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(JSNDI/JSA)

**Terms and definitions of
nondestructive testing**

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by The Japanese Society for Non-Destructive Inspection (JSNDI)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS Z 2300:2003** is replaced with this Standard.

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Terms and definitions of nondestructive testing

Introduction

JIS Z 2300 was established in 1991 and has been revised afterwards so as to correspond to the International standards and the standards in Japan for every testing method. This time, it has been revised in consideration of the latest trends of technology, the revision situation of the related International standards and the standards in Japan for every testing method, and the like.

ISO Standard which specifies the general terms and definitions of nondestructive testing in a lump like this has not been established yet.

1 Scope

This Standard specifies principal terms and definitions relevant to the nondestructive testing used in the industrial field.

2 Classification

Terms and definitions of nondestructive testing are classified mainly according to the testing method as shown in **2.1**. Further, for the respective testing methods, they are subclassified basically according to the details shown in **2.2**. However, the strain measurement is subclassified by the measuring method without conforming to **2.2**.

2.1 Testing methods

- a) Common and general
- b) Radiography
- c) Ultrasonic testing
- d) Acoustic emission inspection (AE) testing
- e) Magnetic particle testing
- f) Penetrant testing
- g) Eddy current testing
- h) Leak testing
- i) Strain measurement
- j) Visual testing
- k) Infrared thermography

2.2 Details classification

- a) General (physical phenomenon, etc.)
- b) Instrument/material
- c) Calibration block/reference block

- d) Testing method
- e) Judgment/evaluation
- f) Others

3 General items

3.1 Numbering

The numbers are four digits in general, in which the thousandth digit indicates main classification by the testing method and the hundredth digit indicates the subclassification. The common and general terms are to be initiated at 0001 and the terms of radiography at 1001. They are to be initiated one by one at a number added every 1000. Exceptionally, the terms for infrared thermography testing, being initiated at 10000, are to be five figures. Further, in the case of having 100 or more subclassification terms, taking the figure of the main classification up one place to be at 10000, the numbers are also to be five figures.

3.2 Order of terms

The terms are to be arranged in a sequence of Japanese syllable by every subclassification. Where two or more terms are put together in a column, these shall be employed in priority following the order of description.

3.3 Use of parentheses

Parentheses “()” are used. When the explanation to the word or the phrase just before, or the supplement are indicated, parentheses “()” are used. In the case of expressing by affixing the specific modifier to the term, the said term is indicated by — (dash) and mentioned by using parentheses “()” after the term.

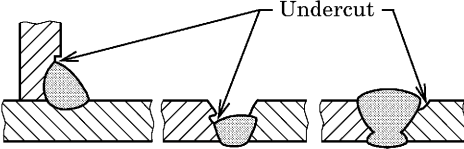
3.4 English equivalent

For English equivalent, which is informative, the terms specified in **ISO** Standard are adopted preferably.

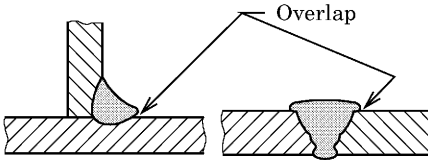
4 Terms and definitions

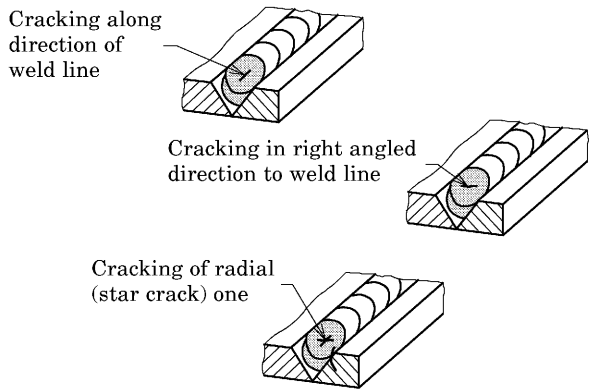
(0) Common and general

(00) General

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0001	あばた (コンクリートのー)	ABATA (KONKURÎTO NO -)	trace of the blow hole remained on the surface of hardening concrete	crater
0002	アルカリ骨材反応	ARUKARI KOTUZAI HANNÔ	phenomenon of concrete in which the aggregate having reactivity with alkali reacts with the cement or other alkali content in long period, and the expanding cracking, etc. are generated (see JIS A 0203)	alkali aggregate reaction
0003	アンダカット	ANDAKATTO	slot on the weld toe generated by welding on parent material or previous weld (see JIS Z 3001-4) 	undercut
0004	異種金属巻込み	ISYU KINZOKU MAKIKOMI	metal of different type included in weld zone (see JIS Z 3001-4) NOTE: Tungsten, copper, other metals are included.	metallic inclusion
0005	異物	IBUTU	other substance got mixed into the inherent material	foreign material
0006	インゴットパターン	INGOTTO PATÂN	concentration difference appeared in contour like feature due to change of crystal form or imbalance of components occurred in the solidification process of steel (see JIS G 0202)	ingot pattern

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0007	裏当て	URAATE	metallic plate, granular flux, etc. to be applied onto the groove bottom, in groove weld, for welding from one side or preventing generation of burn through, defects, etc. (see JIS Z 3001-2) NOTE: A metal plate intending to be welded together with the parent material is referred to as “URAATE-GANE”.	backing metal, backing
0008	裏はつり	URAHATURI	process made from the back side, in butt welding, as chipping off the defect part of the groove bottom, the first layer or the like (see JIS Z 3001-2)	back chipping, back gouging
0009	SN比	ESU-ENU HI	ratio of signal amplitude to noise amplitude generally expressed in decibel	signal-to-noise ratio
0010	塩害（コンクリートのー）	ENGAI (KONKURÎTO NO —)	corrosion phenomenon of reinforcement steel in concrete due to chloride ion in which the damage such as cracking, flaking and delamination in concrete is generated	salt attack, chloride attack
0011	延性破壊	ENSEI HAKAI	phenomenon that a material generates plastic deformation (permanent set) to be fractured by an external force	ductile fracture
0012	応力き裂	ÔRYOKU KIRETU	cracking generated on the surface or inside of plastics caused by a stress smaller than the breaking strength	stress cracking
0013	応力腐食割れ	ÔRYOKU HUSYOKU WARE	cracking generated by synergistic effect of corrosion and tensile stress	stress corrosion cracking
0014	置割れ	OKI WARE	cracking on a metallic material quenched, or quenched and tempered generated while it is left as it is It is also referred to as “SIZEN WARE”	season cracking
0015	遅れ割れ	OKURE WARE	cracking generated with lesser generation of plastic strain on the material to which the tensile stress is applied after a lapse of a certain period	delayed crack

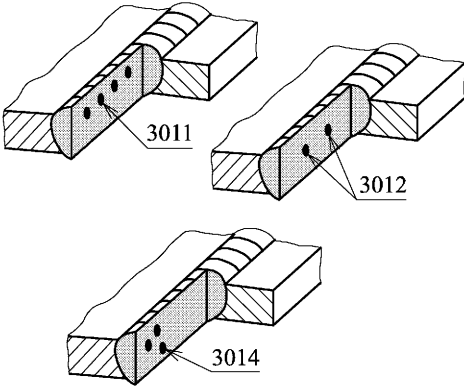
No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0016	オーバーラップ	ÔBARAPPU	portion that the deposited metal lies over the parent material without fusion at the weld toe (see JIS Z 3001-4) 	overlap
0017	開先, グループ	KAISAKI, GURÛBU	slot provided at the interface between the parent materials to be welded NOTE: There are names of square, single V, double V, single bevel, double bevel, single J, single U, double U grooves, etc.	groove
0018	かぶり (鋼材の－), かぶり厚さ (鋼材の－)	KABURI (KÔZAI NO －) KABURI ATUSA (KÔZAI NO －)	minimum distance from the surface of concrete to the surface of reinforcement steel, sheath, etc. to be examined (see JIS A 0203)	cover (reinforcement)
0019	スリバー	SURIBÂ	state of material surface that seems to be skinned, which is caused by foreign matters (including gases) or flaws in the raw material, and that such skins have been peeled off	sliver
0020	乾燥収縮ひび割れ (コンクリートの－)	KANSÔ SYÛSYUKU HIBIWARE (KONKURÎTO NO －)	cracking in concrete generated after dry shrinkage	drying shrinkage crack
0021	気孔	KIKÔ	blow hole remaining in the weld zone or ingot which is generated in the molten metal and missed to leave at the solidification	gas cavity, cavity
0022	銀点, フィッシュアイ	GINTEN, HUISSYU AI	fish eye like incomplete part of silver white colour to be appeared on the weld metal broken surface (see JIS Z 3001-4)	fish eye

