



SLOVENSKI STANDARD
SIST EN ISO 11782-2:2008/oprA1:2023
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Korozija kovin in zlitin - Ugotavljanje pokanja zaradi korozijske utrujenosti - 2. del: Preskus za ugotavljanje napredovanja razpok z vzorci z umetno razpoko - Dopolnilo A1 (ISO 11782-2:1998/DAM 1:2023)

Corrosion of metals and alloys - Corrosion fatigue testing - Part 2: Crack propagation testing using precracked specimens - Amendment 1 (ISO 11782-2:1998/DAM 1:2023)

Korrosion von Metallen und Legierungen - Prüfung der Schwingungskorrosion - Teil 2: Rissausbreitungsprüfung an angerissenen Proben - Änderung 1 (ISO 11782-2:1998/DAM 1:2023)

Corrosion des métaux et alliages - Essais de fatigue-corrosion - Partie 2: Essais d'amorce de rupture sur des éprouvettes préfissurées - Amendement 1 (ISO 11782-2:1998/DAM 1:2023)

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Corrosion of metals and alloys — Corrosion fatigue testing —

Part 2:

Crack propagation testing using precracked specimens

AMENDMENT 1

*Corrosion des métaux et alliages — Essais de fatigue-corrosion —**Partie 2: Essais d'amorce de rupture sur des éprouvettes préfissurées**AMENDEMENT 1*

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ICS: 77.060

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Foreword

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

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 11782-2 was prepared by Technical Committee ISO/TC 156, *Corrosion of metals and alloys*.

ISO 11782 consists of the following parts, under the general title *Corrosion of metals and alloys — Corrosion fatigue testing*:

- *Part 1: Cycles to failure testing*
- *Part 2: Crack-propagation testing using precracked specimens*

Annex A of this part of ISO 11782 is for information only.

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Corrosion of metals and alloys — Corrosion fatigue testing —

Part 2: Crack propagation testing using precracked specimens

AMENDMENT 1

4.2.2, Table 1

Replace the Table 1 with the following:

Table 1 — Stress intensity factor function values for SENB3 specimens

Tabulated values = $(KB/P) \times W^{1/2}$										
Span = $4W$										
a/W	0,000	0,001	0,002	0,003	0,004	0,005	0,006	0,007	0,008	0,009
0,10	3,39	3,40	3,42	3,43	3,45	3,46	3,48	3,49	3,50	3,52
0,11	3,53	3,55	3,56	3,58	3,59	3,60	3,62	3,63	3,64	3,66
0,12	3,67	3,69	3,70	3,71	3,73	3,74	3,75	3,77	3,78	3,79
0,13	3,81	3,82	3,83	3,85	3,86	3,87	3,89	3,90	3,91	3,93
0,14	3,94	3,95	3,96	3,98	3,99	4,00	4,02	4,03	4,04	4,05
0,15	4,07	4,08	4,09	4,11	4,12	4,13	4,14	4,16	4,17	4,18
0,16	4,19	4,21	4,22	4,23	4,25	4,26	4,27	4,28	4,30	4,31
0,17	4,32	4,33	4,35	4,36	4,37	4,38	4,40	4,41	4,42	4,43
0,18	4,45	4,46	4,47	4,48	4,50	4,51	4,52	4,54	4,55	4,56
0,19	4,57	4,59	4,60	4,61	4,62	4,64	4,65	4,66	4,67	4,69
0,20	4,70	4,71	4,72	4,74	4,75	4,76	4,78	4,79	4,80	4,81
0,21	4,83	4,84	4,85	4,87	4,88	4,89	4,90	4,92	4,93	4,94
0,22	4,96	4,97	4,98	5,00	5,01	5,02	5,03	5,05	5,06	5,07
0,23	5,09	5,10	5,11	5,13	5,14	5,15	5,17	5,18	5,19	5,21
0,24	5,22	5,23	5,25	5,26	5,27	5,29	5,30	5,32	5,33	5,34
0,25	5,36	5,37	5,38	5,40	5,41	5,43	5,44	5,45	5,47	5,48
0,26	5,49	5,51	5,52	5,54	5,55	5,57	5,58	5,59	5,61	5,62
0,27	5,64	5,65	5,67	5,68	5,69	5,71	5,72	5,74	5,75	5,77

