

付録-4 塗膜の密着性が劣る塗装鉄筋の疲労試験結果

1. 変位

各供試体ごとの変位を付表 4.1.1 ～ 4.1.5 に示す。またコンクリート部の上側平均変位 (D2,D3)、下側平均変位 (D4,D5)、全平均変位 (D2 ～ D5) を付図 4.1.1 ～ 4.1.5 に、鉄筋の抜け出し量を付図 4.1.6 ～ 4.1.10 に示す。

付表 4.1.1 累積疲労回数ごとの変位 (A1)

疲労 累積回数		上 D1 (mm)	上a面 D2 (mm)	上c面 D3 (mm)	下a面 D4 (mm)	下c面 D5 (mm)	下 D6 (mm)	横c面 D7 (mm)	横b面 D8 (mm)
1	0N/mm ²	0.165	0.046	0.254	0.000	0.000	-0.003	0.254	-0.440
1	20N/mm ²	0.246	0.052	0.308	-0.040	0.090	-0.006	0.308	-0.557
1	180N/mm ²	1.228	0.436	1.364	-0.040	0.090	-0.006	1.364	-2.120
100	0N/mm ²	0.207	0.122	0.371	-0.471	0.080	-0.018	0.371	-0.401
100	20N/mm ²	0.294	0.088	0.347	-0.120	0.030	-0.033	0.347	-0.532
100	180N/mm ²	1.294	0.521	1.398	-0.090	0.070	-0.033	1.398	-1.964
1,000	0N/mm ²	0.213	0.097	0.279	-0.491	0.050	-0.033	0.279	-0.327
1,000	20N/mm ²	0.348	0.116	0.357	-0.100	0.030	-0.009	0.357	-0.669
1,000	180N/mm ²	1.351	0.582	1.378	-0.100	0.020	-0.033	1.378	-1.739
10,000	0N/mm ²	2.757	0.472	0.767	-0.501	0.020	0.592	0.767	-0.567
10,000	20N/mm ²	2.841	0.475	0.811	-0.150	0.050	0.592	0.811	-0.620
10,000	180N/mm ²	3.847	0.969	1.848	-0.160	0.060	0.592	1.848	-1.700
20,000	0N/mm ²	2.676	0.396	0.987	-0.551	-0.010	0.601	0.987	-0.430
20,000	20N/mm ²	2.862	0.445	1.144	-4.409	0.030	0.604	1.144	-0.835
20,000	180N/mm ²	3.859	0.999	2.258	-4.248	0.070	0.601	2.258	-1.637
50,000	0N/mm ²	2.724	0.429	1.139	-4.349	-0.050	0.622	1.139	-0.537
50,000	20N/mm ²	2.832	0.472	1.241	-1.633	0.080	0.622	1.241	-0.708
50,000	180N/mm ²	3.865	1.014	2.248	-1.673	0.060	0.622	2.248	-1.588
100,000	0N/mm ²	2.787	0.433	1.168	-2.064	-0.060	0.610	1.168	-0.332
100,000	20N/mm ²	2.892	0.469	1.276	-1.663	0.010	0.616	1.276	-0.489
100,000	180N/mm ²	3.922	1.002	2.253	-1.703	-0.010	0.616	2.253	-1.470
500,000	0N/mm ²	2.943	0.463	1.310	-2.084	-0.040	0.652	1.310	-0.449
500,000	20N/mm ²	3.024	0.487	1.417	-1.713	0.020	0.655	1.417	-0.650
500,000	180N/mm ²	4.126	1.115	2.473	-1.774	0.030	0.655	2.473	-1.431
1,000,000	0N/mm ²	3.676	0.530	1.369	-2.144	-0.140	0.893	1.369	-0.591
1,000,000	20N/mm ²	3.829	0.582	1.535	-1.834	-0.070	0.893	1.535	-0.782
1,000,000	180N/mm ²	4.243	1.185	2.571	-1.844	-0.010	0.896	2.571	-1.607
1,500,000	0N/mm ²	3.676	0.591	1.383	-2.234	-0.201	0.875	1.383	-0.923
1,500,000	20N/mm ²	3.829	0.588	1.496	-1.874	0.030	0.896	1.496	-0.962
1,500,000	180N/mm ²	4.243	1.154	2.463	-1.894	0.020	0.896	2.463	-1.612
2,000,000	0N/mm ²	3.676	0.506	1.422	-2.194	-0.110	0.866	1.422	-0.879
2,000,000	20N/mm ²	3.829	0.539	1.579	-1.864	-0.040	0.872	1.579	-1.050
2,000,000	180N/mm ²	4.243	1.173	2.551	-1.904	-0.010	0.872	2.551	-1.690

付表 4.1.2 累積疲労回数ごとの変位 (B1)

