## Visual testing (VT) — Levels 1, 2 and 3

The visual testing training shall be in accordance with Tables 15 and 16 (ISO/TS 25107:2019(E))

## Table 15 — General content

Content	Level 1	Level 2	Level 3
Introduction to terminology and history of visual testing (VT)	3	4	8
Physical principles and associated knowledge	3	12	10
Product knowledge and capabilities of the method and its	18	13	8
derived techniques			
Equipment	12	8	8
Information prior to testing	3	8	21
Testing	12	12	5
Evaluation and reporting	37	19	10
Assessment	3	4	2
Quality aspects	6	12	22
Developments	3	8	6

## Table 16 — Visual testing (VT) — Levels 1, $\mathbf{2}$ and 3

Content			Level 1	Level 2	Level 3
	History		Х	Х	Х
	Purpose of NDT	What is testing?	Х	Х	Х
	-	What is the purpose of NDT?	Х	Х	Х
		P	Х	Х	Х
		F	Х	Х	Х
		V	Х	Х	Х
		Ν	Х	Х	Х
	Purpose of	D	Х	Х	Х
	visual testing	A	Х	Х	Х
	(VT)	I T	Х	Х	
		U C II	Х	Х	
	Terminology		Х	Х	Х
Physical principles and	Fundamentals	C L	Х	Х	
associated knowledge		C nd understanding of the physical principles and physics of light	X	X	Х
		Optical performance	Х	Х	

