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TECHNICAL NOTE

**Preliminary Assessment of the Data Arising from
a Standard Fire Resistance Test Performed on
a Slimflor Beam at the Warrington Fire Research Centre
on 14th February, 1996
Test Number : WFRC 66162**

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25th March, 1996
CLASSIFICATION

SUMMARY

PRELIMINARY ASSESSMENT OF THE DATA ARISING FROM A STANDARD FIRE RESISTANCE TEST PERFORMED ON A SLIMFLOR BEAM AT THE WARRINGTON FIRE RESEARCH CENTRE ON 14TH FEBRUARY, 1996
TEST NUMBER WFRC 66162

D.E. Wainman

A standard fire resistance test has been carried out on a loaded slimflor beam assembly consisting of a 280 mm x 280/180 mm x 104 kg/m hot rolled asymmetric section. The flange and web thicknesses were both 18 mm. The steel was BS EN 10025 : 1993 Grade S355 JR (Fe 510B). The floor was formed using 210 mm deep metal decking, supplied by Precision Metal Forming Ltd., on top of which was cast a nominally 1 metre wide x 80 mm thick concrete slab which incorporated A142 reinforcing mesh. The concrete used was normal weight Grade 30 material.

The test was carried out at the Warrington Fire Research Centre on 14th February 1996. The load ratio was fixed at a value of 0.423 and the assembly attained a *fire resistance rating of 107 minutes*, all on the basis of non-composite action.

This Technical Note describes briefly the test assembly and the general results obtained. A more detailed interpretative report is currently under preparation.

KEYWORDS

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**PRELIMINARY ASSESSMENT OF THE DATA ARISING FROM A STANDARD FIRE RESISTANCE TEST PERFORMED ON A SLIMFLOR BEAM AT THE WARRINGTON FIRE RESEARCH CENTRE ON 14TH FEBRUARY, 1996
TEST NUMBER WFRC 66162**

1. INTRODUCTION

Since about 1990 a series of standard fire resistance tests has been carried out on various slimflor beam assemblies, each employing a different size of steel member and/or form of construction. The tenth test in this series was undertaken on 14th February 1996 at the Warrington Fire Research Centre, (Test Number : WFRC 66162).

In all the previous tests a plate was welded to the lower flange of a universal column section so as to produce a fabricated asymmetric section shape. However, during 1995 it became possible to carry out trial rollings of asymmetric sections on the universal beam mill at Lackenby Works. It was considered that there were sufficient differences between the hot rolled product and the previously fabricated sections to warrant a further full scale fire test being carried out. The present test was therefore seen as a logical progression in the development of the overall slimflor beam concept.

The assembly was extensively instrumented with thermocouples, the data from which were recorded using the Heavy Engineering and Design Departments 'KONTRON' and 'SOLATRON' logging systems. Strain gauges were located at various positions around the perimeter of the section and also on the concrete floor slab. Wire potentiometers were attached to the top flange of the section for recording the deflection of the assembly under the influence of load and fire. The strain gauge and deflection data were recorded using the department's 'HBM' logger.

This Technical Note describes briefly the test assembly and the general results obtained. Its primary purpose, however, is to present the thermal data recorded during the test and, where appropriate, to comment on its validity and reliability. Strain gauge and deflection data recorded on the HBM logger are not available at the present time. These data will be reported separately. A full interpretative report is currently under preparation.

2. TEST ASSEMBLY

The assembly consisted of a hot rolled 'asymmetric' beam section having the following nominal dimensions.

Overall depth	280 mm
Upper flange width	180 mm
Lower flange width	280 mm
Flange thickness	18 mm
Web thickness	18 mm
Weight per metre	104 kg

The steel grade was BS EN 10025 : 1993 Grade S355 JR, (equivalent to earlier grade designations of Fe510 B and 50B).

Side closure 'flashings' and 210 mm deep metal decking, both supplied by Precision Metal Forming Ltd., were used as the floor decking. 75 mm wide cut outs were provided in the decking segments to facilitate casting of the concrete. Normal weight Grade 30 concrete to a nominal depth of 80 mm and width of 1 metre was cast over the decking to form the floor slab. The concrete also incorporated A142 reinforcing mesh. The top surface of the poured concrete was approximately 30 mm above the top of the steel section.

Details of the beam section are given in Table 1 and the test assembly is illustrated in Figures 1-3. Chemical analysis and mechanical properties data are given in Tables 2 and 3, respectively. The 210 mm deep closure flashings supplied by PMF are detailed in Figure 4 and the dimensions of the decking cut-outs are given in Figure 5.

3. INSTRUMENTATION

3.1 Thermocouples

A total of 153 thermocouples were employed to record the temperatures attained in the steel section, decking, concrete infill and furnace atmosphere throughout the duration of the test. Unless otherwise stated, all the thermocouples were 3 mm diameter 'K' type with Inconel 600 sheaths. Their positions and identities are given in Figures 6 to 13 and summarised in Appendix 1.

The 30 concrete thermocouples were all formed from fibre-glass covered conductors which were attached to a light gauge steel mesh framework. The 3 thermocouples on the decking were also formed from the same material, the conductors being twisted, flattened, and spot-welded in position.

3.2 Beam Central Displacement

Vertical movement of the beam at the mid-span position was monitored throughout the test by a displacement transducer connected into the WFRC data logging system.

3.3 Other Beam Displacements

Vertical movements of the beam at six positions along its length were recorded throughout the test. The system utilised wire potentiometers, the outputs from which were recorded and displayed using the Heavy Engineering and Design Department's 'HBM' logger. These data are not included in this Technical Note.

3.4 Strain Gauge Data

Strain gauges were located at 12 positions around the perimeter of the steel section and at 6 positions on the concrete floor slab. These data were also recorded and displayed using the 'HBM' logger. They are not available for inclusion in this Technical Note.

3.5 Load Cell Data

A load cell was placed under one of the hydraulic rams in order to establish the actual load being applied to the assembly. This was carried out during the cold loading test and only at one ram position. The load cell was removed prior to the actual fire test.

The test load required was 82.6 kN per ram, which converts to a hydraulic pressure in the WFRC system of 2626 psi. During the cold loading test the pressure was 2630 psi and the load cell value was 84.6 kN. Assuming that all the four rams were identical then the total load on the assembly during the fire test would be 338.4 kN.

4. LOADING

Loads of 84.6 kN were applied by each of four hydraulic rams which were positioned along the centre-line of the web of the steel section and at points corresponding to $\frac{1}{8}$, $\frac{3}{8}$, $\frac{5}{8}$ and $\frac{7}{8}$ of the supported span. The loads were applied directly to the upper flange of the steel section and not to the concrete floor slab situated above it.

The applied loads, together with the self-weight of the system, had been calculated to give a load ratio of 0.423, (load actually required was calculated to be 82.6 kN). The calculations were based on the actual dimensions of the steel section but on nominal strength properties. It was also assumed that no composite action would be generated between the steel beam and the floor slab. The over-riding consideration in determining the level of the applied load was that the test assembly should attain a one hour fire resistance rating.