疲労 累積回数		上 D1 (mm)	上a面 D2 (mm)	上c面 D3 (mm)	下a面 D4 (mm)	下c面 D5 (mm)	下 D6 (mm)	横c面 D7 (mm)	横b面 D8 (mm)
1	0N/mm ²	0.297	0.225	0.503	-0.110	-0.181	0.081	0.020	0.430
1	20N/mm ²	0.321	0.210	0.283	-0.060	-0.151	0.081	0.024	0.350
1	180N/mm ²	1.300	0.853	1.080	-0.281	-0.231	0.078	-0.430	0.570
100	0N/mm ²	0.943	0.381	0.674	-0.271	-0.271	0.163	0.278	-0.150
100	20N/mm ²	1.051	0.448	0.523	-0.261	-0.221	0.211	0.088	-0.290
100	180N/mm ²	2.204	1.167	1.461	-0.411	-0.321	0.208	-0.479	-0.040
1,000	0N/mm ²	1.096	0.420	0.591	-0.331	-0.321	0.260	0.430	-0.230
1,000	20N/mm ²	1.249	0.487	0.582	-0.331	-0.291	0.326	0.215	-0.370
1,000	180N/mm ²	2.396	1.191	1.520	-0.471	-0.361	0.323	-0.098	-0.100
10,000	0N/mm ²	1.186	0.408	0.870	-0.411	1.355	0.347	-5.408	0.770
10,000	20N/mm ²	1.318	0.554	0.987	-0.361	1.365	0.347	-5.115	0.650
10,000	180N/mm ²	2.468	1.209	1.921	-0.551	1.254	0.350	-5.926	0.780
20,000	0N/mm ²	1.291	0.518	1.002	-0.451	1.315	0.347	-5.408	1.070
20,000	20N/mm ²	1.381	0.551	1.149	-0.331	1.355	0.353	-5.623	1.010
20,000	180N/mm ²	2.514	1.228	2.063	-0.651	1.224	0.356	-5.926	1.170
50,000	0N/mm ²	1.312	0.521	1.041	-0.501	1.264	0.392	-5.110	1.040
50,000	20N/mm ²	1.414	0.481	1.105	-0.311	1.305	0.414	-5.252	1.020
50,000	180N/mm ²	2.532	1.185	2.023	-0.571	1.264	0.411	-5.603	1.110
100,000	0N/mm ²	1.820	0.527	1.305	-0.571	1.335	0.558	-5.335	0.760
100,000	20N/mm ²	1.910	0.631	1.354	-0.471	1.264	0.558	-5.252	0.620
100,000	180N/mm ²	3.051	1.337	2.341	-0.842	1.054	0.558	-6.072	0.820
500,000	0N/mm ²	3.216	0.835	1.662	-0.892	0.401	1.035	-4.885	0.610
500,000	20N/mm ²	3.351	0.874	1.755	-0.922	0.442	1.035	-5.115	0.590
500,000	180N/mm ²	4.508	1.703	2.693	-1.142	0.251	1.038	-5.462	0.680
1,000,000	0N/mm ²	3.327	0.908	1.716	-0.972	0.251	1.141	-4.563	-0.110
1,000,000	20N/mm ²	3.453	0.956	1.852	-1.012	0.261	1.138	-4.739	-0.160
1,000,000	180N/mm ²	4.586	1.730	2.786	-1.343	0.120	1.144	-4.929	-0.020
1,500,000	0N/mm ²	3.240	0.832	1.667	-1.012	0.191	1.216	-4.548	0.040
1,500,000	20N/mm ²	3.378	1.115	1.784	-0.972	0.221	1.219	-4.758	-0.160
1,500,000	180N/mm ²	4.535	1.910	2.747	-1.132	0.171	1.213	-5.051	-0.010
2,000,000	0N/mm ²	3.387	1.164	1.764	-1.022	0.221	1.159	-4.397	0.100
2,000,000	20N/mm ²	3.526	1.221	1.877	-0.992	0.281	1.195	-4.841	-0.080
2,000,000	180N/mm ²	4.670	1.986	2.761	-1.242	0.130	1.192	-4.787	0.040

付表 4.1.3 累積疲労回数ごとの変位 (B2)

