

भारतीय मानक  
Indian Standard

IS 812 (Part 4) : 2024  
ISO/TR 25901-4 : 2016

---

---

वेल्डिंग और संबद्ध प्रक्रियाएं — शब्दावली  
भाग 4 आर्क वेल्डिंग

**Welding and Allied Processes —  
Vocabulary  
Part 4 Arc Welding**

ICS 01.040.25, 25.160.10

© BIS 2024

© ISO 2016



भारतीय मानक ब्यूरो  
BUREAU OF INDIAN STANDARDS  
मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली - 110002  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI - 110002  
[www.bis.gov.in](http://www.bis.gov.in) [www.standardsbis.in](http://www.standardsbis.in)

June 2024

Price Group 9

## NATIONAL FOREWORD

This Indian Standard (Part 4) which is identical to ISO/TR 25901-4 : 2016 'Welding and allied processes — Vocabulary — Part 4: Arc welding' issued by the International Organization for Standardization (ISO), was adopted by the Bureau of Indian Standards on the recommendation of the Welding General and its Applications Sectional Committee and approval of the Metallurgical Engineering Division Council.

This standard was first published in 1957. In order to ensure harmonization of the vocabulary used in the field of welding on an international level, the Committee decided to revise this standard to bring it in line with ISO standards by splitting in four parts as the requirements of IS 812 : 1957 are covered in multiple ISO standards.

This Indian Standard is published in four parts. The other parts in this series are:

Part 1	General terms
Part 2	Health and safety
Part 3	Welding processes

The text of ISO standard has been approved as suitable for publication as an Indian Standard without deviations. Certain terminologies and conventions are, however, not identical with those used in Indian Standard. Attention is especially drawn to the following:

- a) Wherever the words 'International Standard' appear referring to this standard, it should be read as 'Indian Standard'; and
- b) Comma (,) has been used as a decimal marker, while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

# Contents

Page

<b>1</b>	<b>Scope</b> .....	<b>1</b>
<b>2</b>	<b>Terms and definitions</b> .....	<b>1</b>
2.1	Terms related to welding procedures .....	1
2.2	Terms related to welding execution .....	2
2.3	Terms related to welding process characteristics .....	3
2.4	Terms related to welding consumables .....	6
2.5	Terms related to characteristics of welding power source .....	8
2.6	Terms related to welding equipment .....	8
<b>Annex A (informative) Alphabetical index of English terms with French and German translations</b> .....		<b>10</b>
<b>Annex B (informative) Alphabetical index of arc welding related terms defined in ISO 857-1:1998 that were not included in this part of ISO/TR 25901</b> .....		<b>14</b>
<b>Bibliography</b> .....		<b>18</b>



*Indian Standard*

**WELDING AND ALLIED PROCESSES — VOCABULARY**  
**PART 4 ARC WELDING**

## **1 Scope**

This part of ISO/TR 25901 contains terms and definitions applicable to arc welding. It does not contain terms and definitions related to specific processes or particular aspects of welding and allied processes that are covered in other parts of this Technical Report (see Foreword) or in other ISO standards.

In the main body of this part of ISO/TR 25901, terms are arranged in a systematic order. [Annex A](#) provides an index in which all terms are listed alphabetically with reference to the appropriate subclause. In addition, it provides French translations, covering two of the three official ISO languages (English, French and Russian). German translations are also provided; these are published under the responsibility of the member body for Germany (DIN), and are given for information only.

NOTE 1 Only the terms given in the official languages (English, French and Russian) are to be considered as ISO terms and definitions.

NOTE 2 All these terms and definitions are also available on the ISO Online Browsing Platform (OBP): <https://www.iso.org/obp/ui/>

## **2 Terms and definitions**

For the purposes of this document, the following terms and definitions apply.

### **2.1 Terms related to welding procedures**

#### **2.1.1**

##### **pulsed MAG welding**

MAG welding using a pulsed current

Note 1 to entry: Acronym MAG stands for Metal Active Gas; the shielding gas used typically consists of a mixture containing 0,5 % or more of oxygen or carbon dioxide.

#### **2.1.2**

##### **pulsed MIG welding**

MIG welding using a pulsed current

Note 1 to entry: Acronym MIG stands for Metal Inert Gas; the shielding gas used typically consists of argon, helium or a mixture of both.

#### **2.1.3**

##### **pulsed TIG welding**

TIG welding using a pulsed current

Note 1 to entry: Acronym TIG stands for Tungsten Inert Gas; the shielding gas used typically consists of argon, helium or a mixture of both.

#### **2.1.4**

##### **arc spot welding**

arc welding in which the overlapping parts are joined by fusing through one part into the other and so producing a fusion weld at the faying surfaces

### 2.1.5

#### **MIG spot welding**

*arc spot welding* ([2.1.4](#)) by MIG process

Note 1 to entry: Acronym MIG stands for Metal Inert Gas; the shielding gas used typically consists of argon, helium or a mixture of both.

### 2.1.6

#### **TIG spot welding**

*arc spot welding* ([2.1.4](#)) by TIG welding

Note 1 to entry: Acronym TIG stands for Tungsten Inert Gas; the shielding gas used typically consists of argon, helium or a mixture of both.

### 2.1.7

#### **microplasma arc welding**

plasma arc welding at *welding currents* ([2.2.8](#)) generally below 10 A

### 2.1.8

#### **narrow gap welding**

arc welding in which the distance or angle between the faces of the parent materials is so small that particular welding equipment has to be used

Note 1 to entry: Generally employed to join high thickness workpieces in order to reduce the amount of filler material to use.

