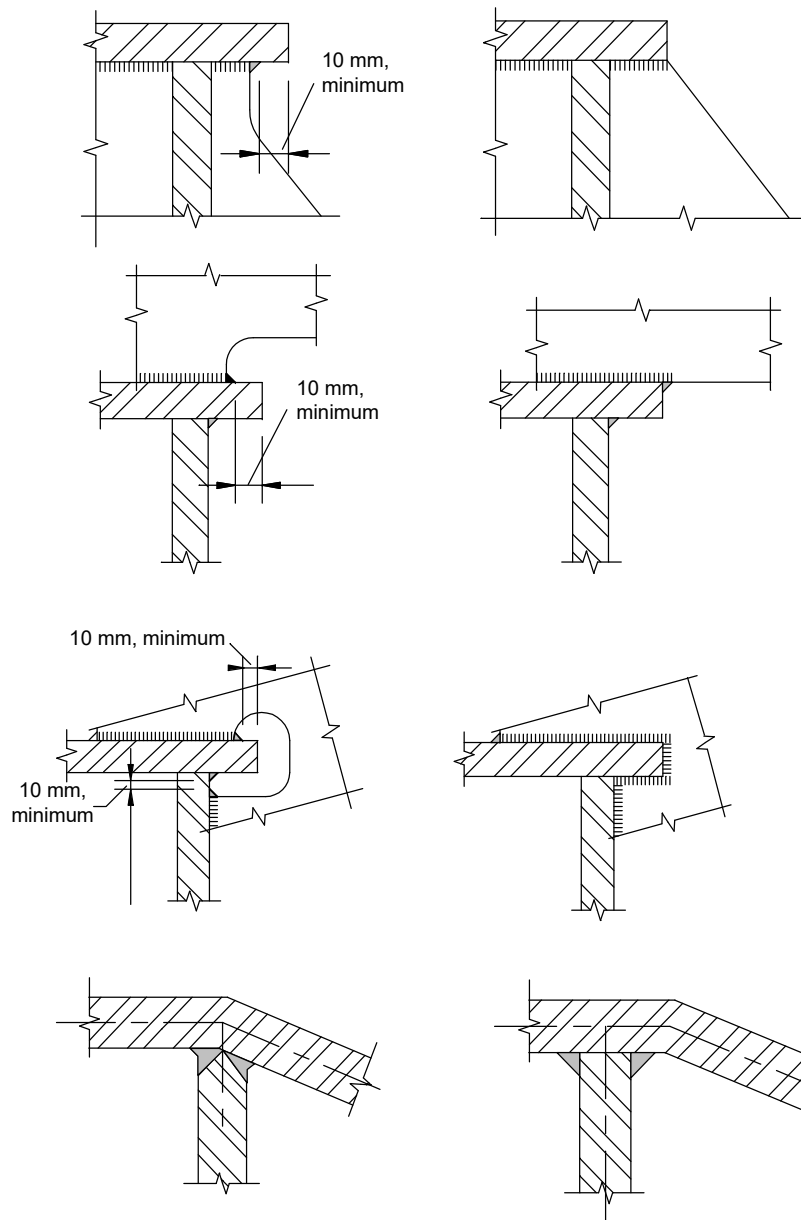


FATIGUE DETAIL GUIDELINES

VERSION 2.0, NOVEMBER 2014

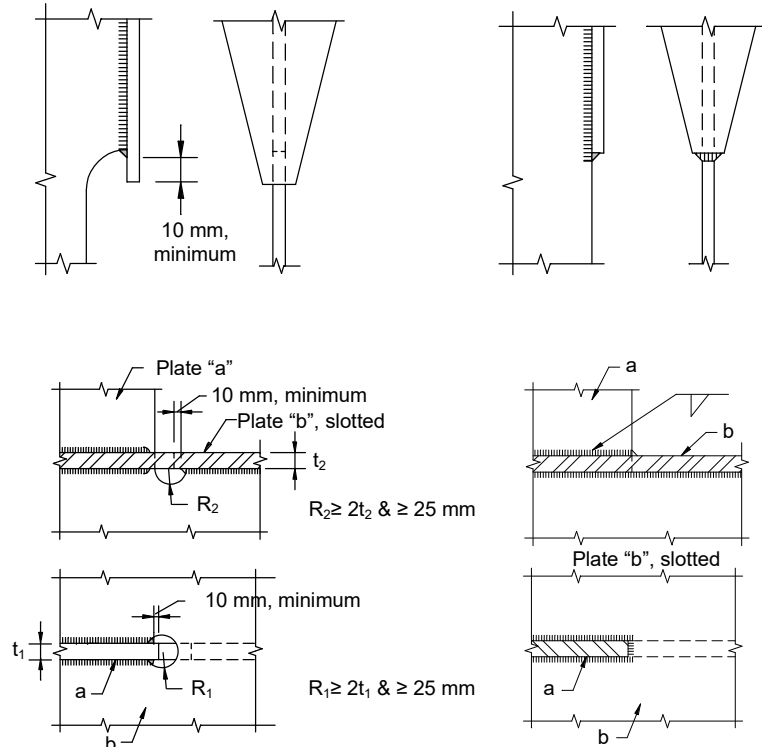
Acceptable

Not Acceptable



Acceptable

Not Acceptable



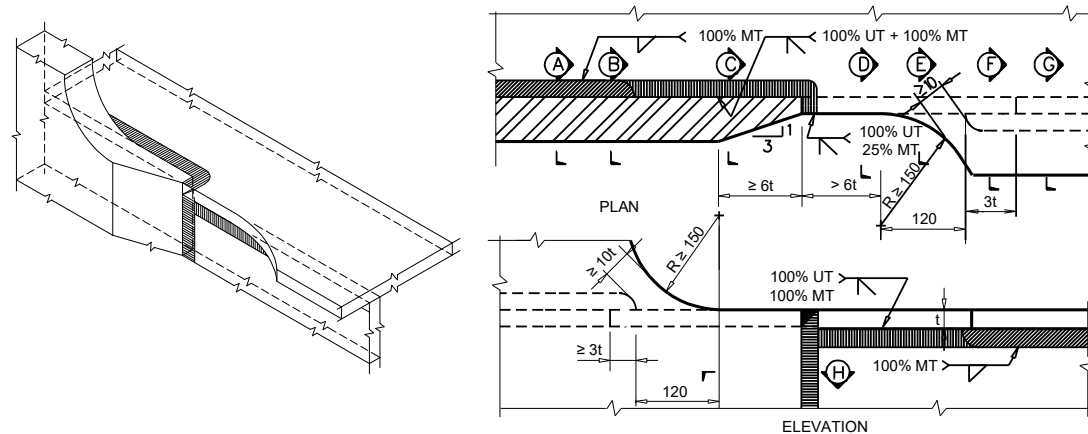
Cruciform Weld

For components carrying the calculated axial stress

UT 100%
Fillet size, $t/4$, but at least the AWS minimum
For fracture critical members (FCMs): The through-thickness, yield, ductility, and CVN properties shall comply with the requirements for plane tension plates.

UT inspect to check for lamellar tears before and 36 hours after welding.

Avoidance of Wraparound Weld



Relative Fatigue Life

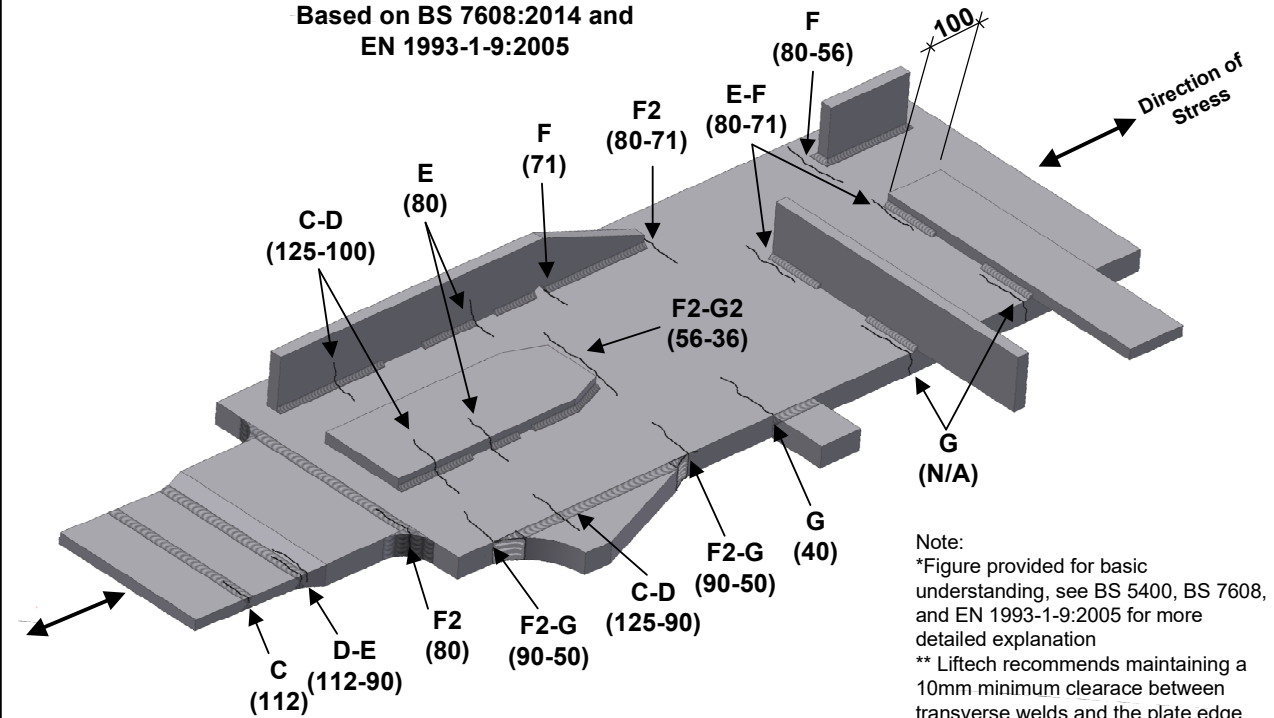
Compared to Class

Class	D	E	F	F2	G
D	1.00	1.46	2.41	3.35	6.08
E	0.68	1.00	1.65	2.42	4.16
F	0.41	0.61	1.00	1.47	2.52
F2	0.28	0.41	0.68	1.00	1.71
G	0.16	0.24	0.40	0.58	1.00

Note: Based on BS 7608:2014, and reliability of 97.8%

Example: For a given location on a crane, the fatigue life of a class F detail is expected to be 2.52 times that of a class G detail

Classification of Select Fatigue Details Based on BS 7608:2014 and EN 1993-1-9:2005



Note:
*Figure provided for basic understanding, see BS 5400, BS 7608, and EN 1993-1-9:2005 for more detailed explanation
** Liftech recommends maintaining a 10mm minimum clearance between transverse welds and the plate edge.

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Note: Welds shall conform to the most recent edition of AWS D1.1, including the requirements for cyclically loaded structures.