/25	250	60	60	60	77	25	1.350
178/250/080/5/30-1	250	80	80	80	75	30	1.700
178/250/080/5/30-2	250	80	78	78	91	30	1.800
178/250/080/5/40	250	80	80	78	101	40	1.800
178/300/060/5/30	300	60	65	65	82	30	1.600
178/300/080/5/40	300	80	85	85	106	40	2.100
178/300/100/5/50	300	100	100	100	105	50	2.750
178/300/135/5/50	300	135	135	135	140	50	3.400
178/400/075/5/45	400	75	80	80	131	45	2.200
178/400/100/5/50	400	100	100	100	130	50	3.600
178/500/085/5/50	500	85	100	100	140	50	2.360
178/500/200/5/90	500	200	200	200	230	90	9.170

25.4 mm = 1 inch 1 kg = 2.2 lbs *with crowned tread

All wheels can be adapted to fit in U.S. caster rigs.



SERIES 178A

VULKOLLAN® drive wheels
 Gray cast iron wheel center with bore and keyway according to DIN 6885. Direct bonded VULKOLLAN® tread (93° Shore A).

Item #	Diameter (mm)	Wheel Width (mm)	Hub Length (mm)	Hub Diameter (mm)	Bearing ID (mm)	Load Capacity (kg)
178A/100/050/2/25 H7	100	50	50	-	25	450
178A/125/040/2/20 H7	125	40	36	46	20	450
178A/125/040/2/25 H7	125	40	45	60	25	450
178A/125/050/2/25 H7	125	50	50	60	25	560
178A/125/050/2/30 H7	125	50	50	60	30	560
178A/125/050/2/35 H7	125	50	50	60	35	560
178A/150/050/2/30 H7	150	50	50	61	30	650
178A/150/050/2/35 H7	150	50	50	61	35	650
178A/150/050/2/40 H7	150	50	50	61	40	660
178A/160/050/2/25 H7	160	50	50	61	25	700
178A/160/050/2/35 H7	160	50	50	61	35	700
178A/180/050/2/35 H7	180	55	60	63	35	850
178A/200/050/2/30 H7	200	50	60	65	30	1.000
178A/200/050/2/35 H7	200	50	60	85	35	1.000
178A/200/050/2/40 H7	200	50	60	85	40	1.000
178A/200/080/2/50 H7	200	80	80	95	50	1.400
178A/250/050/2/40 H7	250	50	50	90	40	1.100
178A/250/050/2/50 H7	250	50	60	90	50	1.100
178A/250/080/2/30 H7	250	80	80	100	30	1.800
178A/250/080/2/40 H7	250	80	80	100	40	1.800
178A/250/080/2/50 H7	250	80	80	100	50	1.800
178A/300/060/2/40 H7	300	60	65	82	40	1.600
178A/300/060/2/50 H7	300	60	65	80	50	1.600
178A/300/080/2/50 H7	300	80	80	107	50	2.100
178A/300/100/2/40 H7	300	100	100	106	40	2.500
178A/300/100/2/60 H7	300	100	110	105	60	2.500

25.4 mm = 1 inch 1 kg = 2.2 lbs

VULKOLLAN®

HEAVY-DUTY WHEELS



SERIES 171

VULKOLLAN® heavy-duty wheels

Stable welded wheel center with ball bearing (/5).
Direct bonded VULKOLLAN® tread (93° Shore A).

Item #	Diameter (mm)	Wheel Width (mm)	Hub Length (mm)	Fixing Length (mm)	Hub Diameter (mm)	Bearing ID (mm)	Load Capacity (kg)
171/300/075/260/5/35	300	75	80	80	96	35	2.000
171/300/100/260/5/35	300	100	110	110	116	35	2.500
171/360/075/310/5/40	360	75	80	80	116	40	2.500
171/360/100/310/5/40	360	100	110	110	116	40	3.000
171/400/100/350/5/40	400	100	110	110	116	40	3.500
171/400/120/350/5/50	400	120	130	130	116	50	4.000
171/400/150/350/5/50	400	150	160	160	117	50	4.300
171/500/100/450/5/50	500	100	110	110	136	50	4.500
171/500/120/450/5/50	500	120	130	130	136	50	5.000
171/500/150/450/5/50	500	150	160	160	136	50	5.700
171/500/200/450/5/80	500	200	210	210	197	80	8.000
171/600/150/550/5/80	600	150	160	160	203	80	8.000
171/600/200/550/5/80	600	200	210	210	199	870	10.000

25.4 mm = 1 inch 1 kg = 2.2 lbs

VULKOLLAN®

HEAVY-DUTY DRIVE WHEELS



SERIES 171A

VULKOLLAN®
heavy-duty drive wheels
 Stable welded wheel center
 with bore and keyway
 according to DIN 6885.
 Direct bonded VULKOLLAN®
 tread (93° Shore A).