Source: SRAWLEY, J.E., *Int. J. Fracture*, 1976, 12, 475, 1987, Martinus Nijhoff Publishers, Dordrecht, Boston, Lancaster. Closed form approximation:

$$Y = \frac{6\alpha^{1/2} [1,99 - \alpha(1 - \alpha)(2,15 - 3,93\alpha + 2,7\alpha^2)]}{(1 + 2\alpha)(1 - \alpha)^{3/2}}$$

where $\alpha = a/W$

Applicability: all value of a/W

ISO 11782-2:1998/DAM 1:2023(E)

Table 1 (continued)

Tabulated values = $(KB/P) \times W^{1/2}$										
Span = $4W$										
a/W	0,000	0,001	0,002	0,003	0,004	0,005	0,006	0,007	0,008	0,009
0,28	5,78	5,80	5,81	5,83	5,84	5,86	5,87	5,89	5,90	5,92
0,29	5,93	5,95	5,96	5,98	5,99	6,01	6,02	6,04	6,05	6,07
0,30	6,08	6,10	6,12	6,13	6,15	6,16	6,18	6,20	6,21	6,23
0,31	6,24	6,26	6,28	6,29	6,31	6,32	6,34	6,36	6,37	6,39
0,32	6,41	6,42	6,44	6,46	6,47	6,49	6,51	6,52	6,54	6,56
0,33	6,57	6,59	6,61	6,63	6,64	6,66	6,68	6,69	6,71	6,73
0,34	6,75	6,77	6,78	6,80	6,82	6,84	6,85	6,87	6,89	6,91
0,35	6,93	6,95	6,96	6,98	7,00	7,02	7,04	7,06	7,08	7,09
0,36	7,11	7,13	7,15	7,17	7,19	7,21	7,23	7,25	7,27	7,29
0,37	7,31	7,33	7,34	7,36	7,38	7,40	7,42	7,44	7,46	7,48
0,38	7,51	7,53	7,55	7,57	7,59	7,61	7,63	7,65	7,67	7,69
0,39	7,71	7,73	7,75	7,78	7,80	7,82	7,84	7,86	7,88	7,91
0,40	7,93	7,95	7,97	7,99	8,02	8,04	8,06	8,08	8,11	8,13
0,41	8,15	8,17	8,20	8,22	8,24	8,27	8,29	8,31	8,34	8,36
0,42	8,38	8,41	8,43	8,46	8,48	8,50	8,53	8,55	8,58	8,60
0,43	8,63	8,65	8,68	8,70	8,73	8,75	8,78	8,80	8,83	8,85
0,44	8,88	8,90	8,93	8,96	8,98	9,01	9,04	9,06	9,09	9,12
0,45	9,14	9,17	9,20	9,22	9,25	9,28	9,31	9,33	9,36	9,39
0,46	9,42	9,45	9,47	9,50	9,53	9,56	9,59	9,62	9,65	9,68
0,47	9,70	9,73	9,76	9,79	9,82	9,85	9,88	9,91	9,94	9,97
0,48	10,01	10,04	10,07	10,10	10,13	10,16	10,19	10,22	10,26	10,29
0,49	10,32	10,35	10,38	10,42	10,45	10,48	10,52	10,55	10,58	10,62
0,50	10,65	10,68	10,72	10,75	10,79	10,82	10,86	10,89	10,93	10,96
0,51	11,00	11,03	11,07	11,10	11,14	11,18	11,21	11,25	11,29	11,32
0,52	11,36	11,40	11,43	11,47	11,51	11,55	11,59	11,63	11,68	11,70
0,53	11,74	11,78	11,82	11,86	11,90	11,94	11,98	12,02	12,06	12,10
0,54	12,15	12,19	12,23	12,27	12,31	12,35	12,40	12,44	12,48	12,53
0,55	12,57	12,61	12,66	12,70	12,75	12,79	12,84	12,88	12,92	12,97
0,56	13,02	13,06	13,11	13,16	13,20	13,25	13,30	13,35	13,39	13,44
0,57	13,49	13,54	13,59	13,64	13,69	13,74	13,79	13,84	13,89	13,98
0,58	13,99	14,04	14,10	14,15	14,20	14,25	14,31	14,36	14,41	14,47

