

---

---

**Plastics — Joining of thermoplastic  
moulded components — Specification  
of variables for thermal joining  
processes**

*Plastiques — Assemblage de composants thermoplastiques moulés —  
Spécification de variables pour les procédés d'assemblage thermique*

**iTeh Standards**  
**(<https://standards.iteh.ai>)**  
**Document Preview**

[ISO 23512:2021](https://standards.iteh.ai/catalog/standards/iso/3e4355ec-6673-430e-adba-0fe9b753cb56/iso-23512-2021)

<https://standards.iteh.ai/catalog/standards/iso/3e4355ec-6673-430e-adba-0fe9b753cb56/iso-23512-2021>



**iTeh Standards**  
**(<https://standards.iteh.ai>)**  
**Document Preview**

[ISO 23512:2021](https://standards.iteh.ai/catalog/standards/iso/3e4355ec-6673-430e-adba-0fe9b753cb56/iso-23512-2021)

<https://standards.iteh.ai/catalog/standards/iso/3e4355ec-6673-430e-adba-0fe9b753cb56/iso-23512-2021>



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Technical content of thermal joining process specification (TJPS)</b> .....	<b>3</b>
4.1 General.....	3
4.2 Related to the joining organization.....	3
4.3 Related to the sub-component(s).....	3
4.4 Common to all joining processes.....	3
4.5 Specific to a joining process.....	4
4.5.1 Ultrasonic welding/staking/spot welding.....	4
4.5.2 Infrared welding.....	4
4.5.3 Hot gas convection welding.....	5
4.5.4 Linear vibration welding.....	5
4.5.5 Orbital vibration welding.....	5
4.5.6 Spin welding.....	5
4.5.7 Laser welding.....	6
4.5.8 Hot plate welding.....	7
4.5.9 Heat staking – hot air.....	7
4.5.10 Heat staking – electrical.....	7
4.5.11 Heat staking – infrared.....	7
<b>Annex A (informative) Template for TJPS: Ultrasonic welding/staking/spot welding</b> .....	<b>9</b>
<b>Annex B (informative) Template for TJPS: Infrared welding</b> .....	<b>11</b>
<b>Annex C (informative) Template for TJPS: Hot gas convection welding</b> .....	<b>13</b>
<b>Annex D (informative) Template for TJPS: Linear vibration welding</b> .....	<b>15</b>
<b>Annex E (informative) Template for TJPS: Orbital vibration welding</b> .....	<b>17</b>
<b>Annex F (informative) Template for TJPS: Spin welding</b> .....	<b>19</b>
<b>Annex G (informative) Template for TJPS: Laser welding</b> .....	<b>21</b>
<b>Annex H (informative) Template for TJPS: Hot plate welding</b> .....	<b>23</b>
<b>Annex I (informative) Template for TJPS: Heat staking – hot air</b> .....	<b>25</b>
<b>Annex J (informative) Template for TJPS: Heat staking – electrical</b> .....	<b>27</b>
<b>Annex K (informative) Template for TJPS: Heat staking – infrared</b> .....	<b>29</b>
<b>Annex L (informative) Worked example for TJPS: Hot plate welding</b> .....	<b>30</b>
<b>Annex M (informative) Worked example for TJPS: Heat staking – electrical</b> .....	<b>33</b>
<b>Bibliography</b> .....	<b>37</b>

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 61, *Plastics*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

ISO 23512:2021

<https://standards.iteh.ai/catalog/standards/iso/3e4355ec-6673-430e-adba-0fe9b753cb56/iso-23512-2021>

## Introduction

This document has been developed to help organizations better understand and implement controls with thermal joining processes through the use of thermal joining process specifications.

# iTeh Standards (<https://standards.itih.ai>) Document Preview

[ISO 23512:2021](https://standards.itih.ai/catalog/standards/iso/3e4355ec-6673-430e-adba-0fe9b753cb56/iso-23512-2021)

<https://standards.itih.ai/catalog/standards/iso/3e4355ec-6673-430e-adba-0fe9b753cb56/iso-23512-2021>