5. TEST PREDICTIONS⁽¹⁾

As assessment of the fire resistance time of the proposed slim floor assembly was made. The assessment was carried out in two stages. Firstly, a thermal analysis of the structure was performed using the FIRES-T2 finite element program and a comparison made with a previous fire test performed by BST. Secondly, a structural analysis was carried out based on the moment capacity at elevated temperature of a cross section of the floor at its centreline. This analysis was based on the assumption of non-enhanced action between the steelwork and the surrounding concrete and indicated that in order to achieve a fire resistance time in excess of 1 hour the maximum moment applied to the beam must be limited to 220.9 kNm which is equivalent to a load ratio of 0.47.

An element of safety was introduced by reducing this value by 10%, hence the previously quoted value of 0.423.

6. EXPERIMENTAL RESULTS

6.1 General Test Result

The performance of the test assembly was judged against the load bearing capacity criterion outlined in section 5 of BS476: Part 21: 1987. The maximum allowable deflection and the maximum allowable rate of deflection for the test assembly, as specified by the standard, were calculated to be 225 mm (span/20), and 7.26 mm/min. ($\text{span}^2/9000 \times D$), respectively, where $D = 310$ mm, the measured depth of the assembly. The allowable rate of deflection criterion is not applicable until the deflection exceeds span/30 i.e. 150 mm.

The various failure criteria occurred after the following times:

SPAN/30	-	91.75 minutes
SPAN/20	-	107.5 minutes
(SPAN) ² /9000D	-	Not attained

The fire resistance rating of the assembly was therefore deemed to be 107 minutes.

At this time the temperature of the steel section at the mid-span, ¼ width of lower flange position, (thermocouple G3), was 935°C (Table 11).

6.2 Recorded Data

The furnace atmosphere temperature data, (recorded by WFRC), are given in Table 4. This also gives the mean temperature and the aim value as defined by the standard. The mean and aim values are shown plotted in Figure 14.

The temperatures recorded by the thermocouples embedded in the steelwork and concrete are presented in tables 5 to 21 as indicated in Appendix 2.

The mid-span vertical deflection of the test assembly, as recorded by the displacement transducer installed by WFRC, is given in Table 22. This also includes the deflection rate measured over the preceding minute. The data are shown plotted in Figure 15.

7. OBSERVATIONS

7.1 Prior to the Test

The moisture content of the concrete floor slab was measured on the morning of the test using a PROTIMETER gauge. Readings were taken at the ¼ width positions on both sides of the slab at the C, G and K positions. A mean value of 4.2% was obtained at a depth of 50 mm from the concrete surface. The metal decking was drilled to allow the probes to be inserted into the concrete at the base of the 3 'troughs'. A mean value of 4.6% was obtained at a depth of approximately 40 mm.

7.2 During the Test

The test was carried out without the occurrence of any unusual incident. However, the following items were noted.

- (i) The amount of steam being released from the test assembly seemed to be less than on previous occasions when in-situ concrete floors have been tested.
- (ii) The displacement transducer installed by WFRC needed to be re-set after 77 minutes.
- (iii) Load was removed from the assembly after 108 minutes. Heating of the beam continued until 120 minutes in order to obtain further thermal data.

7.3 Subsequent to the Test

The test assembly was inspected visually after its removal from the furnace. Apart from a certain amount of spalling of the concrete, particularly in the thinner sections above the 'crests' of the metal decking, there was little worthy of comment. The permanent deflection of the assembly, measured at the mid-span position, was recorded as 63 mm.

8. DISCUSSION

The discussion section of this Technical Note is restricted to an assessment of the reliability of the recorded data. No attempt has been made to interpret the thermal or other data at the present time. A comprehensive interpretative report is under preparation.

8.1 Thermal Data

All the thermocouples were checked prior to and during their installation and were performing satisfactorily. They were checked again prior to the commencement of the test, at which time it was noted that the thermocouple in the CONCRETE 27 position was non-operational. It was presumed that this thermocouple, (which was formed from thin fibre-glass covered conductors), had been damaged during the pouring and consolidation of the concrete.

Examination of the recorded data indicates that a small number of thermocouples did not perform satisfactorily during all, or part, of the test. Specifically these were:

- (i) Furnace atmosphere thermocouple at position ATM3 (not working at all during the test).
- (ii) Steelwork thermocouple at position E1 (not working at all during the test).
- (iii) Steelwork thermocouple at position F7 (not working for first 46 minutes - fault traced and corrected).
- (iv) Decking thermocouple at position F (working for first 91 minutes only).
- (v) Concrete thermocouple at position 10 (working for first 102 minutes only).

In the case of items (i) and (ii) investigations have so far failed to provide a satisfactory explanation as to why no signal was recorded. In the case of items (iv) and (v) it was presumed that the thin fibre-glass covered wire had been damaged due to the deflection under load of the assembly.

9. CONCLUSIONS

- (i) A standard fire resistance test has been carried out on a slimflor beam based on a hot rolled 280 mm deep x 280/180 mm wide asymmetric steel section. The flange and web thicknesses were both nominally 18 mm. The section weight was 104 kg/m, and the steel was in accordance with BS EN 10025: 1993 Grade S355 JR. The assembly included PMF 210 mm deep metal decking which supported an 80 mm thick normal weight Grade 30 concrete floor slab.
- (ii) Four hydraulic rams were used to apply a total load of 338 kN (84.6 kN each), to the test assembly. The load was applied directly to the upper flange of the steel section at positions corresponding to $\frac{1}{8}$, $\frac{3}{8}$, $\frac{5}{8}$ and $\frac{7}{8}$ of the supported span. The load ratio, based on actual section dimensions, but nominal strength properties was calculated to be 0.423, (for a load of 82.6 kN per ram). It was assumed that there was no composite action between the steel section and the concrete slab.

- (iii) The fire resistance rating of the test assembly was found to be 107 minutes, (span/20 = 225 mm). The rate criterion of $L^2/9000 D$ was not exceeded. The lower flange temperature at 107 minutes was 935°C. (Mid-span, ¼ width).
- (iv) Thermal data recorded during the test have been carefully studied. Instances of equipment malfunction are noted and recommendations are made concerning the reliability of the data.
- (v) A comprehensive interpretative report is currently under preparation.

