

2 APP's for analysis & optimization for fatigue loaded joints

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The Weld Optimizer

- *Made for fillet joints*

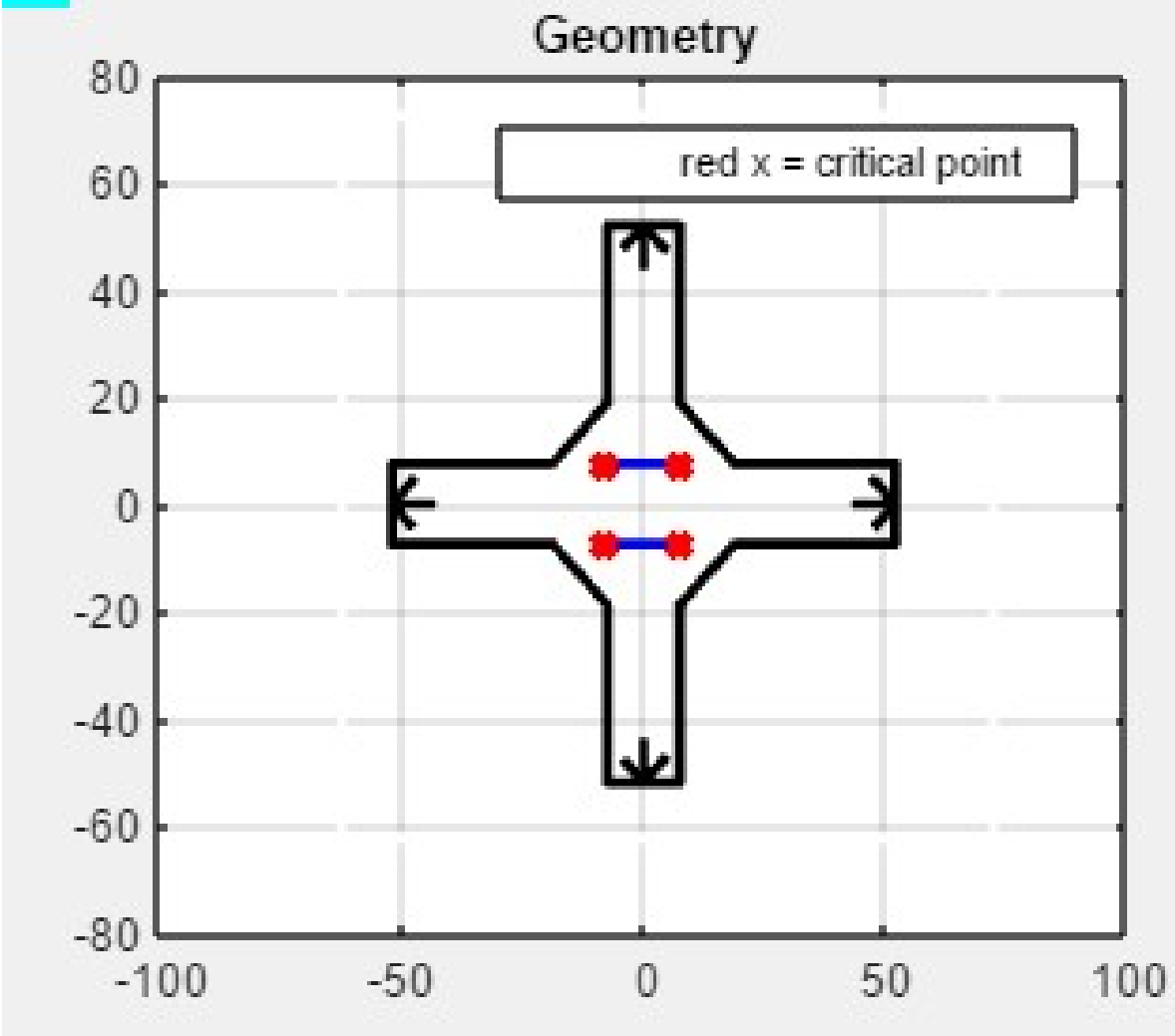
GEOMETRY

Thickness

Throat size

Side penetration

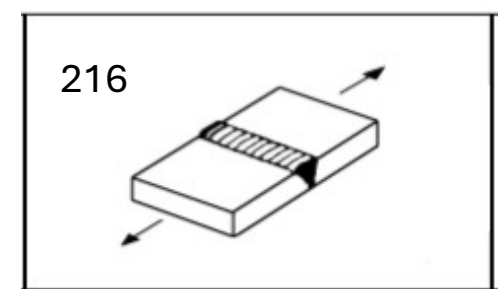
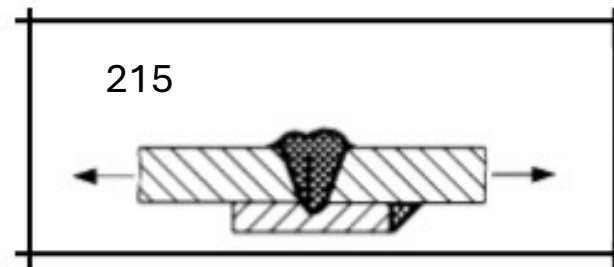
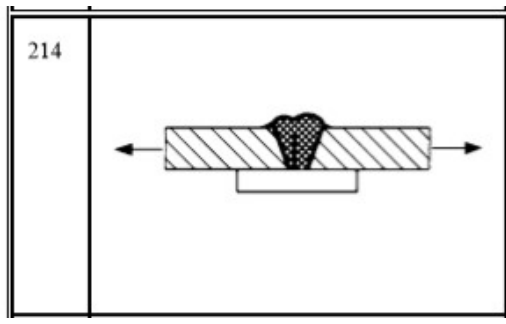
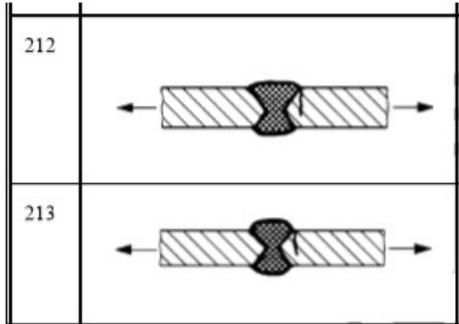
Loads (2 directions)



The Weld Analyzer

- *Made for different butt & fillet joints*

Overview of Butt Joints (no in fig – see IIW Rec)

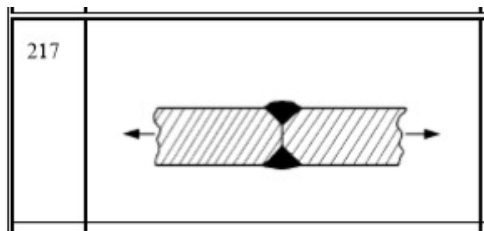