## 2.2 Terms related to welding execution

### 2.2.1

#### **push technique**

#### **forehand welding**

welding technique in which the electrode is pushed in the welding direction

Note 1 to entry: The *electrode angle* ([2.2.10](#)) is greater than 90°.

### 2.2.2

#### **pull technique**

#### **backhand welding**

welding technique in which the electrode is pulled in the welding direction

Note 1 to entry: The *electrode angle* ([2.2.10](#)) is less than or equal to 90°.

### 2.2.3

#### **weaving**

welding technique where the run is produced by oscillating the electrode transversely to the direction of welding

### 2.2.4

#### **weaving width**

transverse extent of *weaving* ([2.2.3](#))

### 2.2.5

#### **weaving amplitude**

half of the *weaving width* ([2.2.4](#))

### 2.2.6

#### **weaving frequency**

number of oscillatory movements per unit time

### 2.2.7

#### **weave bead**

run formed using *weaving* ([2.2.3](#))

### 2.2.8

#### **welding current**

current delivered by a welding power source during welding

### 2.2.9

#### **work angle**

angle between the electrode axis and the surface of the parts, measured in a plane perpendicular to the weld

### 2.2.10

#### **electrode angle**

#### **torch angle**

angle between the electrode axis and the longitudinal axis in the direction of welding

### 2.2.11

#### **travel angle**

angle complementary to the *electrode angle* ([2.2.10](#))

### 2.2.12

#### **wire feed rate**

#### **wire feed speed**

length of wire consumed per unit time

### 2.2.13

#### **contact electrode**

*covered electrode* ([2.4.1](#)) with a special covering that enables it to be kept in contact with the parent material during welding to facilitate control of *arc length* ([2.3.12](#))

## 2.3 Terms related to welding process characteristics

### 2.3.1

#### **metal transfer**

#### **droplet transfer**

transfer of molten metal across the arc from a consumable electrode to the weld pool

### 2.3.2

#### **globular transfer**

*metal transfer* ([2.3.1](#)) in which droplets of diameter larger than that of the *wire electrode* ([2.4.9](#)) are transferred

### 2.3.3

#### **spray transfer**

*metal transfer* ([2.3.1](#)) in which rapidly accelerated droplets of diameter smaller than that of the *wire electrode* ([2.4.9](#)) are transferred

### 2.3.4

#### **dip transfer**

#### **short circuiting transfer**

*metal transfer* ([2.3.1](#)) in which a short circuiting current enhances the detachment of the molten wire tip during bridging by the electromagnetic pinch effect

### 2.3.5

#### **particle transfer frequency**

#### **droplet transfer frequency**

frequency with which metal globules or droplets are transferred across the arc from the end of a consumable electrode

### 2.3.6

#### **main arc**

in plasma arc welding, arc that supplies the welding heat

### 2.3.7

#### **pilot arc**

low current arc between the electrode and the constricting nozzle of the *plasma torch* (2.6.6) to ionize the gas and facilitate the start of the *main arc* (2.3.6)

### 2.3.8

#### **transferred arc**

arc established between the electrode of the *plasma torch* (2.6.6) and the workpiece

### 2.3.9

#### **non-transferred arc**

arc established between the electrode and the constricting nozzle of the *plasma torch* (2.6.6) or thermal spraying gun

Note 1 to entry: The workpiece does not form part of the electrical circuit.

### 2.3.10

#### **arc voltage**

electrical potential between the electrode and the workpiece

### 2.3.11

#### **striking voltage**

minimum voltage at which any specific arc may be initiated

### 2.3.12

#### **arc length**

distance from the tip of the welding electrode to the surface of the weld pool

Note 1 to entry: During welding with consumable electrode processes, the actual length may vary depending on the *metal transfer* (2.3.1) process as metal droplets form and transfer to the weld pool.

### 2.3.13

#### **arc time**

#### **arcing time**

time during which the arc is maintained

### 2.3.14

#### **pulse time**

#### **pulse duration**

duration of a single pulse

### 2.3.15

#### **duty cycle**

#### **duty factor**

ratio, for a given time interval, of the uninterrupted on-load duration to the total time

### 2.3.16

#### **arc blow**

#### **magnetic arc blow**

magnetic deflection of the arc from its intended direction

### 2.3.17

#### **stand-off distance**

distance between the gas nozzle and the workpiece

Note 1 to entry: Stand-off distance is illustrated in [Figure 1](#) as item 3.

### 2.3.18

#### **stickout**

distance between the gas nozzle and end of the *wire electrode* (2.4.9)

Note 1 to entry: Stickout is illustrated in [Figure 1](#) as item 4.



### 2.3.19

#### electrode extension

distance between the *contact tip* (2.6.2) or *collet* (2.6.1) and end of the *wire electrode* (2.4.9)

Note 1 to entry: Electrode extension is illustrated in [Figure 1](#) as item 5.