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0023	グラウト工法	GURAUTO KÔHÔ	injection technique or filling technique The cement based material, inorganic material other than cement, organic material, etc. are used for grouting (see JIS A 0203).	grouting
0024	クラスター	KURASUTÂ	cluster of non-metallic inclusions collected	inclusion cluster
0025	クリープ破壊	KURÎPU HAKAI	fracture phenomenon generated after the increase of plastic deformation as the time elapses while the material has been subjected to the external force for a long period	creep fracture
0026	クレータパイプ	KURÊTA PAIPU	pipe like flaw generated at an indentation, which is referred to as a crater, on the bead end of arc welding	crater pipe
0027	クレータ割れ	KURÊTA WARE	cracking generated at the crater of weld zone end part (see JIS Z 3001-4)  NOTE: There are cracking along the direction of weld line, that in the right angled direction to weld line, that in radial (star crack) one, etc.	crater crack
0028	研磨割れ	KENMA WARE	cracking generated by thermal stress during the grinding in grinder work on heat-treated steel	grinding crack

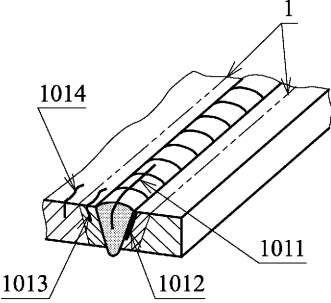
No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0029	高温割れ	KÔON WARE	cracking generated at such a high temperature as the solidification range of weld zone or just beneath it	hot crack
0030	孔食	KÔSYOKU	local corrosion phenomenon in which a local corrosion advances as pit toward the metal inside	pitting corrosion
0031	コールドラップ, コールドウェルド, 冷接	KÔRUDO RAPPU, KÔRUDO UERUDO, REISETU	type of incomplete fusion, which is the state where both metal surfaces are in contact but fused incompletely	cold lap, cold weld
0032	再熱割れ	SAINETU WARE	cracking generated on reheating of weld zone (see JIS Z 3001-4)	reheat crack
0033	サルファバンド	SARUHA BANDO	layer in steels of which the portion containing large amount of sulphur is segregated as band	sulphur band
0034	サルファ割れ	SARUHA WARE	primary intercrystalline crack generated in the weld metal resulting from iron sulphide eutectic of low melting point when welding steels in which sulphur segregation exists as layer	sulphur crack
0035	酸化物の巻込み	SANKABUTU NO MAKIKOMI	remaining of metallic oxide caught during welding without melting in weld metal part	oxide inclusion
0036	残留応力	ZANRYÛ ÔRYOKU	stress remaining in the material inside under the state without external force or temperature gradient (see JIS G 0201 and JIS Z 3001-1)	residual stress
0037	残留ひずみ	ZANRYÛ HIZUMI	strain remaining in the material inside under the state without external force or temperature gradient	residual strain
0038	シェル	SYERU	overlap of material derived from the cause in casting or caused during hot rolling NOTE: These are in various shapes and distributed randomly. Each of them connects partially with the parent material. Non-metallic inclusions are accounted for their most part.	shell

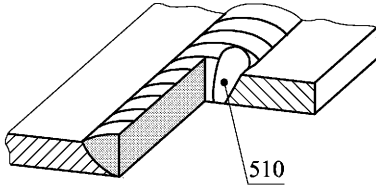
No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0039	σ ぜい（脆）性	SIGUMA ZEI SEI	property becoming brittle by the precipitating separation of σ phase NOTE: σ phase means an intermetallic compound found in high chrome steel containing 20 % or more or high chrome nickel steel.	σ embrittlement
0040	止端割れ	SITAN WARE	cracking generated from the weld toe Refer to the drawing in “0027 KURÊTA WARE” (see JIS Z 3001-4).	toe crack
0041	しま状組織, 層状組織	SIMAZYÔ SOSIKI, SÔZYÔ SOSIKI	segregation structure running in parallel to the rolling or swaging direction	banded structure
0042	シームきず	SÎMU KIZU	closed linear flaw, in various degrees, by rolling or other works	seam
0043	収縮割れ（鋼材の－）, ひけ割れ	SYÛSYUKU WARE (KÔZAI NO －), HIKE WARE	cracking generated in heating or solidificating process of molten metal where the cooling rates differ by respective parts	shrinkage crack
0044	照射ぜい（脆）性	SYÔSYA ZEI SEI	property that the substance becomes brittle by receiving irradiation of radioactive ray or the like	irradiation embrittlement
0045	水素侵食	SUIISO SINSEYOKU	phenomenon that hydrogen atoms diffused in steel react with carbides to cause decarburization at a temperature of 200 °C or higher under the high hydrogen pressure, and methane blow holes grow to generate cracks	hydrogen attack
0046	水素ぜい（脆）性	SUIISO ZEISEI	property of lowering ductility or toughness caused on steel by the hydrogen absorbed into the steel NOTE: When copper containing oxygen is subjected to high temperature heating in such a reduction atmosphere as hydrogen, the ductility or toughness lowers due to voids generated by the reduction of copper oxide.	hydrogen embrittlement

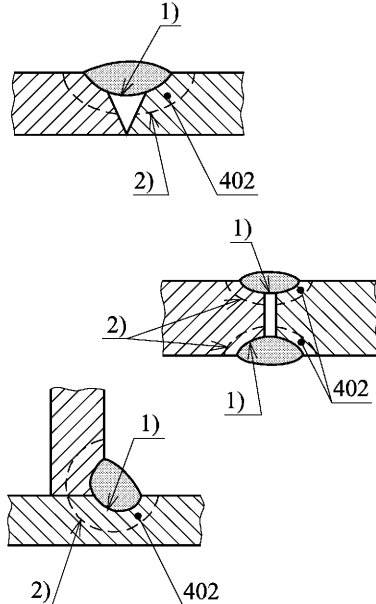
No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0047	水素誘起割れ	SUIISO YŪKI WARE	cracking generated through hydrogen blow hole derived from hydrogen atoms diffused in the steel which are generated when hydrogen sulphide and water exist at a temperature of approximately 70 °C or lower	hydrogen induced crack
0048	スケールきず	SUKÊRU KIZU	surface state such that scale is pressure-bonded and got in, or peeled off to be the crater like	scale mark
0049	砂かみ	SUNA KAMI	sand contaminated from the mould in casting	sand inclusion, sand patches
0050	スパッタ	SUPATTA	metal grains scattered and adhered during the work of arc welding, gas welding, soldering or the like (see JIS Z 3001-4)	spatter
0051	スビルきず	SUPIRU KIZU	discontinuous micro-fine surface flaw which is irregular and flaking like NOTE: These are connected with the parent material, instead they are extended in the rolling direction and effected by the rolling reduction.	spills
0052	スポーリング	SUPÔRINGU	peeling generated on the outer surface of rolling mill roll and the like Phenomenon in which adhesiveness of the anodic oxide coating is locally lost followed by peeling.	spalling

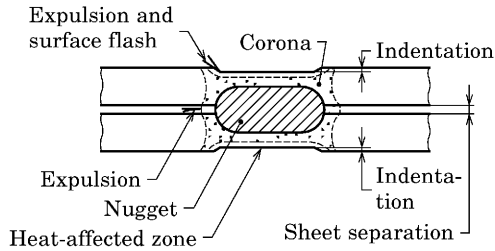
No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0053	スラグ巻込み	SURAGU MAKIKOMI	remaining of slag in the deposited metal or the fused part with the parent material (see JIS Z 3001-4) NOTE: There are a linear like, isolated like, group like, etc. depending on the forming state.  3011: Linear like 3012: Isolated like 3014: Group state	slag inclusion
0054	すりきず	SURIKIZU	continuous or intermitted linear flaw generated on the surface during handling	scratch
0055	清浄度（鋼の－）	SEIZYÔDO (HAGANE NO －)	degree of non-metal inclusion contained in the steel which is expressed in the area percentage accounted for non-metal inclusion within a visual field of microscope	index of cleanliness of steel
0056	ぜい（脆）性破壊	ZEISEI HAKAI	fracture of material by external force with hardly generating plastic deformation	brittle fracture
0057	青熱ぜい（脆）性	SEINETU ZEISEI	property in which tensile strength or hardness increases above the case at ordinary temperature, and the elongation and the reduction thereof decreases to become brittle at a temperature nearby 200 °C to 300 °C	blue shortness