Double symmetry
assumed
Nominal FAT 80 / 90 (*)

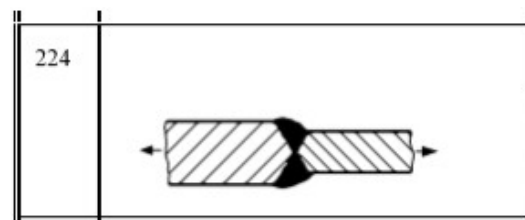
Single symmetry
2 choices of BC at right end
Nominal FAT 80

No symmetry
2 choices of BC at right end
Nominal FAT 71

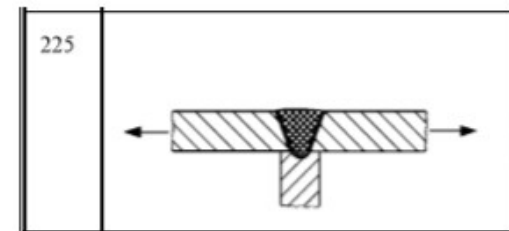
Single symmetry
2 choices of BC at right end
Nominal FAT 71/63/36



Double symmetry
assumed
Nominal FAT 36



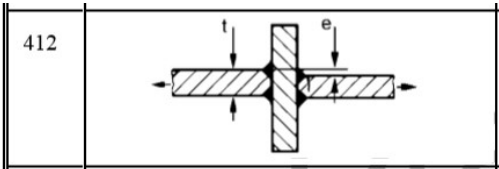
Symmetry assumed
Nominal FAT 71



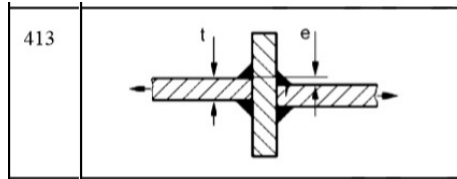
Symmetry assumed
Nominal FAT 71

(*) FAT is the characteristic strength (stress range, Mpa) for reaching 2E6 cycles with 95% probability.

