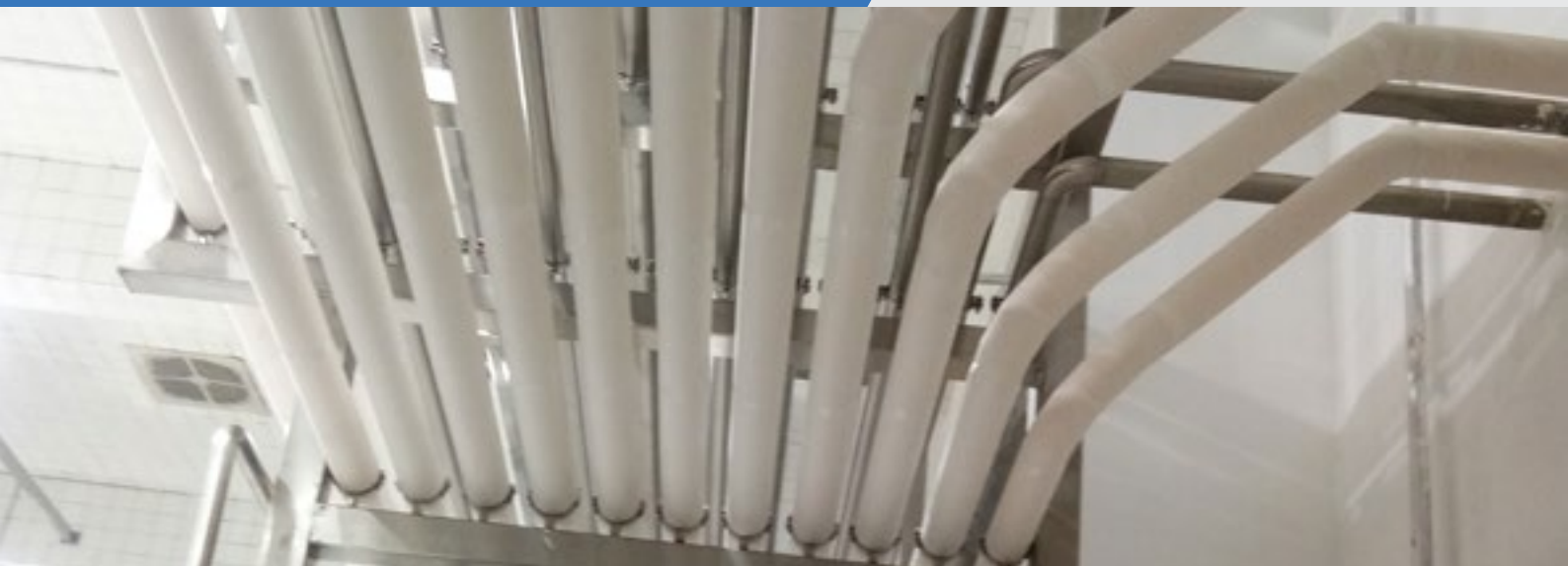


T-FIT® Hygiene

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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