

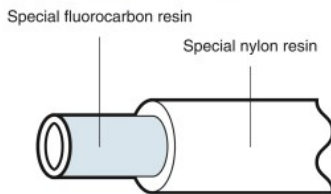
# TES

For coating (flexible, abrasion resistant)

## Features

- Bilayer structure of inner (special fluorocarbon resin) and outer (special nylon resin) layers.
- Super flexible and suitable for movable piping for robots.
- Highly smooth and highly chemical resistant inner surface, and highly abrasion resistant outer surface.
- The translucent tubing enables the fluid to be seen.

## Structure diagram



## Product number table

### ● Millimeter size type (Group 4)

Type	Outer diameter × Inner diameter (mm)	Max. working pressure (MPa at 20°C)	Min. bending radius (mm)	Weight (g/m)	Standard color (color symbol)	
					Translucent	CWH
TES-4-4×2.5	4×2.5	1.8	15	9	○	○
TES-4-6×4	6×4	1.8	20	18	○	○
TES-4-8×6	8×6	1.5	35	26	○	○
TES-4-10×8	10×8	1.1	50	33	○	○

### ● Inch size type (Group 1)

Type	Outer diameter × Inner diameter (mm)	Max. working pressure (MPa at 20°C)	Min. bending radius (mm)	Weight (g/m)	Standard color (color symbol)	
					Translucent	CWH
TES-1-1/4	06.35×4.57	1.4	25	18	○	○
TES-1-3/8	9.53×6.99		40	37	○	○
TES-1-1/2	12.70×9.56		55	61	○	○

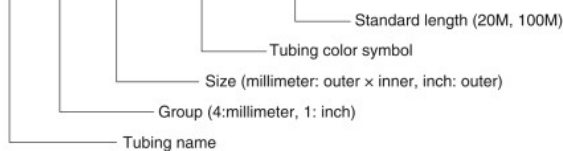
\* Made to Order

## Standard length

20M, 100M

## Product number example

**TES - 4 - 6x4 - CWH - 100M**



## Applicable fittings



(\*1) Combinatory use of TES tubing and Chemifit series mixes general and clean type performances. When using them together in a clean environment, be aware of how this could lower the cleanliness level.



## Operating fluid, working temperature range

Operating fluid	Working temperature range
Air	-40°C~+100°C
Water	0°C~+70°C
Water-based paint <sup>(*)</sup>	0°C~+40°C

(\*1) Water-based paint, or aliphatic or aromatic carbon hydride solvent.  
☞ Contact us for other operating fluids.

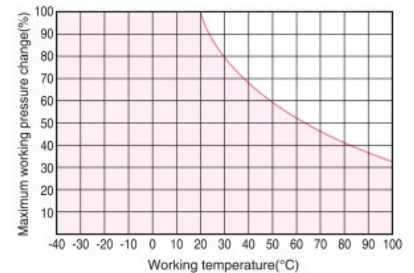
## Negative pressure performance

-101.294kPa

## Relation between the working temperature and the maximum working pressure

The maximum working pressure varies with the working temperature (environmental temperature). For use at an abnormal temperature, always check the maximum working pressure change in the graph below and keep the pressure within the indicated range.

⚠ Caution: Using tubes at a pressure outside the range may cause accidents or damage, for which Nitta is not liable.



## Handling instructions

⚠ Caution: When water is used as the operating fluid, the tubing material might degrade depending on the additive. Contact us for details.

⚠ Caution: When water is used as the operating fluid, keep the surge pressure below the maximum working pressure. Also, do not allow the water to freeze.

☞ See page 10 for common instructions for tubing products.

## Reference

TES Tubing  
Technology Data .....P.189  
Chemical resistance  
specification table .....P.189  
Effective sectional area .....P.168  
Negative-pressure  
performance list .....P.169