Source: SRAWLEY, J.E., *Int. J. Fracture*, 1976, 12, 475, 1987, Martinus Nijhoff Publishers, Dordrecht, Boston, Lancaster. Closed form approximation:

$$Y = \frac{6\alpha^{1/2} \left[1,99 - \alpha(1-\alpha)(2,15 - 3,93\alpha + 2,7\alpha^2) \right]}{(1+2\alpha)(1-\alpha)^{3/2}}$$

where $\alpha = a/W$

Applicability: all value of a/W

Table 1 (continued)

Tabulated values = $(KB/P) \times W^{1/2}$										
Span = $4W$										
a/W	0,000	0,001	0,002	0,003	0,004	0,005	0,006	0,007	0,008	0,009
0,59	14,52	14,58	14,63	14,69	14,74	14,80	14,86	14,91	14,97	15,03
0,60	15,09	15,14	15,20	15,26	15,32	15,38	15,44	15,50	15,56	15,62
0,61	15,69	15,75	15,81	15,87	15,94	16,00	16,06	16,13	16,19	16,26
0,62	16,32	16,39	16,46	16,52	16,59	16,66	16,73	16,80	16,86	16,93
0,63	17,00	17,08	17,15	17,22	17,29	17,36	17,44	17,51	17,58	17,60
0,64	17,73	17,81	17,88	17,96	18,04	18,12	18,19	18,27	18,25	18,43
0,65	18,51	18,59	18,67	18,76	18,84	18,92	19,01	19,09	19,18	19,26
0,66	19,35	19,44	19,52	19,61	19,70	19,79	19,85	19,97	20,06	20,15
0,67	20,25	20,34	20,44	20,53	20,63	20,72	20,82	20,92	21,02	21,12
0,68	21,22	21,32	21,42	21,52	21,63	21,73	21,84	21,94	22,05	22,16
0,69	22,27	22,38	22,49	22,60	22,71	22,82	22,94	23,05	23,17	23,28
0,70	23,40	23,52	23,64	23,76	23,88	24,01	24,13	24,25	24,38	24,51
0,71	24,64	24,76	24,90	25,03	25,16	25,29	25,43	25,56	25,70	25,84
0,72	25,98	26,12	26,26	26,41	26,55	26,70	26,85	27,00	27,15	27,30
0,73	27,45	27,61	27,76	27,92	28,08	28,24	28,40	28,56	28,73	28,90
0,74	29,06	29,23	29,41	29,53	29,75	29,93	30,11	30,29	30,47	30,65
0,75	30,84	31,03	31,22	31,41	31,60	31,80	31,99	32,19	32,39	32,60
0,76	32,80	33,01	33,22	33,43	33,65	33,86	34,08	34,31	34,53	34,76
0,77	34,98	35,22	35,45	35,69	35,92	36,17	36,41	36,66	36,91	37,16
0,78	37,42	37,67	37,94	38,20	38,47	38,74	39,01	39,29	39,57	39,85
0,79	40,14	40,43	40,73	41,02	41,32	41,63	41,94	42,25	42,57	42,89
0,80	43,21	43,54	43,87	44,21	44,55	44,90	45,25	45,60	45,96	46,33
0,81	46,70	47,07	47,45	47,83	48,22	48,62	49,02	49,42	49,83	50,25
0,82	50,67	51,10	51,54	51,98	52,43	52,88	53,34	53,81	54,28	54,76
0,83	55,25	55,74	56,25	56,76	57,27	57,80	58,33	58,88	59,43	59,98
0,84	60,55	61,13	61,72	62,31	62,92	63,53	64,16	64,79	65,44	66,09
0,85	66,76	67,44	68,13	68,83	69,55	70,27	71,01	71,77	72,53	73,31
0,86	74,11	74,91	75,74	76,57	77,43	78,30	79,18	80,09	81,01	81,94
0,87	82,90	83,87	84,87	85,88	86,91	87,97	89,04	90,14	91,26	92,40
0,88	93,57	94,76	95,98	97,23	98,50	99,80	—	—	—	—
0,89	—	—	—	—	—	—	—	—	—	—