Foundation on gain       A       A		Polarization of light		v	V	
- Suborecomp principles       X       X         Refraction and refractive in lex       X       X         Refraction and refraction in lex       X       X         Refraction and refraction in lex       X       X         Refractination and refraction in lex <t< td=""><td></td><td>- rotanzation of fight</td><td></td><td></td><td></td><td></td></t<>		- rotanzation of fight				
$\begin{array}{ c c c c c c } \hline$		— Stroboscopic principles		X V	X	
Index       X       X		— Dispersion		Х	Х	
Intervention       X       X       X		— Retraction and retractive		Х	Х	
- $   -$ <td></td> <td>Index</td> <td></td> <td>V</td> <td>V</td> <td></td>		Index		V	V	
A       X       X         d       n       X       X         vision       1       X       X         X       X       X       X         X       X       X       X         X       X       X       X         X       X       X       X         X       X       X       X         X       X       X       X         X       X       X       X         X       X       X       X         X       X       X       X         X       X       X       X         X       X       X       X         X       X       X       X         Y       X       X       X         Y       X       X       X         Y       X       X       X         X       X       X       X         X       X       X       X         X       X       X       X         X       X       X <td></td> <td>- Reflection</td> <td></td> <td>X</td> <td>X</td> <td></td>		- Reflection		X	X	
d       n       X       X       X         Vision       1       -       -       -         -       -       -       -       -         -       -       -       -       -         -       -       -       -       -       -         -       -       -       -       -       -         -       -       -       -       -       -         -       -       -       -       -       -         -       -       -       -       -       -         - <td></td> <td></td> <td></td> <td>λ</td> <td>Å</td> <td></td>				λ	Å	
Vision       n       X       X       X         Vision       1       - <td< td=""><td></td><td>4</td><td></td><td></td><td></td><td></td></td<>		4				
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		d		$\mathbf{v}$	v	v
Usion       I       X       X         Image: state sta		W.	)II	Λ	Λ	Λ
Vision $I$ $X$ $X$ </td <td></td> <td>(C</td> <td></td> <td></td> <td></td> <td></td>		(C				
Vision       1       X       X         -       X       X       X         -       X       X       -         -       X       X       -         -       X       X       -         -       X       X       -         -       X       X       X         -       X       X       X         -       X       X       X         -       X       X       X         -       X       X       -         -       X       X       -         -       X       X       -         -       X       X       -         -       X       X       -         -       X       X       X         -       X       X       X         -       X       X       X         -       X       X       X         -       X       X       -         -       X       X       -         -       X <td>Vision</td> <td>T</td> <td></td> <td>v</td> <td>v</td> <td></td>	Vision	T		v	v	
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Image: constraint of the second constraint of the seco						
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Lighting       T       X       X       X         R       X       X       X       X         P       X       X       X       X         P       X       X       X       X         P       X       X       X       X         P       X       X       X       X         P       X       X       X       X         P       X       X       X       X         V       X       X       X       X         P       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X<				Λ V		V
Lighting       T       X       X       X         R       X       X       X       X         A       X       X       X       X         P       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X         I       X       X       X       X<				X V	X V	X
Lighting       I       X       X         R       X       X       X         A       X       X       X         P       X       X       X         I       X       X       X         I       X       X       X         I       X       X       X         I       X       X       X         I       X       X       X         I       X       X       X         I       X       X       X         I       X       X       X         I       X       X       X         I       X       X       X         I       X       X       X         I       X       X       X         I       X       X       X         I       X       X       X         I       X       X       X         I       X       X       X         I       X       X       X         Inface constraction </td <td>T ' 1.'</td> <td></td> <td></td> <td>X</td> <td>X</td> <td>X</td>	T ' 1.'			X	X	X
R       X       X       X         P       X       X       X         F       X       X       X         N       X       X       X         T       X       X       X         T       X       X       X         T       X       X       X         T       X       X       X         T       X       X       X         T       X       X       X         T       X       X       X         T       X       X       X         T       X       X       X         T       X       X       X         T       X       X       X         T       X       X       X         T       X       X       X         T       X       X       X         T       X       X       X         T       X       X       X         T       X       X       X         T       X	Lighting	1		X	X	
A       X       X         P       X       X         P       X       X         V       X       X         T       X       X         X       X       X         T       X       X         X       X       X         T       X       X         X       X       X         X       X       X         A       X       X         X       X       X         A       X       X         A       X       X         A       X       X         A       X       X         A       X       X         A       X       X         A       X       X         X       X       X         X       X       X         X       X       X         X       X       X         X       X       X         X       X       X         X       X       X		R		X	X	
P       X       X         V       X       X         T       X       X         X       X       X         T       X       X         X       X       X		A		X	X	
E       X       X       X         1       X       X       X         -       X		P		X	X	
V       X       X       X         T       X       X       X         -       X       X       X         -       X       X       X         -       X       X       X         -       X       X       X         -       X       X       X         -       X       X       X         -       X       X       X         -       X       X       X         -       X       X       X         I       X       X       I         I       X       X       I         -       X       X       I         -       X       X       I         -       X       X       I         -       X       X       I         -       X       X       I         -       X       X       I         -       X       X       I         -       X       X       I         Geometric distortion		B		Х	X	
T       X       X       X         -       X		V		Х	Х	
- $X$ $X$ $X$ $X$ $ X$ $X$ $X$ $1$ $  X$ $ X$ $X$ $1$ $X$ $X$ $1$ $X$ $X$ $ X$ $X$		Τ		Х	Х	Х
IXXXIIIaIIoIX-XX-XX-XXIXXIXXIXXIXX-X-				Х	Х	Х
I     a     x       -     X     X       -     X     X       -     X     X       -     X     X       P     X     X       I     X     X		-	r	Х	Х	Х
a-XX-XXX-XXX-XXX1XXX1XXX1XXX-XX		L	S			
oX-X-X-X-X-X1X1X1X1X1X1X1X1X1X1X1X1X1X1X1X2X1X2X1X2X1X2X2X1X2X1X2X1X1X2X1X1X1X1X2X1X2X1X1X2X1X		an				
0   -   X   X     -   X   X   X     P   X   X   X     I   X   X   I     I   X   X   I     I   X   X   I     I   X   X   I     I   X   X   I     I   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I     -   X   X   I  -		-				Х
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Image constructionXXOptical principlesOXOutput principlesOXImage constructionXVirtual imagesXVirtual imagesXChromatic aberrationXGeometric distortionXMagnification principlesX				X	X	
Optical principlesCXXImage constructionXVirtual imagesXChromatic aberrationXGeometric distortionXMagnification principlesX				Х	X	
Optical principlesCXImage constructionXImage constructionXVirtual imagesXChromatic aberrationXGeometric distortionXMagnification principlesX		-		Х	X	
principlesOXImage constructionXVirtual imagesXChromatic aberrationXGeometric distortionXMagnification principlesX	Optical	C			Х	
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Chromatic aberrationXGeometric distortionXMagnification principlesX		Virtual images			Х	
Geometric distortionXMagnification principlesX		Chromatic aberration			Х	
Magnification principles   X		Geometric distortion			Х	
		Magnification principles			Х	

Camera and	Optical filters				Х
photo sensor	Construction of digital images				
operation and	and problems				Х
principles	Image processing				Х
	Image analysis				Х
	Image compression and				••
	tra				Х
	In				Х
	R				Х
	V				Х
	0				Х
	L				X
Principles of	C				X
operation of	In				
fibre bundles					Х
and lenses					
Photogrammetry					Х
Visual	V			Х	
perception	V			X	
1 1	V			X	
	V	tc			
	Se	,		X	
Material	C		Х	X	
attributes	S		X	X	
affecting the test	S		Х	X	
U	Č		X	X	
	S		X	X	
	S		X	X	
	Т		X	X	
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and	C			X	
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	E				
	N				
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	P C				
	5	-			
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D'anat 1	Creaniness			X	
Direct and			Х	Х	
remote methods	Dentinue		17	v	
v1810n	Requirements		Х	X	
	Employer's responsibility			X	