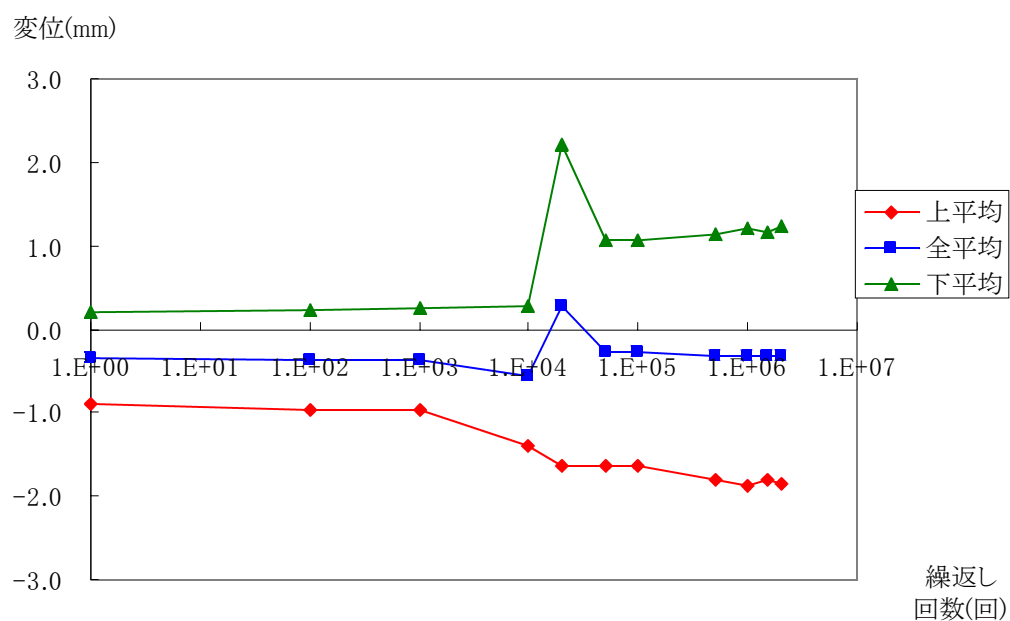
疲労 累積回数		上 D1 (mm)	上a面 D2 (mm)	上c面 D3 (mm)	下a面 D4 (mm)	下c面 D5 (mm)	下 D6 (mm)	横c面 D7 (mm)	横b面 D8 (mm)
1	0N/mm ²	0.174	0.067	0.190	-0.020	-0.010	0.000	-0.098	-0.103
1	20N/mm ²	0.315	0.067	0.220	-0.100	-0.030	0.000	-0.327	-0.127
1	180N/mm ²	1.760	1.121	1.110	-0.531	-0.381	0.003	-0.772	0.239
100	0N/mm ²	0.429	0.308	0.530	0.010	-0.201	0.000	0.073	0.005
100	20N/mm ²	0.529	0.295	0.440	0.020	-0.191	0.000	-0.068	-0.024
100	180N/mm ²	1.655	0.856	1.110	-0.341	-0.251	0.003	-0.977	0.112
1,000	0N/mm ²	0.444	0.317	0.090	0.000	-0.181	0.000	-0.137	-0.005
1,000	20N/mm ²	0.544	0.302	0.000	0.030	-0.171	0.000	-0.195	-0.039
1,000	180N/mm ²	1.661	0.835	0.830	-0.291	-0.211	0.000	-0.957	0.108
10,000	0N/mm ²	0.471	0.183	0.000	-0.060	2.428	-0.072	-0.762	-0.034
10,000	20N/mm ²	0.580	0.198	0.110	-0.100	2.439	-0.072	-0.967	-0.068
10,000	180N/mm ²	1.718	0.899	0.390	-0.491	2.428	-0.072	-1.656	0.117
20,000	0N/mm ²	0.402	0.277	-0.060	-0.110	2.308	-0.045	-0.845	-0.068
20,000	20N/mm ²	0.514	0.280	0.150	-0.160	2.308	-0.045	-1.089	-0.078
20,000	180N/mm ²	1.643	0.978	1.390	-0.521	2.208	-0.057	-1.710	0.166
50,000	0N/mm ²	0.417	0.521	-2.060	-0.130	1.214	-0.066	-0.928	-0.010
50,000	20N/mm ²	0.529	0.521	-1.890	-0.160	1.194	-0.066	-1.148	-0.078
50,000	180N/mm ²	1.670	1.197	-0.940	-0.421	1.054	-0.066	-1.710	0.161
100,000	0N/mm ²	0.438	0.506	-1.810	-0.150	1.024	-0.112	-0.962	-0.059
100,000	20N/mm ²	0.544	0.512	-1.630	-0.180	1.014	-0.109	-1.207	-0.103
100,000	180N/mm ²	1.676	1.179	-0.750	-0.451	0.913	-0.109	-1.793	0.132
500,000	0N/mm ²	0.354	0.466	-1.590	-0.180	0.702	-0.109	-0.957	0.015
500,000	20N/mm ²	0.502	0.512	-1.500	-0.210	0.702	-0.109	-1.299	-0.010
500,000	180N/mm ²	1.661	1.237	-0.490	-0.601	0.572	-0.109	-1.915	0.288
1,000,000	0N/mm ²	0.414	0.722	-1.470	-0.200	0.472	-0.091	-1.168	0.044
1,000,000	20N/mm ²	0.532	0.734	-1.440	-0.261	0.482	-0.088	-1.392	0.029
1,000,000	180N/mm ²	1.706	1.486	-0.480	-0.571	0.512	-0.091	-1.983	0.288
1,500,000	0N/mm ²	0.414	0.807	-2.340	-0.291	3.823	-0.172	-1.168	0.137
1,500,000	20N/mm ²	0.523	0.801	-2.360	-0.291	3.853	-0.172	-1.339	0.078
1,500,000	180N/mm ²	1.697	1.489	-2.360	-0.611	3.773	-0.172	-2.022	0.327
2,000,000	0N/mm ²	0.408	0.600	-2.370	-0.491	3.833	0.214	-1.319	0.117
2,000,000	20N/mm ²	0.514	0.609	-2.380	-0.481	3.894	0.214	-1.539	0.073
2,000,000	180N/mm ²	1.691	1.334	-2.380	-0.832	3.813	0.214	-2.145	0.313

付表 4.1.4 累積疲労回数ごとの変位 (AB1)

