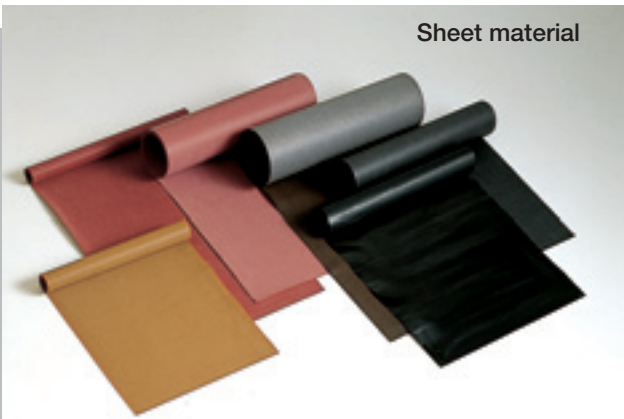


# 3

## NTN Engineering Plastics Material Standard Dimensions

NTN Engineering Plastics are widely used in many areas such as the machinery, electric, chemical industries. Among the materials of NTN Engineering Plastics, the most popular series of fluoroplastics based (**BEAREE FL 3000, FL 3020, FL 3030, FL 3700, FL 3305**) and ultra-high-molecular-weight polyethylene (**BEAREE UH 3954, UH 3000**) are prepared in sheets, rods or pipes for your own fabrication.

Sheet material



Rod material



Pipe material



## Sheet material

Sheet material is skived (turned) from a large billet made by compression molding. Surface treatment (etching) is required to make the sheet bondable. In the case of using the sheet by bonding with adhesives, the material should be treated through the preparation process for bonding (TOS).

BEAREE UH 3954 cannot be etched. One side of BEAREE FL 3305 sheet is pre-etched for bonding unless otherwise requested.

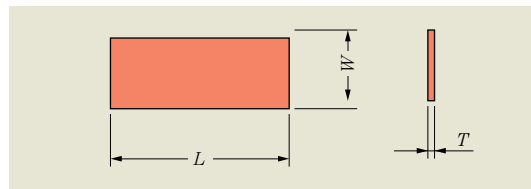
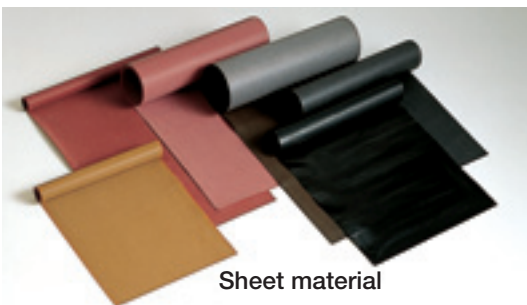
Sheet material dimension table

(Unit in mm)

Dimension			Material							
Thickness (T)	Width (W)	Maximum continuous length* (L) m	BEAREE FL3000	BEAREE FL3020	BEAREE FL3030	BEAREE FL3700	BEAREE FL3305	BEAREE UH3954		
0.1±0.02	300 <sup>+30</sup> <sub>0</sub>	10						○		
0.2±0.02								○		
0.3±0.03			○	○	○	○	○	○		
0.4±0.04			○	○	○	○	○	○		
0.5±0.05			○	○	○	○	○	○		
0.6±0.06			○	○	○	○	○			
0.8±0.06			○	○	○	○	○	○		
1 ±0.1			○	○	○	○	○	○		
1.2±0.1			500 <sup>+30</sup> <sub>0</sub> for BEAREE FL3020	5	○	○	○	○	○	
1.5±0.1					○	○	○	○	○	
2 ±0.2	○	○			○	○	○			
2.5±0.2	○	○			○	○	○			
3 ±0.3	1	1	○	○	○	○	○			
4 ±0.3			○	○	○	○	○			
5 ±0.4			○	○	○	○	○			
6 ±0.5			○	○	○	○	○			

Marked (○) is available; however, these materials are made to order. Please contact NTN if these materials are drawn as there is a possibility of cracking with certain drawing ratios.

\* Length code for 1 m is M1.

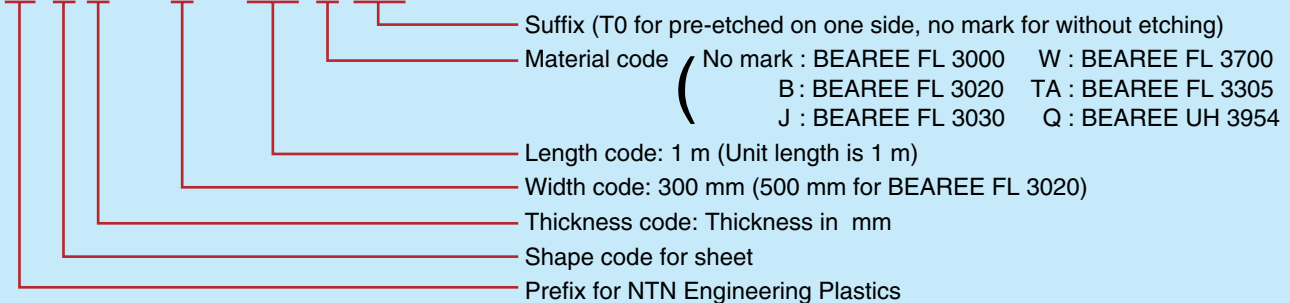


<Applications>

- Slider tape
- Washer
- Packing
- Other machine parts

Use the following designation of part number when making an order.

