

T-FIT® Clean

Condensation control in cleanroom environments

T-FIT®

INSULATION

Fit to perform. **Fit** to last



T-FIT® Clean insulation is developed from Zotefoams' ZOTEK® F 42 HT LS PVDF closed cell foam, a material which has numerous benefits when it comes to insulation, especially within Pharma, Biotech and Semiconductor cleanroom 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 clean 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 Clean 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 Clean 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 and is provided only as a guide for installation in typical cleanroom environments where condensation control is required.

Standard T-FIT Clean product thickness is 6.35 mm 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 temperature	-20	-15	-10	-5	0	5	10	15	20
Ambient temperature	Minimum thickness of T-FIT® Clean required to prevent condensation (mm)								
5	1.3	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1
10	1.9	1.2	0.5	0.1	0.1	0.1	0.1	0.1	0.1
15	2.4	1.8	1.2	0.4	0.1	0.1	0.1	0.1	0.1
20	2.9	2.3	1.7	1.1	0.4	0.1	0.1	0.1	0.1
25	3.4	2.8	2.3	1.6	1.0	0.3	0.1	0.1	0.1

Relative humidity: 40%

Pipe temperature	-20	-15	-10	-5	0	5	10	15	20
Ambient temperature	Minimum thickness of T-FIT® Clean required to prevent condensation (mm)								
5	2.3	1.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1
10	3.0	2.2	1.4	0.5	0.1	0.1	0.1	0.1	0.1
15	3.7	2.9	2.1	1.3	0.4	0.1	0.1	0.1	0.1
20	4.3	3.6	2.8	2.0	1.2	0.3	0.1	0.1	0.1
25	4.9	4.2	3.5	2.7	1.9	1.1	0.2	0.1	0.1

Relative humidity: 50%

Pipe temperature	-20	-15	-10	-5	0	5	10	15	20
Ambient temperature	Minimum thickness of T-FIT® Clean required to prevent condensation (mm)								
5	3.6	2.5	1.4	0.2	0.1	0.1	0.1	0.1	0.1
10	4.4	3.5	2.4	1.3	0.1	0.1	0.1	0.1	0.1
15	5.3	4.3	3.4	2.3	1.2	0.1	0.1	0.1	0.1
20	6.0	5.2	4.2	3.3	2.2	1.1	0.1	0.1	0.1
25		5.9	5.0	4.1	3.2	2.1	1.0	0.1	0.1

Relative humidity: 60%

Pipe temperature	-20	-15	-10	-5	0	5	10	15	20
Ambient temperature	Minimum thickness of T-FIT® Clean required to prevent condensation (mm)								
5	5.3	4.0	2.6	1.0	0.1	0.1	0.1	0.1	0.1
10		5.2	3.9	2.5	0.9	0.1	0.1	0.1	0.1
15		6.3	5.1	3.8	2.4	0.8	0.1	0.1	0.1
20			6.2	5.0	3.7	2.3	0.8	0.1	0.1
25				6.1	4.8	3.6	2.2	0.7	0.1

Relative humidity: 70%

Pipe temperature	-20	-15	-10	-5	0	5	10	15	20
Ambient temperature	Minimum thickness of T-FIT® Clean required to prevent condensation (mm)								
5		6.2	4.4	2.4	0.1	0.1	0.1	0.1	0.1
10			6.1	4.3	2.3	0.1	0.1	0.1	0.1
15				6.0	4.2	2.2	0.1	0.1	0.1
20					5.9	4.0	2.1	0.1	0.1
25						5.7	3.9	2.0	0.1

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