

Reference values for the International Roughness Index

**Support for the development of
new computer algorithms**

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Introduction

The present report presents results from the calculations of the International Roughness Index (IRI). The longitudinal profiles used in the calculations are attached to the document.

The purpose with the present report is to act as a support for those who want to test their own computer code.

International Roughness Index (IRI)

The calculation of the IRI have been performed on three longitudinal profiles: “low”, “medium” and “high”, with increasing IRI. The sampling distance for the profiles are 0.125 m, 0.1 m and 0.05 m, which has been used in the IRI-calculation. The height is given in millimeters.

The results from the IRI-calculations are given in the table below. See the next page for access to the reference profiles.

Distance	dx=0.125 m			dx=0.1 m			dx=0.05 m		
	“low”	“medium”	“high”	“low”	“medium”	“high”	“low”	“medium”	“high”
20	0.521041	1.409008	2.579342	0.514533	1.413630	2.563911	0.518182	1.428122	2.617854
40	0.771296	1.631585	4.831566	0.774403	1.627856	4.834366	0.780275	1.637828	4.851770
60	0.839522	2.026298	6.056056	0.830941	2.027462	6.052708	0.832646	2.062647	6.082514
80	0.724596	2.330698	3.250406	0.711149	2.335682	3.248303	0.726932	2.349931	3.290067
100	0.984403	1.491924	2.270365	0.988417	1.487955	2.274555	0.974315	1.503257	2.281997
120	2.187528	2.015838	2.640094	2.168968	2.019363	2.641063	2.223077	2.035250	2.646905
140	0.606347	2.241310	3.840697	0.608805	2.237414	3.834014	0.611696	2.248585	3.840053
160	0.463408	1.919588	2.662317	0.464294	1.914261	2.645970	0.469124	1.944911	2.704749
180	0.631279	2.377496	2.286753	0.630847	2.379976	2.278848	0.636089	2.386044	2.266062
200	0.858345	2.136856	6.167637	0.849046	2.151538	6.170188	0.856602	2.186521	6.203669
220	0.797412	2.350116	6.236335	0.791622	2.348281	6.238094	0.789759	2.367471	6.261307
240	0.856324	2.122785	4.930604	0.853960	2.106420	4.935633	0.867710	2.132892	4.942162
260	0.673056	1.828344	3.797498	0.678650	1.824641	3.791382	0.686520	1.841105	3.804767
280	0.720377	2.397342	2.978274	0.721904	2.398711	2.974074	0.727919	2.430048	2.982133
300	1.097179	1.422690	3.291543	1.096480	1.424419	3.286984	1.099925	1.446922	3.301985
320	0.477812	2.199483	2.017555	0.479212	2.197275	2.035281	0.487374	2.214560	2.052217
340	0.477108	2.158343	4.456818	0.481082	2.153136	4.440103	0.485567	2.164912	4.456426
360	0.667873	1.759033	9.332794	0.677793	1.746914	9.340527	0.683074	1.782005	9.332865
380	0.987895	2.176608	4.268200	0.987818	2.171925	4.254007	0.984574	2.187980	4.306945
400	0.733211	1.914949	3.830369	0.717117	1.912429	3.807594	0.735111	1.909576	3.828821
420	0.612175	2.510690	3.675591	0.603083	2.508053	3.688201	0.612478	2.535014	3.701346
440	0.636125	3.224920	8.212674	0.631763	3.210804	8.207456	0.641667	3.237652	8.240301
460	0.786497	1.792662	3.111621	0.789218	1.795925	3.108481	0.789492	1.788733	3.105875
480	1.022952	2.836296	6.203730	1.006972	2.835690	6.194020	1.011986	2.873484	6.226354
500	1.077562	2.263816	2.787937	1.076038	2.257777	2.786769	1.086186	2.280726	2.812696
520	0.689057	1.836429	2.702403	0.694343	1.830280	2.711397	0.700660	1.863372	2.729021
540	0.438339	1.439186	2.889337	0.438575	1.442895	2.889278	0.444924	1.458036	2.874745
560	0.725907	2.028561	6.260302	0.719266	2.026513	6.243445	0.728502	2.045583	6.308954
580	0.623021	2.627749	7.153145	0.619585	2.630739	7.164488	0.628607	2.634748	7.176033
600	0.768788	2.162773	7.760441	0.770778	2.157363	7.760548	0.781637	2.174980	7.830527
620	0.553145	3.294292	7.725464	0.553418	3.287453	7.744462	0.557121	3.308325	7.783859
640	0.637955	2.119484	4.174191	0.641248	2.136437	4.161037	0.645433	2.146310	4.173447
660	0.842672	2.717678	3.433895	0.844496	2.715205	3.440191	0.852503	2.757192	3.467445
680	0.631172	3.136959	2.555966	0.618802	3.136918	2.555641	0.627447	3.141710	2.575455
700	0.794005	1.746916	4.859466	0.798682	1.745926	4.864646	0.804021	1.754843	4.875284
720	0.952131	2.273990	7.213638	0.950909	2.281943	7.193101	0.961982	2.294907	7.211356
740	0.841965	3.556099	3.168175	0.829513	3.556753	3.146447	0.837772	3.560304	3.196881
760	0.674802	2.745360	2.621429	0.675316	2.746445	2.601589	0.689212	2.753064	2.617286
780	1.055817	4.338570	2.190435	1.056498	4.341665	2.181735	1.058444	4.334905	2.197138
800	1.384285	2.118364	4.034427	1.374208	2.111463	4.023676	1.384499	2.151308	4.048328
820	1.167945	1.613379	4.817372	1.156432	1.606877	4.819137	1.161983	1.613970	4.846908
840	0.989094	1.442681	3.883657	0.985564	1.453236	3.885524	0.988131	1.479897	3.852342
860	1.421727	1.906757	4.213441	1.430535	1.905060	4.224111	1.438426	1.931757	4.270591
880	0.817828	2.925321	3.001546	0.811098	2.926965	2.993730	0.814865	2.939601	3.027396
900	0.808570	3.135170	5.563550	0.810436	3.135958	5.549552	0.818593	3.166425	5.551142
920	0.545377	1.592112	3.001848	0.536004	1.597388	3.001413	0.546269	1.620606	3.040749
940	0.685371	2.083080	6.544980	0.687138	2.089143	6.554700	0.694876	2.111392	6.573701
960	0.533726	2.321057	4.986554	0.537946	2.318900	4.976246	0.546664	2.310861	5.023028
980	0.543193	3.011331	5.651921	0.531754	3.007156	5.653476	0.544590	3.019700	5.661814
1000	0.541544	2.147660	3.123476	0.533488	2.138813	3.116061	0.543748	2.163373	3.133620

The reference profiles are embedded in the present PDF-file. In Adobe Acrobat right click on the paperclip symbol and choose “Save Embedded File to Disk ...” or double-click on the icon.



: low_dx_50mm.txt



: medium_dx_50mm.txt



: high_dx_50mm.txt



: low_dx_100mm.txt



: medium_dx_100mm.txt



: high_dx_100mm.txt



: low_dx_125mm.txt



: medium_dx_125mm.txt



: high_dx_125mm.txt