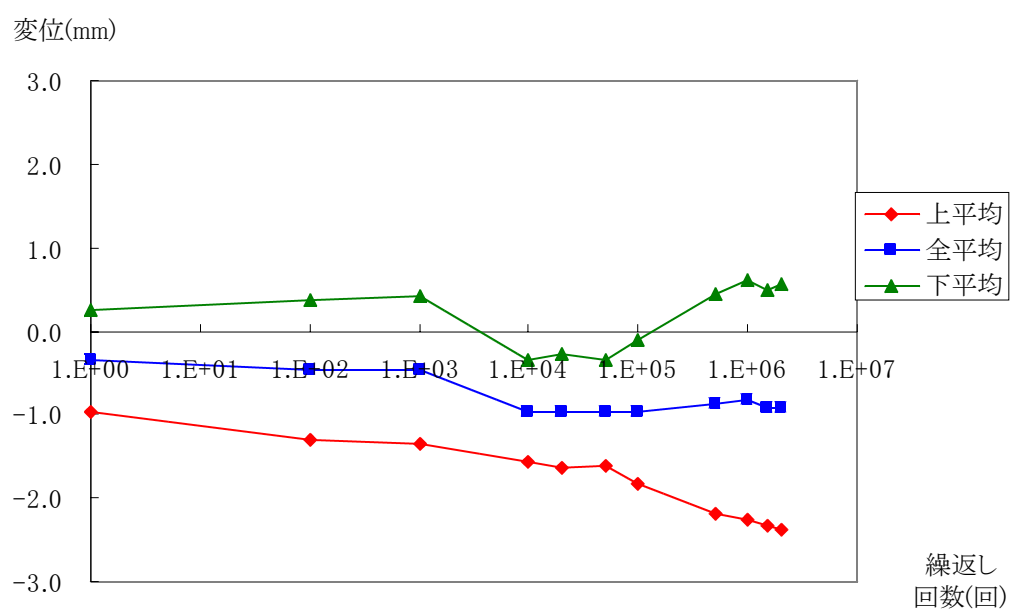
疲労 累積回数		上 D1 (mm)	上a面 D2 (mm)	上c面 D3 (mm)	下a面 D4 (mm)	下c面 D5 (mm)	下 D6 (mm)	横c面 D7 (mm)	横b面 D8 (mm)
1	0N/mm ²	0.111	0.186	0.068	-0.040	-0.151	-0.003	0.293	-0.350
1	20N/mm ²	0.162	0.128	0.024	-0.010	-0.140	-0.009	0.186	-0.270
1	180N/mm ²	0.631	0.710	0.440	-0.371	-0.261	0.000	-0.738	0.690
100	0N/mm ²	0.255	0.256	0.108	-0.060	-0.171	-0.009	0.713	-0.610
100	20N/mm ²	0.628	0.311	0.068	-0.070	-0.181	-0.009	-6.546	-0.540
100	180N/mm ²	0.628	0.835	0.474	-0.371	-0.361	0.000	-7.377	0.330
1,000	0N/mm ²	0.628	0.350	0.073	-0.100	-0.171	-0.009	-5.432	-0.960
1,000	20N/mm ²	0.628	0.320	0.059	-0.060	-0.161	-0.066	-5.603	-0.920
1,000	180N/mm ²	0.631	0.923	0.479	-0.341	-0.401	-0.036	-6.409	-0.540
10,000	0N/mm ²	0.628	0.277	0.049	-0.251	-0.442	-0.347	-5.286	-1.000
10,000	20N/mm ²	0.628	0.311	0.108	-0.271	-0.462	-0.398	-5.467	-0.970
10,000	180N/mm ²	0.631	0.975	0.513	-0.591	-0.642	-0.374	-6.199	-0.670
20,000	0N/mm ²	1.330	0.515	0.083	-0.411	-1.024	-0.154	-5.032	-1.310
20,000	20N/mm ²	1.351	0.554	0.112	-0.391	-1.114	-0.196	-5.198	-1.190
20,000	180N/mm ²	1.456	1.246	0.587	-0.802	-1.264	-0.175	-5.916	-1.140
50,000	0N/mm ²	1.432	0.475	0.142	-0.461	-1.144	-0.308	-4.993	-1.480
50,000	20N/mm ²	1.444	0.506	0.191	-0.431	-1.164	-0.359	-5.125	-1.370
50,000	180N/mm ²	1.565	1.267	0.650	-0.812	-1.315	-0.329	-5.906	-1.320
100,000	0N/mm ²	1.583	0.539	0.147	-0.411	-1.154	-0.263	-4.988	-1.470
100,000	20N/mm ²	1.595	0.560	0.176	-0.401	-1.164	-0.317	-4.963	-1.400
100,000	180N/mm ²	1.724	1.334	0.640	-0.822	-1.315	-0.290	-5.745	-1.380
500,000	0N/mm ²	2.679	1.011	0.186	-0.511	-1.987	-0.030	-5.222	-1.580
500,000	20N/mm ²	2.721	1.008	0.269	-0.551	-1.987	-0.081	-5.388	-1.520
500,000	180N/mm ²	2.841	1.334	0.767	-1.042	-2.178	-0.039	-6.063	-1.540
1,000,000	0N/mm ²	2.760	1.011	0.249	-0.531	-2.198	-0.039	-4.895	-1.500
1,000,000	20N/mm ²	2.790	1.008	0.279	-0.601	-2.148	-0.087	-4.895	-1.500
1,000,000	180N/mm ²	2.883	1.404	0.743	-1.002	-2.228	-0.063	-5.335	-1.430
1,500,000	0N/mm ²	2.757	0.892	0.215	-0.671	-2.529	0.009	-4.402	-1.490
1,500,000	20N/mm ²	2.790	0.896	0.283	-0.611	-2.529	-0.036	-4.621	-1.530
1,500,000	180N/mm ²	2.913	1.331	0.753	-1.012	-2.629	-0.006	-5.413	-1.420
2,000,000	0N/mm ²	2.739	1.039	0.381	-0.601	-3.261	0.015	-4.421	-1.500
2,000,000	20N/mm ²	2.796	1.042	0.411	-0.591	-3.302	-0.036	-4.660	-1.580
2,000,000	180N/mm ²	2.910	1.432	0.885	-1.042	-3.412	-0.015	-5.398	-1.420