Item #	Diameter (mm)	Wheel Width (mm)	Hub Length (mm)	Hub Diameter (mm)	Bearing ID (mm)	Load Capacity (kg)
171A/300/075/260/2/50 H7	300	75	85	96	50	2.000
171A/300/100/260/2/60 H7	300	100	110	116	60	2.500
171A/360/075/310/2/70 H7	360	75	85	116	70	2.500
171A/360/100/310/2/60 H7	360	100	110	116	60	3.000
171A/400/100/350/2/70 H7	400	100	110	121	70	3.500
171A/400/120/350/2/60 H7	400	120	130	116	60	4.000
171A/400/120/350/2/70 H7	400	120	130	116	70	4.000
171A/400/150/350/2/60 H7	400	150	160	117	60	5.500
171A/500/100/450/2/60 H7	500	100	110	116	60	4.500
171A/500/150/450/2/80 H7	500	150	160	136	80	5.700
171A/500/200/450/2/80 H7	500	200	210	135	80	8.000
171A/600/150/550/2/80 H7	600	150	160	116	80	8.250
171A/600/200/550/2/80 H7	600	200	210	135	80	10.000
171A/700/200/640/2/80 H7	700	200	210	136	80	11.500

25.4 mm = 1 inch 1 kg = 2.2 lbs

VULKOLLAN® heavy-duty drive wheels with connecting bore hold or for the reception of clamping sets available on request.



SERIES 174

Item #	Wheel Diameter (mm)	Roller Width (mm)	Fitting Length (mm)	Bore Diameter (mm)	Load Capacity (kg)
174/80/054/060/20	80	54	60	20	400
174/80/057/059/20	80	57	59	20	400
174/80/057/061/20	80	57	61	20	400
174/80/057/061/25	80	57	61	25	400
174/80/070/074/20	80	70	74	20	450
174/80/100/104/20	80	100	104	20	600
174/82/034/034,6/17	82	34	34,6	17	250
174/82/050/052/20	82	50	52	20	400
174/82/053/055/17*	82	53	55	17	400
174/82/065/063/20	82	65	63	17	450
174/82/065/067/20	82	65	67	17	450
174/82/069/062/20	82	69	62	17	500
174/82/070/066/20	82	70	66	17	500
174/82/070/072/20	82	70	72	17	500
174/82/070/074/20	82	70	74	17	500
174/82/072/078/20	82	72	78	17	500
174/82/072/078/20*	82	72	78	17	500
174/82/082/086/20	82	82	86	17	600
174/82/089/082/20	82	89	82	17	650
174/82/098/105/20	82	98	105	17	700
174/82/098/105/20*	82	98	105	17	700
174/82/100/095/20	82	100	95	17	700
174P/82/100/104/20	82	100	104	17	700
174/85/043/043/20	85	43	43	20	300
174/85/046/048/25	85	46	48	25	350
174/85/046/050/20	85	46	50	20	350
174/85/050/055/25*	85	50	55	25	400
174/85/055/060/20*	85	55	60	20	420
174/85/059,5/061,5/17*	85	59,5	61,5	17	450

25.4 mm = 1 inch 1 kg = 2.2 lbs

VULKOLLAN® pallet rollers with ball bearings

Roller body made of steel tube with ball bearings. Direct bonded VULKOLLAN® tread (93° Shore A).

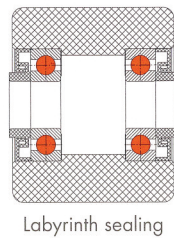
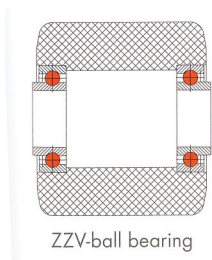


SERIES 174

Item #	Wheel Diameter (mm)	Roller Width (mm)	Fitting Length (mm)	Bore Diameter (mm)	Load Capacity (kg)
174/85/061/065/20	85	61	65	20	450
174/85/070/063/17	85	70	63	17	500
174/85/075/077/20	85	75	77	20	550
174/85/075/080/20*	85	75	80	20	580
174/85/078/078/20	85	78	78	20	600
174/85/078/080/20	85	78	80	20	600
174/85/080/082/17*	85	80	82	17	600
174/85/080/082/25	85	80	82	25	600
174/85/080/084/20*	85	80	84	20	600
174/85/080/085/20*	85	80	85	20	600
174/85/086,5/088,5/17*	85	86,5	88,5	17	650
174/85/090/092/25	85	90	92	25	700
174/85/095/100/20*	85	95	100	20	750
174/85/100/102/17*	85	100	102	17	800
174/85/100/102/25*	85	100	102	25	800
174/85/100/104/25	85	100	104	25	800
174/85/105/110/25*	85	105	110	25	800
174/85/120/124/20	85	120	124	20	900