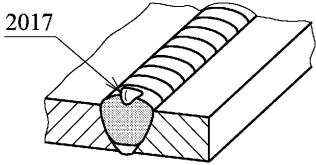
No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0058	赤熱ぜい（脆）性	SEKINETU ZEISEI	property of steel becoming brittle within a temperature range of hot working	red shortness
0059	全硬化層深さ	ZENKÔKA SÔ HUKASA	distance from the surface of hardened layer to the position where the difference between the hardened layer and the substrate becomes indistinguishable in physical or chemical property	depth of hardening
0060	層割れ, 層間はく離	SÔWARE, SÔKAN HAKURI	flaking between layers of laminate	delamination
0061	損傷	SONSYÔ	lowering in the property due to permanent change in physical properties according to the application environment	deterioration, damage
0062	ダイマーク	DAIMÂKU	fine linear unevenness appeared in extrusion (or drawing) direction on the extruded (or drawn) material surface	die mark
0063	脱炭層	DATTAN SÔ	portion of the surface zone in which carbon concentration has decreased through hot working or heat treatment (see JIS G 0202)	decarburized layer

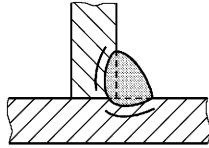
No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0064	縦割れ	TATE WARE	cracking generated in parallel to the weld line (see JIS Z 3001-4) NOTE: Exists in weld metal, weld junction, heat-affected zone, parent material, etc.  1: Boundary between heat-affected zone and parent material 1011: Weld metal 1012: Weld junction 1013: Heat-affected zone 1014: Parent material	longitudinal crack
0065	たれ	TARE	excess weld metal penetrated through over the groove for one-side welding, or over the weld metal on the already overlaid side for double-side welding	excessive penetration
0066	地きず	ZI KIZU	such streak flaw recognizable to naked eyes on finished surface of steel as linear flaw of pinholes, blowholes, etc., that of non-metallic inclusion and that of inclusion of sand or other foreign materials	streak fissure, macro-streak-flaw
0067	中心部偏析	TYŪSINBU HENSEKI	phenomenon or its state in solidification of molten metal that a certain type of alloy element or impurity is concentrated and unevenly distributed into the central part to be finally solidified	centre segregation

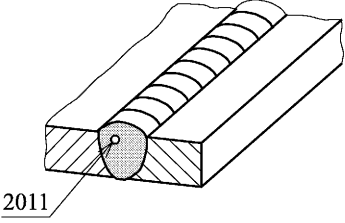
No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0068	中性化（コンクリートのー）	TYÛSEIKA (KONKURÎTO NO —)	phenomenon in which the hardened concrete gradually loses the alkaline property by the action of carbon dioxide in air and other acidic substance (see JIS A 0203) Neutralization by the carbon dioxide in air is called carbonation.	neutralization, carbonation
0069	低温ぜい（脆）性	TEION ZEI SEI	property of steel becoming brittle as rapidly lowering of the anti impact value at a low temperature of near the room temperature or lower	cold shortness
0070	低温割れ	TEION WARE	generic term of cracking generated when the temperature of the weld zone has lowered to almost ordinary temperature after welding Underbead crack, toe crack and the like belong to this (see JIS Z 3001-4).	cold crack, cold cracking
0071	溶落ち	TOKEOTI	molten metal burn to the reverse side of groove (see JIS Z 3001-4)  510: burn through	burn through

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0072	溶込み不良	TOKEKOMI HURYÔ	lack of actual penetration as compared with the designed penetration (see JIS Z 3001-4)  1): Actual penetration 2): Designed penetration 402: Lack of penetration	lack of penetration, incomplete penetration
0073	内部きず	NAIBU KIZU	flaw existing in the test object inside	internal flaw

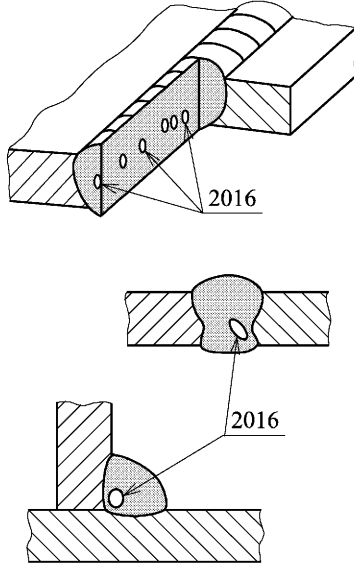
No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0074	ナゲット	NAGETTO	molten-solidified portion generated in the weld zone of lap resistance welding (see JIS Z 3001-1)  The diagram illustrates a cross-section of a lap resistance weld. Two metal sheets are overlapped and welded. A central shaded area represents the 'Nugget'. Surrounding it is the 'Heat-affected zone'. Above the weld, 'Expulsion and surface flash' is shown. A 'Corona' is indicated at the top of the weld. 'Indentation' is shown on both the top and bottom surfaces. 'Sheet separation' is indicated at the bottom edge of the weld zone.	nugget
0075	軟点	NAN TEN	incompletely hardened portion locally generating in quenching	soft spot
0076	熱影響部, HAZ	NETU EIKYÔBU, EITI-Ê-ZETTO	portion of parent material not melted but generated changes in structure, metallurgical and mechanical properties, etc. by the heat of welding, cutting and the like See “00-117 YÔSETU BU” (see JIS Z 3001-1).	heat-affected zone
0077	熱間割れ	NETU KAN WARE	cracking without orientation and being irregular in length, width and depth NOTE: These may generate at a hot working of semi-finished product of material or slab.	hot tears
0078	パイプ	PAIPU	void or blow hole generated through the solidification shrinkage of material of which the trace has been remained in the central part as it is incompletely pressure bonded (see JIS G 0202)	pipe, piping
0079	白点	HAKU TEN	glossy white spot appearing on the surface of steel (see JIS G 0201)	flake white spot, shatter crack

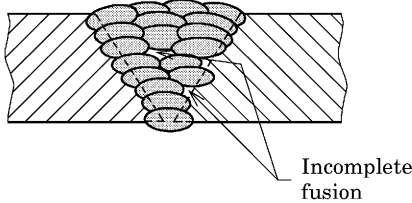
No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0080	はく(剥)離	HAKURI	flaking or peeling of film or plating layer from the substrate or undercoat Or, generation of void between mutual concrete, between concrete and reinforcing steel, between concrete and finishing material, or between mutual finishing materials.	delamination, peeling, flaking
0081	ハードスポット	HÂDO SUPOTTO	portion considerably higher in hardness than periphery due to locally quenching and the like	hard spot
0082	非金属介在物	HI KINZOKU KAIZAIBUTU	non-metallic precipitated or caught into steel in the process of metallic solidification (see JIS G 0202)	non-metallic inclusion
0083	引け巣	HIKE SU	portion dented as funnel which is formed being drawn by the portion previously solidified and shrunk while molten metal poured into mould is solidified	shrinkage cavity
0084	ピックアップ, 汚れ	PIKKU APPU, YOGORE	staining on the surface of electrode end or parent material in lap resistance welding which are mutual adhesion or formation of alloy layer between the electrode and parent material generated by overheating on the contacting part of electrode with parent material	pick up
0085	ピット	PITTO	small hollow generated on the surface due to manufacturing process or corrosion (see JIS G 0202 and JIS Z 3001-4)  2017: Pitting	pitting, pit

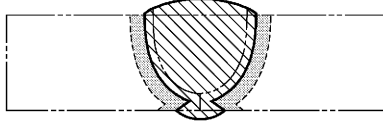
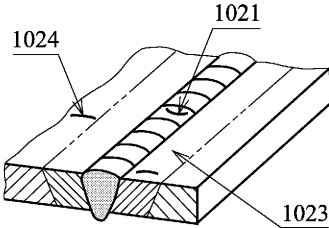
No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0086	ビード下割れ	BÎDO SITA WARE	cracking generated on the bead underside (see JIS Z 3001-4) 	underbead crack
0087	ひび割れ, ひび	HIBIWARE, HIBI	extremely fine cracks generated on the surface or inside of material or product	crazing
0088	ひび割れ (コンクリートのー)	HIBIWARE (KONKURÎTO NO ー)	cracking generated in concrete due to external force or internal stress	crack
0089	表面きず, 周辺きず	HYÔMEN KIZU, SYÛHEN KIZU	flaw due to peripheral blow hole, that due to rolling or forging and others generated on the steel periphery	surface flaw
0090	疲労破壊	HIRÔ HAKAI	phenomenon that a material receives loads repeatedly, by which cracks generate and develop to be resulted in fracture	fatigue fracture
0091	ピンホール	PIN HÔRU	micro-fine hole generated in the product Micro-fine holes penetrated to the substrate through the sprayed coating.	pinhole
0092	ふくれ, 膨れ, ブリスタ	HUKURE, BURISUTA	swelling in spindle form in the metal inside The state of coating separating locally from the substrate or undercoat or in the coating itself.	blister
0093	フッククラック	HUKKU KURAKKU	flaw formed on electric resistance welded steel pipe in which non-metallic inclusion, segregation or the like in the steel strip parallel to the surface has risen in the weld zone	hook crack