付表 4.1.5 累積疲労回数ごとの変位 (N1)

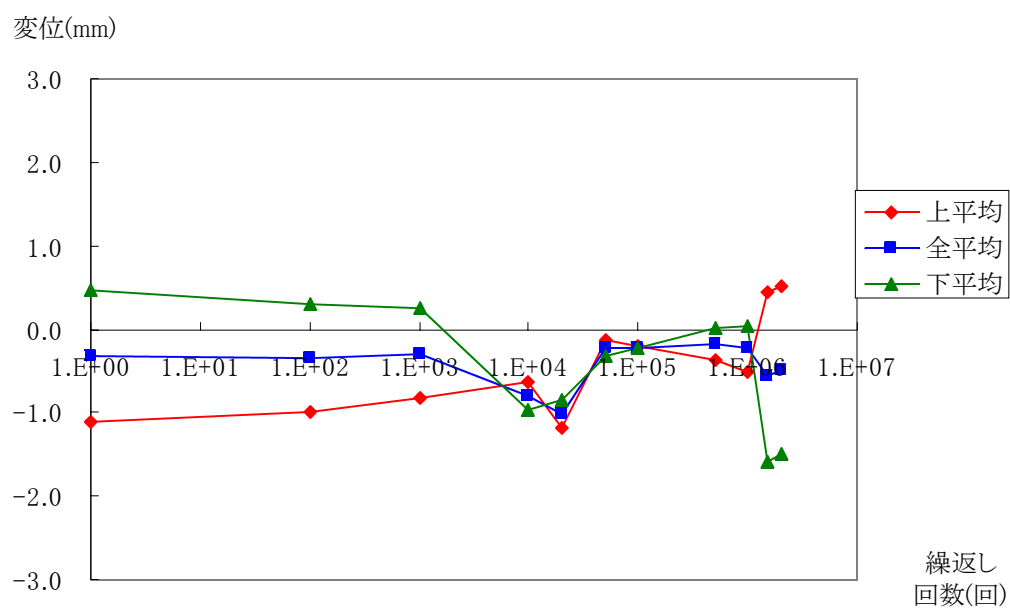
疲労 累積回数		上 D1 (mm)	上a面 D2 (mm)	上c面 D3 (mm)	下a面 D4 (mm)	下c面 D5 (mm)	下 D6 (mm)	横c面 D7 (mm)	横b面 D8 (mm)
1	0N/mm ²	0.147	0.216	0.073	-0.100	-0.151	-0.009	0.186	0.010
1	20N/mm ²	0.180	0.213	0.078	0.050	-0.151	-0.012	0.195	-0.150
1	180N/mm ²	1.135	0.758	0.318	-0.170	-0.191	-0.021	0.083	-0.040
100	0N/mm ²	0.372	0.411	0.117	-0.170	-0.261	-0.057	0.479	-0.350
100	20N/mm ²	0.465	0.381	0.098	-0.140	-0.221	-0.054	0.459	-0.410
100	180N/mm ²	1.526	1.124	0.401	-0.321	-0.432	-0.054	0.449	-0.440
1,000	0N/mm ²	0.417	0.457	0.098	-0.160	-0.281	-0.069	0.537	-0.200
1,000	20N/mm ²	0.514	0.442	0.108	-0.160	-0.241	-0.060	0.503	-0.320
1,000	180N/mm ²	1.553	1.118	0.391	-0.341	-0.401	-0.060	0.489	-0.410
10,000	0N/mm ²	0.396	0.405	-0.020	-0.210	-2.639	-0.085	0.674	-0.140
10,000	20N/mm ²	0.535	0.448	0.000	-0.200	-2.649	-0.081	0.552	-0.270
10,000	180N/mm ²	1.574	1.179	0.298	-0.471	-2.800	-0.085	0.503	-0.390
20,000	0N/mm ²	0.471	0.530	0.034	-0.591	-3.603	0.021	0.787	-0.060
20,000	20N/mm ²	0.592	0.567	0.064	-0.551	-3.583	0.021	0.689	-0.210
20,000	180N/mm ²	1.643	1.322	0.464	-0.762	-3.653	0.024	0.655	-0.350
50,000	0N/mm ²	0.471	0.411	-4.985	-0.521	-3.874	0.024	0.772	0.040
50,000	20N/mm ²	0.598	0.460	-4.946	-0.521	-3.864	0.027	0.630	-0.160
50,000	180N/mm ²	1.643	1.234	-4.580	-0.782	-3.984	0.027	0.630	-0.300
100,000	0N/mm ²	0.508	0.490	-4.932	-0.551	-3.964	0.030	0.723	0.010
100,000	20N/mm ²	0.601	0.478	-4.888	-0.571	-3.974	0.033	0.532	-0.150
100,000	180N/mm ²	1.646	1.237	-4.482	-0.822	-4.084	0.030	0.542	-0.310
500,000	0N/mm ²	0.435	0.472	-4.712	-0.651	-3.984	0.018	0.713	-0.080
500,000	20N/mm ²	0.601	0.490	-4.673	-0.671	-4.034	0.018	0.611	-0.240
500,000	180N/mm ²	1.634	1.285	-4.311	-0.902	-4.195	0.015	0.586	-0.330
1,000,000	0N/mm ²	0.492	0.393	-4.917	-1.172	-4.205	0.097	0.669	-0.140
1,000,000	20N/mm ²	0.622	0.463	-4.839	-1.162	-4.185	0.091	0.635	-0.240
1,000,000	180N/mm ²	1.685	1.292	-4.394	-1.293	-4.285	0.094	0.620	-0.320
1,500,000	0N/mm ²	0.505	0.475	-4.775	-0.982	-3.894	0.045	0.625	-0.030
1,500,000	20N/mm ²	0.634	0.530	-4.751	-0.982	-3.924	0.045	0.586	-0.180
1,500,000	180N/mm ²	1.691	1.316	-4.365	-1.172	-4.134	0.042	0.562	-0.290
2,000,000	0N/mm ²	0.402	0.433	-4.751	-1.293	-3.843	0.009	0.703	-0.310
2,000,000	20N/mm ²	0.553	0.521	-4.673	-1.303	-3.924	0.012	0.606	-0.460
2,000,000	180N/mm ²	1.595	1.313	-4.355	-1.503	-4.155	0.009	0.591	-0.540