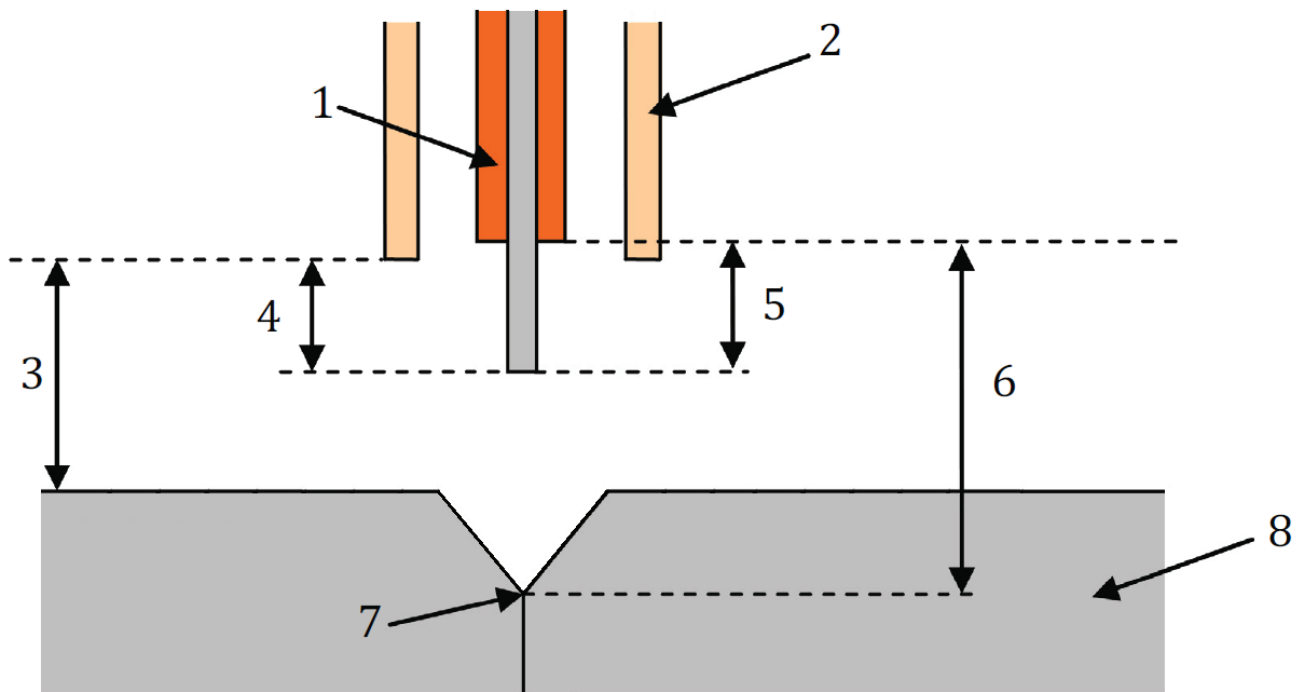
### 2.3.20

#### contact tip distance

#### contact tube distance

distance between the *contact tip* (2.6.2) and the welding point

Note 1 to entry: Contact tip distance is illustrated in [Figure 1](#) as item 6.



#### Key

1	contact tip	4	stickout	7	welding point
2	gas nozzle	5	electrode extension	8	workpiece
3	stand-off distance	6	contact tip distance		

Figure 1 — Distances

### 2.3.21

#### deposition coefficient

for a given electrode, the mass of weld metal deposited under standard conditions per ampere-minute expressed in mass/(current × time)

### 2.3.22

#### deposition efficiency

for a *covered electrode* (2.4.1), ratio of the mass of weld metal deposited under standard conditions to the total mass consumed, excluding the *stub end* (2.4.21)

### 2.3.23

#### effective electrode efficiency

for a *covered electrode* (2.4.1), the ratio of the mass of weld metal deposited under standard conditions to the mass of core wire consumed

### 2.3.24

#### **nominal electrode efficiency**

for a *covered electrode* (2.4.1), the ratio of the mass of weld metal deposited under standard conditions to the mass of nominal diameter core wire consumed

### 2.3.25

#### **overall weld metal recovery**

for a *covered electrode* (2.4.1), the ratio of the mass of weld metal deposited under standard conditions to the total mass of the electrode tested, including covering and *stub end* (2.4.21)

### 2.3.26

#### **electrode pick-up**

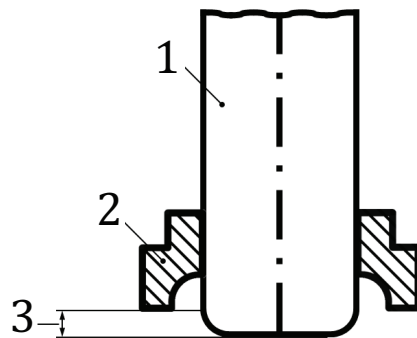
contamination of a *non-consumable electrode* (2.4.20) by metal or scale during welding

### 2.3.27

#### **protrusion**

in stud welding, distance between the tip of the stud and the face of the support device in their initial position

Note 1 to entry: Protrusion is illustrated in [Figure 2](#) as item 3.