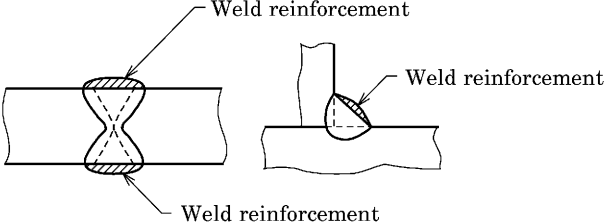
No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0094	ブローホール, 気泡	BURÔ HÔRU, KIHÔ	spherical void generating in weld metal (see JIS G 0202 and JIS Z 3001-4)  2011: Blow hole	blow hole, blowhole
0095	ヘアークラック, 毛割れ	HEÂ KURAKKU, KE WARE	micro-fine cracking as hair appearing on the surface	hair crack
0096	へこみ	HEKOMI	a depression in a surface made by mechanical impact	dent
0097	ペネトレータ, フラットスポット	PENETORÊTA, HURATTO SUPOTTO	internal flaw generated by pressure welding such as flash welding and electric resistance welding with the joint surface being oxidized due to unsuitable welding conditions	penetrator, flat spot
0098	偏析	HENSEKI	phenomenon or its state that any alloy element or impurity is distributed unevenly (see JIS G 0201)	segregation
0099	ボイド	BOIDO	space generated in the material inside	void
00100	放射線損傷, 照射損傷	HÔSYASEN SONSYÔ, SYÔSYA SONSYÔ	causing unfavourable change in various properties of the substance due to receiving irradiation of radioactive ray	radiation damage
00-101	ポップアウト	POPPU AUTO	peeling off of a part of concrete surface as projecting	pop-out
00-102	ポロシティ	POROSITÎ	generic term of blowhole, gas cavity formed in the material after solidification due to the gases generated during melting (see JIS Z 3001-4)	porosity
00-103	ポロシティ (コンクリートのー)	POROSITÎ (KONKURÎTO NO -)	ratio of the micro-voids occupied to the whole volume NOTE: It is also used for ceramics.	porosity

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
00-104	豆板, ジャンカ	MAMEITA, ZYANKA	inhomogeneous part having many voids formed in a part of hardened concrete by mainly collection of the coarse aggregates	honeycomb, rock pocket
00-105	ミクロ割れ	MIKURO WARE	fine cracking detectable when it is magnified with an optical microscope (of approximately 50 magnifications or higher)	micro crack
00-106	溝きず	MIZO KIZU	mechanical flaw having various width, depth and length on the surface NOTE: These are in parallel or right-angle to the rolling direction, and may include scale.	grooves

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
00-107	ウォームホール	WÔMU HÔRU	cylindrical hollow generated in the weld metal caused by gas release (see JIS Z 3001-4) NOTE: The shape and position of worm hole is determined depending on the form of solidification or the gas source. Generally, it makes a crowd and is distributed in fish-bone shape. It reaches to the weld surface and opens in some case.  2016: Worm hole	worm hole, piping porosity
00-108	もみ割れ	MOMI WARE	cracking caused in the central part due to unsuitable forging or rolling work	forging crack
00-109	焼戻ぜい（脆）性	YAKI MODOSI ZEI SEI	phenomenon that a quenched steel becomes easy to cause brittle fracture in the case of being kept at a certain tempering temperature or the case of being cooled gradually down from a tempering temperature	temper brittleness

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
00-110	焼戻割れ	YAKI MODOSI WARE	cracking caused by rapidly heating, rapidly cooling or structure change which is subjected to quenching followed by tempering (see JIS G 0201)	tempering crack
00-111	焼割れ	YAKI WARE	cracking caused by quenching stress	quenching crack
00-112	焼け	YAKE	state in which the colour tone of the coating surface changes markedly by heat	burn, burned
00-113	焼け過ぎ	YAKE SUGI	cracking by marked intergranular oxidation even inside due to overheating	over heating, burning
00-114	融合不良	YÛGÔ HURYÔ	fact that the weld boundary surface is incompletely fused mutually (see JIS Z 3001-4) 	lack of fusion, incomplete fusion
00-115	湯境い	YUZAKAI	boundary surface of incomplete fusing generated at the portion where two molten flows join in the mould when the casting conditions are unsuitable	cold shut
00-116	湯回り不良	YUMAWARI HURYÔ	incomplete phenomenon that molten metal is solidified before filling the mould completely, by low temperature or other cause, resulting in producing imperfect castings	misrun

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
00-117	溶接部	YÔSETU BU	generic term of portion including weld metal and the part of heat-affected zone (see JIS Z 3001-1)   Heat-affected zone  Weld metal (weld zone + deposited metal)	weld, weld zone, weldment
00-118	溶接割れ	YÔSETU WARE	discontinuity part caused by the local fracture of solid phase generated by the influence of cooling or stress (see JIS Z 3001-4)	weld crack, weld cracking
00-119	横割れ	YOKO WARE	cracking generated in perpendicular to the weld line (see JIS Z 3001-4) NOTE: Exists in weld metal, weld junction, heat-affected zone, parent material, etc.  1021: Weld metal 1023: Heat-affected zone 1024: Parent material	transverse crack

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
00-120	余盛	YOMORI	excess weld metal over the required height out of surface in groove or fillet welding (see JIS Z 3001) 	weld reinforcement, excess weld metal, weld cap, weld crown
00-121	ラミネーション	RAMINÊSYON	layered matter that internal flaw, non-metallic inclusion, blow hole, impurity, etc. in the rolled steel is extended along the rolling direction in parallel	lamination
00-122	ラメラテア	RAMERATEA	cracking generating in parallel to the base material at the heat affected zone and adjacent portion in such a joint causing hard tensile binding stress perpendicular to the base material surface as cruciform butt joint and fillet multi-layer cladding joint (see JIS Z 3001-4)	lameller tear
00-123	粒界割れ	RYÛKAI WARE	cracking generating on the crystal grain boundary or over the crystal grain boundary NOTE: The so-called hot crack is of this type in general.	intercrystalline crack, intergranular crack
00-124	ルート割れ	RÛTO WARE	cracking generating from the stress concentration part due to root notch of weld (see JIS Z 3001-4)	root crack
00-125	劣化	REKKA	generation of gradual variation harmful to the inherent function of material or product due to such an application environment as stress, heat and light	deterioration, degradation
00-126	割れ, き裂, クラック	WARE, KIRETU, KURAKKU	gap or discontinuity generated from a local fracture caused by thermal or mechanical stress	crack, cracking

(01) Testing method

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0101	アコースティック・エ ミッション試験	AKÔSTIKKU EMISSYON SIKEN	nondestructive testing method and material evaluating method by using AE signal wave The abbreviation is “AE”.	acoustic emission testing, AE testing
0102	異材判別, 異材の鑑別	IZAI HANBETU, IZAI NO KANBETU	sorting for foreign materials through the testing on the test object in which any foreign materials may be mixed, or the confirmation for absence of foreign materials mixed-in	sorting of materials, discrimination of foreign materials
0103	渦電流探傷試験	UZU DENRYÛ TANSYÔ SIKEN	nondestructive testing method to detect flaws by utilizing the changing of eddy current generated in conductor accord- ing to flaws and the like, by giving the magnetic field chang- ing in time to the conductor by using the coil It is also referred to as “KARYÛ TANSYÔ SIKEN”. The abbreviation is “ET”.	eddy current testing
0104	外観試験	GAIKAN SIKEN	test for the state of appearance carried out by visual obser- vation and the like (see JIS Z 3001-4) The abbreviation is “VT”.	appearance test, visual testing
0105	回送試験, ラウンドロビンテスト	KAISÔ SIKEN, RAUNDO ROBIN TESUTO	test carried out, for deciding the standard test method or the reference test piece, as sending a specific test piece by turns successively between the members of working group with making agreement previously on the draft of test method	round robin test
0106	技術検定	GIZYUTU KENTEI	confirming whether or not the test technique attains the re- quired level	performance qualification
0107	きず検出能, きず検出限界	KIZU KENSYUTU NÔ, KIZU KENSYUTU GENKAI	index indicating the capability of detecting how small the flaw is	detectability
0108	技術者の認証	GIZYUTUSYA NO NINSYÔ	official approval for having knowledge, skill, training and experience required to execute adequately the works of non- destructive testing	(personnel) qualification and certification