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REFERENCES

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TABLE 1

**DIMENSIONAL DATA FOR THE STEEL SECTION USED IN THE FIRE RESISTANCE TEST
(WFRC 66162)**

POSITION/ORIENTATION			NOMINAL (mm)	ACTUAL (mm)
Beam Depth			280	279
Beam Width	-	Upper Flange	180	183
	-	Lower Flange	280	280
Flange Thickness	-	Upper Left Side	18	16.0
	-	Upper Right Side	18	17.3
		Mean Value	18	16.6
Flange Thickness	-	Lower Left Side	18	18.9
	-	Lower Right Side	18	18.0
		Mean Value	18	18.4
Web Thickness			18	19.5
Between Flanges		Left Side		245.0
		Right Side		244.7
		Mean Value		244.9

Left And Right Sides Are As Viewed Along The Beam Looking From The 'Door End'

TABLE 2

CHEMICAL COMPOSITION OF THE STEEL SECTION USED IN THE FIRE RESISTANCE TEST

(WFRC 66162)

BS CODE	SECTION AND TEST RESULTS	CHEMICAL COMPOSITION (PRODUCT ANALYSIS - Wt.%)														
		C	Si	Mn	P	S	Cr	Mo	Ni	Al	Cu	N	Nb	Sn	Ti	V
J5X276	280 x 280/180 mm ² x 140 kg/m Asymmetric Beam	0.10	0.27	1.47	0.022	0.018	0.03	<0.005	0.02	0.043	0.03	0.0051	0.032	<0.005	<0.005	<0.005
	BS EN 10025: 1993 Grade S355 JR Product Analysis	0.27 max.	0.60 max.	1.70 max.	0.055 max.	0.055 max.						(0.011)				

TABLE 3

**TENSILE TEST RESULTS FROM THE STEEL SECTION USED IN THE
FIRE RESISTANCE TEST
(WFRC 66162)**

BS CODE	SECTION AND TEST DETAILS	YIELD STRESS (LYS) N/mm²	TENSILE STRENGTH N/mm²	ELONGATION %
J5X276	280 x 280/180 mm x 104 kg/m Asymmetric Beam (Flange)	402	520	35
	BS EN 10025: 1993 Grade S355 JR Specification	345	490/630	22 (min.)

TABLE 4**Furnace Atmosphere Temperatures (WFRC)**

Time min.	ISO Temp.	1	2	3	4	5	6	7	8	9	10	Mean Temp.
0	20	14	15	15	14	14	15	13	14	14	14	14
1	349	315	314	307	300	313	327	286	302	272	293	303
2	445	478	469	461	466	495	511	456	481	409	446	467
3	502	526	515	522	514	542	557	518	529	475	499	520
4	544	530	529	547	538	556	575	526	541	490	513	535
5	576	560	564	575	585	602	609	557	593	527	544	572
6	603	587	590	590	591	641	638	581	618	557	563	596
7	626	602	596	614	620	649	654	603	633	573	579	612
8	645	623	619	642	640	668	681	628	648	589	596	633
9	663	633	629	658	662	684	686	641	664	603	600	646
10	678	664	657	690	695	717	706	675	685	634	628	675
11	693	682	682	709	716	721	728	701	713	650	656	696
12	705	692	683	718	720	730	736	723	716	662	658	704
13	717	712	701	722	728	739	749	728	718	670	664	713
14	728	708	714	738	734	746	752	739	730	678	680	722
15	739	720	723	748	749	766	766	755	743	687	684	734
16	748	732	738	758	757	785	784	771	752	715	704	750
17	757	739	744	768	783	786	796	776	765	727	713	760
18	766	774	758	780	785	799	811	788	794	742	730	776
19	774	764	756	782	786	792	805	784	788	743	738	774
20	781	755	757	803	797	801	815	801	791	749	744	781
21	789	769	776	798	809	814	815	811	795	754	746	789
22	796	787	779	813	807	814	826	816	799	770	744	796
23	802	788	797	816	838	831	842	816	813	778	757	808
24	809	807	805	821	816	831	838	824	809	783	759	809
25	815	794	785	829	830	839	842	822	824	775	763	810
26	820	801	799	827	837	845	846	842	817	785	771	817
27	826	808	795	827	832	842	846	841	813	786	781	817
28	832	814	817	835	844	830	861	838	826	800	787	825
29	837	826	821	841	838	844	858	845	836	801	790	830
30	842	826	832	857	847	851	855	851	837	810	790	836
31	847	845	841	852	872	848	881	859	868	828	821	852
32	851	841	832	884	870	880	888	874	866	818	818	857
33	856	859	844	880	880	896	896	883	870	842	824	867
34	860	856	851	874	877	891	893	865	862	823	822	861
35	865	860	857	879	876	882	882	873	875	828	821	863
36	869	844	840	872	875	874	880	866	870	839	828	859
37	873	853	856	877	890	885	887	867	879	842	833	867
38	877	866	875	883	895	877	898	895	881	850	834	875
39	881	866	854	912	877	916	886	887	864	840	825	873
40	885	886	862	920	896	909	916	900	910	858	848	891
41	888	892	877	924	906	933	916	912	908	868	860	900
42	892	889	874	908	914	916	929	903	904	875	858	897
43	896	893	884	918	899	914	910	902	904	868	849	894
44	899	894	896	914	906	908	928	916	916	886	866	903
45	902	896	898	919	921	924	938	914	920	886	870	909

TABLE 4 cont.**Furnace Atmosphere Temperatures (WFRC)**

Time min.	ISO Temp.	1	2	3	4	5	6	7	8	9	10	Mean Temp.
46	906	909	901	935	917	932	932	923	920	882	874	913
47	909	889	882	921	905	930	923	921	910	888	868	904
48	912	907	897	928	924	938	941	934	929	895	881	917
49	915	914	909	938	938	944	955	928	944	904	893	927
50	918	911	917	926	943	934	947	928	932	908	889	924
51	921	904	905	938	946	927	949	917	939	904	898	923
52	924	905	902	942	924	946	934	934	928	894	891	920
53	927	900	899	952	928	948	948	933	940	898	884	923
54	930	915	916	947	934	945	950	939	939	914	901	930
55	932	934	926	951	945	950	964	937	946	912	912	938
56	935	935	929	958	951	961	959	946	951	926	909	943
57	938	925	914	958	953	956	967	941	958	917	912	940
58	940	948	937	964	954	953	961	948	959	927	910	946
59	943	933	933	957	964	968	970	954	956	925	924	948
60	945	934	932	966	966	968	973	956	966	925	923	951
61	948	939	942	964	972	962	979	951	966	926	929	953
62	950	950	950	967	973	971	978	958	967	930	926	957
63	953	949	954	976	974	969	987	966	972	938	932	962
64	955	953	944	980	969	975	982	965	965	947	934	961
65	957	948	953	970	970	970	981	966	963	926	926	957
66	960	942	953	969	963	973	977	962	971	938	938	959
67	962	956	944	977	965	975	970	968	969	939	935	960
68	964	951	943	973	970	972	970	958	972	940	938	959
69	966	953	953	974	966	972	985	973	970	942	935	962
70	968	957	959	977	963	973	985	973	976	948	944	966
71	971	961	952	981	971	971	985	963	986	943	944	966
72	973	958	951	988	974	976	987	968	979	947	945	967
73	975	964	961	991	975	977	994	977	984	950	944	972
74	977	962	963	989	987	985	993	975	985	960	948	975
75	979	961	960	999	981	988	993	984	990	963	956	978
76	981	967	963	1001	982	995	997	989	989	958	949	979
77	983	968	960	1000	989	998	1000	988	992	965	958	982
78	985	976	967	1006	988	989	1005	983	999	968	959	984
79	986	988	984	1006	1002	1002	1010	987	1002	973	967	992
80	988	984	980	1006	1000	1005	1013	995	997	972	957	991
81	990	998	987	1013	1004	998	1013	985	1012	977	973	996
82	992	996	992	1019	1018	1010	1020	1006	1006	982	977	1003
83	994	992	985	1012	1013	1005	1018	999	1013	986	975	1000
84	996	985	973	1015	1002	1004	1014	998	1014	984	975	996
85	997	1000	994	1021	1010	1006	1015	996	1008	981	982	1001
86	999	996	994	1012	1008	1010	1021	999	1018	983	978	1002
87	1001	989	996	1022	1010	1014	1022	996	1018	988	982	1004
88	1003	1000	1003	1026	1023	1008	1036	982	1031	991	997	1010
89	1004	1012	1008	1030	1018	1018	1027	1003	1017	994	985	1011
90	1006	1001	1009	1018	1031	1016	1031	995	1026	995	986	1011