#### **Key**

1 stud

2 support device

3 protrusion

**Figure 2 — Protrusion example**

## 2.4 Terms related to welding consumables

### 2.4.1

#### **covered electrode stick electrode**

consumable electrode in the form of a rod consisting of a metallic core to which a covering has been applied

### 2.4.2

#### **acid electrode**

*covered electrode* (2.4.1) in which the covering contains a high proportion of acid material

### 2.4.3

#### **basic electrode**

*covered electrode* (2.4.1) in which the covering contains a high proportion of calcium carbonate and fluoride

#### 2.4.4

##### **cellulosic electrode**

*covered electrode* (2.4.1) in which the covering contains a high proportion of cellulose

#### 2.4.5

##### **hydrogen controlled electrode**

*covered electrode* (2.4.1) that, when used correctly, produces less than a specific amount of diffusible hydrogen in the deposit

#### 2.4.6

##### **rutile electrode**

*covered electrode* (2.4.1) in which the covering contains a high proportion of titanium dioxide

#### 2.4.7

##### **iron powder electrode**

*covered electrode* (2.4.1) in which the covering contains a high proportion of iron powder giving a *deposition efficiency* (2.3.22) of at least 100 %

#### 2.4.8

##### **high efficiency electrode**

*iron powder electrode* (2.4.7) giving a *deposition efficiency* (2.3.22) greater than 125 %

#### 2.4.9

##### **wire electrode**

consumable electrode in the form of a wire

#### 2.4.10

##### **solid wire electrode**

*wire electrode* (2.4.9) that is solid

#### 2.4.11

##### **tubular cored electrode**

*wire electrode* (2.4.9) in a tubular form

#### 2.4.12

##### **flux cored electrode**

*tubular cored electrode* (2.4.11) containing flux

#### 2.4.13

##### **metal cored electrode**

*tubular cored electrode* (2.4.11) containing metal powder

#### 2.4.14

##### **strip electrode**

consumable electrode in the form of a strip

#### 2.4.15

##### **solid strip electrode**

*strip electrode* (2.4.14) that is solid

#### 2.4.16

##### **cored strip electrode**

*strip electrode* (2.4.14) that is cored

#### 2.4.17

##### **solid wire**

filler wire that is solid, not being a part of the welding circuit

#### 2.4.18

##### **tubular cored rod**

filler rod in a tubular form, not being a part of the welding circuit

#### 2.4.19

##### **tubular cored wire**

filler wire in a tubular form, not being a part of the welding circuit

#### 2.4.20

##### **non-consumable electrode**

electrode that is not consumed during welding

#### 2.4.21

##### **stub end**

##### **stub**

discarded unusable part of an electrode or filler rod after welding

### 2.5 Terms related to characteristics of welding power source

#### 2.5.1

##### **static characteristic**

relationship between the voltage and the current at the output terminals of a welding power source when connected to a conventional load

#### 2.5.2

##### **dynamic characteristic**

relationship between the main parameters of a welding power source after a sudden change of one parameter

#### 2.5.3

##### **drooping characteristic**

external *static characteristic* ([2.5.1](#)) of a welding power source which, in its normal welding range, is such that the negative slope is greater than or equal to 7 V/100 A

#### 2.5.4

##### **flat characteristic**

##### **constant voltage characteristic**

external *static characteristic* ([2.5.1](#)) of a welding power source which, in its normal welding range, is such that, as the current increases, the voltage either decreases by less than 7 V/100 A or increases by less than 10 V/100 A

#### 2.5.5

##### **no-load voltage**

##### **open-circuit voltage**

voltage, exclusive of any arc striking or arc stabilizing voltage, between the output terminals of a welding power source when the external welding circuit is open

### 2.6 Terms related to welding equipment

#### 2.6.1

##### **collet**

device for retaining a *non-consumable electrode* ([2.4.20](#)) in an arc welding torch

#### 2.6.2

##### **contact tip**

##### **contact tube**

replaceable component fixed at the front end of the torch, which transfers the *welding current* ([2.2.8](#)) to, and guides, the *wire electrode* ([2.4.9](#))

#### 2.6.3

##### **welding gun**

##### **gun**

torch with a handle substantially perpendicular to the torch body

#### 2.6.4

##### **electrode holder**

device for clamping, guiding and connecting a *covered electrode* ([2.4.1](#)) to the welding circuit while electrically insulating the welder or the welding operator

#### 2.6.5

##### **welding head**

part of a welding machine or robot in which a welding torch is incorporated

#### 2.6.6

##### **plasma torch**

arc welding torch using a *non-consumable electrode* ([2.4.20](#)) and having a gas nozzle producing a constricted plasma arc

#### 2.6.7

##### **welding rectifier**

*arc welding power source* ([2.6.12](#)) consisting of a static converter for supplying direct current for welding from an AC supply

#### 2.6.8

##### **welding converter**

*arc welding power source* ([2.6.12](#)) consisting of an electric motor and a d.c. *welding generator* ([2.6.10](#))

#### 2.6.9

##### **arc welding transformer**

transformer designed to provide electrical energy for arc welding

#### 2.6.10

##### **welding generator**

generator designed to provide electrical energy to one or more welding arcs

#### 2.6.11

##### **engine driven welding power source**

*arc welding power source* ([2.6.12](#)) consisting of an engine and a d.c. *welding generator* ([2.6.10](#))

#### 2.6.12

##### **arc welding power source**

equipment for supplying current and voltage and having the required characteristics suitable for arc welding and allied processes

#### 2.6.13

##### **drooping characteristic welding power source**

*arc welding power source* ([2.6.12](#)) with a *drooping characteristic* ([2.5.3](#))

#### 2.6.14

##### **constant-voltage welding power source**

*arc welding power source* ([2.6.12](#)) with a *flat characteristic* ([2.5.4](#))