* with labyrinth sealing

25.4 mm = 1 inch 1 kg = 2.2 lbs





SERIES 179Z

Item #	Flange Diameter (D mm)	Tread Width (W mm)	Inner Diameter (d mm)	Load Capacity (kg)
179Z/100/032/075	100	32	75	280
179Z/100/043/055	100	43	55	390
179Z/100/070/055	100	70	55	600
179Z/125/040/075	125	40	75	420
179Z/125/050/075	125	50	75	540
179Z/150/040/100	150	40	100	520
179Z/150/050/100	150	50	100	640
179Z/150/065/100	150	65	100	820
179Z/150/075/100	150	75	100	960
179Z/150/100/085	150	100	85	1.260
179Z/150/130/100	150	130	100	1.640
179Z/160/050/100	160	50	100	730
179Z/160/075/100	160	75	100	1.020
179Z/180/050/120	180	50	120	760
179Z/180/075/120	180	75	120	1.140
179Z/180/100/105	180	100	105	1.520
179Z/200/050/140	200	50	140	840
179Z/200/060/150	200	60	150	1.020
179Z/200/070/140	200	70	140	1.180
179Z/200/075/100	200	75	100	1.370
179Z/200/080/120	200	80	120	1.360
179Z/200/085/105	200	85	105	1.440
179Z/200/105/120	200	105	120	1.780
179Z/230/050/170	230	50	170	980
179Z/230/075/170	230	75	170	1.460
179Z/230/085/170	230	85	170	1.660
179Z/250/050/190	250	50	190	1.060
179Z/250/060/190	250	60	190	1.260
179Z/250/075/140	250	75	140	1.580
179Z/250/080/170	250	80	170	1.680
179Z/250/100/170	250	100	170	2.100
179Z/250/105/170	250	105	170	2.220
179Z/250/105/190	250	105	190	2.220
179Z/250/130/140	250	130	140	2.740
179Z/254/076/203	254,0 (10")	76,0 (3")	203,0 (8")	1.640
179Z/254/102/165	254,0 (10")	102,0 (4")	165,0 (6-1/2")	2.180
179Z/254/127/165	254,0 (10")	127,0 (5")	165,0 (6-1/2")	2.720
179Z/260/085/170	260	85	170	1.860
179Z/260/105/170	260	105	170	2.300
179Z/267/089/203	267,0 (10-1/2")	89,0 (3-1/2")	203,0 (8")	2.000
179Z/285/075/220	285	75	220	1.800
179Z/285/100/200	285	100	200	2.400
179Z/285/100/220	285	100	120	2.400
179Z/285/100/228	285	100	228	2.400
179Z/290/105/185	290	105	185	2.560
179Z/300/050/240	300	50	240	1.260
179Z/300/075/240	300	75	240	1.800

25.4 mm = 1 inch 1 kg = 2.2 lbs

VULKOLLAN® press-on tires

Cylindrical VULKOLLAN® press-on tires (93° Shore A) with machined steel band for rims with fit h11.



