

Urethane Washers / Antistatic Urethane Washers

(1)

(2)

Type	Standard Grade	Precision Grade	Material	Hardness	
Standard Type	URWS	UAWS	General Urethane (Ether Polyurethane)	Shore A95	Natural Color (1)
	URWH	UAWH		Shore A90	
	URWM	UAWM	General Urethane (Ester Polyurethane)	Shore A70	
	URWL	—	Shore A50		
Configurable Type	URFS	UAFSN	General Urethane (Ether Polyurethane)	Shore A95	Natural Color (1)
	URFH	UAFH		Shore A90	
	URFL	UAFM	General Urethane (Ether Polyurethane)	Shore A50	
	URFY	—	Shore A30		
	URFHE	—	Antistatic Polyurethane	Shore A90	
	URFME	—		Shore A70	
	URFLE	—		Shore A50	
	Grey (2)				

Standard Grade

D Tolerance

D	Tolerance
6-40	±0.2
40-60	±0.3
61-100	±0.4

Precision Grade

V Tolerance

V	Tolerance
2-50	+0.1
51-80	+0.2
81-100	0

① Urethane turns yellow by aging, but physical property or characteristics remain unchanged. For Yellow Discoloration of Urethane, see P.2568.

② Depending on the production lot, the side face may show marks from machining.

③ The tolerances are verified at 23°C ± 2 and 40-80% humidity.

Characteristic Values of Antistatic Urethane

Specific Volume Resistivity	2.1 x 10 ⁸ cm
Surface Resistivity	4.0 x 10 ⁹

(Conditions: Temperature 30°C Humidity 60%)

④ All other properties are equal to that of urethane of the same hardness.

Standard

Part Number		V		T											
Type	D														
Standard Grade	6	2					1	2	3						
Precision Grade	8	2	3	4					1	2	3				
URWS Shore A95	10	3	4	5	6					1	2	3	5		
URWH Shore A90	12	4	5	6	8					1	2	3	5		
URWM Shore A70	15	4	5	6	8	10					1	2	3	5	
URWL Shore A50	20	5	6	8	10	12					3	5	10		
	25	5	6	8	10	12	16	20					3	5	10
	30	5	6	8	10	12	16	20					3	5	10
	35	8	10	12	16	20	25					5	10		
	40	8	10	12	16	20	25	30					5	10	
	50	8	10	12	16	20	25	30					5	10	
	60	12	16	20	25	30	40					5	10		

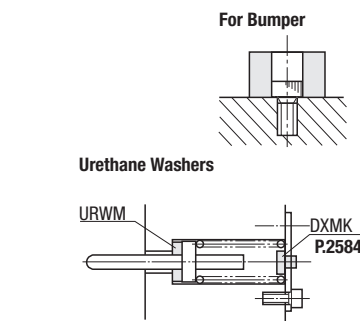
Configurable

Part Number		D		V		T	
Type	D						
	6-15					1.0-5.0	
	16-30					5.5-10.0	
	31-45					1.0-5.0	
	46-60					5.5-10.0	
	61-80					1.0-5.0	
	81-100					5.5-10.0	

Standard Grade	Precision Grade	D	V	T
URFS	UAFSN	6-15	0 No Hole	1.0-5.0
URFH	UAFH	16-30	2-41	5.5-10.0
URFM	UAFM	31-45	V≤D-4	1.0-5.0
URFL	—	46-60	0 No Hole	5.5-10.0
URFY	—	61-80	10-70	1.0-5.0
URFHE	—	81-100	V≤D-4	5.5-10.0
URFME	—		20-80	1.0-5.0
URFLE	—		V≤D-4	5.5-10.0

- ① When V=0, there is no hole.
- ② For Ceramic Urethane, T=5.0 or more.

Application Example



Part Number Example

Standard Type

Part Number - V - T

URWL20 - 10 - 5

Configurable Type

Part Number - D - V - T

URFM - D19 - V3 - T4.5

URFH - D35 - V18 - T8.0

Abrasion Resistant Urethane Washers / Heat-Resistant Urethane Washers

Vulkollan® and Abrasion Resistant Urethane are 6 times and 2.5 times more abrasion than the standard urethane respectively, and Heat Urethane is capable to withstand up to 120°C. For property details, refer to P.2568.