#### 2.6.15

##### **quiver**

portable receptacle for keeping *covered electrodes* ([2.4.1](#)) dry

## Annex A (informative)

### Alphabetical index of English terms with French and German translations

English term	Subclause	French translation	German translation
<b>A</b>			
acid electrode	<a href="#">2.4.2</a>	électrode acide	sauerumhüllte Stabelektrode
arc blow	<a href="#">2.3.16</a>	soufflage magnétique de l'arc	Blaswirkung
arc length	<a href="#">2.3.12</a>	longueur de l'arc	Lichtbogenlänge
arc spot welding	<a href="#">2.1.4</a>	soudage à l'arc par points	Lichtbogenpunktschweißen
arc time	<a href="#">2.3.13</a>	temps d'arc	Lichtbogenbrennzeit
arc voltage	<a href="#">2.3.10</a>	tension à l'arc	Lichtbogenspannung
arc welding power source	<a href="#">2.6.12</a>	source de courant de soudage à l'arc	Lichtbogen-Schweißstromquelle
arc welding transformer	<a href="#">2.6.9</a>	transformateur de soudage à l'arc	Schweißtransformator
arc time	See: arc time ( <a href="#">2.3.13</a> )		
<b>B</b>			
backhand welding	See: pull technique ( <a href="#">2.2.2</a> )		
basic electrode	<a href="#">2.4.3</a>	électrode basique	basischumhüllte Stabelektrode
<b>C</b>			
cellulosic electrode	<a href="#">2.4.4</a>	électrode cellulosique	zelluloseumhüllte Stabelektrode
collet	<a href="#">2.6.1</a>	pince porte-électrode	Elektrodenklemmhülse
constant voltage characteristic	See: flat characteristic ( <a href="#">2.5.4</a> )		
constant-voltage welding power source	<a href="#">2.6.14</a>	source de courant de soudage à caractéristique plate; source de courant de soudage à tension constant	Konstantspannungs-Schweißstromquelle
contact electrode	<a href="#">2.2.13</a>	électrode-contact	Kontaktelektrode
contact tip	<a href="#">2.6.2</a>	tube-contact	Stromkontaktrohr
contact tip distance	<a href="#">2.3.20</a>	distance tube-contact/point de soudage	Kontaktrohrabstand
contact tube	See: contact tip ( <a href="#">2.6.2</a> )		
contact tube distance	See: contact tip distance ( <a href="#">2.3.20</a> )		
cored strip electrode	<a href="#">2.4.16</a>	électrode en feuillard fourrée	Füllbandelektrode
covered electrode	<a href="#">2.4.1</a>	électrode enrobée	umhüllte Stabelektrode
<b>D</b>			
deposition coefficient	<a href="#">2.3.21</a>	coefficient de depot	Abschmelzkoeffizient
deposition efficiency	<a href="#">2.3.22</a>	rendement global effectif	Abschmelzfaktor
dip transfer	<a href="#">2.3.4</a>	transfert par courts-circuits	Werkstoffübergang im Kurzschluss
drooping characteristic	<a href="#">2.5.3</a>	caractéristique tombante	fallende Kennlinie
drooping characteristic welding power source	<a href="#">2.6.13</a>	source de courant de soudage à caractéristique tombante	Schweißstromquelle mit fallender Kennlinie

English term	Subclause	French translation	German translation
droplet transfer	See: metal transfer ( <a href="#">2.3.1</a> )		
droplet transfer frequency	See: particle transfer frequency ( <a href="#">2.3.5</a> )		
duty cycle	<a href="#">2.3.15</a>	facteur de marche	Einschaltdauer
duty factor	See: duty cycle ( <a href="#">2.3.15</a> )		
dynamic characteristic	<a href="#">2.5.2</a>	caractéristique dynamique	dynamische Kennlinie
<b>E</b>			
effective electrode efficiency	<a href="#">2.3.23</a>	rendement effectif d'une électrode	effektive Ausbringung
electrode angle	<a href="#">2.2.10</a>	angle d'inclinaison de l'électrode; angle d'inclinaison de la torche	Elektrodenanstellwinkel; Schweißbrenneranstellwinkel
electrode extension	<a href="#">2.3.19</a>	longueur de fil libre	freies Drahtelektrodenende
electrode holder	<a href="#">2.6.4</a>	porte-électrode	Stabelektrodenhalter
electrode pick-up	<a href="#">2.3.26</a>	encrassement de l'électrode	Anlegierung an der Elektrode
engine driven welding power source	<a href="#">2.6.11</a>	groupe électrogène de soudage	Schweißsumformer mit Antrieb durch Verbrennungsmotor; Schweißaggregat
<b>F</b>			
flat characteristic	<a href="#">2.5.4</a>	caractéristique plate; caractéristique constante	flach fallende Stromquellenkennlinie
flux cored electrode	<a href="#">2.4.12</a>	fil fourré de flux	pulvergefüllte Drahtelektrode
forehand welding	See: push technique ( <a href="#">2.2.1</a> )		
<b>G</b>			
globular transfer	<a href="#">2.3.2</a>	transfert globulaire	großtropfiger Werkstoffübergang
gun	See: welding gun ( <a href="#">2.6.3</a> )		
<b>H</b>			
high efficiency electrode	<a href="#">2.4.8</a>	électrode à haut rendement	Hochleistungselektrode
hydrogen controlled electrode	<a href="#">2.4.5</a>	électrode à hydrogène contrôlé	wasserstoffkontrollierte Stabelektrode
<b>I</b>			
iron powder electrode	<a href="#">2.4.7</a>	électrode à la poudre de fer	Eisenpulver-Stabelektrode
<b>M</b>			
magnetic arc blow	See: arc blow ( <a href="#">2.3.16</a> )		
main arc	<a href="#">2.3.6</a>	arc principal	Hauptlichtbogen
metal cored electrode	<a href="#">2.4.13</a>	fil fourré de métal	metallgefüllte Drahtelektrode
metal transfer	<a href="#">2.3.1</a>	transfert de métal	Werkstoffübergang
microplasma arc welding	<a href="#">2.1.7</a>	soudage microplasma	Mikroplasmenschweißen
MIG spot welding	<a href="#">2.1.5</a>	soudage MIG par points	Metall-Inertgaspunktschweißen
<b>N</b>			
narrow gap welding	<a href="#">2.1.8</a>	soudage sur chanfrein étroit; soudage narrow gap	Engspaltschweißen
no-load voltage	<a href="#">2.5.5</a>	tension à vide	Leerlaufspannung
nominal electrode efficiency	<a href="#">2.3.24</a>	rendement nominal d'une électrode	Nennausbringung
non-consumable electrode	<a href="#">2.4.20</a>	électrode non consommable	nicht abschmelzende Elektrode
non-transferred arc	<a href="#">2.3.9</a>	arc non transféré	nicht übertragener Lichtbogen