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0109	材質試験	ZAISITU SIKEN	test to examine the quality of materials utilizing their physical properties that may change according to the “type of material”, “impurities or alloy component”, “heat treatment” and the like	identification of materials
0110	サルファプリント試験	SARUHA PURINTO SIKEN	test to detect the position and area of sulfide existing in the material in various chemical forms by adhering closely the material to the monochrome photographic developing paper immersed in corrosive liquid containing sulfuric acid beforehand (see JIS G 0560) NOTE: In ISO 4968 , the application of flat film is approved in place of the photographic developing paper.	sulphur print examination
0111	試験体	SIKENTAI	object to be tested or object under test or examination	test object, examination object
0112	試験体積	SIKEN TAISEKI	stereoscopic space of the test object subjected to a test	test volume, examination volume
0113	試験片	SIKENHEN	sample with artificial flaw or natural flaw to be used for checking the defect detection performance	test piece
0114	磁粉探傷試験	ZIHUN TANSYÔ SIKEN	nondestructive testing to detect flaws on the surface or in the neighbourhood of surface by magnetic leakage field by utilizing the adequate test medium containing magnetic particle The abbreviation is “MT”.	magnetic particle testing
0115	浸透探傷試験	SINTÔ TANSYÔ SIKEN	nondestructive test typically comprising a penetration treatment, removal of excess penetrant and developing to produce a visible indication of surface breaking flaws The abbreviation is “PT”.	penetrant testing

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0116	スンプ試験	SUNPU SIKEN	one of the replica methods to determine the quality of steel by grinding the steel surface to finish, dropping methyl acetate onto the surface to create the film of acetyl cellulose, peeling it after dry, and observing it with a transmission optical microscope	Suzuki's Universal Micro Printing examination
0117	赤外線サーモグラフィ試験	SEKIGAISEN SÂMOGURAHÎ SIKEN	test applying the method in which the infrared radiant energy is detected and the distribution thereof is displayed by image The abbreviation is "TT".	infrared thermographic testing
0118	耐圧試験	TAIATU SIKEN	test carried out for a purpose to appreciate whether such a pressure vessel as cylinder, boiler and the piping can endure the pressure to be applied during the use.	pressure test
0119	体積試験	TAISEKI SIKEN	testing method to take the whole test object except the surface and the surface zone as the object for flaw detection	volumetric examination
0120	対比試験片	TAIHI SIKENHEN	test piece containing defined discontinuities used to adjust the sensitivity of the equipment or the process checking of inspection	reference test piece, reference block
0121	断面試験	DANMEN SIKEN	test made on the sectional surface by cutting the test object to examine internal flaw, metallic structure, shape and the like	section test
0122	超音波探傷試験	TYÔONPA TANSYÔ SIKEN	nondestructive testing to examine inside flaw/discontinuity of the test object or the material quality utilizing the acoustic properties shown by the test object through which ultrasonic wave is propagated The abbreviation is "UT".	ultrasonic testing
0123	破面試験	HAMEN SIKEN	test carried out by observing the fracture surface after breaking the test object by an external force to examine internal flaws and the like	fracture test

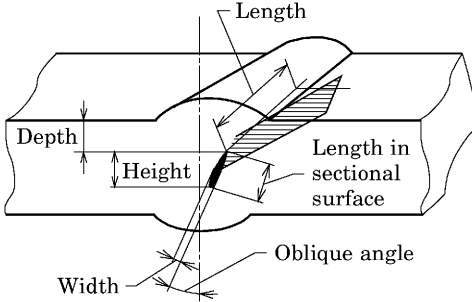
No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0124	ひずみ測定	HIZUMI SOKUTEI	test to examine the condition of strain or stress generated in the test object to which the load is applied The abbreviation is “SM”. NOTE: In JIS Z 2305 :2001, the strain measurement (abbreviation: SM) is specified; however, the strain testing (abbreviation: ST) is specified in ISO 9712 :2005.	strain measurement
0125	非破壊検査, NDI	HIHAKAI KENSA, ENU-DÊ-AI	method to judge acceptance from the results of nondestructive testing according to the criteria of the standard and the like The abbreviation is “NDI”.	nondestructive inspection
0126	非破壊試験, NDT	HIHAKAI SIKEN, ENU-DÊ-TEI	test to examine quality or flaws, existence of inclusion and its location, size, shape, distribution and the like without breaking the materials and product The abbreviation is “NDT”. NOTE: This may be applied to material quality test and the like. Radiography, ultrasonic testing, magnetic particle inspection, penetrant testing, eddy current testing and the like are included (also including the development and application of technical methods to examine materials or components in ways that do not impair future usefulness and serviceability in order to detect, locate, measure and evaluate flaws; to assess integrity, properties and composition; and to measure geometrical characteristics.).	nondestructive testing, nondestructive examination
0127	非破壊評価, NDE	HIHAKAI HYÔKA, ENU-DÊ-Î	to analyze and evaluate the indications obtained in the non-destructive testing from the phase of properties or using functions comprehensively The abbreviation is “NDE”.	nondestructive evaluation

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0128	火花試験（鋼の—）	HIBANA SIKEN (HAGANE NO —)	test carried out for the estimation of steel type or sorting of foreign materials by observing characteristics of the spark generated with grinding the steel ingot, slab, semi-product or other steel product by using a grinder	spark test (for steel)
0129	標準試験片	HYÔZYUN SIKENHEN	testing block made of specified material and having specified shape and dimensions to be used for calibration or evaluation of the instrument It may be given one or more artificial flaw(s).	calibration block
0130	付帯記号	HUTAI KIGÔ	symbols for supplement of basic symbols	supplemental symbols
0131	分解能	BUNKAINÔ	ability to distinguish meaningfully between closely adjacent discontinuities	resolution
0132	放射線透過試験	HÔSYASEN TÔKA SIKEN	nondestructive testing to examine the inside flaw of test object from the change of intensity of transmitted radiation by irradiating the test object The abbreviation is “RT”.	radiography, radiographic testing
0133	膜厚試験	MAKUATU SIKEN	test for measuring the coating thickness of plating, painting, oxide coating and the like NOTE: For such coating thickness test, the following methods are applied other than chemical method. a) To measure directly with micrometer or microscope. b) To use electromagnetic means, radiation ray or the like.	coating thickness testing
0134	マクロ組織試験	MAKURO SOSIKI SIKEN	test carried out as making judgment visually by the naked eye, for the purpose to inspect the flaws, properties and structure of the sectional or outer surface, with giving corrosion on the ground sectional or outer surface with hydrochloric acid, copper chloride ammonium, aqua regia or the like	macroscopic test, macro structure examination

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0135	目視検査	MOKUSI KENSA	judgement of a quality by a visual testing	visual inspection
0136	目視試験	MOKUSI SIKEN	test to examine the surface properties (shape, colour, roughness, existence of flaws, etc.) of test body by the naked eye directly or using magnifier (see JIS Z 3001-1) The abbreviation is “VT”.	visual testing
0137	漏れ試験, リーク試験	MORE SIKEN, RĪKU SIKEN	test to detect the existence of leak, leak spot, and an amount of leak The abbreviation is “LT”.	leak testing
0138	レプリカ法	REPURIKA HÔ	method to stick a film of organic material having well followability on the surface of test part, reproduce the surface unevenness on the film with well fidelity and observe it directly	replica method

(02) Judgement/evaluation

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0201	疑似指示	GIZI SIZI	NDT indication that is interpreted to be caused by a condition other than a discontinuity or imperfection	false indication
0202	きず	KIZU	imperfection or discontinuity to be judged from the result of nondestructive testing NOTE: Some flaws may be acceptable, and others may not be.	flaw

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0203	きず高さ	KIZU TAKASA	dimension of flaw measured in the plate thickness direction  NOTE: In the case of open flaw, it is also called a flaw depth.	flaw height
0204	きず深さ	KIZU HUKASA	minimum distance from the flaw to a test (reference) surface See diagram in “0203 KIZU TAKASA”. NOTE: In the case of open flaw, sometimes it means a flaw height.	flaw depth
0205	欠陥	KEKKAN	flaw exceeding the acceptance criteria defined in the standard, specification, etc. to be rejected NOTE: One or more flaws whose aggregate size, shape, orientation, location or property does not meet the specified acceptance criteria and are determined to be rejected.	defect
0206	欠陥高さ	KEKKAN TAKASA	dimension of defect in the plate thickness direction See diagram in “0203 KIZU TAKASA”. NOTE: In the case of open defect, it is also called a defect depth.	defect height

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0207	欠陥深さ	KEKKAN HUKASA	minimum distance from the defect to a test (reference) surface See diagram in “0203 KIZU TAKASA”. NOTE: In the case of open defect, sometimes it means a defect height.	defect depth
0208	検出感度	KENSYUTU KANDO	capability of nondestructive testing technique to detect the quality or discontinuities of test object NOTE: The higher the detection sensitivity, the greater its capability of detecting a small discontinuity.	detection sensitivity
0209	検出レベル	KENSYUTU REBERU	lowest limit of detection of indications	disregard level
0210	検証	KENSYÔ	systematic scanning of the data or evidence produced as a result of nondestructive testing to determine the presence or absence of indications NOTE: In the cases of radiography, magnetic particle inspection and penetrant testing, this means “observation”.	viewing
0211	検証条件	KENSYÔ ZYÔKEN	description of the surrounding environmental conditions during the process of viewing	viewing conditions
0212	健全部	KENZENBU	part of test object to be judged in being free of abnormalities from the indication of nondestructive testing	sound area
0213	合格基準	GÔKAKU KIZYUN	criteria against which the test object is examined in order to determine its acceptability	acceptance criteria
0214	合格品質レベル	GÔKAKU HINSITU REBERU	maximum rate of defect occurrence that, for the purpose of sampling test, can be considered satisfactory as a process average	acceptable quality level
0215	合格レベル	GÔKAKU REBERU	value of prescribed parameters setting the threshold for acceptance or rejection	acceptance level