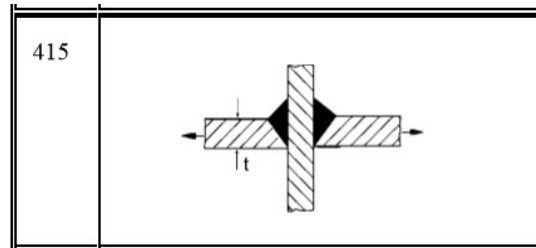
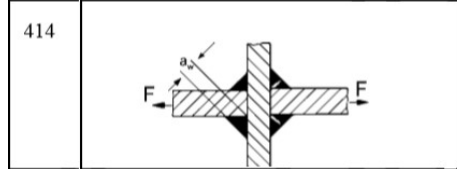
Overview of Fillet Joints (no in fig – IIW Rec)



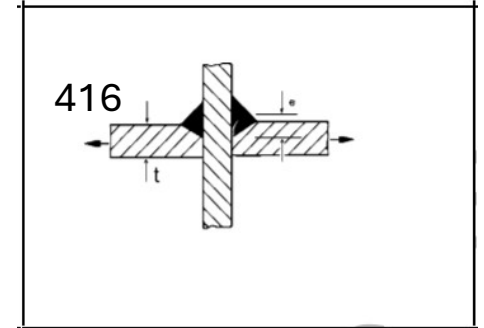
412
Double symmetry assumed
Nominal FAT 71/80



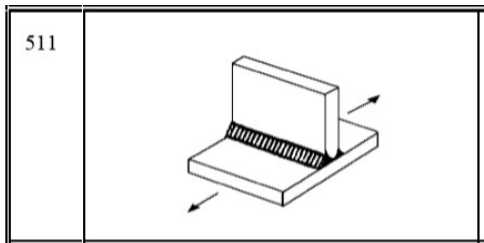
413
Double symmetry assumed
Nominal FAT 71/63/40/36



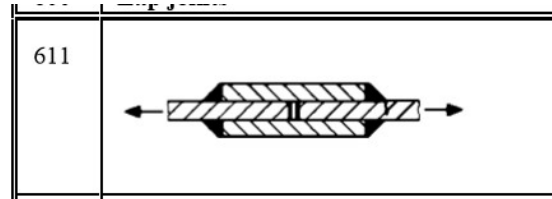
415
Single symmetry
2 choices of BC at right end
Nominal FAT 71/36



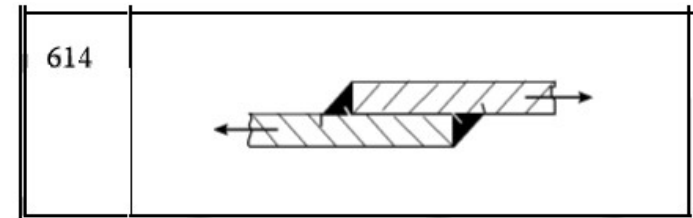
416
Single symmetry
2 choices of BC at right end
Nominal FAT 71



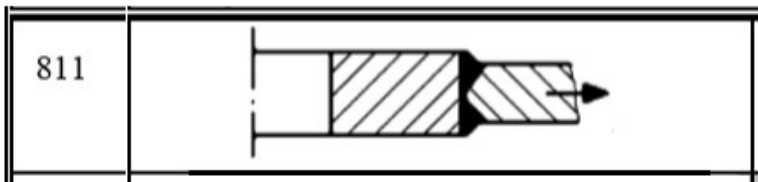
511
Single symmetry
2 choices of BC at right end
Nominal FAT 80/71



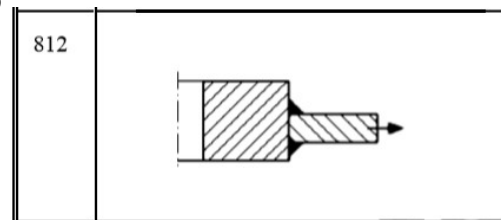
611
Double symmetry assumed
Nominal FAT 63/45



614
No symmetry
2 choices of BC at right end
Nominal FAT 63/36



811
Symmetry assumed (axi sym not modelled !)
Nominal FAT 71



812
No symmetry (axi sym not modelled !)
2 choices of BC at right end
Nominal FAT 63/36