English term	Subclause	French translation	German translation
<b>O</b>			
open-circuit voltage	See: no-load voltage ( <a href="#">2.5.5</a> )		
overall weld metal recovery	<a href="#">2.3.25</a>	rendement global	Gesamtausbringung
<b>P</b>			
particle transfer frequency	<a href="#">2.3.5</a>	fréquence de transfert du métal	Tropfenübergangsfrequenz
pilot arc	<a href="#">2.3.7</a>	arc pilote	Pilotlichtbogen; Hilfslichtbogen; Zündlichtbogen
plasma torch	<a href="#">2.6.6</a>	torche plasma	Plasmaschweissbrenner
protrusion	<a href="#">2.3.27</a>	Dépassement	Überstand
pull technique	<a href="#">2.2.2</a>	soudage en tirant; soudage à droite	schleppendes Schweißen
pulse duration	See: pulse time ( <a href="#">2.3.14</a> )		
pulse time	<a href="#">2.3.14</a>	durée de l'impulsion	Impulszeit
pulsed MAG welding	<a href="#">2.1.1</a>	soudage MAG pulsé	Metall-Aktivgasschweißen mit Impulslichtbogen
pulsed MIG welding	<a href="#">2.1.2</a>	soudage MIG pulsé	Metall-Inertgasschweißen mit Impulslichtbogen
pulsed TIG welding	<a href="#">2.1.3</a>	soudage TIG pulsé	Wolfram-Inertgasschweißen mit Impulslichtbogen
push technique	<a href="#">2.2.1</a>	soudage en poussant; soudage à gauche	stechendes Schweißen
<b>Q</b>			
quiver	<a href="#">2.6.15</a>	carquois	Köcher
<b>R</b>			
rutile electrode	<a href="#">2.4.6</a>	électrode au rutile	rutilumhüllte Stabelektrode
<b>S</b>			
short circuiting transfer	See: dip transfer ( <a href="#">2.3.4</a> )		
solid strip electrode	<a href="#">2.4.15</a>	électrode en feuillard pleine	Massivbandelektrode
solid wire	<a href="#">2.4.17</a>	fil plein	Massivdraht
solid wire electrode	<a href="#">2.4.10</a>	fil-électrode plein	Massivdrahtelektrode
spray transfer	<a href="#">2.3.3</a>	transfert par pulvérisation	feintropfiger Werkstoffübergang
stand-off distance	<a href="#">2.3.17</a>	distance buse/pièce	Gasdüsenabstand
static characteristic	<a href="#">2.5.1</a>	caractéristique statique	statische Kennlinie
stick electrode	See: covered electrode ( <a href="#">2.4.1</a> )		
Stickout	<a href="#">2.3.18</a>	longueur terminale du fil; stickout	freie Drahtelektrodenlänge
striking voltage	<a href="#">2.3.11</a>	tension d'amorçage	Zündspannung
strip electrode	<a href="#">2.4.14</a>	électrode en feuillard; feuillard	Bandelektrode
Stub	See: stub end ( <a href="#">2.4.21</a> )		
stub end	<a href="#">2.4.21</a>	chute d'électrode	Elektrodenrest
<b>T</b>			
TIG spot welding	<a href="#">2.1.6</a>	soudage TIG par points	Wolfram-Inertgas-punktschweißen
torch angle	See: electrode angle ( <a href="#">2.2.10</a> )		
transferred arc	<a href="#">2.3.8</a>	arc transféré	übertragener Lichtbogen



