

Asean Engineering Journal Part C

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20361653&lokasi=lokal>

Abstrak

ABSTRAK

Distortion-induced fatigue cracking has occurred in many types of steel bridge structures, especially welded structures where high local stresses exist. This research experimentally investigates the fatigue cracking behaviors around the web gap of welded I-Beam. A total of nine specimens in three series of experiments were tested under constant cyclic loading to observe the cracking behaviors that include crack initiation, crack propagation, and final failure. The test results show that the cracks initiate along the weld toe and grow upward to the lower stress field with lower strain energy, whereas the second crack occurs inside the "weak zone" depending on the critical stress or spot available in the area. This second crack is critical as it leads to the beam failure.