

DAFTAR PUSTAKA

- [1] Chakrabarti. S. K. 2005. *Handbook of Offshore Engineering*. Elsevier. United States
- [2] Saini. Dikshant Singh. 2016. *A review of stress concentration factors in tubular and non-tubular joints for design of offshore installations*. Indian Institute of Technology Kanpur. India.
- [3]. API RP-2A-WSD. 2000. *Recommended Practice for Planning, Designing and Constructing Fixed Offshore Platform*.
- [4] Muis Alie. M.Z. 2016. *The Effect of Symmetrical and Asymmetrical Configuration Shapes of Buckling and Fatigue Strength Analysis of Fixed Offshore Platforms*. International Journal of Technology. ISSN: 20286-9614.
- [5] Syahroni. N. 2014. *Fracture Mechanics – An Introduction*. Surabaya: Jurusan Teknik Kelautan.
- [6] Rolfe. S. T. & Barsom. J. M. 1999. *Fracture and Fatigue Control in Structures: Application of Fracture Mechanics (Third Edition)*. Philadelphia: ASTM.
- [7] Broek. D. 1988. *The Practical Use of Fracture Mechanics*. Netherlands: Kluwer Academic.
- [8] Akbari. S. A. 2005. *Analisa Umur Kelelahan Tubular Joint Tipe T dengan Menggunakan Metode Elastic Plastic Fracture Mechanics*. Surabaya: Institut Teknologi Sepuluh Nopember.
- [9] Bhafikatti. SS. 2005. *Finite Element Analysis*. New age international. New Delhi.
- [10] Klaus Jurgen Bathe. 1996. *Finite Element Procedures*. Prentice Hall. Massachusetts Institut of Technology. Amerika.
- [11] Irwansyah. 2017. *Analisa Pengaruh Tegangan Sisa Pengelasan Terhadap Kekuatan Pelat*. Skripsi. Universitas Hasanuddin: Gowa. Indonesia.
- [12] Amrullah. M Amal. 2020. *Analisis Pengaruh Tegangan Sisa Pengelasan Terhadap Kekuatan Rangka Tubular*. Skripsi. Universitas Hasanuddin: Gowa. Indonesia.

- [13] Jiang. Y.. Yuan K.. Cui H. 2018. *Prediction of Stress Concentration Factor Distribution for Multi-planar Tubular DT-Joints under Axial Loads*. Marine Structures.
- [14] Nguyen Le. Thanh. 2019. *Melting Point of Carbbon Steel and Stainless*.
- [15] Assidiq Fuad M. 2018. *Prediksi sisa umur sambungan tubular asimetris multi bidang menggunakan metode fracture mechanics*. SENSISTEK. Universitas Hasanuddin: Gowa. Indonesia

BAB 1. LAMPIRAN

BAB 2. Crack Propagation Rate		
BAB 3.	BAB 4. $\frac{d}{dn}$ elta K	BAB 5. a/dn
BAB 6.	BAB 7. 2 ,19E+0 0	BAB 8. ,76E -09
BAB 9. ,579 8	BAB 10. 2 ,23E+0 1	BAB 11. ,01E -06
BAB 12. ,159 2	BAB 13. 6 ,30E+0 0	BAB 14. ,01E -08
BAB 15. 3,87 9	BAB 16. 1 ,74E+0 1	BAB 17. ,90E -06
BAB 18. 8,59	BAB 19. 1 ,44E+0 1	BAB 20. ,08E -06
BAB 21. 3,31	BAB 22. 1 ,93E+0 1	BAB 23. ,60E -06
BAB 24. 8,02 9	BAB 25. 1 ,68E+0 1	BAB 26. ,72E -06
BAB 27. 2,74 8	BAB 28. 1 ,90E+0 1	BAB 29. ,48E -06
BAB 30. 7,46 8	BAB 31. 1 ,75E+0 1	BAB 32. ,92E -06
BAB 33. 2,18 8	BAB 34. 1 ,89E+0 1	BAB 35. ,43E -06
BAB 36. 6,90 8	BAB 37. 1 ,76E+0 1	BAB 38. ,98E -06

BAB 39. 1,62 9	BAB 40. 1 ,87E+0 1	BAB 41. ,36E -06
BAB 42. 6,34 9	BAB 43. 1 ,72E+0 1	BAB 44. ,82E -06

Crack Propagation Rate		
a	delta K	da/dn
0	2,19E+00	3,76E-09
4,5798	2,23E+01	4,01E-06
9,1592	6,30E+00	9,01E-08
13,879	1,74E+01	1,90E-06
18,59	1,44E+01	1,08E-06
23,31	1,93E+01	2,60E-06
28,029	1,68E+01	1,72E-06
32,748	1,90E+01	2,48E-06
37,468	1,75E+01	1,92E-06
42,188	1,89E+01	2,43E-06
46,908	1,76E+01	1,98E-06
51,629	1,87E+01	2,36E-06
56,349	1,72E+01	1,82E-06