TABLE 4 cont.**Furnace Atmosphere Temperatures (WFRC)**

Time min.	ISO Temp.	1	2	3	4	5	6	7	8	9	10	Mean Temp.
91	1008	1011	1000	1033	1020	1019	1024	1003	1022	997	991	1012
92	1009	1024	1013	1030	1027	1021	1031	1003	1036	1004	996	1019
93	1011	1016	1010	1037	1020	1026	1032	1012	1025	1001	996	1018
94	1012	1005	997	1022	1022	1009	1028	1000	1022	997	994	1010
95	1014	1014	1012	1030	1032	1016	1033	995	1035	995	997	1016
96	1016	1011	1010	1017	1020	1010	1018	1004	1021	997	988	1010
97	1017	1008	1013	1024	1035	1012	1027	1004	1025	995	989	1013
98	1019	1012	1005	1023	1035	1011	1020	994	1032	1004	999	1014
99	1020	1014	1000	1029	1029	1017	1013	1000	1029	996	994	1012
100	1022	1016	1008	1034	1021	1007	1011	1005	1031	1005	1000	1014
101	1023	1021	1003	1036	1020	1012	1008	1004	1030	1005	1000	1014
102	1025	1023	1022	1030	1036	1011	1020	1005	1044	1010	1004	1021
103	1026	1027	1022	1042	1038	1018	1027	1014	1047	1015	1005	1026
104	1028	1031	1020	1044	1048	1015	1025	1023	1051	1021	1018	1030
105	1029	1033	1019	1053	1044	1018	1027	1024	1055	1019	1022	1031
106	1030	1044	1031	1058	1047	1024	1034	1028	1060	1026	1029	1038
107	1032	1054	1043	1060	1050	1029	1037	1037	1066	1036	1033	1045
108	1033	1047	1034	1058	1054	1032	1038	1039	1062	1036	1034	1043
109	1035	1046	1039	1071	1061	1039	1040	1044	1066	1043	1041	1049
110	1036	1048	1042	1062	1058	1035	1039	1037	1064	1040	1035	1046
111	1037	1048	1039	1058	1057	1026	1037	1034	1063	1038	1031	1043
112	1039	1046	1041	1056	1054	1026	1032	1032	1054	1033	1024	1040
113	1040	1045	1036	1055	1055	1034	1033	1037	1052	1032	1030	1041
114	1041	1043	1035	1059	1045	1030	1032	1035	1052	1034	1024	1039
115	1043	1041	1036	1058	1051	1036	1036	1037	1056	1032	1027	1041
116	1044	1048	1039	1062	1061	1035	1041	1035	1066	1040	1038	1047
117	1045	1048	1041	1061	1058	1031	1042	1043	1064	1041	1031	1046
118	1047	1048	1034	1065	1053	1040	1042	1043	1062	1035	1031	1045
119	1048	1049	1044	1065	1067	1042	1044	1043	1067	1043	1036	1050
120	1049	1052	1046	1070	1062	1040	1042	1043	1066	1041	1038	1050

TABLE 5**Temperatures Recorded in the Steel Section at the 'A' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
0	13	13	13	13	13	13	13	13	13	13	13	13
1	17	16	16	16	16	15	14	13	13	13	13	13
2	27	24	23	22	22	18	16	14	13	13	13	13
3	41	36	34	31	31	25	19	15	13	13	13	13
4	52	47	43	39	38	31	24	18	13	13	13	13
5	63	56	52	47	46	38	29	21	14	13	13	13
6	76	67	61	55	54	45	34	24	14	13	13	13
7	88	78	71	63	61	52	40	28	15	13	13	13
8	101	90	82	73	71	59	46	32	15	13	13	13
9	113	101	93	83	81	68	52	37	16	14	13	13
10	127	114	105	94	91	77	59	41	18	14	13	13
11	143	128	118	105	102	86	67	47	19	14	13	13
12	158	142	130	117	114	97	74	52	20	14	14	13
13	174	156	143	129	125	107	83	57	22	15	14	13
14	189	170	156	141	136	118	93	63	24	15	14	14
15	206	185	170	153	148	128	102	71	25	16	14	14
16	223	201	184	166	160	139	111	79	27	16	14	14
17	239	217	199	179	173	151	121	89	29	16	14	14
18	257	233	214	193	187	163	130	98	31	17	14	14
19	273	249	229	207	200	175	140	104	34	17	15	14
20	289	264	243	220	212	186	150	110	37	18	15	14
21	305	279	258	234	226	198	159	117	40	19	15	14
22	319	294	272	247	238	209	168	123	44	20	15	15
23	334	308	286	260	251	221	177	130	48	21	16	15
24	350	323	300	273	264	232	186	137	54	22	16	15
25	364	337	313	286	276	244	196	144	63	23	16	16
26	378	350	326	298	287	255	206	151	76	25	17	16
27	392	363	339	310	299	266	215	157	90	27	18	16
28	406	376	351	322	311	276	223	164	97	30	18	17
29	418	388	363	333	322	287	233	171	100	34	19	17
30	431	401	375	345	333	297	241	178	101	40	20	18
31	444	413	387	356	345	307	250	183	101	46	21	19
32	457	426	399	367	356	317	258	188	101	53	23	20
33	471	439	412	379	367	327	265	191	101	60	24	21
34	484	452	424	391	378	336	272	196	102	67	26	22
35	496	464	436	401	388	346	280	202	102	76	28	23
36	507	474	447	411	398	355	288	208	102	83	30	25
37	517	485	457	421	407	364	295	216	103	87	33	26
38	529	496	468	431	418	373	304	223	105	90	35	28
39	540	507	479	442	428	383	312	231	107	91	37	30
40	552	519	490	452	438	392	321	239	108	93	39	31
41	565	531	501	463	449	402	329	246	109	93	42	33
42	576	542	513	473	459	411	338	254	114	94	44	35
43	586	552	522	482	468	420	346	261	117	95	46	37
44	595	562	532	492	477	429	354	267	120	96	48	39
45	605	572	542	501	486	438	361	274	123	96	50	41

