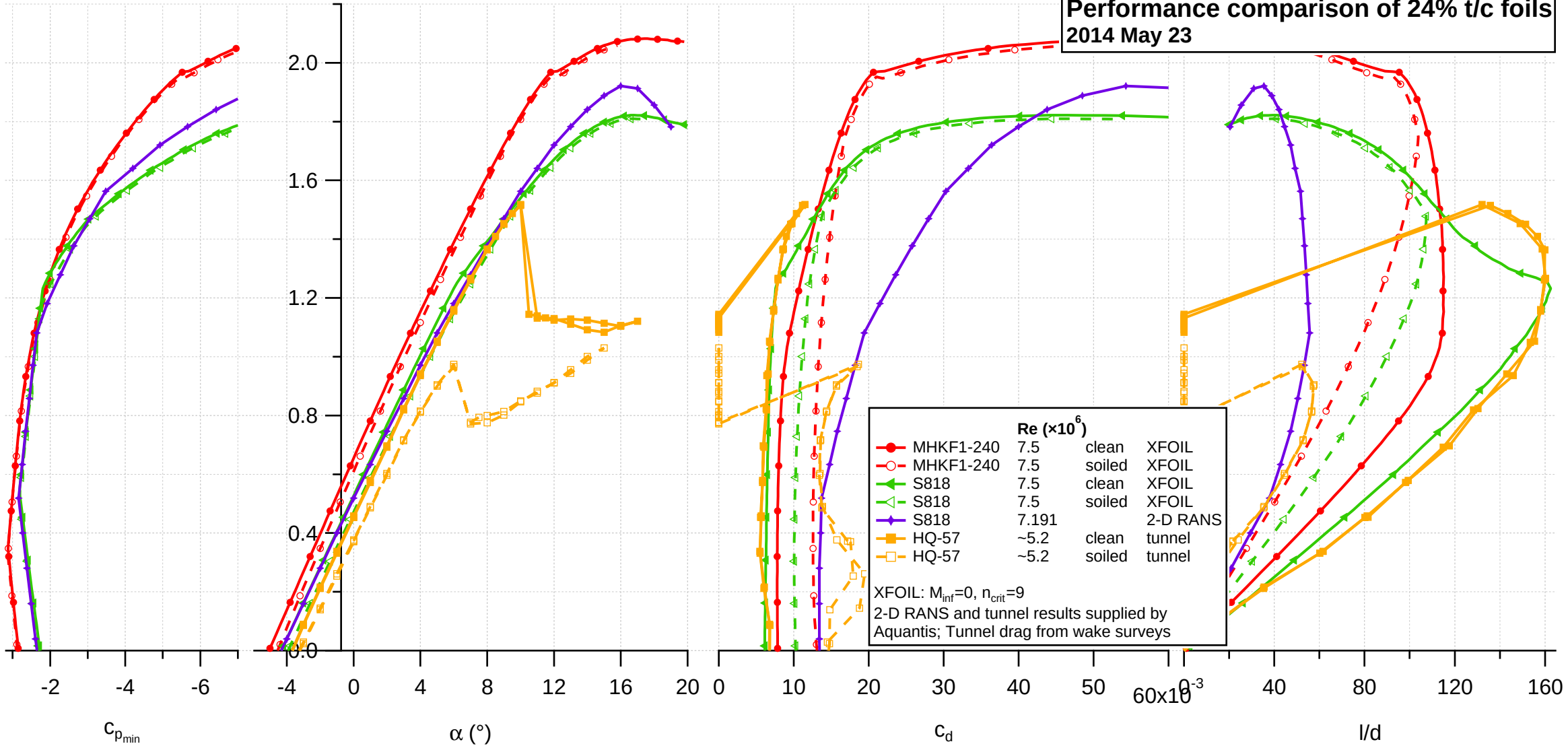
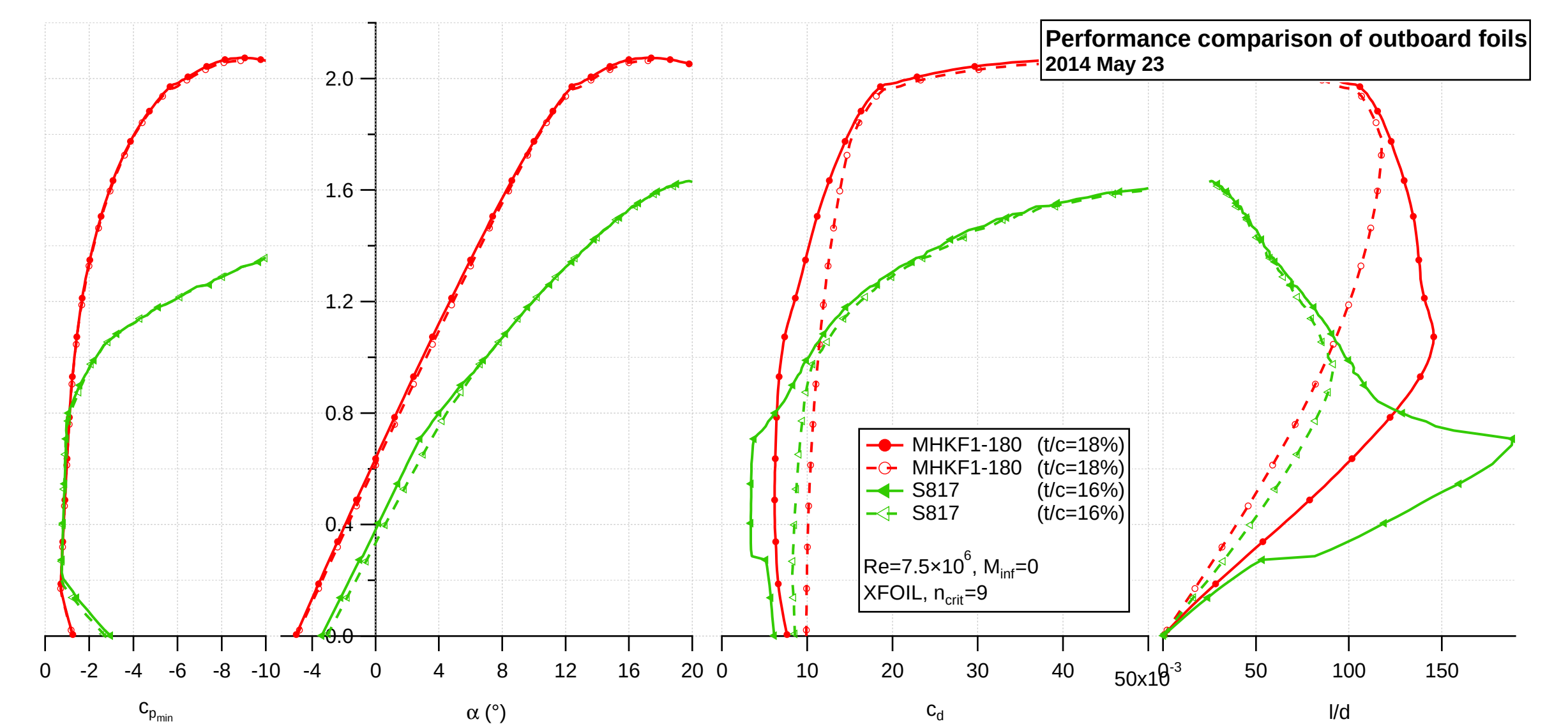
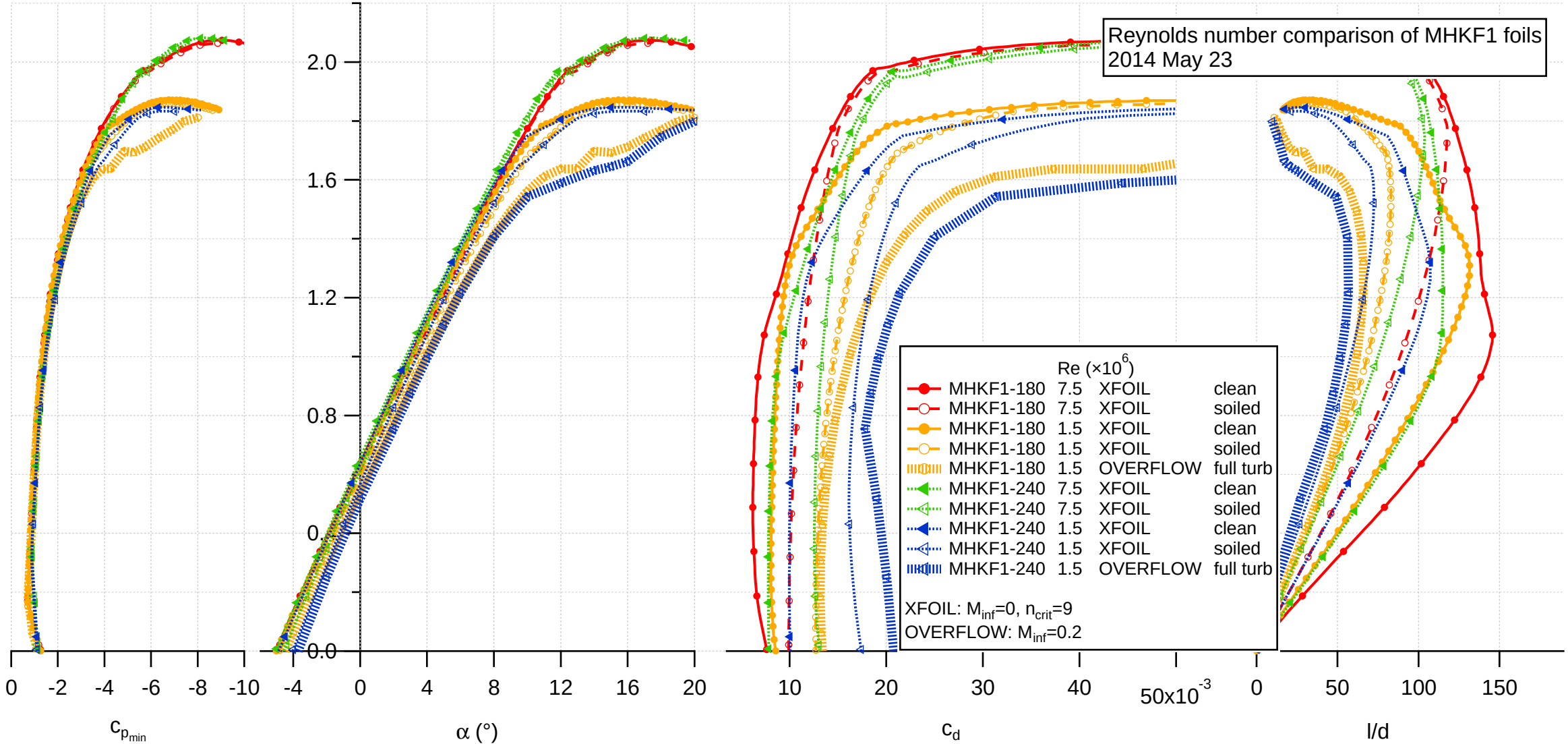

Performance comparison of 24% t/c foils
2014 May 23
Re (×10^6)
MHKF1-240 7.5 clean XFOIL
MHKF1-240 7.5 soiled XFOIL
S818 7.5 clean XFOIL
S818 7.5 soiled XFOIL
S818 7.191 2-D RANS
HQ-57 ~5.2 clean tunnel
HQ-57 ~5.2 soiled tunnel
XFOIL: M_inf=0, n_crit=9
2-D RANS and tunnel results supplied by Aquantis; Tunnel drag from wake surveys