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0216	校正（装置の－）	KÔSEI (SÔTI NO －)	to make instrument comparable or to adjust the instrument by known reference flaws	calibration instrument
0217	指示	SIZI	image or numerical value indicated on the instrument, or a pattern appeared on the test object at the nondestructive testing NOTE: In the penetrant testing, it may be replaced with “indication pattern” in some case.	indication
0218	人工きず	ZINKÔ KIZU	discontinuities such as holes, grooves or notches worked on a test piece by machining or other processes	artificial discontinuity
0219	寸法測定	SUNPÔ SOKUTEI	determination of dimensions of discontinuities or indications for evaluation	sizing
0220	特性化（きずの－）	TOKUSEIKA (KIZU NO －)	process of quantifying the dimension, orientation, growth, or other characteristics of a flaw based on NDT response	flaw characterization
0221	ノイズ	NOIZU	non-inherent indications caused by surface condition or structure of the test object, or by instrument or test conditions	background noise
0222	判定	HANTEI	determination whether flaws satisfy the specified requirements or not	evaluation
0223	判定基準	HANTEI KIZYUN	criteria to decide whether the required criteria is satisfied or not by using results detected in nondestructive testing	acceptance criteria, acceptance standard
0224	判別	HANBETU	determination whether indications are relevant, non-relevant, or suspicious	interpretation
0225	評価対象外指示	HYÔKA TAISYÔGAI SIZI	flaw indication that is not the object of evaluation NOTE: In the penetrant testing, it may be replaced with “nonrelevant indication pattern” in some case.	nonrelevant indication
0226	評価対象指示	HYÔKA TAISYÔ SIZI	flaw indication that is the object of evaluation NOTE: In the penetrant testing, it may be replaced with “relevant indication pattern” in some case.	relevant indication

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
0227	不完全部	HUKANZENBU	departure of quality characteristics from intended condition	imperfection
0228	不連続部	HURENZOKUBU	interruption of continuity, intentional or unintentional in structure, material quality or shape	discontinuity

(1) Radiography

(10) General

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
1001	一次放射線	ITIZI HÔSYASEN	radiation which travels directly from the radiation source to the detector without scattering	primary radiation
1002	X線, エックス線	EKKUSU SEN	penetrating electromagnetic wave (radiation) within about 0.000 1 nm to 1 nm in wavelength (range) produced when high velocity electrons strike on a metal target (see JIS Z 4001)	X-rays
1003	壊変曲線	KAIHEN KYOKUSEN	curve of the radioactivity of radioisotope plotted against time NOTE: It is usually a log/linear relationship.	decay curve
1004	γ線, ガンマ線	GANMA SEN	electromagnetic wave (radiation) emitted from specific radioactive substances	gamma rays
1005	輝尽発光	KIZIN HAKKÔ	luminescence phenomenon such that, when a certain type of substance is irradiated (stimulated) by radiation such as X-rays, then the irradiated place is irradiated by visible light or infrared ray, fluorescence shorter than this light in wavelength corresponding to the initial amount of irradiation is emitted	photostimulated luminescence
1006	吸収	KYÛSYÛ	process whereby photons (radiation) are reduced in number as they pass through the substance	absorption

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
1007	吸収線量	KYÛSYÛ SENRYÔ	radiation dose expressed by the energy absorbed in the substance exposed to radiation The unit is grey (Gy) and 1 Gy means that the energy of 1 joule (J) per 1 kg substance is absorbed.	absorbed dose
1008	空気カーマ	KÛKI KÂMA	irradiation dose of X-rays or gamma rays when irradiated into air which is expressed by per 1 kg air of the primary energy of charged particles isolated [unit: Gy, 1 Gy = 1 J/kg]	air kerma
1009	グレイ	GUREI	unit of absorbed dose, air kerma, etc. It equals to energy absorption of 1 J per 1 kg substance [unit: Gy, 1 Gy = 1 J/kg].	gray
1010	減弱	GENZYAKU	reduction in intensity of a beam of X-rays or gamma rays during its passage through the substance caused by absorption and scattering	attenuation
1011	減弱曲線	GENZYAKU KYOKUSEN	diagram showing penetrated intensity of the primary radiation penetrating an absorber as a function of the penetration thickness	attenuation curve
1012	減弱係数 (μ)	GENZYAKU KEISÛ (μ)	When X-rays or gamma rays pass through a substance, it is attenuated by the interaction with the substance (photo-electric absorption, Compton scatter and electron pair formation) When the number of incident photon is taken as I_0 and it becomes I at the place of the depth x of substance, the relation formula to be $I = I_0 \cdot e^{-\mu x}$ is led. In this formula, μ is the linear attenuation coefficient. The unit of μ is m^{-1} , cm^{-1} , etc. The quotient of the linear attenuation coefficient divided by the density of substance is the mass attenuation coefficient.	attenuation coefficient, μ

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
1013	後方散乱線	KÔHÔ SANRAN SEN	part of the scattered X-rays or gamma rays which are emitted at an angle of not less than 90° in relation to the direction of the incident radiation beam	back scatter/back scattered radiation
1014	固有ろ過	KOYÛ ROKA	filtration of a radiation beam by the parts of X-ray tube, set-up or source encapsulation through which the primary radiation beam passes	inherent filtration
1015	コンプトン散乱	KONPUTON SANRAN	a form of scattering that is caused by an interaction of a photon of X-rays or gamma rays with an electron and that associated with an attenuation of photon energy, the scattered radiation is emitted at an angle different to the incident direction	compton scatter
1016	再生係数	SAISEI KEISÛ	correction factor (build up factor) required for correction such a case where, in the broad beam, a part of scattered ray of lowered energy by Compton scatter is added to the incident ray when the attenuation in substance is calculated	build-up factor
1017	散乱比	SANRAN HI	ratio between the intensity of the scattered radiation and the penetrated radiation at an optional point, when the radiation has penetrated the test object	intensity ratio of scattered to penetrated radiation
1018	散乱放射線	SANRAN HÔSYASEN	radiation of which the direction changes during its passage through the substance See diagram in “1013 KÔHÔ SANRAN SEN”. NOTE: It may be with or without a change in energy.	scattered radiation

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
1019	実効エネルギー	ZIKKÔ ENERUGÎ	radiation quality of white X-rays represented by the energy of X-rays of single wavelength having half-value thickness equal to that of the white X-rays	effective energy
1020	シーベルト	SÎBERUTO	unit of dose equivalent to which the difference of influence on living creatures depending on the type of radiation is taken into consideration (see JIS Z 4001) [unit: Sv]	sievert
1021	1/10 価層	1/10 KASÔ	thickness of specific substance which is required to reduce the radiation dose intensity by tenth, when it is introduced into the beam of X-rays or gamma rays NOTE: Herein, the radiation dose intensity is the radiation dose per unit time.	tenth-value layer (TVL)
1022	照射線量	SYÔSYASEN RYÔ	electrical charge produced in air by ionizing radiation [unit: C/kg]	radiation dose, exposure
1023	線質 (放射線束のー)	SENSITU (HÔSYASENSOKU NO ー)	penetrating power of the radiation See “1034 HANKASÔ, HVT”. NOTE: It is measured mainly as the half value thickness.	radiation quality
1024	前方散乱線	ZENPÔ SANRANSEN	scattered radiations less than 90° in scattering angle See the diagram in “1013 KÔHÔ SANRAN SEN”.	forward scattered radiation
1025	速中性子	SOKUTYÛSEISI	neutrons of which the kinetic energy is larger than a certain specific value NOTE: Usually refer to those in the range of 10 keV to 20 MeV in energy.	fast neutron
1026	中性子	TYÛSEISI	particle having no electrical charge and having a static mass of $1.674\ 95 \times 10^{-27}$ kg (see JIS Z 4001)	neutron
1027	中性子捕獲断面積	TYÛSEISI HOKAKU DANMENSEKI	probability of reaction, out of interactions between neutrons and atomic nuclei, that an atomic nucleus captures a neutron to release gamma rays and it returns in the ground state	neutron capture cross section

