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Welding terms

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently **JIS Z 3001 : 1988** is replaced with **JIS Z 3001 : 1999**.

This revision has been made based on **ISO 581 : 1980 Weldability—Definition** and **ISO 857 : 1990 Welding, brazing and soldering processes—Vocabulary** in order to make it easy to compare with the International Standard; to establish Japanese Industrial Standard in conformity with the International Standard; to propose a draft of International Standard which is based on Japanese Industrial Standard; and further, to facilitate technological interchange or to lessen trade barrier.

In addition, it is considered that the conformity with the terms specified in the related International Standard **ISO 6520 : 1982 Classification of imperfections in metallic fusion welds, with explanations**.

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Welding Terms

Introduction This Japanese Industrial Standard which specifies the technical terms used in the field of welding has been revised by adding the terms and their definitions specified in the corresponding International Standards, ISO 581 : 1980 *Weldability—Definition* and ISO 857 : 1990, *Welding, brazing and soldering processes—Vocabulary*.

ISO 6520 : 1982, *Classification of imperfections in metallic fusion welds, with explanations* was also taken into account as a related International Standard as for the possibility of conforming with the specified terms, and in this revision, 10 terms specified in ISO 857 : 1990 were adopted. ISO numbers are given to the corresponding terms for informative.

Annex(informative) gives related figures to the welding terms which are illustrated in ISO 857 : 1990.

1 Scope This Japanese Industrial Standard specifies the main terms which are used as technical terms and their definitions related to the welding.

Remarks : The corresponding International Standards to this Standard are as follows :.

ISO 581 : 1980 *Weldability—Definition*

ISO 857 : 1990 *Welding, brazing and soldering processes—Vocabulary*

2 Normative references The standards shown in Attached Table 1 contain provisions which, through reference in this Standard, constitute provisions of this Standard.

The most recent editions of the standards shall be applied.

3 Classification Terms shall be classified as follows.

- a) General
- b) Arc welding
- c) Resistance welding
- d) Brazing and soldering
- e) Special welding
- f) Testing
- g) Gas welding and thermal cutting
- h) Safety and sanitation
- i) Thermal spraying

4 Number, Term and Definition

(4.1) General

(4.1.1) Welding Process

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
1101	溶 接	YŌSETSU	Operation in which not less than two members are united in a body by heat, pressure, or both of them so that continuity can be obtained between the united two members. Remarks 1. Filler metal may be or may not be used. 2. Welding may be also used for both surfacing and build-up.	welding ISO 857, 1
1102	溶接方法	YŌSETSU HŌHŌ	Process of welding including with or without the application of pressure, with or without of filler metal, and with or without fusion of base metal.	welding process
1103	融 接	YŪSETSU	Generic term for welding process performed without applying mechanical pressure on material under welding conditions. This welding includes arc welding, thermit welding, some gas welding, and others.	fusion welding ISO 857, 1.1
1104	ガス溶接	GASU YŌSETSU	Welding performed with heat of gas flame.	gas welding, fuel gas welding ISO 857, 1.4
1105	アーク溶接	ĀKU YŌSETSU	Welding performed with the heat of arc, which is grossly classified into two kinds of AC arc welding and DC arc welding.	arc welding, ISO 857, 1.2 DC arc welding, AC arc welding

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
1106	エレクトロスラ グ溶接	EREKUTORO SURAGU YŌSETSU	Welding in which the fused slag and fused metal are surrounded so as not to flow out from the weld, welding wire and base metal are melted by the resistance heat of mainly molten slag continuously supplying the welding wire into the molten slag bath, and deposited metal is successively piled upward.	<u>electroslag welding</u> ISO 857, 1.6.2
1107	電子ビーム溶接	DENSHI BĪMU YŌSETSU	Welding by impact heat which is produced by projecting high speed electron beam generated in vacuum.	<u>electron beam welding</u> ISO 857, 1.6.8
1108	レーザビーム溶 接	RĒZA BĪMU YŌSETSU	Welding performed by projecting laser beams, which is classified into CO ₂ laser beam welding, YAG laser beam welding and others. It is also called RĒZA YŌSETSU (Japanese).	<u>laser beam welding</u> , <u>laser welding</u> , CO ₂ laser beam welding, YAG laser beam welding ISO 857, 1.6.6
1109	光ビーム溶接	HIKARI BĪMU YŌSETSU	Welding performed by utilizing light energy which is obtained by the collected and focused light emission from a light source of a large output with a reflecting mirror on a weld.	<u>light radiation welding</u> <u>light beam welding</u> ISO 857, 1.6.5
1110	アークイメージ溶接	ĀKU IMĒJI YŌSETSU	Light radiation welding in which the source of light is an arc.	<u>light image welding</u> ISO 857, 1.6.7
1111	テルミット溶接	TERUMITTO YŌSETSU	Welding performed with the heat of thermit reaction, using the fused metal as it is produced by the reaction as a filler metal.	<u>aluminothermic welding</u> , <u>thermic welding</u> , thermit welding ISO 857, 1.6.1

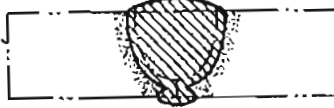
No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
1112	圧 接	ASSETSU	Generic term for welding process performed with large mechanical pressure applied to a weld joint, which is the abbreviation of KAATSU YŌSETSU (Japanese).	<u>pressure welding</u> ISO 857, 1. 5
1113	鍛 接	TANSETSU	High temperature pressure welding performed with the heated metal hit or pressurized.	<u>forge welding</u> ISO 857, 1. 5. 3
1114	ガス圧接	GASU ASSETSU	High temperature pressure welding performed by using the heat of gas flame.	<u>gas pressure welding</u> <u>pressure gas welding</u> ISO 857, 1. 5. 6
1115	抵抗溶接	TEIKŌ YŌSETSU	Welding performed by making a large current flow through the contact area of weld joint and heating with the resistance heat generated there while applying pressure.	<u>resistance welding</u> ISO 857, 1. 3
1116	パーカッション 溶接	PĀKASSHON YŌSETSU	Pressurized arc welding by heating and welding with the energy of arc generated by discharging the electric energy previously accumulated in a capacitor through the contact face of a base metal.	<u>percussion welding</u> ISO 857, 1. 6. 9
1117	磁気駆動アーク バット溶接	JIKI-KUDŌ ĀKU BATTO YŌSETSU	Arc welding performed by applying upsetting force after making the end faces of a weld joint face each other by slightly separating them, generating an arc between the end faces, driving the arc with the magnetic field applied normally to the arc, and heating the total line of a weld line. It is also called MIAB welding.	<u>magnetically impelled arc butt welding</u> , MIAB welding ISO 857, 1. 2. 14

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
1118	固相接合	KOSŌSETSUGŌ	Generic term for welding methods performed between solid face surfaces under pressurized or non-pressurized conditions without filler metal at a temperature below the melting point of a base metal.	solid-state welding, solid-phase welding
1119	高温圧接	KŌON ASSETSU	Generic term for solid-state welding performed by heating a base metal at a high temperature of not less than its recrystallization temperature and applying a strong Pressure thereto.	high temperature pressure welding
1120	摩擦圧接	MASATSU ASSETSU	High temperature pressure welding performed by utilizing frictional heat generated while pressurizing from relative movement between contact surfaces of members and applying upsetting force, which is also called MASATSU YŌSETSU (Japanese).	<u>friction welding</u> ISO 857, 1.5.2
1121	常温圧接	JŌON ASSETSU	Method for pressure welding performed by making local plastic deformation of the boundary of ductile material be carried out by strong compression at a room temperature as it is without applying any heat or current from outside, which is classified into lap welding and butt welding. It is occasionally carried out for the metal of a high fusion temperature by auxiliary heating.	<u>cold pressure welding</u> <u>cold welding</u> ISO 857, 1.5.7

