

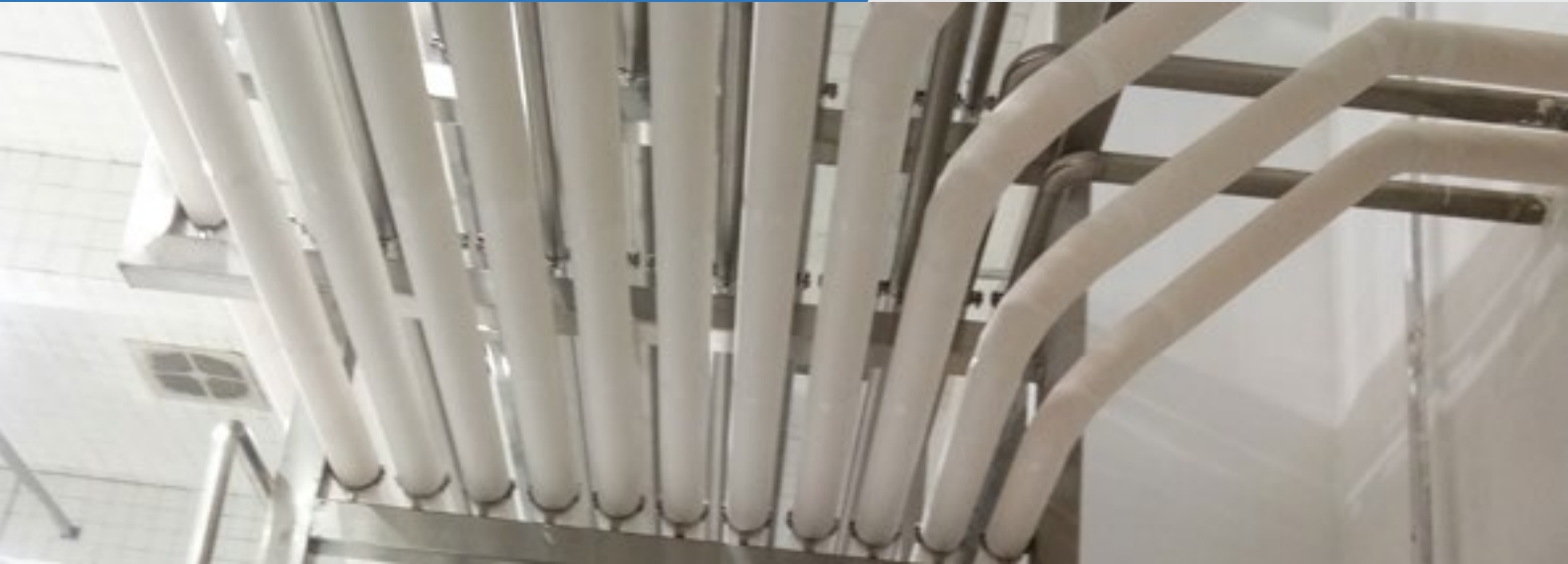
# T-FIT® Hygiene

## Condensation control in F&B production environments

# T-FIT®

INSULATION

**Fit** to perform. **Fit** to last



T-FIT® Hygiene insulation is developed from Zotefoams' ZOTEK® F 43 HT PVDF closed cell foam, a material which has numerous benefits when it comes to insulation, especially within food and beverage, dairy and other aseptic, sterile environments.

### Introduction

As cold pipe work is susceptible to condensation forming on its surface - this occurs if the surface temperature of the pipe falls below the dew point of its environment - formation of condensation in controlled manufacturing facilities can lead to contamination of the environment and compromise the quality of products being produced, so must be avoided. Therefore, the thickness of T-FIT Hygiene insulation can have a significant impact on the ability to prevent condensation build up.

This application profile outlines information regarding the thickness of T-FIT Hygiene insulation that is predicted to prevent condensation formation on cold pipework for a selection of different pipe temperatures and ambient conditions.

The information is generated by theoretical calculation according to ISO 12241:2022 and is provided only as a guide for installation in typical cleanroom environments where condensation control is required.

T-FIT Hygiene can be supplied in 12.7mm wall thickness and is the basis on which the information below is generated. The data tables show predictions for a 1" ASME pipe (Pipe OD = 25.4 mm).

Please contact the T-FIT sales team for further information and estimates to satisfy alternative environmental conditions or pipe sizes.

## Relative humidity: 30% Pipe OD 25mm

Pipe temperature	-80	-50	-25	-20	-15	-10	-5	0	5	10	15	20
Ambient temperature	Thickness of T-FIT® Hygiene required to prevent condensation (mm)											
5	9	5.4	2.1	1.4	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1
10	9.2	5.8	2.6	2	1.3	0.5	0.1	0.1	0.1	0.1	0.1	0.1
15	9.4	6.1	3.1	2.5	1.8	1.2	0.4	0.1	0.1	0.1	0.1	0.1
20	9.6	6.4	3.6	3	2.3	1.7	1	0.4	0.1	0.1	0.1	0.1
25	9.8	6.7	4	3.4	2.8	2.2	1.6	0.9	0.3	0.1	0.1	0.1
30	9.9	7	4.4	3.8	3.2	2.7	2.1	1.5	0.8	0.2	0.1	0.1
35	10.1	7.2	4.7	4.2	3.6	3.1	2.5	1.9	1.4	0.8	0.1	0.1