Crack Propagation Rate		
a	delta K	da/dn
0	1,99E+00	2,84E-09
4,5798	2,05E+01	3,11E-06
9,1592	5,85E+00	7,20E-08
13,879	1,61E+01	1,50E-06
18,59	1,33E+01	8,44E-07
23,31	1,76E+01	1,97E-06
28,029	1,52E+01	1,26E-06
32,748	1,70E+01	1,77E-06
37,468	1,55E+01	1,34E-06

42,188	1,67E+01	1,68E-06
46,908	1,56E+01	1,37E-06
51,629	1,66E+01	1,65E-06
56,349	1,53E+01	1,30E-06

Stress Intensity Factor						
LENGTH	K1 COUNTOR 1	K1 COUNTOR 2	K1 COUNTOR 3	K1 COUNTOR 4	K1 COUNTOR 5	K1 COUNTOR 6
0	-69,124	-302,73	-602,67	-658,51	-692,1	-736,69
4,5798	-712,86	-746,21	-744,66	-743,95	-743,8	-743,79
9,1592	-203,11	-551,26	-610,3	-675,03	-726,62	-728
13,879	-559,19	-670,48	-669,7	-669,22	-668,82	-668,7
18,59	-461,43	-639,04	-672,99	-673,05	-672,8	-672,41
23,31	-612,55	-659,08	-659,31	-659,45	-659,41	-659,09
28,029	-528,03	-648,96	-650,1	-650,5	-650,61	-650,44
32,748	-591,14	-636,56	-637,95	-638,56	-638,89	-638,85
37,468	-538,82	-629,26	-630,74	-631,5	-631,92	-631,96
42,188	-579,94	-622,53	-624,07	-624,84	-625,32	-625,42
46,908	-542,06	-620,46	-621,98	-622,73	-623,2	-623,3
51,629	-577,15	-619,55	-620,88	-621,55	-621,98	-622,09
56,349	-532,82	-623,01	-624,23	-624,68	-624,93	-625,13

Jumlah Siklus					
a	delta K	da/dn	X	X/1-(M/2)	delta N
0,00E+00	1,99E+00	2,84E-09	352469201,5	-704938403	2,35E+08
4,58E+00	2,05E+01	3,11E-06	321362,3691	-642724,7383	2,15E+05
9,16E+00	5,85E+00	7,20E-08	13893569,59	-27787139,18	9,28E+06
1,39E+01	1,61E+01	1,50E-06	665778,1994	-1331556,399	4,45E+05
1,86E+01	1,33E+01	8,44E-07	1184923,407	-2369846,814	7,92E+05
2,33E+01	1,76E+01	1,97E-06	506504,2882	-1013008,576	3,38E+05
2,80E+01	1,52E+01	1,26E-06	790736,828	-1581473,656	5,28E+05
3,27E+01	1,70E+01	1,77E-06	563555,5322	-1127111,064	3,77E+05
3,75E+01	1,55E+01	1,34E-06	744177,6738	-1488355,348	4,97E+05
4,22E+01	1,67E+01	1,68E-06	596840,8862	-1193681,772	3,99E+05
4,69E+01	1,56E+01	1,37E-06	730912,9842	-1461825,968	4,88E+05
5,16E+01	1,66E+01	1,65E-06	605538,3585	-1211076,717	4,05E+05
5,63E+01	1,53E+01	1,30E-06	769602,03	-1539204,06	5,14E+05
Total					2,50E+08

JUMLAH SIKLUS					
a	delta K	da/dn	X	X/1-(M/2)	delta N
0,00E+00	2,19E+00	3,76E-09	265982679,9	-531965359,8	1,78E+08
4,58E+00	2,23E+01	4,01E-06	249089,5099	-498179,0199	1,66E+05
9,16E+00	6,30E+00	9,01E-08	11100179,34	-22200358,68	7,42E+06
1,39E+01	1,74E+01	1,90E-06	526643,9937	-1053287,987	3,52E+05
1,86E+01	1,44E+01	1,08E-06	922047,6527	-1844095,305	6,16E+05
2,33E+01	1,93E+01	2,60E-06	384837,3595	-769674,719	2,57E+05
2,80E+01	1,68E+01	1,72E-06	581427,5666	-1162855,133	3,88E+05
3,27E+01	1,90E+01	2,48E-06	402469,8817	-804939,7634	2,69E+05
3,75E+01	1,75E+01	1,92E-06	520113,7107	-1040227,421	3,48E+05
4,22E+01	1,89E+01	2,43E-06	411399,611	-822799,222	2,75E+05
4,69E+01	1,76E+01	1,98E-06	506008,4851	-1012016,97	3,38E+05
5,16E+01	1,87E+01	2,36E-06	423317,7676	-846635,5352	2,83E+05
5,63E+01	1,72E+01	1,82E-06	550185,914	-1100371,828	3,68E+05
TOTAL					1,89E+08