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
1122	超音波圧接	CHŌONPA ASSETSU	Solid-phase welding performed by utilizing ultrasonic vibration generated by applying ultrasonic waves to the base metal supported between sound poles while applying pressure.	<u>ultrasonic welding</u> ISO 857, 1.5.1
1123	爆発圧接	BAKUHATSU ASSETSU	Solid-phase welding performed by using impact pressure generated by explosion of powder.	<u>explosive welding</u> , <u>explosion welding</u> ISO 857, 1.5.4
1124	手溶接	TE YŌSETSU	Welding where welding operation is performed by hand.	manual welding
1125	ろう接	RŌ SETSU	Generic term for brazing and soldering performed with wetting phenomena by melting a base metal as little as possible using a brazing filler or solder.	<u>brazing and soldering</u> ISO 857, 2
1126	拡散接合	KAKUSAN SETSUGŌ	Method for joining by making a base metal closely adhere, pressurizing it to an extent so as to generate plastic deformation as little as possible at a temperature condition of not more than the melting point of the base metal and utilizing the diffusion of atom generated between joining surfaces.	<u>diffusion welding</u> , <u>diffusion joining</u> ISO 857, 1.5.5
1127	マイクロ接合	MAIKURO SETSUGŌ	Generic term for welding process applied to a part where because a joining subject is minute and fine, the influence on the joining property and joining quality of molten amount, diffusion thickness, deformation amount, surface tension, etc. are large and dimensional effects are especially necessarily considered.	micro joining

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
1128	自動溶接	JIDŌ YŌSETSU	Generic term for welding performed by using equipment so designed that welding progresses continuously without constant operation by a worker.	automatic welding
1129	ロボット溶接	ROBOTTO YŌSETSU	A kind of automatic welding performed by using an industrial robot, which includes robotic arc welding, robotic spot welding, etc.	robotic welding, robotic arc welding, robotic spot welding
1130	機械化溶接	KIKAIKA YŌSETSU	Welding performed by the motorization and automatization of operations such as parts supply, clamp, feed, rotation, reverse rotation, clamp release, discharge, etc.	mechanical welding, mechanized welding
1131	スタッド溶接	SUTADDO YŌSETSU	Joining of a metal stud or similar part to a workpiece. Welding may be accomplished by arc, resistance, friction or other suitable welding process, by applying force with or without external gas shielding or flux. The weld is made over the whole end area of the stud or attachment.	<u>stud welding</u> 857, 1.6.10

(4.1.2) Common Terms

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
1201	溶接部	YŌSETSUBU	Generic term for the zone including the weld metal and heat-affected zone.	weld, weld zone
1202	熱影響部	NETSU EIKYŌBU	An unmelted base metal zone of which the structure, metallurgical properties, mechanical properties, etc. have been changed by the heat of welding, cutting, etc.	heat-affected zone
1203	溶接金属	YŌSETSU KINZOKU	Metal melted and solidified during welding, which is a part of the weld. For resistance welding, see 3301 "nugget".   Heat-affected zone  Weld metal (fused base metal + deposited metal)	weld metal
1204	溶着金属	YŌCHAKU KINZOKU	Metal transferred to base metal from filler metal.	deposited metal
1205	溶融部	YŌYŪBU	Zone formed from fused base metal in weld.	fusion zone

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
1206	ボンド部	BONDO BU	Part of boundary between fusion zone (weld metal) and base metal, which occasionally includes the vicinity of the boundary. For no weld metal such as solid phase welding, brazing and soldering, it means boundary between base metals or boundary between filler metal and base metal.	weld junction, weld interface
1207	溶接装置	YŌSETSU SŌCHI	Equipment used for welding. Although applicable to all welding equipment, equipment composed of several components, such as an automatic arc welding machine, is called a "welding set".	welding equipment, welding set
1208	溶接変圧器	YŌSETSU HEN'ATSU KI	Transformer used for supply welding current.	welding transformer
1209	トーチ	TŌCHI	Apparatus used to heat, weld and cut metal and other material by using gas flame, gas shielded arc, plasma arc, etc. It is called semi-automatic arc welding torch (see 2307), cutting torch (see 7208), etc. depending on the application. Further, for use of gas flame, it is also called SUIKAN (Japanese), and Blowpipe.	torch, blowpipe
1210	母材	BOZAI	Metal (material) to be welded or cut.	base metal (material)
1211	溶接材料	YŌSETSU ZAIRYŌ	Generic term for welding consumable materials such as covered electrode, wire, flux, shielding gas, etc. used for welding.	welding consumables

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
1212	溶加棒	YŌKA-BŌ	Rod-shaped filler metal (excepting covered electrode). Both with current and without current may be called filler rod.	filler rod, welding rod
1213	溶加材	YŌKA-ZAI	Metal (material) to be added during welding (including braze welding, brazing and soldering, and surfacing).	filler metal (material)
1214	フラックス	FURAKKUSU	Materials used to remove harmful materials such as oxides or the like of base metal and filler metal, to protect the surface of base metal, or otherwise to refine weld metal in welding or brazing and soldering. Though powdery or granular flux is often used, those of a paste state, a liquid state, etc. exist for the flux of soldering. Further, it is also used as materials for flux cored wire.	flux
1215	プラズマアーク	PURAZUMA ĀKU	Arc having mechanically and electrically convergent plasma column, used to generate high-density heat. Plasma arcs include transfer arcs, generated between the electrode and the base metal, and non-transfer arcs, generated between the electrode and the nozzle in a torch.	plasma arc, transferred arc, non-transferred arc
1216	消耗ノズル	SHĪMŌ NOZURU	Metal tube to supply current as well as to guide welding wire to weld to become a part of deposited metal by fusing.	consumable (wire) guide, consumable nozzle
1217	使用率	SHIYŌ-RITSU	Rate of welding time against the whole time expressed by percentage in a condition of intermittent loading.	duty cycle

(4.2) Arc Welding

(4.2.1) Welding Procedure

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
1105	アーク溶接	ĀKU YŌSETSU	See 1105 arc welding.	
2102	半自動アーク溶接	HANJIDŌ ĀKU YŌSETSU	Arc welding performed by using equipment that automatically feeds wire while operating the torch manually. It is also simply called HANJIDŌ YŌSETSU (Japanese).	semi-automatic arc welding, semi-automatic welding
2103	自動アーク溶接	JIDŌ ĀKU YŌSETSU	Arc welding performed by using equipment that automatically feeds wire so that the welding can progress continuously.	automatic arc welding
2104	被覆アーク溶接	HIFUKU ĀKU YŌSETSU	Welding performed by using covered electrodes.	shielded metal arc welding, manual metal arc welding metal-arc welding with covered electrode ISO 857, 1.2.2
2105	グラビティ溶接	GURABITI YŌSETSU	Welding performed in such a manner that as the covered electrode melts, the rod supporter goes down due to gravity and moves along the weld line while keeping a constant angle with the base metal. It is also called JŪRYOKUSHIKI YŌSETSU (Japanese).	gravity arc welding with covered electrode ISO 857, 1.2.3
2106	低角度溶接	TEIKAKUDO YŌSETSU	Welding performed with the covered electrode held at a low angle to the weld line by the force of a spring or the like while the end of the electrode makes contact with and moves along the weld line.	spring contact arc welding