## Relative humidity: 40% Pipe OD 25mm

Pipe temperature	-80	-50	-25	-20	-15	-10	-5	0	5	10	15	20
Ambient temperature	Thickness of T-FIT® Hygiene required to prevent condensation (mm)											
5	11.6	7.3	3.3	2.4	1.5	0.6	0.1	0.1	0.1	0.1	0.1	0.1
10	11.9	7.8	4	3.1	2.3	1.4	0.5	0.1	0.1	0.1	0.1	0.1
15	12.2	8.2	4.5	3.8	3	2.1	1.3	0.4	0.1	0.1	0.1	0.1
20	12.4	8.5	5.1	4.3	3.6	2.8	2	1.2	0.3	0.1	0.1	0.1
25	12.6	8.9	5.6	4.9	4.2	3.4	2.7	1.9	1.1	0.2	0.1	0.1
30		9.2	6	5.4	4.7	4	3.2	2.5	1.8	1	0.1	0.1
35		9.5	6.4	5.8	5.1	4.5	3.8	3.1	2.4	1.7	0.9	0.1

## Relative humidity: 50% Pipe OD 25mm

Pipe temperature	-80	-50	-25	-20	-15	-10	-5	0	5	10	15	20
Ambient temperature	Thickness of T-FIT® Hygiene required to prevent condensation (mm)											
5		9.7	4.8	3.7	2.6	1.4	0.2	0.1	0.1	0.1	0.1	0.1
10		10.3	5.6	4.6	3.6	2.5	1.3	0.1	0.1	0.1	0.1	0.1
15		10.8	6.3	5.4	4.4	3.4	2.3	1.2	0.1	0.1	0.1	0.1
20		11.2	7	6.1	5.2	4.2	3.2	2.2	1.1	0.1	0.1	0.1
25		11.7	7.6	6.7	5.8	4.9	4	3	2.1	1	0.1	0.1
30		12.1	8.1	7.3	6.5	5.6	4.7	3.8	2.9	2	0.9	0.1
35		12.4	8.7	7.9	7.1	6.2	5.4	4.5	3.8	2.8	1.9	0.8

**Relative humidity: 60% Pipe OD 25mm**

Pipe temperature	-80	-50	-25	-20	-15	-10	-5	0	5	10	15	20
Ambient temperature	Thickness of T-FIT® Hygiene required to prevent condensation (mm)											
5			6.9	5.5	4.1	2.6	1	0.1	0.1	0.1	0.1	0.1
10			7.9	6.6	5.3	3.9	2.5	0.9	0.1	0.1	0.1	0.1
15			8.8	7.6	6.4	5.1	3.7	2.3	0.8	0.1	0.1	0.1
20			9.6	8.5	7.3	6.1	4.9	3.6	2.2	0.7	0.1	0.1
25			10.4	9.3	8.2	7	5.9	4.7	3.4	2.1	0.6	0.1
30			11.1	10	9	7.9	6.8	5.6	4.6	3.3	2	0.5
35			11.7	10.7	9.7	8.7	7.6	6.5	5.6	4.4	3.2	1.9

**Relative humidity: 70% Pipe OD 25mm**

Pipe temperature	-80	-50	-25	-20	-15	-10	-5	0	5	10	15	20
Ambient temperature	Thickness of T-FIT® Hygiene required to prevent condensation (mm)											
5			10.1	8.3	6.4	4.5	2.4	0.1	0.1	0.1	0.1	0.1
10			11.4	9.7	8	6.2	4.3	2.2	0.1	0.1	0.1	0.1
15			12.6	11	9.4	7.7	5.9	4.1	2.1	0.1	0.1	0.1
20				12.1	10.6	9	7.4	5.7	3.9	2	0.1	0.1
25					11.8	10.3	8.7	7.1	5.5	3.8	1.9	0.1
30						11.4	9.9	8.4	7	5.4	3.7	1.8
35						12.4	11	9.6	8.4	6.9	5.3	3.6

**Relative humidity: 80% Pipe OD 25mm**

Pipe temperature	-80	-50	-25	-20	-15	-10	-5	0	5	10	15	20
Ambient temperature	Thickness of T-FIT® Hygiene required to prevent condensation (mm)											
5					10.6	7.8	4.8	1.5	0.1	0.1	0.1	0.1
10						10.2	7.5	4.6	1.3	0.1	0.1	0.1
15						12.4	9.9	7.2	4.4	1.2	0.1	0.1
20							12	9.5	7	4.2	1.1	0.1
25								11.6	9.3	6.8	4.1	1
30									11.5	9.2	6.7	4
35										11.3	9	6.6

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#### Zotefoams plc

675 Mitcham Road  
Croydon  
Surrey  
CR9 3AL  
United Kingdom

Tel: +44 (0) 20 8664 1600  
Email: t-fitsales@zotefoams.com

#### T-FIT Insulation Solutions India Private Limited

810 Shapath V, S.G. Highway  
Ahmedabad  
Gujarat  
380015

Tel: +91 (0) 7433946464  
Email: t-fitindia@zotefoams.com

#### Zotefoams T-FIT Material Technology (Kunshan) Co., Ltd

181 Huanlou Road  
Development Zone,  
Kunshan City,  
Jiangsu Pr.  
China 215333

Tel: +86 (0)512 5012 6001-8001  
Email: t-fitchina@zotefoams.com

#### Zotefoams Inc.

55 Precision Drive  
Walton KY  
41094 USA

Tel: +1 (0) 859 371 4025  
Free: (800) 362-8358 (US Only)  
Email: t-fitusa@zotefoams.com

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