SERIES 179Z

Item #	Flange Diameter (D mm)	Tread Width (W mm)	Inner Diameter (d mm)	Load Capacity (kg)
179Z/300/090/203	300	90	203	2.160
179Z/300/100/203	300	100	203	2.750
179Z/310/060/220	310	60	220	1.480
179Z/310/120/203	310	120	203	2.980
179Z/310/120/220	310	120	220	2.980
179Z/330/089/203	330,0 (13")	89,0 (3-1/2")	203,0 (8")	2.100
179Z/330/089/254	330,0 (13")	89,0 (3-1/2")	254,0 (10")	2.350
179Z/330/127/254	330,0 (13")	127,0 (5")	254,0 (10")	3.350
179Z/330/145/193,5	330	145	193,5	3.820
179Z/343/114/225	343	114	225	3.120
179Z/345/115/245	345	115	245	3.340
179Z/350/090/280	350	90	280	2.600
179Z/350/100/280	350	100	280	2.800
179Z/350/110/270	350	110	270	3.080
179Z/350/140/270	350	140	270	3.920
179Z/360/075/270	360	75	270	2.470
179Z/360/085/270	360	85	270	2.450
179Z/381/127/286	381,0 (15")	127,0 (5")	286,0 (11-1/4")	3.860
179Z/400/075/305	400	75	305	2.750
179Z/405/065/305	405	65	305	2.100
179Z/405/130/290	405	130	290	3.800
179Z/405/130/305	405	130	305	4.000
179Z/405/145/290	405	145	290	4.100
179Z/406/178/305	406	178	305	5.400
179Z/415/075/305	415	75	305	2.500
179Z/415/090/305	415	90	305	3.000
179Z/415/100/305	415	100	305	3.370
179Z/445/178/381	445,0 (17-1/2")	178,0 (7")	381,0 (15")	6.000
179Z/457/127/308	457,0 (18")	127,0 (5")	308,0 (12-1/4")	4.650
179Z/457/152/308	457,0 (18")	152,0 (6")	308,0 (12-1/4")	4.950
179Z/457/178/308	457,0 (18")	178,0 (7")	308,0 (12-1/4")	5.400
179Z/500/085/370	500	85	370	3.000
179Z/500/100/370	500	100	370	3.660
179Z/500/140/370	500	140	370	5.130
179Z/559/152/406	559,0 (22")	152,0 (6")	406,0 (16")	5.950
179Z/559/203/406	559,0 (22")	203,0 (8")	406,0 (16")	8.000
179Z/559/229/406	559,0 (22")	229,0 (9")	406,0 (16")	8.950
179Z/610/150/410	610	150	410	6.400
179Z/645/250/500	645	250	500	2.300
179Z/660/127/508	660,0 (26")	127,0 (5")	508,0 (20")	6.550
179Z/711/203/559	711,0 (28")	203,0 (8")	559,0 (22")	10.100
179Z/711/254/559	711,0 (28")	254,0 (10")	559,0 (22")	12.650
179Z/711/305/559	711,0 (28")	305,0 (12")	559,0 (22")	15.200
179Z/750/150/640	750	150	640	7.880
179Z/900/200/670	900	200	670	12.600
179Z/920/180/770 U9	920	180	770	11.600
179Z/920/290/770	920	290	770	18.500

25.4 mm = 1 inch 1 kg = 2.2 lbs

VULKOLLAN® PALLET ROLLERS



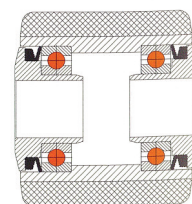
SERIES 174 VKS

Item #	Wheel Diameter (mm)	Roller Width (mm)	Fitting Length (mm)	Bore Diameter (mm)	Load Capacity (kg)
174VKS/80/074/076/13	80	74	76	13	500
174VKS/80/095/100/20	80	74	76	13	500
174VKS/82/050/055/20	82	50	55	20	350
174VKS/82/065/070/20	82	65	70	20	450
174VKS/82/069/074/20	82	69	74	20	500
174VKS/82/070/075/20	82	70	75	20	500
174VKS/82/072/077/17	82	72	77	17	500
174VKS/82/075/080/20	82	75	80	20	550
174VKS/85/060/065/12	85	60	65	12	450
174VKS/85/060/065/20	85	60	65	20	450
174VKS/85/060/065/25	85	60	65	25	450
174VKS/85/070/075/20	85	70	75	20	500
174VKS/85/070/075/25	85	70	75	25	500
174VKS/85/073/078/20	85	73	78	20	550
174VKS/85/075/080/12	85	75	80	12	580
174VKS/85/075/080/20	85	75	80	20	550
174VKS/85/075/080/25	85	75	80	25	550
174VKS/85/078/082/12	85	78	82	12	600
174VKS/85/080/082/17	85	80	82	17	600
174VKS/85/080/085/12	85	80	85	12	600
174VKS/85/080/085/20	85	80	85	20	600
174VKS/85/080/085/25	85	80	85	25	490
174VKS/85/085/089,7/25	85	85	89,7	25	660
174VKS/85/085/090/12	85	85	90	12	650
174VKS/85/085/090/20	85	85	90	20	650
174VKS/85/085/090/25	85	85	90	25	650
174VKS/85/090/095/20	85	90	95	20	700
174VKS/85/090/095/25	85	90	95	25	700
174VKS/85/095/100/17	85	95	100	17	750
174VKS/85/095/100/20	85	95	100	20	750
174VKS/85/095/100/25	85	95	100	25	750
174VKS/85/100/105/20	85	100	105	20	800
174VKS/85/100/105/25	85	100	105	25	800
174VKS/85/105/110/13	85	105	110	13	800
174VKS/85/105/110/20	85	105	110	20	800
174VKS/85/105/110/25	85	105	110	25	800
174VKS/85/110/115/25	85	100	115	25	850

25.4 mm = 1 inch 1 kg = 2.2 lbs

VULKOLLAN® pallet rollers with sealed ball bearings

Roller body made of steel tube with ball bearings. Direct bonded VULKOLLAN® tread (93° Shore A). Plastic sealing and V-ring gasket for protection of the ball bearing against splash water and foreign matter.



V-ring sealing gasket