-2 -4 -6
c_pmin
2.0 1.6 1.2 0.8 0.4 0.0
-4 0 4 8 12 16 20
α (°)
0 10 20 30 40 50
60x10^-3
c_d
40 80 120 160
l/d


Performance comparison of outboard foils
2014 May 23
MHKF1-180 (t/c=18%)
MHKF1-180 (t/c=18%)
S817 (t/c=16%)
S817 (t/c=16%)
Re=7.5×10^6, M_inf=0
XFOIL, n_crit=9
0 -2 -4 -6 -8 -10
c_pmin
-4 0 4 8 12 16 20
α (°)
2.0
1.6
1.2
0.8
0.4
0.0
0 10 20 30 40
50x10^-3
c_d
50 100 150
l/d


Reynolds number comparison of MHKF1 foils
2014 May 23
Re (×10^6)
MHKF1-180 7.5 XFOIL clean
MHKF1-180 7.5 XFOIL soiled
MHKF1-180 1.5 XFOIL clean
MHKF1-180 1.5 XFOIL soiled
MHKF1-180 1.5 OVERFLOW full turb
MHKF1-240 7.5 XFOIL clean
MHKF1-240 7.5 XFOIL soiled
MHKF1-240 1.5 XFOIL clean
MHKF1-240 1.5 XFOIL soiled
MHKF1-240 1.5 OVERFLOW full turb
XFOIL: M_inf=0, n_crit=9
OVERFLOW: M_inf=0.2
0 -2 -4 -6 -8 -10
c_pmin
-4 0 4 8 12 16 20
α (°)
2.0 1.6 1.2 0.8 0.0
10 20 30 40 50x10^-3 0
c_d
50 100 150
l/d