TABLE 5 cont.**Temperatures Recorded in the Steel Section at the 'A' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
46	615	582	552	510	495	446	369	280	126	97	52	43
47	625	592	562	520	504	455	377	287	129	98	54	45
48	634	601	571	529	513	463	384	293	133	98	55	47
49	644	611	580	538	522	471	391	299	135	99	57	49
50	653	620	590	547	531	480	399	305	138	99	59	50
51	661	628	597	554	538	487	406	311	141	100	61	52
52	669	636	605	562	546	494	412	317	144	100	63	54
53	676	643	613	569	553	501	418	322	147	100	65	56
54	683	651	620	576	560	508	425	327	149	101	67	58
55	690	658	627	583	567	514	430	332	151	101	68	59
56	697	665	635	590	574	521	436	337	154	101	70	61
57	704	672	642	598	581	528	442	342	156	101	72	63
58	710	679	649	605	588	534	448	347	159	101	73	64
59	716	686	656	611	595	540	454	352	162	102	74	66
60	722	692	663	618	601	547	460	357	165	102	76	68
61	727	698	669	624	607	553	465	362	168	103	78	69
62	733	704	675	631	614	559	470	366	170	103	79	71
63	740	710	682	638	620	565	476	371	173	104	81	72
64	745	716	688	643	626	571	481	376	176	105	82	74
65	751	721	693	649	631	576	486	381	180	106	83	75
66	756	725	698	654	636	581	492	385	183	108	85	77
67	761	730	703	659	641	586	496	390	187	109	87	79
68	766	734	707	663	646	591	501	395	190	110	88	81
69	772	739	711	668	651	596	506	400	193	112	90	83
70	776	744	716	673	655	600	510	404	197	113	91	84
71	781	749	720	677	660	605	515	409	200	115	93	87
72	786	754	724	682	665	609	520	413	203	116	94	91
73	791	759	728	686	669	614	524	417	206	118	96	93
74	795	764	733	691	673	618	528	421	209	119	97	94
75	800	769	738	695	678	623	532	425	212	122	98	96
76	805	773	742	699	682	627	536	429	215	123	98	96
77	809	778	747	703	687	631	541	433	217	124	99	97
78	814	783	752	708	691	635	544	437	220	126	100	98
79	819	788	757	712	695	639	548	440	223	127	100	98
80	824	793	761	716	699	643	552	444	225	130	101	99
81	829	798	766	720	704	647	556	447	228	132	102	99
82	834	803	771	725	708	651	560	451	231	133	102	99
83	838	808	776	729	712	655	564	455	233	135	103	100
84	844	813	782	734	716	659	567	458	236	137	104	100
85	849	818	786	738	720	663	571	462	239	139	105	100
86	853	822	791	742	724	667	575	465	241	140	105	101
87	857	827	795	747	728	671	578	468	243	142	105	101
88	861	831	799	751	732	674	582	472	245	143	106	101
89	866	835	804	755	736	678	585	475	248	144	107	101
90	871	841	809	760	740	682	589	478	250	146	107	102

TABLE 5 cont.**Temperatures Recorded in the Steel Section at the 'A' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
91	876	846	814	765	745	686	592	481	252	147	108	102
92	880	850	818	769	750	690	596	484	254	148	109	102
93	885	855	823	774	754	694	599	488	257	149	110	103
94	888	859	827	778	758	698	603	491	259	151	111	103
95	890	862	830	781	761	701	606	494	261	151	111	104
96	891	864	833	785	764	704	610	497	263	153	112	104
97	894	867	836	788	768	708	613	500	265	154	113	105
98	896	870	839	791	771	711	616	503	267	155	113	105
99	899	873	843	795	774	714	619	506	269	156	114	105
100	901	876	846	798	778	717	622	509	271	158	115	106
101	903	878	849	801	781	720	625	511	273	159	116	106
102	907	882	852	804	784	723	627	514	275	160	116	107
103	911	886	856	808	788	727	630	517	277	161	117	108
104	915	890	860	812	792	730	633	519	279	162	117	108
105	919	894	865	817	797	734	636	522	281	163	118	108
106	923	899	869	821	801	738	640	525	283	164	119	109
107	928	903	874	826	805	742	643	528	285	165	120	110
108	933	908	879	830	810	746	646	531	286	166	120	110
109	937	913	884	835	814	750	649	534	288	167	121	111
110	942	917	889	839	818	754	652	536	290	169	122	112
111	944	921	892	843	822	758	656	539	292	170	123	113
112	945	923	894	846	825	761	659	542	294	171	123	113
113	947	924	897	849	828	765	662	545	296	172	124	114
114	948	926	899	852	831	768	665	548	298	173	125	115
115	949	927	900	854	833	770	667	550	300	175	126	116
116	951	930	903	857	836	773	670	553	302	176	127	117
117	953	932	905	860	839	776	673	555	304	177	128	117
118	955	934	907	862	841	779	675	558	306	179	129	118
119	956	936	910	864	844	782	678	560	308	180	130	119
120	958	938	912	867	846	785	681	563	310	181	131	120

TABLE 6 cont.**Temperatures Recorded in the Steel Section at the 'B' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
46	676	648	611	567	551	499	395	317	164	105	95	93
47	685	657	621	576	560	508	402	323	167	106	96	96
48	695	667	631	586	570	517	410	330	170	106	97	98
49	704	676	641	595	579	526	417	336	173	108	97	99
50	712	685	650	604	588	534	425	342	177	109	98	100
51	718	692	657	612	595	542	432	348	180	109	98	100
52	724	699	665	620	603	550	439	354	184	110	98	100
53	730	706	672	627	610	557	445	360	188	112	98	100
54	736	712	679	634	617	564	452	366	191	116	99	100
55	742	719	686	641	625	570	458	371	195	118	99	101
56	749	724	693	648	632	577	464	377	199	120	99	101
57	756	730	700	655	639	584	470	382	202	121	99	101
58	764	736	706	662	646	590	476	388	205	123	100	101
59	771	743	712	669	652	597	482	393	209	125	100	101
60	779	750	718	675	659	603	488	398	212	127	101	101
61	785	757	724	681	665	609	493	403	215	129	101	101
62	792	764	729	686	671	615	498	408	218	131	101	101
63	799	771	735	693	677	621	504	413	222	133	102	102
64	805	778	741	698	682	626	509	417	225	134	103	101
65	810	783	747	703	687	631	514	422	228	136	104	102
66	815	789	752	707	691	636	518	426	231	138	104	102
67	820	794	758	712	696	641	523	431	234	140	105	102
68	825	799	763	716	700	645	527	435	236	141	106	102
69	829	804	768	720	704	649	531	438	239	143	107	102
70	834	809	773	724	708	653	535	442	242	144	108	103
71	838	813	777	728	711	656	539	446	245	146	109	103
72	843	818	782	732	715	660	543	450	247	148	110	104
73	848	822	786	736	719	664	547	453	250	149	111	104
74	853	827	791	740	722	668	550	457	252	151	111	105
75	857	832	796	744	726	671	554	460	255	152	112	106
76	862	837	800	749	730	675	557	463	257	153	113	106
77	866	841	804	753	733	678	561	467	259	155	113	107
78	871	846	809	757	737	682	564	470	262	156	114	107
79	876	851	814	761	742	686	568	473	264	157	115	108
80	881	855	818	766	746	690	571	476	267	159	116	109
81	885	860	823	770	750	693	574	479	269	160	116	109
82	890	865	828	775	755	697	578	483	271	161	117	110
83	894	870	833	780	759	701	581	486	273	163	118	110
84	898	874	838	785	764	706	585	489	276	164	119	111
85	902	879	842	789	769	710	588	492	278	165	120	112
86	906	883	847	793	773	714	592	495	280	167	120	112
87	910	887	851	798	777	718	595	499	282	168	121	113
88	913	891	856	802	782	722	599	502	284	169	122	114
89	917	895	860	806	786	725	602	505	286	170	123	114
90	922	900	865	812	791	730	606	508	289	172	124	115