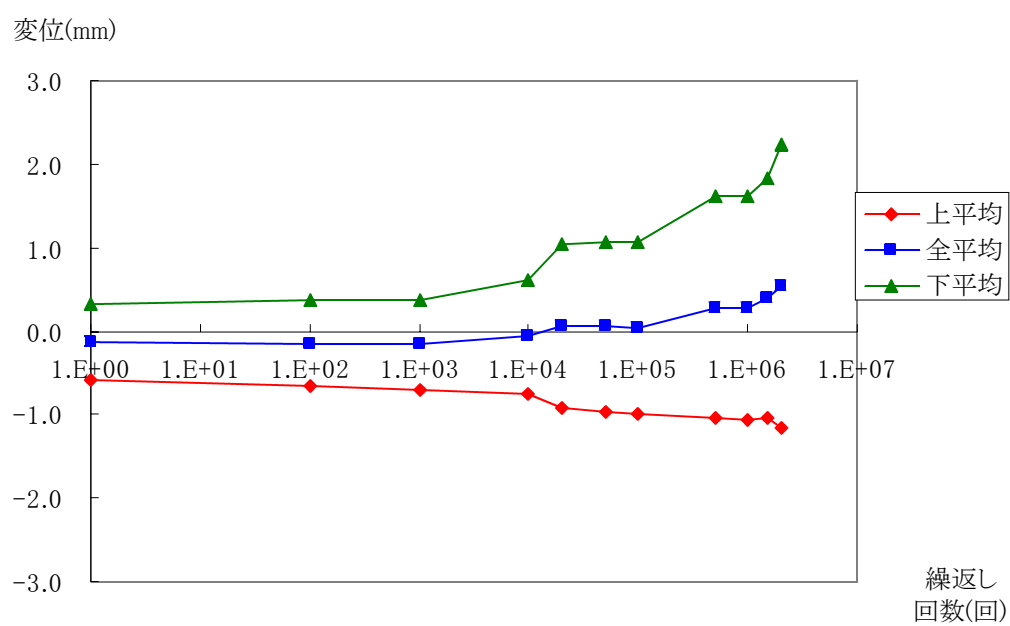
付図 4.1.1 コンクリート部の平均変位 (A1)



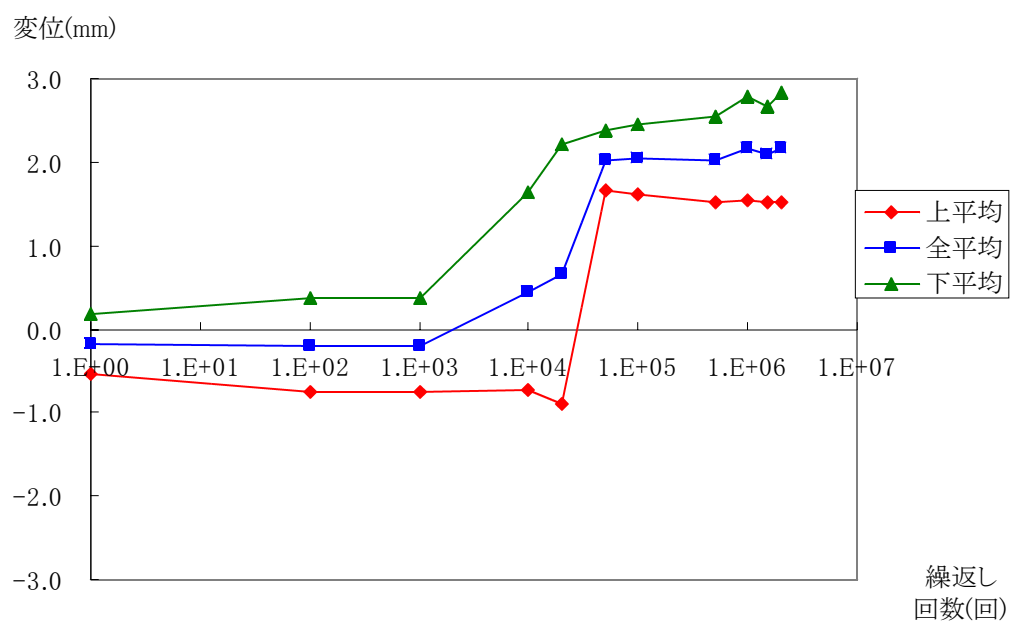
付図 4.1.2 コンクリート部の平均変位 (B1)