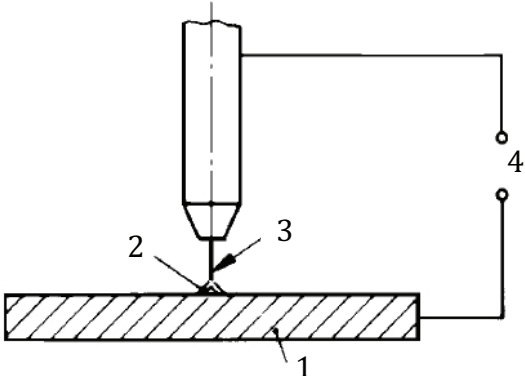
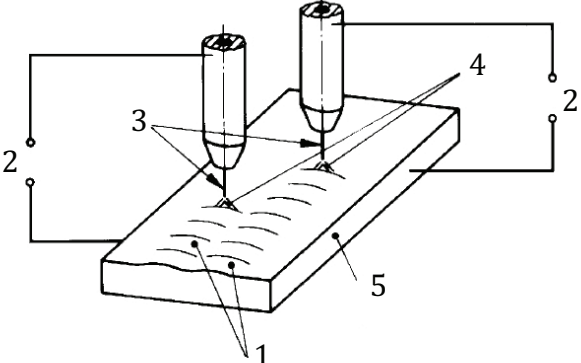
English term	Subclause	French translation	German translation
travel angle	<a href="#">2.2.11</a>	angle de traîne	(no German term) (pas de terme allemand) (kein deutscher Begriff)
tubular cored electrode	<a href="#">2.4.11</a>	fil fourré; fil-électrode fourré	Fülldrahtelektrode
tubular cored rod	<a href="#">2.4.18</a>	baguette tubulaire fourrée	Füllstab; Rohrstab
tubular cored wire	<a href="#">2.4.19</a>	fil tubulaire fourré	Fülldraht
<b>W</b>			
weave bead	<a href="#">2.2.7</a>	passe large	Pendelraupe
weaving	<a href="#">2.2.3</a>	balayage	Pendeln; pendelndes Schweißen
weaving amplitude	<a href="#">2.2.5</a>	amplitude de balayage	Pendelausschlag
weaving frequency	<a href="#">2.2.6</a>	fréquence de balayage	Pendelfrequenz
weaving width	<a href="#">2.2.4</a>	largeur de balayage	Pendelbreite
welding converter	<a href="#">2.6.8</a>	convertisseur de soudage	Schweißumformer (mit Antrieb durch Elektromotor)
welding current	<a href="#">2.2.8</a>	intensité de soudage	Schweißstrom
welding generator	<a href="#">2.6.10</a>	générateur de soudage	Schweißgenerator
welding gun	<a href="#">2.6.3</a>	pistolet	Schweißbrenner; Schweißpistole
welding head	<a href="#">2.6.5</a>	tête de soudage	Schweißkopf
welding rectifier	<a href="#">2.6.7</a>	redresseur de soudage	Schweißgleichrichter
wire electrode	<a href="#">2.4.9</a>	fil-électrode	Drahtelektrode
wire feed rate	<a href="#">2.2.12</a>	vitesse de dévidage du fil	Drahtvorschubgeschwindigkeit
wire feed speed	See: wire feed rate ( <a href="#">2.2.12</a> )		
work angle	<a href="#">2.2.9</a>	angle d'inclinaison	Schweißbrennerneigungswinkel

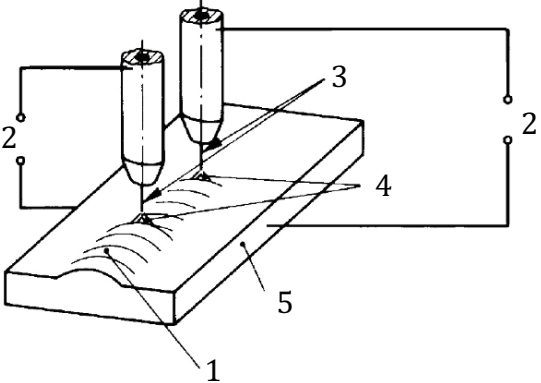
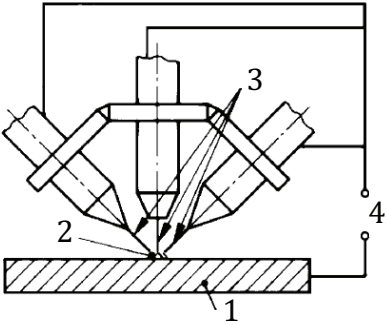
## Annex B (informative)

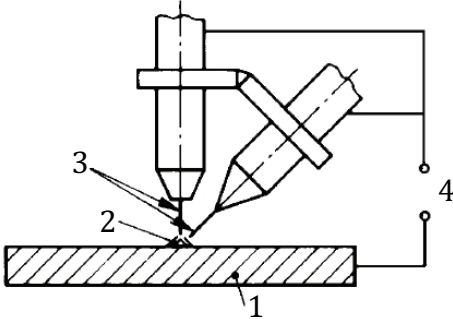
### Alphabetical index of arc welding related terms defined in ISO 857-1:1998 that were not included in this part of ISO/ TR 25901

The terms from ISO 857-1:1998 that are not included in the body of this first edition of this part of ISO/TR 25901 are either listed below when they have become obsolete or redundant, or are covered in another part of this Technical Report.

Term	Definition	Origin	Subclause
<b>E</b>			
<b>energy input per unit length</b>	<p><math>E_1</math>                      electrical energy consumed during deposition of a unit length of weld metal and calculated from the following formula</p> $E_1 = IU / v$ <p>where</p> <p><math>U</math> is the welding voltage;  <math>I</math> is the welding current;  <math>v</math> is the welding speed.</p>	ISO 857-1:1998	5.2.21
<b>M</b>			
<b>multiple-electrode welding</b>	See: ISO 857-1:1998, Table 3 (Number of arc carrying electrodes: more than three)	ISO 857-1:1998	8.4
<b>P</b>			
<b>parallel welding</b>	<p>See: ISO 857-1:1998, Table 4                      (Arrangement of the filler metals or of the non-consumable electrodes: side by side, at right angles to the direction of welding)</p> <div style="text-align: center;"> </div> <p><b>Key</b>                      1 weld                      4 arc                      2 power source          5 workpiece                      3 electrode</p>	ISO 857-1:1998	9.1