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
1028	透過放射線	TÔKA HÔSYASEN	radiation which is the primary radiation irradiated to the test object to penetrate it directly without causing interactions See the diagram in “1013 KÔHÔ SANRAN SEN”.	penetrated radiation, transmitted radiation
1029	特性 X 線	TOKUSEI EKKUSU SEN	X-rays having line spectrum inherent in the target element (see JIS Z 4001)	characteristic X-ray
1030	軟 X 線	NAN EKKUSU SEN	popular name of X-rays containing many components of long wavelength	soft X-ray
1031	二次放射線	NIZI HÔSYASEN	radiation radiated from the substance irradiated with the primary radiation (see JIS Z 4001)	secondary radiation
1032	熱中性子	NETUTYÛSEISI	neutrons being in the condition of thermal equilibrium with the environmental medium or approximately near thereto Usually, refer to those in the range of 0.01 eV to 0.5 eV in energy (see JIS Z 4001).	thermal neutron
1033	白色 X 線	HAKUSYOKU EKKUSU SEN	X-rays with continuous spectrum	white X-ray
1034	半価層, HVT	HANKASÔ, EITI-VÎ-TEI	thickness of substance when the radiation dose is reduced to a half by absorption when the specific substance is introduced into the beam of X-rays or gamma rays	half value thickness, HVT
1035	半減期	HANGENKI	time in which the intensity of a radioactive substance reduces to half its value The length of half life is inherent in nuclides.	half life
1036	比放射能	HIHÔSYANÔ	expressing the intensity of radioactivity per the unit mass of the substance containing radioisotope	specific activity
1037	フィルムコントラスト (γ)	HIRUMU KONTORASUTO (γ)	slope of the characteristic curve of a film at a specified optical density	film gradient (γ)
1038	フィルムシステムの感 度	HIRUMU SISUTEMU NO KANDO	quantitative measure of the response of a film system (to radiation energy) for specific exposure conditions	film system speed

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
1039	放射線	HÔSYASEN	propagation of energy as that a kinetic energy of electromagnetic wave or particle is radiated through a space or substance (see JIS Z 4001) NOTE: There are the electromagnetic radiation and the particle radiation.	radiation
1040	放射線エネルギー	HÔSYASEN ENERUGÎ	energy of photon for the case of electromagnetic wave such as X-rays, gamma rays NOTE: Energy of particle for the case of particle rays such as α -rays and β -rays. The unit of electron volt is used.	radiation energy
1041	放射能	HÔSYANÔ	number of nuclear disintegrations per unit time taking place in a radioisotope (see JIS Z 4001 and JIS Z 9211)	radioactivity
1042	冷中性子	REITYÛSEISI	neutrons having lower kinetic energy than that of thermal neutron Usually, refer to those less than 0.01 eV in energy.	cold neutron
1043	連続スペクトル	RENZOKU SUPEKUTORU	distribution of wavelengths of X-rays or photon energies generated by an X-ray apparatus	continuous spectrum
1044	露出	ROSYUTU	process whereby radiation is recorded on an imaging system	exposure

(11) Instrument/material

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
1101	IP, イメージングプレート	AI-PÎ, IMÊZINGU PURÊTO	radiation detector for CR painted with a photostimulated luminescence substance on the test body	imaging plate
1102	IP用カセット	AI-PÎ YÔ KASETTO	light-proof container holding IP (imaging plate) at photographing NOTE: Metal intensifying film may be inserted for a purpose of reducing the effects of scattering.	IP cassette

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
1103	イコライザ	IKORAIZA	device used to equalize the intensity across the primary X-ray beam in high energy radiography and so extend the useful field size	equalizing filter-beam flattener
1104	一体形 X 線装置, 携帯式 X 線装置	ITTAIGATA EKKUSU SEN SÔTI, KEITAISIKI EKKUSU SEN SÔTI	X-ray apparatus designed as connecting X-ray generator integrated with high-voltage transformer and X-ray tube, and controller with low-voltage cables	mono-tank type X-ray apparatus, portable type X-ray apparatus
1105	陰極	INKYOKU	negative electrode of an X-ray tube	cathode
1106	SI 識別度計 (中性子 ラジオグラフィ)	ESU-AI SIKIBETUDO KEI (TYÛSEISI RAZIOGURAHÎ)	gauge for qualitative evaluation of the resolution of radiograph by neutron radiography	sensitivity indicator
1107	X 線管	EKKUSU SEN KAN	vacuum tube to generate X-rays so that the thermo electrons generated from the filament generally are accelerated to strike an anode NOTE: X rays are generated on the surface of its anode.	X-ray tube
1108	X 線フィルム	EKKUSU SEN HIRUMU	See “1171 TÔKA SYASIN HIRUMU”.	X-ray film
1109	カセット	KASETTO	light-proof container (bag) for holding radiographic film during the exposure NOTE: It may be rigid or flexible and with or without intensifying screens.	cassette
1110	階調計	KAITYÔ KEI	gauge for evaluating the image quality of radiograph To be used for qualitative confirmation of radiographing condition of the radiograph.	contrast indicator, contrastmeter
1111	画素	GASO	minimum unit composing a digital radiographic image (see JIS Z 8120)	pixel

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
1112	画素寸法	GASO SUNPÔ	geometric distance between the centres of adjacent pixels in the row or column of read image It means a traverse interval in row and a longitudinal interval in column.	pixel size
1113	管電圧	KAN DEN'ATU	high voltage applied between the anode and the cathode of an X-ray tube	tube voltage
1114	γ線源	GANMA SEN GEN	radioactive material sealed in a metal capsule NOTE: Such materials of ytterbium 169, iridium 192 and cobalt 60.	gamma-ray source
1115	照射容器, 線源容器	SYÔSYA YÔKI, SENGEN YÔKI	container made of dense material that the radiation dose emitted from radiation source can be remarkably reduced and the sufficient wall thickness capable of handling safely is provided	radiation source container
1116	輝尽性蛍光体	KIZIN SEI KEIKÔ TAI	phosphor having property of photostimulated luminescence	photostimulable phosphor
1117	金属蛍光増感紙	KINZOKU KEIKÔ ZÔKANSI	intensifying screen consisting of a metallic foil (usually lead) coated with a material that fluoresces when exposed to X-rays or gamma rays.	fluorometallic intensifying screen
1118	金属増感紙	KINZOKU ZÔKANSI	intensifying screen consisting of dense metal (usually lead) that filters radiation and emits electrons when exposed to X-rays or gamma rays	metal screen
1119	クリアリング時間	KURIARINGU ZIKAN	time required for the first stage of fixing of a film, during which the cloudiness disappears	clearing time
1120	蛍光増感紙	KEIKÔ ZÔKANSI	intensifying screen consisting of a coating of phosphors which fluoresces when exposed to X-rays or gamma rays	fluorescent intensifying screen
1121	X線蛍光増倍管	EKKUSU SEN KEIKÔ ZÔBAI KAN	electron tube having the function to convert the incident X-ray (image) to light (image) and to intensify brightness, and being used for X-ray radioscopy	X-ray image intensifier

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
1122	経時かぶり	KEIZI KABURI	increase in optical density on an unexposed film, measured after processing, due to long-term storage	aging fog
1123	減速材	GENSOKU ZAI	material absorbing fast neutron energy without remarkable capture to reduce the neutron energy NOTE: Such as graphite, polyethylene or paraffin is used.	moderator
1124	現像（フィルム又は印画紙のー）	GENZÔ (HIRUMU MATAWA INGASI NO -)	chemical or physical process which converts a latent image into a visible image	development (of a film or paper)
1125	校正済み基準濃度ステップフィルム	KÔSEI ZUMI KIZYUN NÔDO SUTEPPU HIRUMU	film having a series of different optical densities calibrated to be used as reference densities	calibrated density step wedge
1126	固定マスク	KOTEI MASUKU	attachment to an illuminator to exclude environmental glare	viewing mask
1127	コリメータ	KORIMÊTA	device made from radiation absorbent material such as lead or tungsten, designed to limit and define the direction and area of the radiation beam	collimator
1128	コントラスト調整材	KONTORASUTO TYÔSEI ZAI	any suitable material, solid or liquid, applied to a radiographing object to enhance its radiation contrast in total or in part	contrast medium
1129	コントロールケーブル, リリースワイヤ	KONTORÔRU KÊBURU, RERÎZU WAIYA	cable to connect for taking in and out a radiation source holder from a radiation source container to the appropriate place by remote control	control cable, release wire
1130	コーンビーム	KÔN BÎMU	conically extending beam of radiation, in narrow sense A beam of radiation, regardless of the form of beam edge, when measured with a two-dimensional detector, in wide sense.	cone beam
1131	試験体とフィルム間の距離	SIKEN TAI TO HIRUMU KAN NO KYORI	distance between the radiation side of the test object and the film surface measured along the central axis of the radiation beam	object-to-film distance