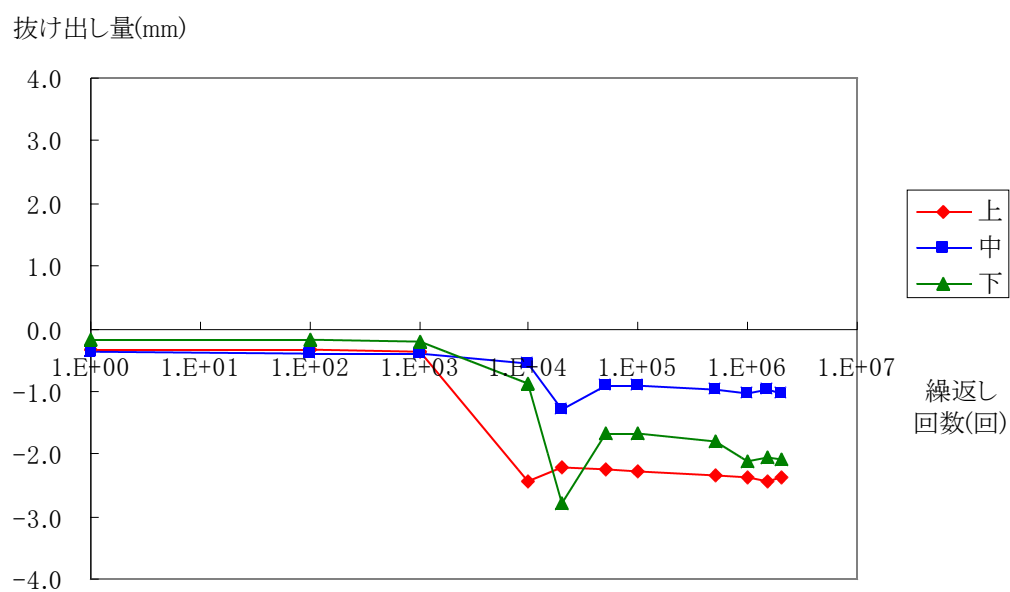
付図 4.1.3 コンクリート部の平均変位 (B2)



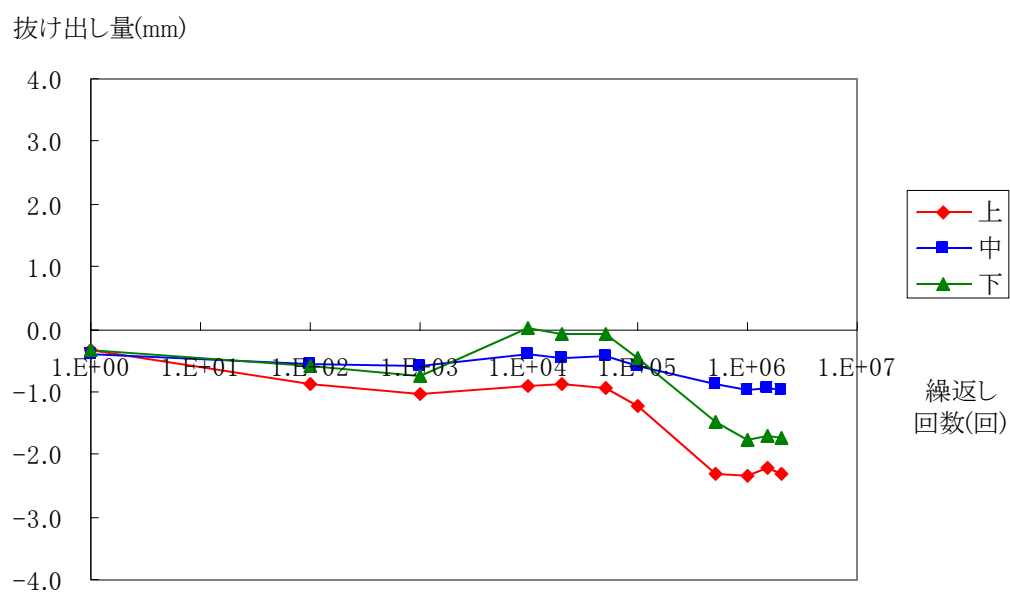
付図 4.1.4 コンクリート部の平均変位 (AB1)



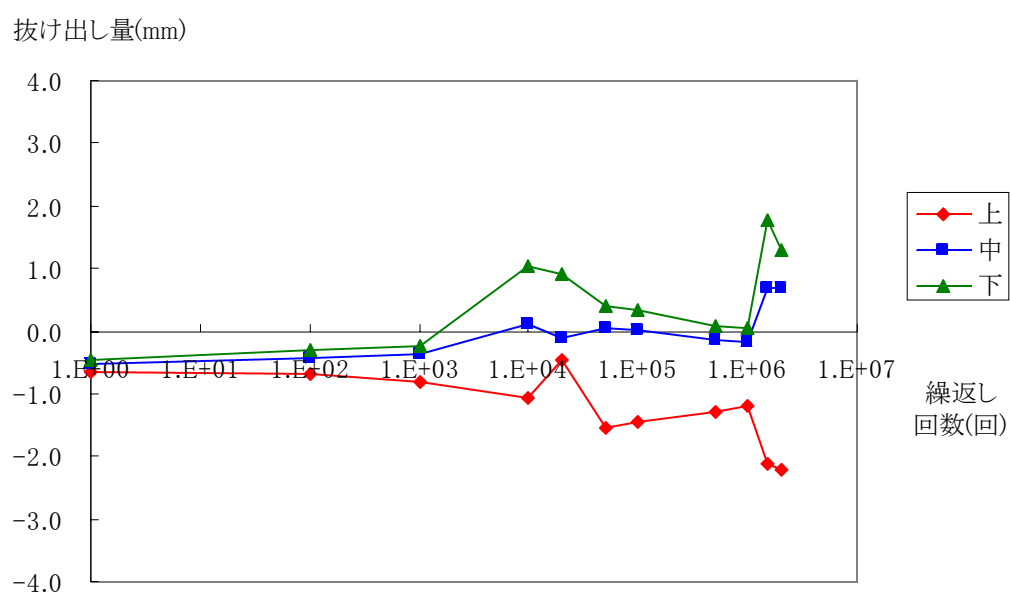
付図 4.1.5 コンクリート部の平均変位(N1)