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2107	横置(よこ置き)式溶接	YOKOOKISHIKI YŌSETSU	Welding performed automatically by the progress of arc generated from the end of covered electrode closely placed on the groove.	firecracker welding
2108	ガスシールドアーク溶接	GASUSHĪRUDO ĀKU YŌSETSU	Generic term for arc welding performed with arc and deposited metal shielded from the atmosphere by gases of CO ₂ , Ar, etc.	gas-shielded metal arc welding ISO 857, 1.2.6
2109	マグ溶接	MAGU YŌSETSU	Generic term for arc welding performed by using oxidic shielding gases such as CO ₂ , mixed gas of Ar and CO ₂ , etc.	MAG (metal active gas) welding. metal-arc active gas welding ISO 857, 1.2.8
2110	炭酸ガスアーク 溶接	TANSAN GASU ĀKU YŌSETSU	Automatic or semiautomatic welding with the electrode of welding wire by using carbonic acid gas (CO ₂) as shielding gas.	CO ₂ (gas shielded) arc welding
2111	混合ガス (Ar - CO ₂) アーク 溶接	KONGŌ GASU (Ar - CO ₂) ĀKU YŌSETSU	Generic term for arc welding excepting CO ₂ (gas shielded) arc welding among MAG (metal active gas) welding.	mixed gas (Ar - CO ₂) shielded arc welding
2112	イナートガスアーク溶接	INĀTO GASU ĀKU YŌSETSU	Arc welding performed by using shielding gases such as Ar, He, or their mixture inert gas or otherwise the mixture obtained by adding a small amount of active gas thereto. A case where Ar is used as shielding gas, is called argon arc welding, which principally means TIG (tungsten inert gas) welding.	inert gas shielded arc welding, argon arc welding

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2113	ティグ溶接	TIGU YŌSETSU	Non-consumable electrode inert gas arc welding employing tungsten or tungsten alloy as electrode.	TIG (tungsten inert gas) welding, <u>gas tungsten arc welding</u> <u>tungsten inert gas arc welding</u> ISO 857, 1.2.11
2114	ミグ溶接	MIGU YŌSETSU	A kind of consumable electrode inert gas arc welding employing a welding wire as electrode.	MIG (metal inert gas) welding, <u>metal-arc inert gas welding</u> ISO 857, 1.2.7
2115	セルフシールド アーク溶接	SERUFU-SHĪRUDO ĀKU YŌSETSU	Arc welding performed without shielding gas supplied from the outside by using flux cored wire electrodes.	self-shielded arc welding <u>flux-cored wire metal-arc welding without gas shield</u> ISO 857, 1.2.4
2116	パルスアーク溶接	PARUSU ĀKU YŌSETSU	Welding performed with current cyclically varied and caused to pulsate.	pulsed arc welding, pulsed power welding
2117	サブマージアーク溶接	SABU-MĀJI ĀKU YŌSETSU	Welding performed by using arc heat generated from arc in flux between the welding wire and the base metal, which is principally used for automatic arc welding.	<u>submerged arc welding</u> ISO 857, 1.2.5
2118	帯状電極肉盛溶接	OBIJŌ DENKYOKU NIKUMORI YŌSETSU	Cladding by welding using strip electrodes and performed through submerged arc welding with strip material of required composition taken as electrode.	surfacing with strip electrode, strip surfacing

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2119	アークスポット 溶接	ĀKU SUPOTTO YŌSETSU	Arc welding which welds in spots by heating a plate from one side. It includes shielded metal arc spot welding, TIG spot welding, and MIG spot welding.	arc spot welding, shielded metal arc spot welding, TIG spot welding, MIG spot welding
2120	アークスタッド 溶接	ĀKU SUTADDO YŌSETSU	Welding performed by generating arc between the tip of a bolt, bar, etc. and base metal and pressing it into the resulting molten pool.	<u>arc stud welding</u> , <u>stud arc welding</u> ISO 857, 1.6.11
2121	エレクトロガス アーク溶接	EREKUTORO-GASU ĀKU YŌSETSU	A kind of upward welding performed by generating arc with molten pool surrounded by the base metal end and water-cooled copper wall and shielded by carbonic acid gas or the like.	electro-gas arc welding <u>electro-gas welding</u> ISO 857, 1.6.3
2122	プラズマ溶接	PURAZUMA YŌSETSU	Welding performed by the heat of plasma arc (see 1215), which includes plasma arc welding performed by utilizing transfer arc (see 1215) and plasma jet welding performed by the heat of the high temperature and high speed gas current generated with non-transferred arc (see 1215).	plasma welding, <u>plasma arc welding</u> , plasma jet welding ISO 857, 1.2.12
2123	プラズマミグ溶接	PURAZUMA-MIGU YŌSETSU	Plasma arc welding using an additional consumable electrode and an inert shielding gas, e.g. argon, helium or their mixtures.	<u>plasma MIG welding</u> ISO 857, 1.2.13
2124	メタルアーク溶接	METARU ĀKU YŌSETSU	Arc welding using a consumable electrode.	<u>metal-arc welding</u> ISO 857, 1.2.1
2125	活性ガスシールドフ ラックス入りワイ ヤメタルアーク溶 接	KASSEI GASU SHIRUDO FURAKKUSU IRIWAIYA METARU ĀKU YŌSETSU	Metal-arc welding using consumable cored wire electrode with a non-inert (active) gas shield from an external source.	<u>flux-cored wire metal-arc welding with active gas shield</u> ISO 857, 1.2.9
2126	イナートガスシール	INĀTO GASU	Metal-arc welding using a consumable cored wire	flux-cored wire metal-arc

(4.2.2) Welding Consumables

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
1211	溶接材料	YŌSETSU ZAIRYŌ	See 1211.	
2202	被覆アーク溶接棒	HIFUKU ĀKU YŌSETSU BŌ	Welding rod used as electrode for arc welding, which is coated with flux. It is also called YŌSETSU BŌ (Japanese).	covered electrode
2203	心 線	SHINSEN	Metal wire in a covered electrode.	core wire
2204	棒 径	BŌKEI	Diameter of filler rod or diameter of the core wire of covered electrode.	rod diameter, core diameter
2205	被 覆 剤	HIFUKU ZAI	Flux coated outside the core wire of covered electrode (see 1214 Flux).	covering, coating flux
2206	つかみ	TSUKAMI	A part of covered electrode, where no coat is applied in order to be held with an electrode holder.	exposed core
2207	偏 心 率 (溶接棒の一)	HENSHIN RITSU (YŌSETSU BŌ NO HENSHIN RITSU)	Percentage of the difference between the maximum value and the minimum value of total sum of the measured values of core diameter and the thickness of one side coat to the minimum value.	eccentricity of electrode
2208	溶接ワイヤ	YŌSETSU WAIYA	Generic term for the long solid wire and flux cored wire in the shape of a coil used for welding, which is mainly used for automatic welding and semiautomatic welding.	welding wire, filler wire
2209	ソリッドワイヤ	SORIDDO WAIYA	Welding wire of which the section is solid and homogenous.	solid wire

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2210	フラックス入り ワイヤ	FURAKKUSU IRI WAIYA	Welding wire in the form of a pipe, in which flux is filled for the purposes of arc stabilization, deoxidation, etc.	flux cored wire
2211	キャスト(ワイヤの一)	KYASUTO (WAIYA NO KYASUTO)	Diameter of the spread wire ring when two or three rolls of wires are cut off and laid on a plane without restriction.	cast (of filler wire)
2212	ヘリックス(ワイヤの一)	HERIKKUSU (WAIYA NO HERIKKUSU)	The maximum build up distance of wire from a plane when two or three rolls of wires are cut off and laid on the plane without restriction.	helix (of filler wire)
2213	帯状電極	OBIJŌ DENKYOKU	Steel strip in coil used for welding.	strip electrode
2214	融合インサート	YŪGŌ INSĀTO	Metal material of the same series as the base metal preliminarily laid at a root part in butt welding.	fusible insert
2215	シールドガス (溶接用一)	SHĪRUDO GASU (YŌSETSUYŌ SHĪRUDO GASU)	Gas used to prevent air from penetration into welding atmosphere by shielding an arc and molten metal in welding.	shielding gas (for welding)
2216	溶融フラックス	YŌYŪ FURAKKUSU	A kind of flux for submerged arc welding, produced by shattering materials to pieces after melted in an electric furnace and sorting particle sizes by sieving.	fused flux, melt flux
2217	ボンドフラックス	BONDO FURAKKUSU	A kind of flux for submerged arc welding, produced by mixing powder material with liquid fixing agent to knead, granulating and drying (400 to 600°C) by using a kiln, and then sorting particle sizes by sieving.	bonded flux