(1)

(2)

(3)

(4)

Type	Type	Material	Hardness	Color
Standard Type	URHWH	Heat Resistant Urethane	Shore A90	Brown (2)
	UREWH	Abrasion Resistant Urethane	Shore A70	Dark Brown (1)
	UREWM		Shore A90	Dark Brown (1)
Configurable Type	URHFH	Heat Resistant Urethane	Shore A90	Brown (2)
	VULFH	Super Abrasion Resistant Urethane Vulkollan®	Shore A92	Beige (3)
	VULFM		Shore A68	
	UREFH	Abrasion Resistant Urethane	Shore A90	Dark Brown (1)
	UREFM		Shore A70	
	URCES	Ceramic Urethane	Shore A95	Grey (4)
	URCEH		Shore A90	
	URCEM		Shore A70	

Standard Grade

Vulkollan® (3)

D Tolerance

D	Tolerance
6-40	±0.5
40-60	±0.6
61-100	±0.7

V Tolerance ±0.3

V	Tolerance
2-50	+0.1
51-80	+0.2
81-100	0

Tolerance

t	Tolerance
3-5	±0.5
5.5-10	±0.2

① For features of Ceramic Urethane, see P.2568.

② Urethane turns yellow by aging, but physical property or characteristics remain unchanged. For Yellow Discoloration of Urethane, see P.2568.

③ Depending on the production lot, the side face may show marks from machining.

④ The tolerances are verified at 23°C ± 2 and 40-80% humidity.

Standard

Part Number	D	V Selection		T Selection											
Standard Grade	6	2					1	2	3						
URHWH	8	2	3	4					1	2	3				
Heat-Resistant: Shore A90	10	3	4	5	6					1	2	3	5		
UREWH	12	4	5	6	8					1	2	3	5		
Abrasion Resistant: Shore A90	15	4	5	6	8	10					1	2	3	5	
UREWH	20	5	6	8	10	12					3	5	10		
Abrasion Resistant: Shore A90	25	5	6	8	10	12	16	20					3	5	10
UREWH	30	5	6	8	10	12	16	20					3	5	10
Abrasion Resistant: Shore A70	35	8	10	12	16	20	25					5	10		
UREWM	40	8	10	12	16	20	25	30					5	10	
Abrasion Resistant: Shore A70	45	8	10	12	16	20	25	30					5	10	
UREWM	50	8	10	12	16	20	25	30					5	10	
Abrasion Resistant: Shore A70	60	12	16	20	25	30	40					5	10		

Configurable

Part Number	D	V	T
Standard Grade	6-15	0 (No Hole)	1.0-5.0
Heat-Resistant Urethane Shore A90	16-30	2-41	5.5-10.0
*Vulkollan® Shore A92	31-45	(V≤D-4)	1.0-5.0
*Vulkollan® Shore A68	46-60	0 (No Hole)	5.5-10.0
Abrasion Resistant Urethane Shore A90	46-60	10-70	1.0-5.0
Abrasion Resistant Urethane Shore A70	61-80	(V≤D-4)	1.0-5.0
Ceramic Urethane Shore A95	61-80	0 (No Hole)	5.5-10.0
Ceramic Urethane Shore A90	81-100	20-80	1.0-5.0
Ceramic Urethane Shore A70	81-100	(V≤D-4)	5.5-10.0

Adhesive Type Washers convenient for temporary fixing.

Urethane Washers Adhesive

Type	Type	Material	Hardness	Color
Urethane Washer Adhesive	URWHS	General Urethane (Ether Polyurethane)	Shore A90	Natural Color
	URWMS		Shore A70	

Adhesive Seal (Thickness 0.14 - 0.2mm)

Part Number	D	V Selection	T Selection	Tolerance			
				T1 or 3	T5	D	V
Adhesive	8	1	3	±0.6	0~+0.6	±0.7	0~+0.7
URWHS (Shore A90)	10	3	5	±0.8	0~+0.8	±0.9	0~+0.8
URWMS (Shore A70)	12	3	5	±0.9	0~+0.9	±1.0	0~+1.0