Term	Definition	Origin	Subclause
<b>S</b>			
<b>serially arranged welding</b>	See: ISO 857-1:1998, Table 4 (Arrangement of the filler metals or of the non-consumable electrodes: More than two, arranged one behind the other in the direction of welding)	ISO 857-1:1998	9.4
<b>single-electrode welding</b>	See: ISO 857-1:1998, Table 3 (Number of arc carrying electrodes: one)	ISO 857-1:1998	8.1
			
<p><b>Key</b></p> <p>1 workpiece 2 arc 3 electrode 4 power source</p>			
<b>staggered welding</b>	See: ISO 857-1:1998, Table 4 (Arrangement of the filler metals or of the non-consumable electrodes: Side by side, staggered in the direction of welding)	ISO 857-1:1998	9.2
			
<p><b>Key</b></p> <p>1 weld 2 power source 3 electrode 4 arc 5 workpiece</p>			
<b>T</b>			

Term	Definition	Origin	Subclause
<p><b>tandem welding</b></p>	<p>See: ISO 857-1:1998, Table 4                      (Arrangement of the filler metals or of the non-consumable electrodes: Two, arranged one behind the other in the direction of welding)</p>  <p><b>Key</b>                      1 weld                      2 power source                      3 electrode                      4 arc                      5 workpiece</p>	<p>ISO 857-1:1998</p>	<p>9.3</p>
<p><b>thermal efficiency</b></p>	<p><math>\eta</math>                      ratio of heat input to energy input per unit length  <math>\eta = Q_1 / E_1</math></p>	<p>ISO 857-1:1998</p>	<p>5.2.23</p>
<p><b>three-electrode welding</b></p>	<p>See: ISO 857-1:1998, Table 3                      (Number of arc carrying electrodes: three)</p>  <p><b>Key</b>                      1 workpiece                      2 filler metal                      3 welding head                      4 power source</p>	<p>ISO 857-1:1998</p>	<p>8.3</p>

Term	Definition	Origin	Subclause
<p><b>two-electrode welding</b></p>	<p>See: ISO 857-1:1998, Table 3 (Number of arc carrying electrodes: two)</p>  <p>The diagram shows a cross-section of a workpiece (1) being welded. Two electrodes (3) are positioned above the workpiece, with an arc (2) between them. A power source (4) is connected to the electrodes and the workpiece.</p> <p><b>Key</b>  1 workpiece  2 arc  3 electrode  4 power source</p>	<p>ISO 857-1:1998</p>	<p>8.2</p>

## Bibliography

- [1] ISO 6520-1, *Welding and allied processes — Classification of geometric imperfections in metallic materials — Part 1: Fusion welding*
- [2] ISO 6520-2, *Welding and allied processes — Classification of geometric imperfections in metallic materials — Part 2: Welding with pressure*
- [3] ISO 14917, *Thermal spraying — Terminology, classification*
- [4] ISO 15296, *Gas welding equipment — Vocabulary — Terms used for gas welding equipment*
- [5] ISO 17658, *Welding — Imperfections in oxyfuel flame cuts, laser beam cuts and plasma cuts — Terminology*
- [6] ISO 17677-1, *Resistance welding — Vocabulary — Part 1: Spot, projection and seam welding*
- [7] ISO 25239-1, *Friction stir welding — Aluminium — Part 1: Vocabulary*
- [8] IEC 60050-851, *International electrotechnical vocabulary — Part 851: Electric welding*



## Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 2016* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

### Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Head (Publication & Sales), BIS.

### Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the website-[www.bis.gov.in](http://www.bis.gov.in) or [www.standardsbis.in](http://www.standardsbis.in).

This Indian Standard has been developed from Doc No.: MTD 11 (24186).

### Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

## BUREAU OF INDIAN STANDARDS

### Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002

Telephones: 2323 0131, 2323 3375, 2323 9402

Website: [www.bis.gov.in](http://www.bis.gov.in)

### Regional Offices:

	Telephones
Central : 601/A, Konnectus Tower -1, 6 <sup>th</sup> Floor, DMRC Building, Bhavbhuti Marg, New Delhi 110002	{ 2323 7617
Eastern : 8 <sup>th</sup> Floor, Plot No 7/7 & 7/8, CP Block, Sector V, Salt Lake, Kolkata, West Bengal 700091	{ 2367 0012 2320 9474
Northern : Plot No. 4-A, Sector 27-B, Madhya Marg, Chandigarh 160019	{ 265 9930
Southern : C.I.T. Campus, IV Cross Road, Taramani, Chennai 600113	{ 2254 1442 2254 1216
Western : Manakalya, 4 <sup>th</sup> Floor, NTH Complex (W Sector), F-10, MIDC, Andheri (East), Mumbai 400093	{ 283 25838

**Branches :** AHMEDABAD, BENGALURU, BHOPAL, BHUBANESHWAR, CHANDIGARH, CHENNAI, COIMBATORE, DEHRADUN, DELHI, FARIDABAD, GHAZIABAD, GUWAHATI, HARYANA, HUBLI, HYDERABAD, JAIPUR, JAMMU & KASHMIR, JAMSHEDPUR, KOCHI, KOLKATA, LUCKNOW, MADURAI, MUMBAI, NAGPUR, NOIDA, PARWANOO, PATNA, PUNE, RAIPUR, RAJKOT, SURAT, VIJAYAWADA.