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
1132	試験部の有効長さ	SIKENBU NO YÛKÔ NAGASA	length indicating effective range of the test part subjected to by one time radiographing	effective length of test part
1133	実効焦点寸法	ZIKKÔ SYÔTEN SUNPÔ	effective focal spot size, as seen from the centre of radiation field NOTE: To be measured by means of pinhole method, wire grid method and the like.	effective focal spot
1134	絞り	SIBORI	device fixed to tip of X-ray tube or a tube shield to limit the extent of the X-ray beam radiated	diaphragm
1135	写真乳剤	SYASIN NYÛZAI	substance in which microcrystal particles of silver halide are dispersed in a solution of protective colloid (e.g. gelatine solution)	photographic emulsion
1136	シャッター	SYATTÂ	device to control the radiation of X-rays NOTE: It is a device attached to a tube shield, generally of lead and usually remotely operated, used to control the radiation of the X-ray beam.	tube shutter
1137	遮へい材料	SYAHEI ZAIRYÔ	material used to reduce the effect of scattered radiation on the film or on the image detector	blocking medium
1138	遮へいボックス	SYAHEI BOKKUSU	box for protecting X-rays in which the X-ray tube assembly or X-ray generator is installed	X-ray shield box
1139	焦点	SYÔTEN	X-ray emitting area on the anode of the X-ray tube as seen from the test object	focal spot
1140	焦点とフィルム間の距離, ffd	SYÔTEN TO HIRUMU KAN NO KYORI, EHU-EHU-DÊ	shortest distance from the focal spot of X-ray tube to a film for radiographic exposure	focus-to-film distance, ffd
1141	照射角度	SYÔSYA KAKUDO	angle between the central axis of radiation beam and the plane of film	beam angle
1142	照射口	SYÔSYA KÔ	area of X-ray tube through which the radiation is emitted	tube window

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
1143	照射筒	SYÔSYA TÔ	tubular device for limiting the radiation field to be attached on the radiation aperture of the radiation source	tubular diaphragm
1144	照射野	SYÔSYA YA	range of radiation irradiated to the test object for taking a radiograph	radiation field
1145	焦点寸法	SYÔTEN SUNPÔ	dimension across the focal spot of X-ray tube, measured parallel to the plane of the film or the fluorescent screen	focal spot size
1146	真空カセット	SINKÛ KASETTO	light-proof container that when (operated) under a vacuum holds film and screen in intimate contact during radiographic exposure	vacuum cassette
1147	スクリーン形フィルム	SUKURÎN GATA HIRUMU	radiographic film designed for use with fluorescent intensifying screens	screen type film
1148	ステップウエッジ	SUTEPPU UEZZI	test object whose thickness is in the form of a series of steps of the same material	step wedge
1149	線源	SENGEN	equipment (e.g. X-ray tube or gamma-ray source) capable of emitting (ionizing) radiation	radiation source
1150	線源とフィルム間の距離, sfd	SENGEN TO HIRUMU KAN NO KYORI, ESU-EHU-DÊ	distance between the radiation source and the film measured in the direction of the radiation beam	source-to-film distance, sfd
1151	線源ホルダー	SENGEN HORUDÂ	holding or carrying device by means of which the gamma rays source (sealed radiation source) can be fixed in the exposure container, or at the head of a remote control device	source holder
1152	潜像	SENZÔ	invisible image produced in a film by radiation capable of being converted into a visible image by film processing	latent image
1153	線量計	SENRYÔ KEI	instrument for measuring the accumulated dose of X-rays or gamma rays	dosemeter, dosimeter
1154	線量率計	SENRYÔRITU KEI	instrument for measuring X-rays or gamma rays radiation dose rate	dose rate meter

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
1155	増感係数	ZÔKAN KEISÛ	ratio of the exposure time without intensifying screens, to that when screens are used, other conditions being the same, to obtain the same optical density NOTE: It is also referred to as “ZÔKANRITU”.	intensifying factor
1156	増感紙	ZÔKAN SI	material that converts a part of the radiographic energy into light (photon) or electrons and that, when in contact with a recording medium during exposure, improves the quality of the radiograph, or reduces the exposure time required to produce a radiograph or both See “1117 KINZOKU KEIKÔ ZÔKANSI”, “1118 KINZOKU ZÔKANSI” and “1120 KEIKÔ ZÔKANSI”.	intensifying screen
1157	操作管	SÔSAKAN	flexible tube introducing wire release for operating between the radiation source container and the operation device	control-cable sheath
1158	像質計, IQI	ZÔSITU KEI, AI-KYÛ-AI	device comprising a series of elements of graded thickness capable of measuring the image quality to be obtained NOTE: The elements of IQI are commonly wires or step-wise holes.	image quality indicator, IQI
1159	端部遮へい材	TANBU SYAHEI ZAI	material applied around a test object or in cavities to obtain more uniform absorption to reduce extraneous scattered radiation, and to prevent local over-exposure, e.g. fine lead shot See “1137 SYAHEI ZAIRYÔ”.	edge-blocking material
1160	中心指示器	TYÛSIN SIZIKI	device to be attached on a radiation aperture of X-ray generator to indicate the centre of radiation field	centring rod

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
1161	直線加速器	TYOKUSEN KASOKU KI	instrument to accelerate linearly charged particle by the high frequency electric field made in wave guide inside or between the many aligned cavities NOTE: An instrument to accelerate ion or electron is called an ion linear accelerator or an electron linear accelerator, respectively. It is also referred to as “RAINAKKU” or “RINIAKKU”.	LINAC, linear accelerator
1162	ターゲット	TÂGETTO	surface of anode of X-ray tube on which the electron beam strikes and from which the primary beam of X-rays is emitted	target
1163	中性子コンバータ	TYÛSEISI KONBÂTA	substance emitting α -ray or electron beam by exposure to neutron	neutron converter
1164	チューブシールド	TYÛBU SÎRUDO	housing of an X-ray tube which reduces the leakage radiation to defined values	tube shield
1165	チューブヘッド	TYÛBU HEDDO	part of an X-ray apparatus that contains the X-ray tube for protection	tube head
1166	定格出力	TEIKAKU SYUTURYOKU	for X-ray apparatus, to be expressed by the maximum terminal voltage [kV] (rated voltage) applied to X-ray tube and the maximum tube current [mA] (rated current) at that voltage	rated output
1167	定着	TEITYAKU	chemical removal of silver halides from a film emulsion after development	fixing
1168	定電圧回路	TEIDEN'ATU KAIRO	electronic circuit which is designed to apply and maintain a substantially constant potential within an X-ray tube	constant potential circuit
1169	伝送管	DENSÔ KAN	tube having flexibility introducing the radiation source and wire release from the radiation source container	projection sheath

No.	Term (Japanese character)	Reading	Definition	English equivalent (informative)
1170	等価X線管電圧	TÔKA EKKUSU SEN KAN DEN'ATU	voltage of X-ray tube which produces a radiograph most nearly equivalent to a gamma radiograph taken with a particular gamma ray source	equivalent X-ray tube voltage
1171	透過写真フィルム	TÔKA SYASIN HIRUMU	film consisting of a transparent base, usually coated on both sides with a radiation sensitive emulsion	radiographic film
1172	透過写真観察器	TÔKA SYASIN KANSATU KI	equipment containing a light source and a translucent screen used for viewing radiographs	film illuminator-viewing screen
1173	透過度計	TÔKADO KEI	gauge to control quantitatively the image quality of radiograph	penetrameter
1174	特性曲線 (フィルムの —)	TOKUSEI KYOKUSEN (HIRUMU NO —)	curve showing the relationship between the common logarithm of exposure, log <i>K</i> , and the optical density, <i>D</i> .	characteristic curve (of a film)
1175	トモグラム, 断面画像	TOMOGURAMU, DANMEN-GAZÔ	sectional image photographed by CT It is obtained so that the radiation project data obtained from the full circumference direction of specimen cross section is reconstituted to image. Generally, it is displayed by the image in which the distribution of X-ray absorption coefficient obtained is brightness modulated.	tomogram
1176	肉厚補償くさび	NIKUATU HOSYÔ KUSABI	block for thickness compensation to be used for radiograph of fillet weld or a test object with remarkably different X-ray or gamma ray absorption between the base metal and weld zone	compensating wedge
1177	入射線束軸	NYÛSYA SEN SOKUZIKU	axis of the cone beam defined by the focal spot and the tube window	incident beam axis
1178	濃度計	NÔDO KEI	device for the measurement of the optical density of a radiographic film or reflective density of a photographic print	densitometer
1179	ノンスクリーン形フィルム	NON SUKURÎN GATA HIRUMU	radiographic (X-ray) film with a radiation sensibility raised NOTE: To be used in combination with a metallic intensifying screen or metallic fluorometric intensifying screen, or directly without intensifying screen.	non-screen type film