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2218	焼結フラックス	SHŌKETSU FURAKKUSU	A kind of flux for submerged arc welding, produced by mixing powder material with liquid fixing agent to kneed, granulating and sintering (700 to 1000°C) by using a kiln, and then sorting particle sizes by sieving.	sintered flux

(4.2.3) Welding Apparatus

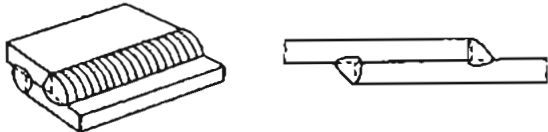
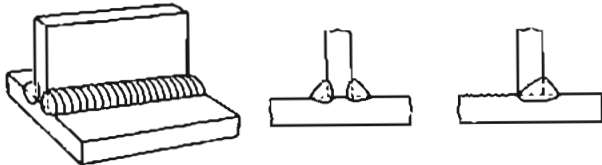
No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2301	エンジンアーク 溶接機	ENJIN ĀKU YŌSETSU	Welding equipment provided with an arc welding generator driven by an engine.	engine driven arc welding machine, engine driven welding set
2302	インバータ式アーク溶接電源	INBĀTA SHIKI ĀKU YŌSETSU DENGEN	Power source for arc welding of which the output is controlled by using an inverter (device converting a commercial a.c. power source to an a.c. power source of a difference frequency).	inverter controlled arc welding power source
2303	電撃防止装置	DENGEKI BŌSHI SŌCHI	Equipment to prevent electric shock by lowering the secondary no-load voltage of welding machine when arc is not generated in arc welding.	voltage reducing device
2304	ポジショナ (溶接用)	POJISHONA (YŌSETSU YŌ POJISHONA)	A kind of working stand so made that the welded object can be attached to rotate freely, hence the weld can be always put in an easy-to-weld position.	welding positioner

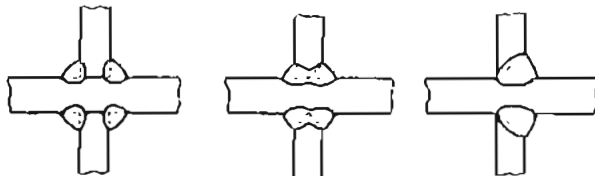
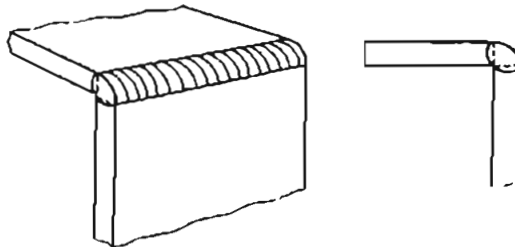
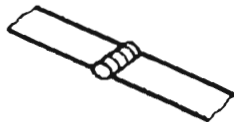
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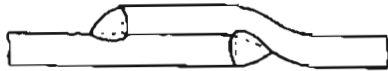
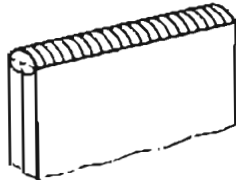
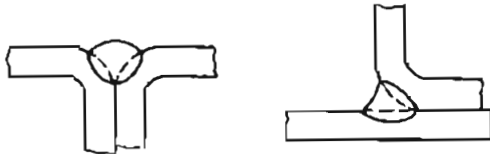
No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2305	ワイヤ送給装置	WAIYA SŌKYŪ SŌCHI	Equipment to feed automatically welding wire.	wire feeder
2306	溶接棒ホルダ	YŌSETSUBŌ HORUDA	Tool for manual welding that holds electrodes to carry current in arc welding, which is also called HORUDA(Japanese).	electrode holder
2307	溶接トーチ	YŌSETSU TŌCHI	Tool for manual operation that feeds welding current and shielding gas, which is used for arc welding in which welding wire is automatically fed. (see 1209).	welding torch
2308	コンタクトチップ	KONTAKUTO CHIPPU	Cylindrical conductor supplying welding current as well as guiding electrode wire. which is also simply called CHIPPU(Japanese).	contact tube, contact tip, tip
2309	スプール	SUPŪRU	Bobbin made of synthetic resin, hard board, steel, etc., which is so constructed that a unit amount of welding wire is wound and can be smoothly pulled out.	spool
2310	ワイヤリール	WAIYA RĪRU	Device so constructed that a coil of wire used for automatic and semiautomatic arc welding is attached and the wire can be smoothly pulled out.	wire reel
2311	ペールパック	PĒRU PAKKU	Cylindrical vessel to accommodate a welding wire in spiral, which is also called DORAMU.	pail pack, drum

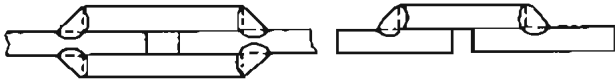
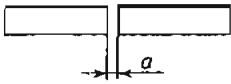
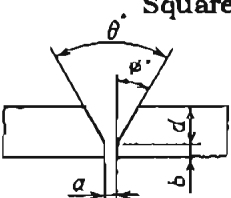
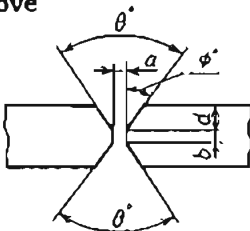
No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2312	消耗電極	SHŌMŌ DENKYOKU	Electrode that melts in arc in various types of arc welding and arc cutting, which is also called YŌKYOKU (Japanese).	consumable electrode
2313	非消耗電極	HIISHŌMŌ DENKYOKU	Electrode that is hard to be consumed even with arc heat because of its high melting point, which is also called HIYŌKYOKU (Japanese).	non-consumable electrode
2314	垂下特性	SUIKA TOKUSEI	A kind of external characteristics of arc welding power supply, in which terminal voltage outstandingly drops with increasing load current.	drooping characteristic
2315	定電圧特性	TEIDEN'ATSU TOKUSEI	A kind of external characteristics of arc welding power supply, in which terminal voltage changes little with increasing load current, (generally, terminal voltage drops about 2 V per 100 A).	constant voltage characteristic
2316	無負荷電圧	MUFUKA DEN'ATSU	Terminal voltage of welding power source at no-load period, which is also called KAIRO DENATSU (Japanese).	open circuit voltage
2317	ホットスタート	HOTTO SUTĀTO	Arc starting method performed when the start-time welding current gets excessively large in generating the arc.	hot start

