

T-FIT®

Avoiding contact burn injuries from heated surfaces using T-FIT insulation

T-FIT®

INSULATION

Fit to perform. Fit to last



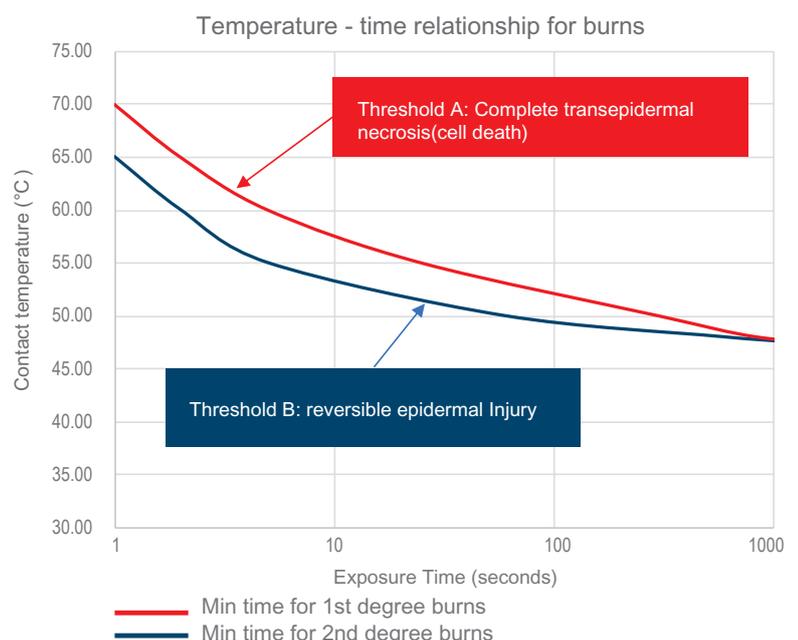
Through internal testing, T-FIT® insulation materials have been shown to provide protection against contact burn injuries from heated surfaces. This document provides a brief summary of the testing and results.

According to ASTM C 1055: Standard guide for heated system surface conditions that produce contact burn injuries, the maximum level of injury recommended on the average person is first degree burns after 5 s contact time for industrial processes. Second degree burns are more serious than first degree because tissue is permanently damaged, so they are not deemed acceptable in most cases.

To measure the skin contact temperature from the surface of T-FIT insulation, covering a hot pipe, a thermesthesiometer device was used in accordance with ASTM C 1057. The thermesthesiometer provides an electrical analogue of the finger's thermal response when touching a heated surface. The calibrated sensor probe is placed against the heated surface for the designated contact time and the maximum temperature is measured.

The graph in Figure 1, based on that found in the ASTM C 1055 standard, can be used to determine the potential user injury at the measured contact temperature over a specified contact time.

Figure 1: Graph showing threshold for burn injuries for various contact temperatures and exposure times



No burn injuries are expected to occur below the limit represented by the Threshold B curve and, in the region between Threshold A and B, the maximum injury that is expected to occur is first degree burns. This is an estimation as to what injuries the 'average' individual may obtain from contact with the heated system, and unusual conditions or physical health variations may modify the results.