R-T□×□×M1□T0



(Example) R-T0.3 × 300 × M1T0  
BEAREE FL 3000 sheet with 0.3mm in thickness, 300mm in width, 1m in length and pre-etched on one side.

NOTE : For more than 1m in length, designate "CONTINUOUS SHEET"

## Rod material

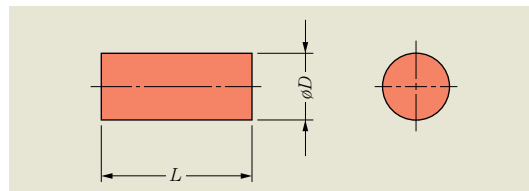
This material is formed by ram extrusion as a round bar.  
 This material is made by ram extrusion to size. This material can be machined to the required profile by turning or milling.

**Rod material dimension table** (Unit in mm)

Dimension		Material			
O.D. ( $\phi D$ )	Length ( $L$ )	BEAREE FL3000	BEAREE FL3030	BEAREE FL3700	BEAREE UH3000
9	1,000*	○	○	○	
12		○			
13					
15		○			
17		○	○		○
19		○			
20					
21					
22			○		
23			○		
28			○		
30					○
33			○		
37			○		

Marked (○) is available; however these materials are made by order.  
 The machining allowance should be deducted from the above shown dimensions.  
 Material dimensions exclude the turning surplus.

\* Length code for 1000 mm is M1.

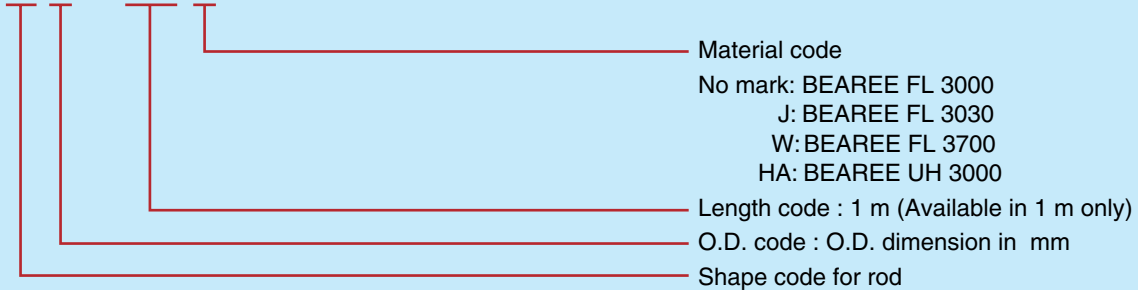


<Applications>

- Bearing bushing
- Washer
- Packing
- Other machine parts

Use the following designation of part number when making an order.

R-R□×M1□



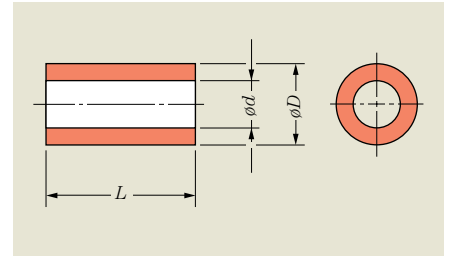
(Example) R-R13×M1W  
 BEAREE FL 3700 rod material, 13mm in O.D. and 1m in length.

## Pipe material

This pipe material is made by ram extrusion to a cylinder. This material can be machined to the required profile by turning or milling.

Dimension table for pipe material (Unit in mm)

Dimension			Material			
I.D. ( $\phi d$ )	O.D. ( $\phi D$ )	Length(L)	BEAREE FL 3000	BEAREE FL 3030	BEAREE FL 3700	BEAREE UH 3000
7	22	1,000*		○		
9	19		○		○	
10	25					○
11	20		○			
13	21					○
13	23				○	○
13	28		○			
15	20					○
15	26		○			
15	28					○
15	30		○			
17	26					○
17	27				○	
18	33		○			○
19	34					○
21	31				○	
21	38		○			○
21	42					○
21	45					○
27	43		○			
27	45				○	
29	36			○		
35	43			○		
38	46			○		



Pipe material

<Applications>

- Sliding bearing
- Washer
- Valve seat
- Other machine parts

Marked ○ is available however these materials are made by order.  
The machining allowance should be deducted from the above shown dimensions.  
Material dimensions exclude the turning surplus.

\* Length code for 1000 mm is M1.

Use the following designation of part number when making an order.

R-U□×□×M1□

- Material code: The same as rod material
- Length code: 1 m (Available in 1 m only)
- O.D. code: O.D. dimension in mm
- I.D. code: I.D. dimension in mm
- Shape code for pipe

(Example) R-U13×23×M1J

BEAREE FL 3030 pipe material, 13mm in I.D., 23mm O.D. and 1m in length.