Source: SRAWLEY, J.E., *Int. J. Fracture*, 1976, 12, 475, 1987, Martinus Nijhoff Publishers, Dordrecht, Boston, Lancaster. Closed form approximation:

$$Y = \frac{6\alpha^{1/2} [1,99 - \alpha(1 - \alpha)(2,15 - 3,93\alpha + 2,7\alpha^2)]}{(1 + 2\alpha)(1 - \alpha)^{3/2}}$$

where $\alpha = a/W$

Applicability: all value of a/W

ISO 11782-2:1998/DAM 1:2023(E)

4.2.2, Table 2

Replace the Table 2 with the following:

Table 2 — Stress intensity factor function values for SENB4 specimens

Tabulated values = $(KB/P) \times W^{1/2}$ for the case where the inner and outer spans differ by $2W$. The value of the compliance function is directly proportional to this difference.

a/W	0,000	0,001	0,002	0,003	0,004	0,005	0,006	0,007	0,008	0,009
0,10	1,75	1,76	1,77	1,77	1,78	1,79	1,80	1,81	1,81	1,82
0,11	1,83	1,84	1,84	1,85	1,86	1,87	1,87	1,88	1,89	1,90
0,12	1,90	1,91	1,92	1,93	1,93	1,94	1,95	1,96	1,96	1,97
0,13	1,98	1,99	1,99	2,00	2,01	2,01	2,02	2,03	2,04	2,04
0,14	2,05	2,06	2,06	2,07	2,08	2,09	2,09	2,10	2,11	2,11
0,15	2,12	2,13	2,13	2,14	2,15	2,15	2,16	2,17	2,18	2,18
0,16	2,19	2,20	2,20	2,21	2,22	2,22	2,23	2,24	2,24	2,25
0,17	2,26	2,26	2,27	2,28	2,29	2,29	2,30	2,31	2,31	2,32
0,18	2,33	2,33	2,34	2,35	2,35	2,36	2,37	2,37	2,38	2,39
0,19	2,39	2,40	2,41	2,41	2,42	2,43	2,44	2,44	2,45	2,46
0,20	2,46	2,47	2,48	2,48	2,49	2,50	2,50	2,51	2,52	2,52
0,21	2,53	2,54	2,54	2,55	2,56	2,57	2,57	2,58	2,59	2,59
0,22	2,60	2,61	2,61	2,62	2,63	2,64	2,64	2,65	2,66	2,66
0,23	2,67	2,68	2,68	2,69	2,70	2,71	2,71	2,72	2,73	2,73
0,24	2,74	2,75	2,76	2,76	2,77	2,78	2,78	2,79	2,80	2,81
0,25	2,81	2,82	2,83	2,84	2,84	2,85	2,86	2,86	2,87	2,88
0,26	2,89	2,89	2,90	2,91	2,92	2,92	2,93	2,94	2,95	2,95
0,27	2,96	2,97	2,98	2,98	2,99	3,00	3,01	3,02	3,02	3,03
0,28	3,04	3,05	3,05	3,06	3,07	3,08	3,09	3,09	3,10	3,11
0,29	3,12	3,12	3,13	3,14	3,15	3,16	3,16	3,17	3,18	3,19
0,30	3,20	3,21	3,21	3,22	3,23	3,24	3,25	3,25	3,26	3,27
0,31	3,28	3,29	3,30	3,31	3,31	3,32	3,33	3,34	3,35	3,36
0,32	3,36	3,37	3,38	3,39	3,40	3,41	3,42	3,43	3,43	3,44
0,33	3,45	3,46	3,47	3,48	3,49	3,50	3,51	3,52	3,52	3,53
0,34	3,54	3,55	3,56	3,57	3,58	3,59	3,60	3,61	3,62	3,63
0,35	3,64	3,65	3,65	3,66	3,67	3,68	3,69	3,70	3,71	3,72

Source: TADA, H., Paris, P.C. and IRWIN, G.R. *Stress analysis of cracks handbook*, 2nd ed., 1985, p. 2. 14, Paris Productions Inc. (and Del Research Corporation) St. Louis.

Closed form approximation:

$$Y = \frac{3\{2\tan\theta[0,923 + 0,199(1 - \sin\theta)^4]\}^{1/2}}{\cos\theta}$$

where

$$\theta = \pi a/2W$$

Applicability: all values of a/W