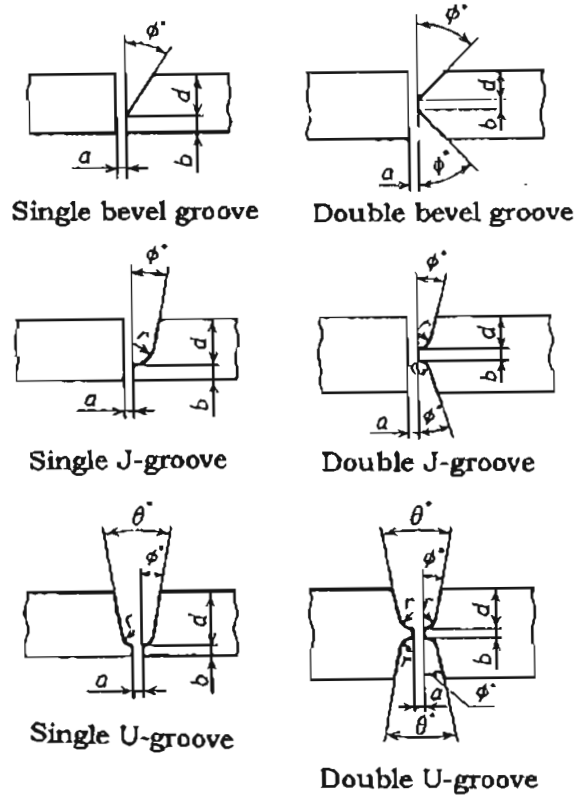
(4.2.4) Weld Joint

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2401	溶接継手	YŌSETSU TSUGITE	Joints to be welded or which have been welded. Welding using these joints is called -welding. For example, butt joint welding or butt welding, and lap joint fillet welding or lap fillet welding.	weld joint, welded joint
2402	突合せ継手	TSUKIAWASE TSUGITE	Weld joints in which the base metals lie nearly in the same plane.	butt joint
2403	重ね継手	KASANE TSUGITE	Weld joints formed by partially overlapping base metal. These include fillet, spot, seam weldings, and brazing and soldering. 	lap joint
2404	T 継 手	TĪ TSUGITE	Weld joints making approximately a right angle in a T-shape formed by putting the end of one plate on the surface of another plate. 	T-joint

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2405	十字継手	JŪJI TSUGITE	Weld joints forming a cross as shown in the figure. 	cruciform joint
2406	角 (かど) 継手	KADO TSUGITE	Weld joints at a corner where two base metals are kept in an L-shape making approximately a right angle. 	corner joint
2407	スカーフ継手 	SUKĀFU TSUGITE	Joints whose welding surface is broadened by cutting the base metal of an I-shape groove at an angle to each other, which is mainly used for brazing and forge welding.	scarf joint

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2408	せきり継手	SEGIRI TSUGITE	Weld joints so made that base metal surfaces lie nearly in the same plane by making a step on one member of the lap joint. 	joggled lap joint
2409	へり継手	HERI TSUGITE	Weld joints between ends of not less than two base metals overlapping almost in parallel. 	edge joint
2410	フレア継手	FUREA TSUGITE	Joint whose groove form is constructed from arc and arc, and otherwise arc and line. 	flare groove joint

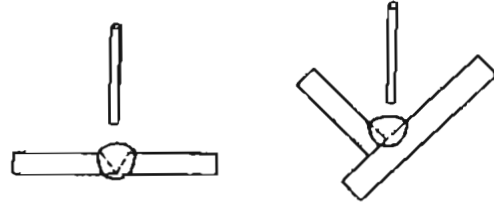
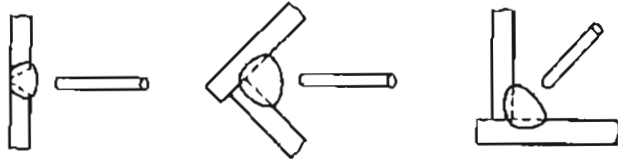
No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2411	当て金継手	ATEGANE TSUGITE	Fillet welding joints made up of a base metal surface and the end of strap. These include one-side strapped joints and both-side strapped joints. 	strapped joint
2412	すみ肉継手	SUMI NIKU TSUGITE	Weld joint having a triangular section used for welding two surfaces intersecting nearly at right angles.	fillet weld joint
2413	開 先 (かいさき)	KAI SAKI	Groove provided between base metals to be welded, which is also called GURŪBU. Standard shape of the groove shall be as given in 2414, square groove, to 2422, double U groove.	groove
2414	I 形開先	AIGATA KAISAKI	 Square groove  Single V-groove  Double V-groove (When root face (b) is comparatively large, it may be sometimes called Y-shape groove.)	square groove
2415	V 形開先	BUIGATA KAISAKI		single V-groove
2416	X 形開先	EKKUSUGATA KAISAKI		double V-groove

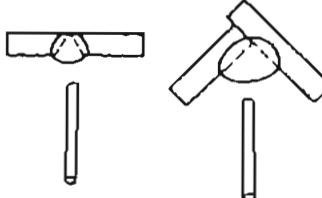
No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2417	レ形開先	REGATA KAISAKI	 Single bevel groove Double bevel groove Single J-groove Double J-groove Single U-groove Double U-groove	single bevel groove
2418	K形開先	KEIGATA KAISAKI		double bevel groove
2419	J形開先	JEIGATA KAISAKI		single J-groove
2420	両面J形開先	RYŌMEN JEI-GATA KAISAKI		double J-groove
2421	U形開先	YŪ-GATA KAISAKI		single U-groove
2422	II形開先	ETCHI-GATA KAISAKI		double U-groove

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2423	開先溶接	KAISAKI YŌSETSU	Welding in which metal is heaped at a groove.	groove weld
2424	開先角度	KAISAKI KAKUDO	θ' in Figs. 2415 to 2422.	groove angle, included angle
2425	ベベル角度	BEBERU KAKUDO	ϕ' in Figs. 2415 to 2422.	bevel angle
2426	開先深さ	KAISAKI FUKASA	d in Figs. 2415 to 2422.	groove depth
2427	ルート面	RŪTO MEN	b in Figs. 2415 to 2422.	root face
2428	ルート間隔	RŪTO KANKAKU	a in Figs. 2414 to 2422.	root opening, gap
2429	ルート半径	RŪTO HANKEI	r in Figs. 2419 to 2422.	root radius, groove radius
2430	開先面	KAISAKI MEN	Surface of groove.	groove face, fusion face

(4.2.5) Welding Position

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2501	溶接姿勢	YŌSETSU SHISEI	Position taken by welding operator against weld. This includes four positions: flat, horizontal, vertical, and overhead positions.	welding position, position of weld

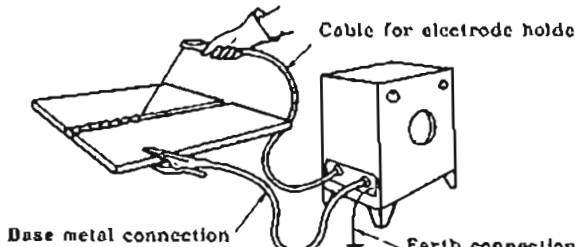
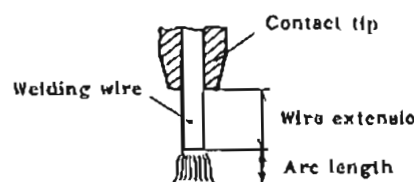
No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2502	全姿勢	ZEN SHISEI	Generic term for all positions; flat, horizontal, vertical, and overhead.	all position
2503	下向姿勢	SHITAMUKI SHISEI	Welding position to weld while facing downward from the top against a joint whose welding axis is almost horizontal. 	flat position
2504	横向姿勢	YOKOMUKI SHISEI	Welding position to put bead horizontally against a joint whose welding axis is almost horizontal. The right end position given in the figure below is especially called horizontal fillet position. 	horizontal position, horizontal fillet position

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2505	立向姿勢	TATEMUKI SHISEI	Welding position to put bead vertically from the top or bottom against a joint whose welding axis is almost vertical. Welding upward from the bottom is called upward welding and welding downward from the top is called downward welding.	vertical position, upward welding, downward welding, downhill welding
2506	上向(うわむき)姿勢	UWAMUKI SHISEI	Welding position to weld while facing upward from the bottom against a joint whose welding axis is almost horizontal. 	overhead position

