

T-FIT[®] Clean

T-FIT Clean PVDF Foam Insulation
comparative performance data

T-FIT[®]

INSULATION

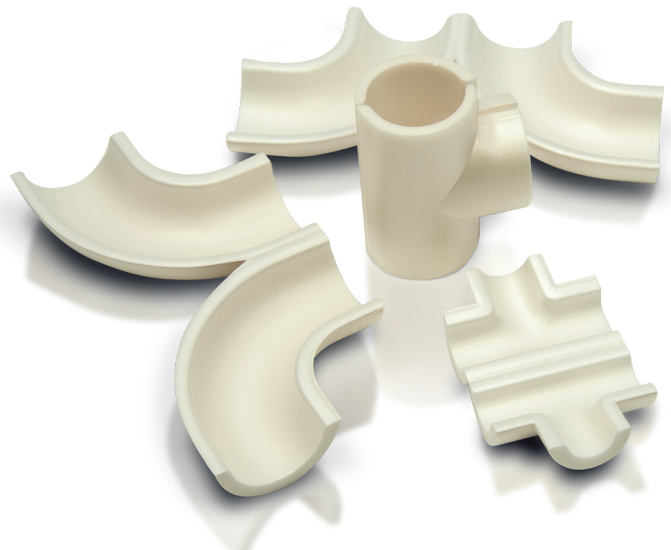
Fit to perform. Fit to last



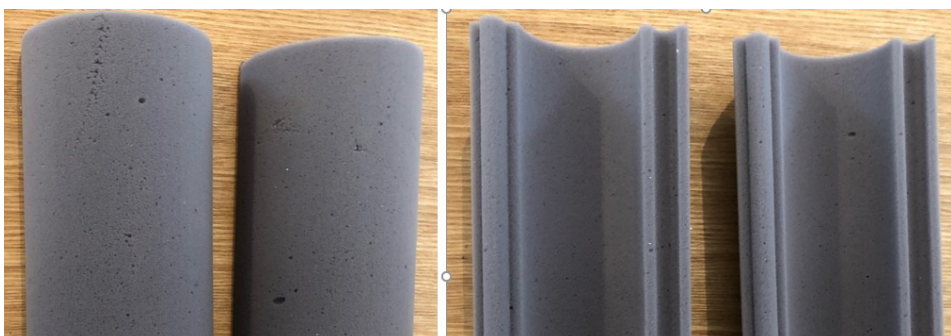
T-FIT[®] Clean Insulation is manufactured from Zotefoams ZOTEK[®] F42 HT LS fine, closed cell foam, the only foam product to be specification tested to FM4910 Clean Room Materials Protocol.

Introduction

T-FIT[®] Clean consistently outperforms the competition in the most demanding cleanroom and manufacturing environments. Fire-retardant, moisture- and bacteria-resistant, T-FIT[®] Clean is the only insulation solution that complies with internationally-recognised cleanroom standards. The comparative data shown in the table below is based on readily available product information typically located on manufacturers websites.



Melamine Foam Insulation



Pre-jacketed Melamine Foam Insulation

Feature	T-FIT Clean	Melamine Foam	Explanation
Base polymer	PVDF	Melamine	PVDF produced with zero FR/UV/ant-microbial additives, Melamine use of additives not known
Material Brand	ZOTEK F	Various	ZOTEK F produced by Zotefoams plc.
Structure	Closed Cell	Open cell	T-FIT fully closed cell, even if damaged
Jacket required	No	Yes	Melamine based product require outer jacket to prevent water/ vapour absorption
Minimum gauge	6.35mm -1/4"	25mm - 1"	By it's nature T-FIT can be supplied at 1/4"/6.35mm
E84 reaction to fire	0/0	25/50	This the standard used by UL to test to UL723
UL723	0/0	Test not found	UL independently test/verify result for T-FIT
FM4910	Yes	Test not found	Independent specification test by Factory Mutual of T-FIT Clean for use in clean rooms
Euroclass EN13501	B S1 D0	Test not found	B S1 D0 is the best result for a polymer insulation product
Thermal conductivity	0.0347	0.039	Expressed in W/m.K at 25°C, melamine 12.5% higher than T-FIT
Ease of installation	Easy/fast	Care/jacketing	Making sure outer cladding is sealed properly takes time and skill
System supply	Yes	No	T-FIT is supplied with elbows, tee's, insulation boxes, tape and adhesive
Density variation	+/- 15%	+/- 43%	Thermal performance must be impacted given a wide variance on melamine density
Particulates	No	Yes	Fume cupboard testing clearly shows no particulate release form T-FIT Clean
Surface voids	None	Yes	Melamine data sheet states "upper limit 10 voids per m ² , range 5 to 15mm"
VOC/AMC emissions	Very low	Test not found	Total VOC measurement 9 ug/g for ZOTEK F, outgassing from jacketing not found
Upper service temp	160°C/320°F peak	176°C/350°F	Melamine based on ASTM C356/1410 based on 24 hours testing only
Lower service temp	-80°C/-112°F	-40°C/-40°F	Informal testing indicates T-Fit Clean can operate at ~-195°C
Compression/ recovery	Excellent	Very Poor	T-FIT Clean is crosslinked, deformation of melamine can cause failure of cladding systemd
Resistance to fungal attack	None after 28 days	Test not found	According to ASTM G21 - 15, test data not found for jacketing
UV resistance	Very high	Test not found	PVDF is naturally UV resistant