TABLE 6 cont.**Temperatures Recorded in the Steel Section at the 'B' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
91	926	904	869	816	796	734	609	511	291	174	125	116
92	929	907	874	820	800	738	613	514	293	174	126	116
93	932	911	878	825	804	742	616	517	295	175	126	117
94	934	914	881	828	807	746	619	520	297	177	127	118
95	935	916	883	831	810	749	622	523	299	178	128	118
96	936	918	886	834	813	753	625	526	301	179	128	119
97	938	919	888	837	816	756	629	529	303	180	129	120
98	940	922	891	840	820	760	632	532	305	181	130	121
99	942	924	893	843	823	763	635	535	307	183	131	122
100	943	925	895	846	825	766	637	537	309	184	132	123
101	945	927	898	849	828	769	640	540	311	185	133	123
102	947	930	901	852	832	772	643	543	313	186	133	124
103	951	933	904	856	836	776	646	545	315	187	134	125
104	956	938	909	860	840	780	649	548	317	189	136	126
105	960	942	913	864	844	784	652	551	319	190	136	127
106	964	946	917	869	849	788	655	554	321	192	137	128
107	969	950	922	873	854	792	659	557	323	193	138	129
108	972	954	926	877	858	796	662	559	325	194	139	130
109	976	958	930	882	862	800	665	563	327	195	140	130
110	981	963	935	887	867	805	668	566	329	197	141	132
111	982	965	937	889	870	809	671	568	331	197	142	132
112	983	966	939	892	872	812	674	572	333	198	143	133
113	983	967	940	894	874	815	677	574	335	199	143	134
114	984	968	942	896	877	818	680	577	337	200	144	135
115	985	969	943	898	879	820	683	580	339	202	146	136
116	986	970	945	900	882	823	685	582	340	203	146	136
117	988	972	947	903	884	826	688	585	343	204	147	138
118	989	973	949	905	886	828	690	587	344	205	148	139
119	990	975	951	907	889	831	693	590	347	207	149	140
120	991	976	952	909	891	833	696	593	348	208	150	140

TABLE 7**Temperatures Recorded in the Steel Section at the 'C' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
0	13	13	13	13	13	13	13	13	13	13	14	14
1	18	17	17	17	17	15	14	14	13	13	14	14
2	27	25	25	24	24	20	16	14	13	13	14	14
3	41	37	36	33	32	27	20	16	14	13	14	14
4	53	48	46	41	40	34	25	19	14	13	14	14
5	66	59	55	50	49	41	30	22	14	13	14	14
6	80	72	66	59	57	48	35	25	15	14	14	14
7	94	85	78	69	67	56	41	29	15	14	14	14
8	108	98	90	79	77	65	47	34	16	14	14	14
9	122	110	101	90	87	74	54	39	18	14	14	14
10	138	125	115	102	99	84	61	44	19	14	14	14
11	156	141	129	115	111	95	69	50	21	15	14	14
12	174	157	143	127	123	106	77	54	22	15	14	14
13	191	173	158	140	136	117	87	60	24	15	14	14
14	207	188	172	153	148	128	98	68	25	16	14	14
15	223	203	187	167	161	141	106	76	27	16	14	14
16	240	219	202	181	175	153	116	84	29	17	15	14
17	258	236	219	196	189	166	126	93	32	17	15	14
18	277	254	235	211	204	179	137	101	35	18	15	14
19	294	270	252	226	219	192	147	109	38	19	15	15
20	310	286	267	240	233	205	158	118	42	20	16	15
21	327	302	283	255	247	218	168	126	45	21	16	15
22	343	317	298	270	261	231	178	134	49	22	16	15
23	359	333	314	284	276	244	189	142	53	23	17	16
24	375	348	329	299	290	257	199	150	58	24	17	16
25	390	362	343	313	303	270	209	157	64	26	18	16
26	404	376	357	326	316	282	219	165	70	27	18	17
27	417	389	371	339	330	294	230	173	78	29	19	17
28	430	402	383	352	342	306	239	180	86	31	20	18
29	443	416	396	365	355	317	248	187	90	35	21	18
30	457	430	410	377	367	329	257	193	94	39	22	19
31	469	443	423	390	380	340	266	199	98	44	23	20
32	483	457	437	403	392	351	275	205	100	49	25	21
33	498	471	451	417	406	363	283	211	101	55	27	22
34	511	485	465	429	418	374	292	217	102	66	29	23
35	524	497	477	441	429	385	300	222	102	79	33	24
36	535	508	488	451	439	394	308	228	102	88	37	27
37	545	518	499	461	450	403	316	235	103	94	42	29
38	557	530	510	472	461	413	324	243	103	97	46	32
39	569	542	522	484	472	424	333	251	103	99	51	34
40	580	553	534	495	483	434	342	258	103	100	57	37
41	592	565	545	507	495	444	350	264	103	100	62	41
42	604	576	556	517	505	454	358	270	102	100	66	44
43	614	586	566	526	514	463	366	275	103	100	70	47
44	624	596	576	536	523	472	373	281	103	101	74	50
45	635	607	586	546	533	481	380	286	103	101	77	53