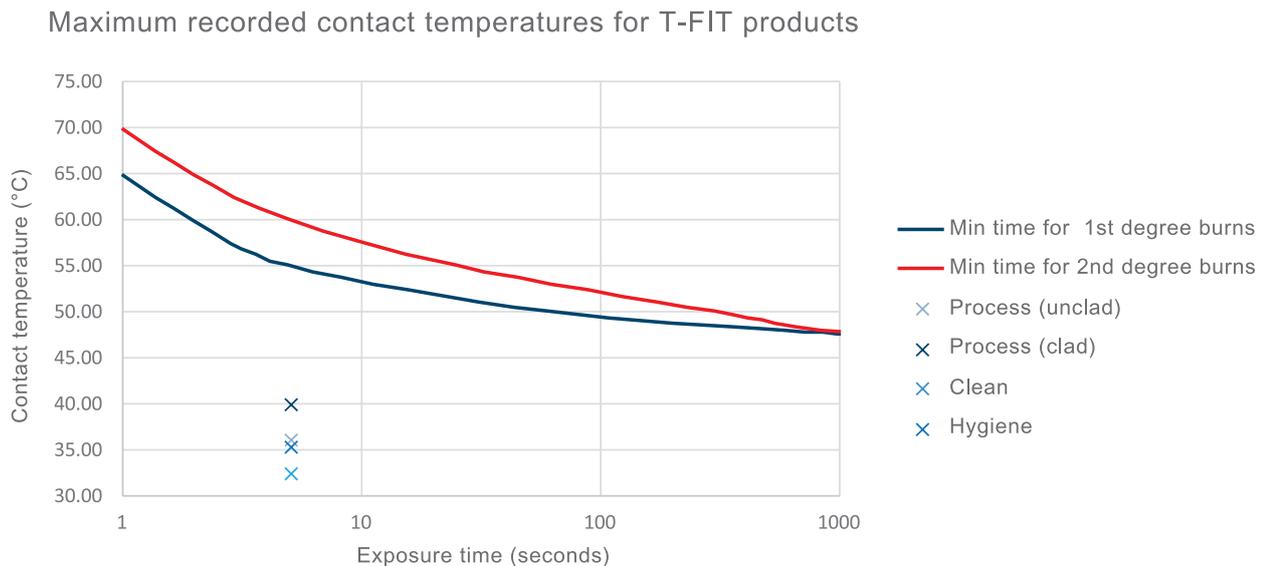
Evaluation of the maximum operating surface temperature must be made under worst case conditions, so the T-FIT products were tested at their highest operating temperatures and lowest insulation thickness.

Table 1: Maximum contact temperatures recorded by thermesthesiometer

Product (all 6.35 mm thick)	Maximum operating temperature stated on data sheet (°C)	Actual temperature of mandrel (°C)	Maximum 5 s contact temperature recorded (°C)
T-FIT Process unclad	200	204	36
T-FIT Process clad	200	189	40
T-FIT Clean	160	159	33
T-FIT Hygiene	145	147	35

The graph in Figure 2. compares the contact temperatures recorded by the thermesthesiometer to the thresholds in Figure 1. When using a contact time of 5 s, the results show that no burn injuries are expected to be suffered by an average individual, as the maximum contact temperatures fall well below Threshold B.

Figure 2: Graph showing the maximum contact temperatures for T-FIT products compared to the threshold for burn injuries



Exclusion of Liability

Any information contained in this document is, to the best of the knowledge and belief of Zotefoams plc and of Zotefoams Inc. (together herein referred to as ZOTEFOAMS), accurate. Any liability on the part of ZOTEFOAMS or any subsidiary or holding company of ZOTEFOAMS for any loss, damage, costs or expenses directly or indirectly arising out of the use of such information or the use, application, adaptation or processing of any goods, materials or products described herein is, save as provided in ZOTEFOAMS' conditions of sale ("Conditions of Sale"), hereby excluded to the fullest extent permitted by law.

Where ZOTEFOAMS' goods or materials are to be used in conjunction with other goods or materials, it is the responsibility of the user to obtain from the manufacturers or suppliers of the other goods or materials all technical data and other properties relating to those other goods or materials. Save as provided in the Conditions of Sale no liability can be accepted in respect of the use of ZOTEFOAMS' goods or materials in conjunction with any other goods or materials.

Where ZOTEFOAMS' goods or materials are likely to come into contact with foodstuffs or pharmaceuticals, whether directly or indirectly, or are likely to be used in the manufacture of toys, prior written confirmation of compliance with relevant legislative or regulatory standards for those applications may be requested from ZOTEFOAMS, if appropriate. Save as provided in the Conditions of Sale no liability can be accepted for any damage, loss or injury directly or indirectly arising out of any failure by the user to obtain such confirmation or to observe any recommendations given by or on behalf of ZOTEFOAMS.

ZOTEFOAMS MAKES NO WARRANTIES EXPRESS OR IMPLIED, EXCEPT TO THE EXTENT SET OUT IN THE CONDITIONS OF SALE, AND HEREBY SPECIFICALLY EXCLUDES ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ANY GOODS, MATERIALS OR PRODUCTS DESCRIBED HEREIN.

Zotefoams plc Management systems are covered by the following:



Quality
FM 01870
ISO 9001:2015



Safety
OHS 52538
ISO 45001: 2018



Environment
EMS 36270
ISO 14001:2015

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

T-FIT® and ZOTEK® are registered trademarks of Zotefoams plc. Kynar® is a registered trademark of Arkema Inc. All rights reserved

Issue 2 Revision 5
April 2021

If you would like more information visit our website www.zotefoams.com