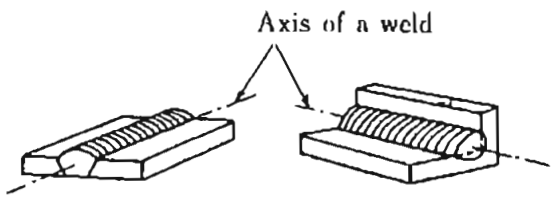
(4.2.6) Welding Phenomena

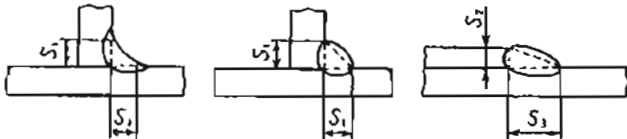
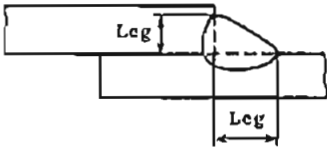
No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2601	アークストライク	ĀKU SUTORAIKU	To generate arc instantaneously on base metal and then immediately cut it in arc welding. Otherwise, defects caused thereby.	arc strike, stray flash, stray arcing
2602	アーク電圧	ĀKU DENATSU	Voltage between both ends of arc.	arc voltage
2603	アーク長	ĀKU CHŌ	Distance between both ends of arc.	arc length
2604	アークタイム	ĀKU TAIMU	Period of time during which arc is generated in arc welding operation.	arc time, arcing time
2605	アークの安定性	ĀKU NO ANTEISEI	Degree of stability of arc, which means a degree how arc length, arc directivity, etc. become constant.	arc stability
2606	アース接続	ĀSU SETSUZOKU	To connect electrically the case of a welding machine with the ground for safety.	ground connection
2607	磁気吹き	JIKI FUKI	Phenomenon in which arc deflects due to magnetic action of current.	(magnetic) arc blow
2608	クリーニング作用	KURĪNINGU SAYŌ	Phenomenon in which the action of the arc removes the oxidized film to clean the surface of base metal in inert gas shielded arc welding.	cleaning action
2609	溶滴	YOTEKI	Particles of molten metal transferring from the tip of welding electrode or welding wire to base metal.	droplet

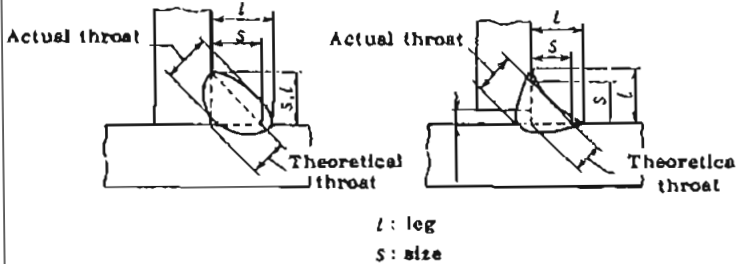
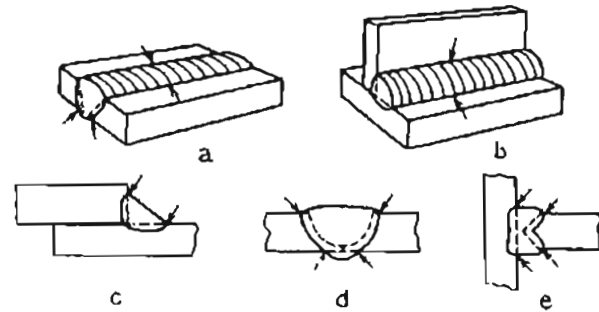
No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2610	溶滴移行	YŌTEKI IKŌ	A fact that molten metal is transferred from the tip of welding electrode or welding wire to the base metal side.	droplet transfer, metal transfer
2611	短絡アーク溶接	TANRAKU ĀKU YŌSETSU	Arc welding in which molten metal is transferred to base metal every time wire is contacted with molten pool in CO ₂ gas shielded arc welding, MIG welding, etc., which is also called SHŌTO ĀKU YŌSETSU (Japanese).	short circuiting arc welding
2612	短絡移行	TANRAKU IKŌ	A fact that the tip of welding wire is short-circuited with base metal and the fused metal is transferred to the base metal.	short circuiting transfer, dip transfer
2613	グローブール移行	GUROBYŪRU IKŌ	Transferring of electrode tip molted by arc to base metal in the form of a large particle.	globular transfer
2614	スプレー移行	SUPURĒ IKŌ	Transferring of electrode tip melted by arc to base metal in the form of a smaller particle than the diameter of wire.	spray transfer

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2615	母材接続	BOZAI SETSUZOKU	Connection of one side terminal of welding power source and base metal by welding cable when welding operation is carried out (see Figure). 	workpiece connection work connection
2616	突出し長さ (ワイヤの一)	TSUKIDASHI NAGASA (WAIYA NO TSUKIDASHI NAGASA)	Extending length of welding wire from the end of contact tip. 	electrode extension, wire extension
2617	棒プラス	BŌ PURASU	Connection in DC arc welding, where the base metal is connected with the negative side of the power source and the welding rod or electrode to the positive side. For welding wire, it is also called WAIYA PURASU (Japanese).	electrode positive, DCEP

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2618	極マイナス	BŌ MAINASU	Connection in DC arc welding, where the base metal is connected with the positive side of the power source and the welding rod or electrode to the negative side. For welding wire, it is also called WAIYA MAINASU (Japanese).	electrode negative, DCEN
2619	溶接電流	YŌSETSU DENRYŪ	Current caused to flow in order to give the heat required for welding.	welding current
2620	溶接速度	YŌSETSU SOKUDO	Speed of welding bead, which is usually expressed by bead length per minute.	welding speed
2621	溶融速度	YŌYŪ SOKUDO	Speed at which the welding rod melts per unit time.	melting rate
2622	溶着速度	YŌCHAKU SOKUDO	Mass of deposited metal put per unit time.	deposition rate
2623	溶着率	YŌCHAKU-RITSU	Ratio of the mass of deposited metal to the mass of consumed welding electrode, provided that the unused part of the electrode should be excepted. For a covered electrode, the mass of the cover is usually included, but excluded in special cases. It is also called YŌCHAKU KŌRITSU (Japanese).	deposition efficiency
2624	溶接記号	YŌSETSU KIGŌ	Symbol for giving designation for welding on a drawing (see JIS Z 3021).	welding symbol

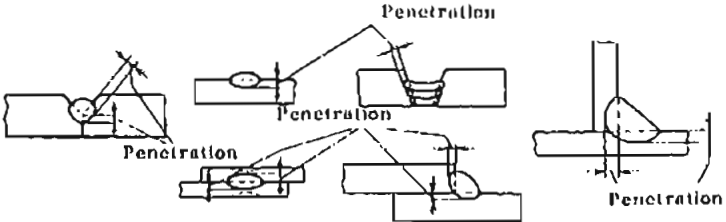
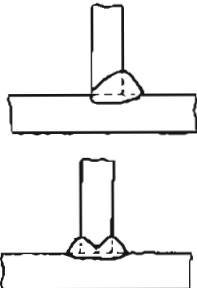
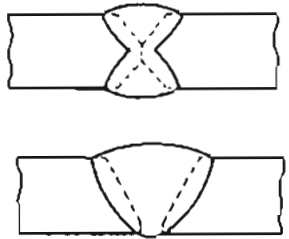
No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2625	溶接軸	YŌSETSU JIKU	Line passing through the centroid of section of weld perpendicular to weld line, and perpendicular to the section. 	axis of a weld, weld axis
2626	溶接線	YŌSETSU SEN	Assumed line for expressing the bead and weld as a line.	weld line, weld arc
2627	溶接の有効長さ	YŌSETSU NO YŪKŌ NAGASA	Whole length of weld whose section has the dimensions as planned.	effective length of weld
2628	すみ肉のサイズ	SUMINIKU NO SAIZU	Dimensions (S_1 , S_2 , S_3) used in design to designate the size of fillet welding metal. Cases of equal legs and unequal legs are included. For equal legs, the dimension is the equilateral length (S_1) of the greatest rectangular equilateral triangle capable of being drawn in the cross section of the fillet weld metal, and for unequal legs, they are the lengths of two sides (S_2 , S_3) containing the right angle of the greatest rectangular triangle capable of being drawn in the cross section of the fillet weld metal.	fillet weld size