TABLE 7 cont.**Temperatures Recorded in the Steel Section at the 'C' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
46	645	617	596	555	542	489	387	291	103	101	80	56
47	655	627	606	564	551	498	394	298	106	101	82	58
48	665	637	615	573	560	506	402	305	110	101	84	61
49	674	646	625	582	569	515	409	313	115	101	86	63
50	684	656	634	591	578	523	417	320	126	101	87	65
51	692	664	642	599	586	531	425	328	138	101	89	67
52	700	672	650	607	593	539	433	337	148	101	90	69
53	707	680	658	614	601	546	441	345	157	101	91	71
54	713	687	665	622	608	554	448	352	164	102	92	73
55	720	694	673	629	616	561	455	359	169	102	93	74
56	725	701	680	637	624	568	462	365	174	103	94	76
57	732	708	687	644	631	575	469	371	178	103	95	78
58	739	714	694	651	638	582	475	377	182	104	95	79
59	746	721	701	658	645	589	482	383	186	105	96	81
60	754	727	708	665	652	596	488	389	190	106	96	82
61	762	733	714	672	658	602	494	394	193	107	97	83
62	769	740	719	678	665	608	500	399	197	108	97	85
63	776	747	725	684	671	614	505	404	201	110	97	85
64	783	754	731	689	676	620	510	409	205	113	97	86
65	789	761	736	694	681	625	516	414	209	116	97	87
66	795	767	742	699	686	629	520	419	212	118	97	87
67	799	773	747	703	690	634	525	424	216	120	98	88
68	805	778	753	707	694	638	529	428	219	123	98	89
69	810	784	758	711	698	643	534	433	223	126	99	90
70	815	790	764	715	702	646	538	437	226	128	99	91
71	820	794	768	719	705	650	542	440	229	130	100	91
72	825	799	773	723	709	654	546	444	232	132	101	92
73	830	804	778	727	712	657	549	448	235	135	102	94
74	835	810	783	731	716	661	553	452	238	137	104	97
75	840	815	788	736	720	665	557	456	241	140	105	98
76	845	820	793	740	724	669	561	459	244	142	106	100
77	849	825	798	744	727	673	565	463	247	143	107	101
78	854	829	802	748	731	676	568	466	249	145	108	101
79	859	834	807	753	736	680	572	470	252	147	110	101
80	864	839	812	757	740	684	576	474	255	148	111	101
81	870	845	817	762	744	688	579	477	258	150	112	102
82	874	850	821	766	749	692	583	481	260	152	113	103
83	879	855	826	771	754	696	587	484	262	153	114	104
84	883	860	831	776	758	700	591	488	265	155	115	105
85	888	865	836	781	763	705	595	492	268	157	117	106
86	892	869	841	785	767	709	598	495	270	158	118	106
87	896	873	845	790	772	713	602	499	273	160	119	107
88	900	878	850	794	777	717	606	502	276	161	120	108
89	904	882	854	799	781	722	610	506	278	163	120	108
90	908	887	860	804	786	726	614	509	281	164	121	109

TABLE 7 cont.**Temperatures Recorded in the Steel Section at the 'C' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
91	913	891	864	809	791	730	618	513	284	166	122	110
92	916	895	869	813	795	735	621	516	286	167	123	110
93	920	899	873	818	799	739	625	520	289	169	124	111
94	922	902	876	821	803	743	629	523	291	170	125	112
95	923	904	879	824	806	747	632	526	293	171	126	113
96	925	906	881	827	809	750	636	530	296	173	127	114
97	926	908	883	830	812	754	639	533	298	174	127	115
98	928	910	886	833	816	757	642	536	300	175	128	116
99	931	913	889	836	819	760	645	539	303	177	129	116
100	932	914	891	839	822	763	648	542	305	178	130	117
101	934	917	893	842	825	766	651	545	307	179	131	118
102	937	920	896	845	828	770	654	548	310	181	132	118
103	940	923	900	849	832	773	657	551	312	182	133	119
104	945	928	904	854	836	777	661	553	314	183	134	120
105	950	932	909	858	841	782	664	556	316	185	135	121
106	954	937	914	863	845	786	667	560	318	186	136	122
107	958	941	918	867	850	790	671	563	320	188	137	123
108	963	946	923	872	855	795	675	566	322	189	138	123
109	967	950	927	876	859	798	678	569	325	190	139	124
110	972	954	932	881	864	803	682	572	327	192	140	125
111	974	956	934	884	867	807	685	575	329	193	141	126
112	974	957	935	886	869	810	689	578	331	194	142	127
113	975	958	936	888	871	813	692	581	333	196	142	128
114	975	959	938	890	874	816	695	584	335	197	143	128
115	976	960	939	892	876	818	698	587	337	199	144	129
116	977	962	941	894	879	821	700	589	339	200	145	130
117	979	964	943	897	881	823	703	592	342	201	147	131
118	980	965	944	899	883	826	706	594	343	203	147	132
119	981	966	946	901	886	829	708	597	346	204	148	133
120	983	968	948	903	887	831	711	599	347	205	149	134

TABLE 8**Temperatures Recorded in the Steel Section at the 'D' Position**

Time min.	1	3	5	8	11
0	14	14	14	13	13
1	18	17	16	14	14
2	28	25	22	14	14
3	42	36	30	16	14
4	55	46	38	18	14
5	68	57	47	22	14
6	82	68	55	25	14
7	96	80	64	29	14
8	112	92	74	33	14
9	127	105	85	38	14
10	144	119	96	44	14
11	163	135	109	49	14
12	180	150	122	55	14
13	196	166	135	62	14
14	211	181	148	70	14
15	227	197	162	79	14
16	246	214	176	87	15
17	267	231	191	96	15
18	289	249	206	105	15
19	308	267	221	112	15
20	327	283	235	122	16
21	346	301	250	130	16
22	365	318	265	138	17
23	384	335	280	147	17
24	403	352	294	156	18
25	419	368	308	165	19
26	436	384	322	175	19
27	451	399	336	183	20
28	462	414	349	192	21
29	473	429	362	200	23
30	484	443	376	208	24
31	496	457	389	217	26
32	509	471	402	226	28
33	522	486	416	235	30
34	535	500	429	244	32
35	547	512	441	253	35
36	557	523	452	261	38
37	567	535	464	269	41
38	578	547	475	277	44
39	590	559	486	284	48
40	601	571	498	291	52
41	613	582	509	298	57
42	625	594	520	305	61
43	634	603	529	313	65
44	644	613	538	320	69
45	656	623	548	327	72

TABLE 8 cont.**Temperatures Recorded in the Steel Section at the 'D' Position**

Time min.	1	3	5	8	11
46	667	632	557	333	76
47	678	642	565	339	79
48	689	651	574	344	82
49	700	661	582	350	85
50	711	670	590	356	87
51	719	677	597	361	88
52	725	685	604	366	90
53	732	692	611	370	91
54	738	699	618	374	92
55	746	706	625	380	94
56	754	712	631	386	94
57	763	718	638	392	96
58	772	724	645	398	96
59	780	730	651	403	97
60	788	736	657	408	97
61	795	743	663	413	97
62	802	750	668	418	98
63	810	757	673	423	99
64	816	763	678	428	100
65	821	769	682	432	100
66	826	774	686	436	101
67	831	779	690	441	101
68	836	784	694	445	102
69	841	789	697	449	103
70	846	794	701	453	104
71	850	798	705	457	105
72	855	802	708	460	106
73	860	807	712	464	107
74	864	812	716	467	108
75	869	816	720	471	109
76	874	821	724	475	110
77	878	826	728	478	111
78	882	830	731	481	112
79	886	834	735	484	113
80	891	839	740	488	114
81	896	844	745	491	115
82	900	849	749	495	116
83	904	853	753	498	116
84	908	858	758	501	117
85	912	863	763	504	118
86	916	867	767	508	119
87	919	871	771	511	120
88	922	875	776	514	120
89	926	879	780	517	121
90	930	884	785	521	122