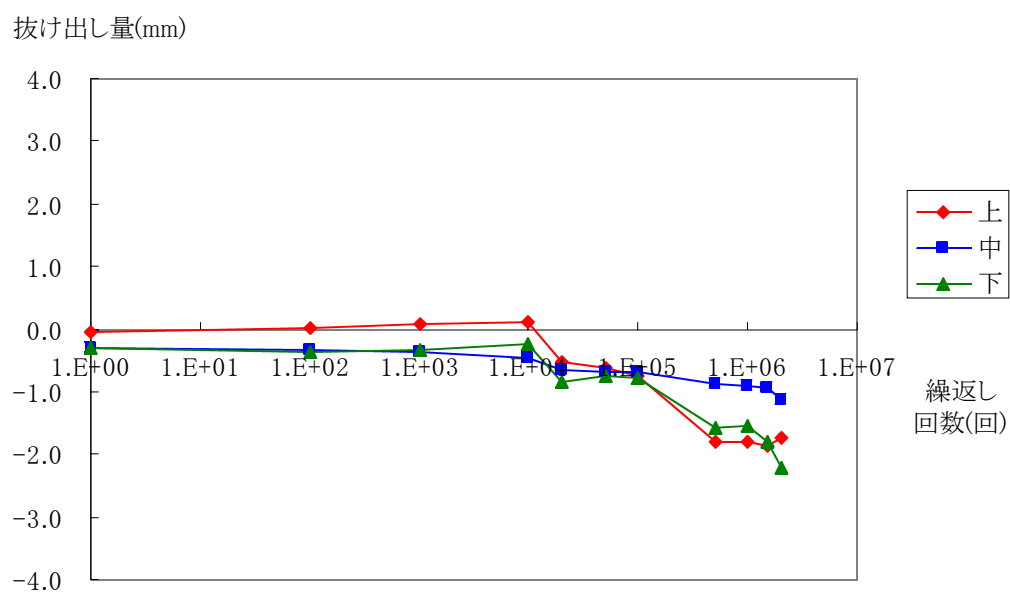
付図 4.1.6 鉄筋の抜け出し量(A1)



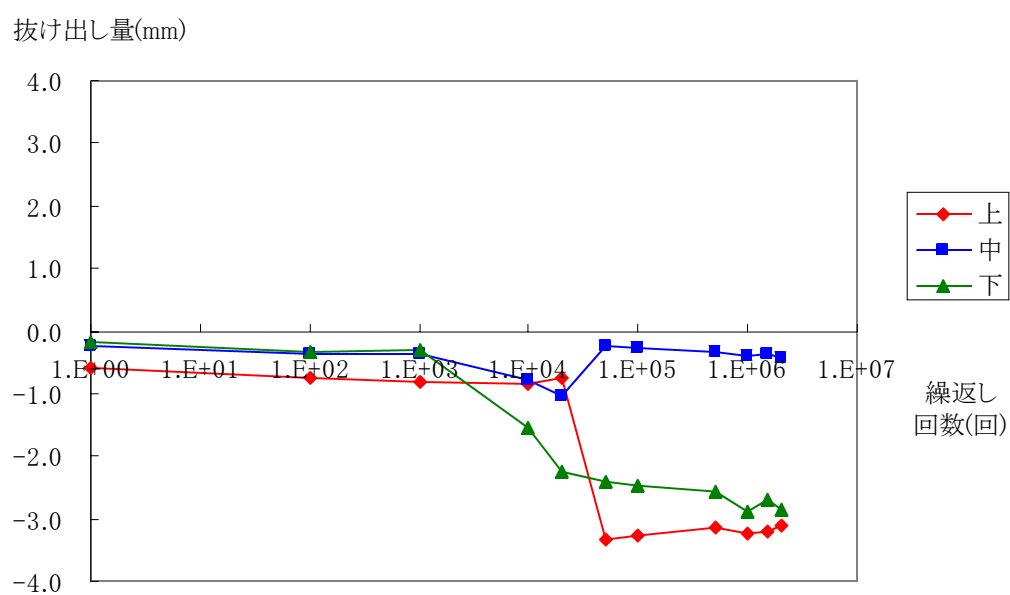
付図 4.1.7 鉄筋の抜け出し量(B1)



付図 4.1.8 鉄筋の抜け出し量(B2)



付図 4.1.9 鉄筋の抜け出し量(AB1)



付図 4.1.10 鉄筋の抜け出し量(N1)