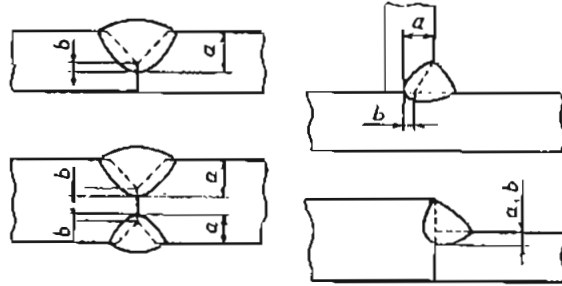
No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2628			(Continued) Equal legs concave fillet weld Equal legs convex fillet weld Unequal legs fillet weld 	
2629	脚 長 (きゃくちょう) (すみ肉の一)	KYAKUCHŌ (SUMINIKU NO KYAKUCHŌ)	Distance from the root of joint to the toe of fillet weld. 	leg (- of a fillet weld), leg length
2630	の と 厚 (あつ) (すみ肉の一)	NODO ATSU (SUMINIKU NO NODO ATSU)	See 2631 (theoretical throat) and 2632 (actual throat).	throat (- of a fillet weld), throat thickness
2631	理論のと厚 (すみ肉の一)	RIRON NODO ATSU (SUMINIKU NO RIRON NODO ATSU)	Throat used in design calculation. Height of triangular fillet determined by the size of the fillet, measured from the root of the joint [See Figure of 2632 (actual throat)].	theoretical throat, design throat thickness (- of a fillet weld)

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2632	実際のと厚 (すみ肉の一)	JISSAI NODO ATSU (SUMINIKU NO JISSAI NODO ATSU)	Throat actually welded. The shortest distance from the root to the surface of the section of a fillet weld.  L : leg S : size	actual throat (- of a fillet weld)
2633	溶融池 (ようゆうち)	YŌYŪ CHI	Pool of the molten metal generated by the heat of arc or the like in welding.	molten pool, weld pool, molten weld pool
2634	クレータ	KURĒTA	Indents caused at the end of bead.	crater
2635	止 端(したん)	SHITAN	Point at which a base metal surface and a welding bead surface intersect. 	toe (of weld)

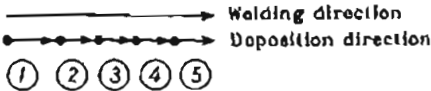
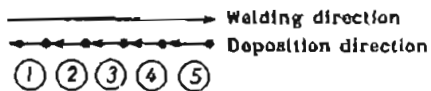
No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2636	エンドタブ	ENDO TABU	Auxiliary plate attached to the end of a weld line.	weld tab, run-on tab, run-off tab
2637	スカラップ	SUKARAPPU	Fan-shaped notch provided on one of base metals to present the intersection of weld lines.	scallop
2638	ウィーピング	UĪBINGU	Operation process of rods in which welding is performed while the welding rod is moved back and forth almost perpendicularly to the welding direction.	weaving
2639	ビード	BĪDO	Weld metal produced by one pass.	bead, weld bead, melt run
2640	ストリングアビード	SUTORINGA BĪDO	Bead placed linearly without weaving.	stringer bead
2641	スパッタ	SUPATTA	Slag and metal particles scattering during welding in arc welding, gas welding, brazing and soldering, etc.	spatter ISO 6520, 602

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2642	スパッタ損失	SUPATTA SONSHITSU	Loss of metal due to spatter.	spatter loss
2643	ス ラ グ	SURAGU	Nonmetallic substances generated on a weld.	slag
2644	スラグハンマ	SURAGU HANMA	Hammer whose tip is made thin for removing slag.	slag hammer
2645	層	SŌ	Layer of deposited metal composed of one or more passes.	layer
2646	パ ス	PASU	One welding operation performed along a weld joint. Bead results from pass.	pass, weld pass, run
2647	パス間温度	PASUKAN ONDO	The lowest temperature of pass before a next pass starts in multipass welding. An interpass temperature for one layer per one pass is called interlayer temperature.	interpass temperature; interlayer temperature
2648	バタリング	BATARINGU	To provide surfacing on the groove surface in order to prevent influences from base metal component and others in butt welding.	buttering

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2649	溶込み	TOKEKOMI	Distance between the summit of molten part of base metal and the surface of the plane to be welded. 	penetration
2650	完全溶込み	KANZEN TOKEKOMI	Penetration over the entire area of the plate thickness of a joint. T joint  Butt joint 	complete joint penetration, full penetration

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2651	部分溶込み	BUBUN TOKEKOMI	Penetration that does not prevail on the entire area of the plate thickness of a joint. <i>a</i> : Partial penetration of a joint <i>b</i> : Partial penetration of a root 	partial (joint) penetration
2652	入 熱	NYŪNETSU	Heat quantity given to a weld from outside in welding. An arc is expressed by the electric energy H (J/cm) generated per unit length (1 cm) of welding bead in arc welding. When E (V) as arc voltage, I (A) as arc current, and v (cm/min) as welding speed are respectively taken, said electric energy H is given by the following formula. $H = \frac{60 EI}{v}$	heat input, energy input

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2653	余 盛(よもり)	YOMORI	Deposited metal piled over the surface more than a dimension required in groove or fillet weld. 	<u>excess weld metal</u> , <u>excessive convexity</u> , weld reinforcement ISO 6520, 502 and 503
2654	残留応力	ZANRYŪ ŌRYOKU	Stress remaining in structures or members.	residual (welding) stress
2655	予 熱	YONETSU	Application of heat to a base metal prior to the operation of welding or thermal cutting.	preheating
2656	後 熱(ごねつ)	GONETSU	Application of heat to a weld or a gas cutting zone afterward.	postheating
2657	溶接後熱処理	YŌSETSU GO NETSU SHORI	Heat treatment provided to a weld or weld structures after welding. Stress relieving heat treatment is typical.	post weld heat treatment
2658	溶接ひずみ	YŌSETSU HIZUMI	Deformation caused in members by welding.	welding distortion
2659	逆ひずみ	GYAKU HIZUMI	Distortion preliminarily given in inverse direction by predicting angular and other deformation resulting from welding.	preset distortion
2660	ピーニング	PĪNINGU	Operation to provide plastic deformation on a surface layer by continuously hitting a weld with a special hammer.	peening

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2661	溶接性	YŌSETSUSEI	Expression of the ability of base metal to be favorably welded by using welding rod or welding wire and welding method which seem to be optimum for the base metal.	weldability ISO 581, 1
2662	遷移温度	SEN'I ONDO	Temperature at which the form of rupture of material changes suddenly.	transition temperature
2663	溶接順序	YŌSETSU JUNJO	To determine an order by which each weld joint is connected when welding structures are connected by many weld joints.	welding sequence
2664	溶着順序	YŌCHAKU JUNJO	Sequence in which deposited metal is deposited on a weld by welding operation when one weld line is welded. For multi-layer welding, it is called SEKISŌ JUNJO (Japanese).	deposition sequence, cross-sectional sequence
2665	前進法 (溶着順序の 一)	ZENSHIN HŌ (YŌCHAKU JUNJO NO ZENSHIN HŌ)	Method in which deposition is carried out so that a welding method has the same direction as a deposition direction. 	progressive welding (of deposition sequence)
2666	後退法 (溶着順序の 一)	KŌTAIHŌ (YŌCHAKU JUNJO NO KŌTAIHŌ)	Method in which deposition is carried out so that a welding direction becomes reverse to a deposition direction. 	backstep welding (of deposition sequence)