12.3 Product		Outline of basic flaws detecte	d			
knowledge		with visual testing as necessar	ry	Х		
and related		to work in a specific sector				
capability of		Evaluation of surfaces				Х
the method		Test objects and flaws			Х	Х
and derived techniques		Basic production and			Х	х
		T			x	x
		a D			Y Y	X V
		B	-		Λ	Λ
		p			X	Х
		V			Х	Х
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		R				Х
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					X	X
		-			X	X
		1			X	X
		_			Х	Х
	Capability and	0		Х		
	limitations of	D			Х	
	visual testing				Х	
		-			X	
		-			Х	
		-			Х	
					Х	
					X	
		- Lighting effects			Х	
	Associated	Gauging			X	
	techniques	Comparators			X	
		Measurement			X	
		Thermographic imaging			X	
		Replication			X	

Equipment	Introduction and	Mirrors		X	Х	X
Equipment	applications	Magnifiers		X	X	X
	11	Borescopes		X	X	X
		Fibrescopes		Х	Х	Х
	Photographic	Imaging cameras		Х	Х	
	and video	V		Х	Х	
		L		Х	Х	
		G		X	X	
		Т		X	X	
		S		X	X	
		S				X
		Ā			Х	X
		С			Х	Х
		D		Х	Х	
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		E	fil			Х
		D	or			X
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		te				Λ
	Image	E			Х	
	recording,	E	_		X	
	transfer and	V		X	Х	
	storage	$\mathbf{P}_{\mathbb{T}}$	C			**
	equipment	m	t			Х
	Cining of	e	-		V	
	Sizing of	II C	-			
	mulcations	S	te		Λ	
		G	15	v	x	
		re		24	21	
12.5 Information	Information about the test	Id	f		X	X
prior to test	object	11			X	X
prior to test	00,000				X	X
					X	X
					X	X
	Test conditions	A			X	X
	and application	Infrastructure			X	X
	of standard	Particular test conditions			X	X
		Application standard			X	X
		Stage of manufacture or service	e		_	
		life when testing is to be carried	ed		Х	Х
		out				

	1	-				
		Standard and codes assigned t the test object	O		Х	Х
		Requirements of test personne	-1		Х	Х
		Acceptance criteria			Х	Х
	Technique and	S			Х	
	sequence of	S			Х	
	performing test	Т	nd		V	
		d			Х	
		Р			Х	
		V	3		v	
		u			Λ	
		D			x	
		in			Λ	
		R	ges		Х	
	Instructions	P	lre			Х
		P	ion		Х	
		P				
		ac :		Х		
					v	v
		D			Λ	Λ
						Х
12.6 Testing	Test set-up	D		X	X	
12.0 Testing	rest set up	R		X	X	
		A			X	
		V			X	Х
		V			Х	Х
12.7	Reporting	R		Х	Х	
Evaluation	results	A		Х	Х	
and reporting		R	of	V	V	
		in		Λ	Λ	
		C		Х	Х	
			ria	Х	Х	
		-	1	Х	Х	
		-	lts	Х	Х	
	Control and	In			Х	Х
	monitoring of	E			Х	Х
	test results	-			Х	Х
		-			Х	Х
		R			Х	Х
		S			V	V
	Derreltereite		ns		X	X 
	Developing	C and a contract of the contra				
	report forms	Distribution of final form				
		Investigation of quitchle or least	7			Λ
		and product standards for and				v
		application	.1			Λ
		Acting as a reference point for	r			X
	1	rieung as a reference point for				11

		level 2 advice for interpretation	on			
12.8	Classification	Acceptance criteria			Х	Х
Assessment	and assessment	— Codes			Х	Х
	of observations	— Standards			Х	Х
					Х	Х
		 C(	)		Х	Х
						Х
		В			X	X
		B			X	
		A pa			Х	
		R			Х	
		R			Х	
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		1	S			
		in	0			x
		be	1			
		in				
		F	nce			
		to	t			x
		C de	nd			
		T				V
		a				Χ
12.9 Quality	Personnel	IS		Х	Х	Х
aspects	qualification	О				x
		CE				
	Documentation	F				Х
		p O	rac			V
		A	on			Λ
		p	, interview.			Х
		D	1		Х	
		V		v		
		in		Λ		
		T			X	X
		R			X	X
	Knowledge of	U			X	
	applicable NDT	N			Λ	$\Lambda$ V
	product	Io				Λ X
	standards	E		X	X	X
12.10	Importance of	-		<u> </u>		
Developments	investigating current and developing					Х

technology and		
method of		
application		
Summary of		
latest		Х
developments		