Elastomeric Foam Insulation



Feature	T-FIT Clean	Elastomeric		Explanation
Base polymer	PVDF	NBR/PVC	EPDM	PVDF produced with zero FR/UV/ant-microbial additives
Material Brand	ZOTEK F	Various	Various	ZOTEK F produced by Zotefoams plc
Structure	Closed Cell	Closed cell	Closed cell	T-FIT fully closed cell, even if damaged
Minimum gauge	6.36mm - 1/4"	13mm - 1/2"	13mm - 1/2"	By it's nature T-FIT can be supplied at 1/4"/6.35mm, elastomeric generally 13mm - 1/2"
UL723/E84	0/0	Test not found	25/50	UL independently test/verify results of E84 testing
FM4910	Yes	Test not found	Test not found	Independent specification test by Factory Mutual of T-FIT Clean for use in clean rooms
Euroclass EN13501	B S1 D0	B S3 D0	D S3 D0	B S1 D0 is the best result for a polymer insulation product
Thermal conductivity	0.0314	0.033	0.041	Expressed in W/m.K at 0°C
Ease of installation	Easy/fast	Skills needed	Skills needed	Fittings need to be fabricated to install Elastomeric insulation
System supply	Yes	No	No	T-FIT Clean is supplied with elbows, tee's, insulation boxes, tape and adhesive
VOC/AMC emissions	17.95	280	352	Based on Exyte testing according to VDI 2083-P17, measured in ug/g
Upper service temp	160°C/320°F peak	110°C/230°F	125°C/257°F	Elastomeric data based on 72 hour test only
Lower service temp	-80°C/-112°F	-40°C/-40°F	-50°C/-58°F	Informal testing indicates T-FIT Clean can operate at ~-195°C
WVDR μ value	6,500	10,000	3,000	Water Vapour Diffusion Resistance measurement
Compression/recovery	Excellent	Poor	Poor	Crosslinked nature of T-FIT Clean prevents permanent deformation when compressed
Fungal resistance	None after 28 days	Test not found	Level 2 growth	According to ASTM G21 - 15
UV resistance	Very high	No	Yes	PVDF is naturally UV resistant

Stonewool HVAC Insulation



Feature	T-FIT Clean	Stonewool H&V	Explanation
Base polymer	PVDF	Stonewool fibres	PVDF produced with zero FR/UV/ant-microbial additives, Melamine use of additives not known
Material Brand	ZOTEK F	Various	ZOTEK F produced by Zotefoams plc.
Structure	Closed Cell	Open cell	T-FIT fully closed cell, even if damaged
Jacket required	No	Yes	Fibre based product require outer jacket to prevent water/vapour absorption
Minimum gauge	1/4"	20mm - 3/4"	By it's nature T-FIT can be supplied at 1/4"/6.35mm
UL723/E84 reaction to fire	0/0	Test not found	UL independently test/verify results of E84 testing
FM4910	Yes	Test not found	Independent specification test by Factory Mutual of T-FIT Clean for use in clean rooms
Thermal conductivity	0.032	0.033	Expressed in W/m.K at 10°C/50°F
Ease of installation	Easy/fast	Care/slow	Making sure outer cladding is sealed properly takes time and skill, fittings fabricated from straights
System supply	Yes	No	T-FIT is supplied with elbows, tee's, insulation boxes, tape and adhesive
Particulates	No	Yes	Fume cupboard testing clearly shows no particulate release form T-FIT Clean
VOC/AMC emissions	Very low	Not found	Total VOC measurement 9 ug/g for ZOTEK F, outgassing from jacketing not found
Upper service temp	160°C/320°F peak	250°C/482°F	Surface temperature not to exceed 80°C/176°F to maintain cladding bond strength
Lower service temp	-80°C/-112°F	0°C/32°F	Informal testing indicates T-FIT Clean can operate at ~-195°C/383°F
Compression/recovery	Excellent	Very poor	Crosslinked nature of T-FIT Clean prevents permanent deformation when compressed
Fungal resistance	None after 28 days	Test not found	According to ASTM G21 - 15

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Environment
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