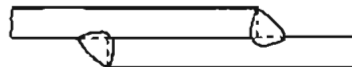
No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2667	対称法	TAISHŌ-HŌ	Method in which welding is carried out from the longitudinal central part of a weld line symmetrically to both ends, which is also called FURIWAKE HŌ (Japanese).	symmetrical sequence
2668	飛石(とびいし)法	TOBIISHI-HŌ	Welding method to be carried out dividing a melt line by a fixed interval intermittently, which is also called SUKIPPU YŌSETSU (Japanese).	intermittent weld, skip welding
2669	ブロック法	BUROKKU-HŌ	Welding method performed by completing each one block in multi-layer welding.	block sequence, block welding
2670	カスケード法	KASUKĒDO-HŌ	Welding method in which welding is progressed left and right being deposited from the center in multi-layer welding.	cascade sequence
2671	一時的溶接	ICHIJITEKI YŌSETSU	Welding in which the welding of a sling fitting, the use of a strongback, etc. are temporarily carried out. They are removed after having achieved respective purposes and do not remain in final products.	temporary welding
2672	ストロングバック	SUTORONGU-BAKKU	A kind of jig temporarily attached for preventing angular deformation and distortion as well as for correcting the dislocation to each other of plates in butt welding, which is commonly called UMA (Japanese).	strongback

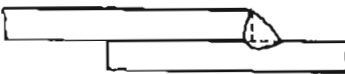
No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2673	溶接のまま	YŌSETSU NO MAMA	A state of welding metal and heat-affected zone as they are welded, in which the material qualities thereof are not changed by heat treatment, peening, etc. after annealing.	as welded
2674	拘束ジグ	KŌSOKU JIGU	Jig by which the occurrence of a strain is lessened by giving constraint on a weld.	welding jig
2675	埋(うも)れアーク	UMORE ĀKU	State in which wire is dipped into the molten pool dug with an arc by keeping the length of the arc short.	buried arc
2676	キーホール	KĪHŌRU	Circular hole formed by penetration of a heat source to the rear side of base metal at the top of a molten pool.	keyhole
2677	運 棒 比	UNBŌ HI	Ratio of the length of a weld bead formed per unit length of an electrode. $\frac{\text{Length of a weld bead}}{\text{Length of a molten electrode}} \times 100$	elongation of bead
2678	初(し)アーク	SHO ĀKU	Arc emitted firstly with a new electrode.	initial arc
2679	再アーク	SAI ĀKU	Arc emitted again after interrupting the arc.	rearc
2680	後戻りスタート 運棒法	ATOMODORI SUTĀTO UNBŌ HŌ	Method for laying a weld bead again returning to a start point of welding after emitting an arc 10 mm to 20 mm in front (welding direction) of the welding start point.	retract start technique

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2681	拡散性水素	KAKUSANSEI SUIISO	Hydrogen of an atomic state capable of moving freely in the crystal lattice of a weld metal part.	diffusible hydrogen
2682	最高硬さ (熱影響部の一)	SAIKŌ KATASA (NETSUEIKYŌBU NO SAIKŌ KATASA)	The change of hardness appears according to a distance from a weld bond part following the change of a structure. It is the maximum value of hardness of this part.	maximum hardness
2683	積層	SEKISŌ	Not less than two layers of welding operation performed along a weld line.	build-up
2684	角変形	KAKU HENKEI	Lateral bending deformation generated in a member or a structure due to welding.	angular distortion, angular misalignment
2685	目違い	MECHIGAI	Misalignment between reference lines of two base metals, 	<u>linear misalignment</u> ISO 6520, 507
2686	フェライト量	FERAITO-RYŌ	Content of ferrite structure contained in austenitic stainless steel weld metal. A measuring method includes a magnetic method and a method by structure diagram.	ferrite content
2687	FN (フェライト番号)	FN (FERAITO BANGŌ)	Value obtained by specifying a ferrite quantity by comparison with a magnetic sensitivity taking the value obtained by measuring the thickness of nonmagnetic substance covered on a magnetic material with a magnetic film meter as a reference value.	FN (ferrite number)

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2688	クロム当量	KUROMU TÖRYŌ	Expression of the index of ferrite formation elements (Cr, Mo, Si, and Nb) having an effect equal or superior to that of Cr when a ferrite quantity is determined by a structure diagram method. Chromium equivalent is expressed by the following formula. Chromium equivalent = $\% \text{Cr} + \% \text{Mo} + 1.5 \% \text{Si} + 0.5 \% \text{Nb}$	chromium equivalent
2689	ニッケル当量	NIKKERU TÖRYŌ	Expression of the index of austenite formation elements (C, Mn, Ni, and N) expressing an effect equal or superior to that of Ni when a ferrite quantity is determined by a structure diagram method. Nickel equivalent is expressed by the following formula. (1) Nickel equivalent of Schaeffler structure diagram Nickel equivalent = $30 \% \text{C} + 0.5 \% \text{Mn} + \% \text{Ni}$ (2) Nickel equivalent of Delong structure diagram Nickel equivalent = $30 \% \text{C} + 0.5 \% \text{Mn} + \% \text{Ni} + 30 \% \text{N}$	nickel equivalent

(4.2.7) Welding Execution

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2701	突合せ溶接	TSUKIAWASE YŌSETSU	Welding used to butt joints.	butt welding
2702	両面溶接 (突合せ継手の一)	RYŌMEN YŌSETSU (TSUKIAWASE TSUGITE NO RYŌMEN YŌSETSU)	Welding performed from both sides: front and back. It is also called RYŌGAWA YŌSETSU (Japanese). 	both side welding (- of butt joint)
2703	両側溶接 (すみ肉継手の一)	RYŌGAWA YŌSETSU (SUMINIKU TSUGITE NO RYŌGAWA YŌSETSU)	Fillet welding for both ends of lapped portion. 	both side welding (- of fillet joint), double welded joint
2704	両側溶接 (T 継手の一)	RYŌGAWA YŌSETSU (T̄-TSUGITE NO RYŌGAWA YŌSETSU)	Welding performed from both sides of T-joint. 	both side welding (- of T-joint)

No.	Term (Japanese character)	Reading	Definition	Informative reference
				English equivalent
2705	片面溶接 (突合せ継手の一)	KATAMEN YŌSETSU (TSUKIAWASE TSUGITE NO KATAMEN YŌSETSU)	Welding performed from only one side of butt joint. It is also called KATAGAWA YŌSETSU (Japanese). 	one side welding (- of butt joint), single welded joint
2706	片側溶接 (すみ肉継手の一)	KATAGAWA YŌSETSU (SUMINIKU TSUGITE NO KATAGAWA YŌSETSU)	Welding performed from only one side of fillet joint. 	one side welding (- of fillet joint)
2707	片側溶接 (T 継手の一)	KATAGAWA YŌSETSU (T TSUGITE NO KATAGAWA YŌSETSU)	Welding performed from only one side of T-joint. 	one side welding (- of T-joint)
2708	ナロウギャップ 溶接	NARŌ GYAPPU YŌSETSU	Welding performed with narrow gap groove such as I-shape or near I-shape in butt welding of thick plates, which is also called KYŌ KAISAKI YŌSETSU (Japanese).	narrow gap welding, narrow groove welding
2709	エンクローズ溶 接	ENKURŌZU YŌSETSU	Arc welding performed by enclosing molten pool with a strap so that molten metal does not flow out from a weld.	enclosed arc welding