TABLE 8 cont.**Temperatures Recorded in the Steel Section at the 'D' Position**

Time min.	1	3	5	8	11
91	934	889	789	524	123
92	937	892	793	527	124
93	940	896	797	530	125
94	942	898	801	533	126
95	943	901	804	537	127
96	944	903	807	540	127
97	945	905	811	543	128
98	947	907	813	546	129
99	949	909	817	548	130
100	950	911	820	551	131
101	952	913	822	554	132
102	954	916	826	557	133
103	958	920	829	559	134
104	962	924	833	562	134
105	967	929	838	565	135
106	971	933	842	568	136
107	975	937	846	570	137
108	980	942	851	574	138
109	984	946	856	577	139
110	988	950	860	580	140
111	989	952	863	583	141
112	988	952	866	586	142
113	988	953	868	589	143
114	988	954	870	591	144
115	988	955	872	594	145
116	989	956	874	596	146
117	991	958	876	599	147
118	992	959	878	601	148
119	993	960	880	604	149
120	994	962	882	606	150

TABLE 9**Temperatures Recorded in the Steel Section at the 'E' Position**

Time min.	1	3	5	8	11
0	0	13	14	13	13
1	0	17	16	14	14
2	0	25	22	14	14
3	0	35	31	16	14
4	0	46	39	19	14
5	0	56	48	22	14
6	0	66	56	26	14
7	0	78	65	30	14
8	0	90	75	35	14
9	0	102	86	40	14
10	0	116	98	45	14
11	0	131	111	51	14
12	0	146	123	57	14
13	0	160	136	64	14
14	0	175	149	72	14
15	0	191	162	81	14
16	0	207	176	92	14
17	0	224	191	101	15
18	0	242	207	109	15
19	0	259	222	119	15
20	0	275	236	128	15
21	0	292	252	136	16
22	0	308	267	146	16
23	0	325	282	154	17
24	0	341	296	163	17
25	0	356	311	173	18
26	0	372	325	182	19
27	0	387	339	192	19
28	0	401	353	201	20
29	0	415	366	210	22
30	0	429	379	218	23
31	0	444	393	227	25
32	0	459	407	235	26
33	0	474	421	243	28
34	0	488	434	252	30
35	0	501	446	260	33
36	0	512	458	269	35
37	0	524	469	276	38
38	0	536	480	284	41
39	0	548	492	292	44
40	0	561	504	299	47
41	0	573	515	306	50
42	0	584	526	313	53
43	0	594	535	320	56
44	0	604	545	327	59
45	0	614	554	333	62

TABLE 9 cont.**Temperatures Recorded in the Steel Section at the 'E' Position**

Time min.	1	3	5	8	11
46	0	623	564	340	65
47	0	633	573	346	68
48	0	642	582	352	70
49	0	652	591	358	72
50	0	660	599	365	75
51	0	668	607	371	77
52	0	675	614	376	79
53	0	683	621	382	80
54	0	690	628	387	82
55	0	697	635	393	83
56	0	703	642	398	84
57	0	710	649	403	85
58	0	716	655	408	86
59	0	721	662	413	87
60	0	727	667	418	88
61	0	732	673	422	89
62	0	738	678	427	90
63	0	744	684	432	91
64	0	750	688	437	92
65	0	755	692	441	92
66	0	760	696	446	93
67	0	765	700	450	94
68	0	771	704	454	95
69	0	775	708	458	96
70	0	780	711	462	96
71	0	784	715	466	97
72	0	789	718	469	98
73	0	794	722	473	98
74	0	798	726	477	100
75	0	803	730	480	101
76	0	808	735	484	102
77	0	813	739	488	103
78	0	817	743	491	104
79	0	821	747	495	105
80	0	826	752	498	106
81	0	831	757	502	108
82	0	836	761	505	109
83	0	841	766	509	110
84	0	846	771	512	111
85	0	850	775	516	111
86	0	855	780	519	112
87	0	860	784	522	113
88	0	864	789	526	114
89	0	868	793	529	114
90	0	873	798	532	115

TABLE 9 cont.**Temperatures Recorded in the Steel Section at the 'E' Position**

Time min.	1	3	5	8	11
91	0	878	802	536	116
92	0	882	807	539	117
93	0	886	811	542	117
94	0	889	814	546	118
95	0	893	819	550	119
96	0	894	821	552	120
97	0	897	824	555	120
98	0	899	827	558	121
99	0	901	830	561	121
100	0	903	833	564	122
101	0	906	836	567	123
102	0	909	839	570	124
103	0	913	843	572	125
104	0	917	848	575	125
105	0	922	852	578	126
106	0	926	857	581	127
107	0	931	861	584	128
108	0	936	866	586	128
109	0	940	871	590	129
110	0	945	875	594	130
111	0	946	878	597	131
112	0	947	880	599	131
113	0	947	881	602	132
114	0	948	883	605	133
115	0	950	886	608	134
116	0	951	888	610	135
117	0	952	890	613	135
118	0	954	892	615	136
119	0	956	894	617	137
120	0	957	896	620	138

TABLE 10**Temperatures Recorded in the Steel Section at the 'F' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
0	20	20	20	20	20	20	0	20	20	20	20	20
1	21	21	21	21	21	21	0	21	21	21	21	21
2	32	28	27	25	24	21	0	21	21	21	21	21
3	47	41	38	34	33	28	0	21	21	21	21	21
4	58	52	48	43	41	35	0	21	21	21	21	21
5	72	63	58	52	50	42	0	23	21	21	21	21
6	86	76	69	61	59	50	0	26	21	21	21	21
7	101	89	81	72	69	59	0	30	21	21	21	21
8	116	103	93	82	80	69	0	35	21	21	21	21
9	132	117	106	94	91	79	0	40	22	22	22	22
10	150	133	121	107	102	89	0	45	22	22	22	22
11	168	150	135	121	116	102	0	50	22	22	22	22
12	186	166	150	135	129	114	0	56	23	22	22	22
13	199	182	165	148	142	125	0	64	24	22	22	22
14	212	197	181	162	156	139	0	72	26	22	22	22
15	231	213	197	177	170	151	0	81	28	22	22	22
16	252	231	214	192	185	165	0	91	31	22	22	22
17	273	251	232	208	200	179	0	101	34	22	22	22
18	295	271	251	226	217	194	0	109	37	23	23	23
19	316	291	269	242	232	209	0	117	41	23	23	23
20	336	310	286	258	248	223	0	127	45	23	23	23
21	355	329	304	274	263	238	0	137	50	23	23	23
22	376	349	322	290	279	253	0	146	56	23	23	23
23	395	368	340	307	295	267	0	155	63	24	23	23
24	412	387	358	323	311	282	0	164	69	26	23	23
25	428	404	375	339	326	296	0	173	77	28	23	23
26	444	420	391	354	340	310	0	182	88	30	23	23
27	459	436	407	369	355	324	0	190	96	31	23	23
28	473	451	422	383	369	337	0	199	100	34	23	23
29	487	466	437	397	382	349	0	208	103	37	24	24
30	500	480	451	410	395	362	0	217	106	40	24	24
31	515	495	466	425	409	375	0	225	108	43	25	24
32	531	511	482	440	424	388	0	234	112	47	26	24
33	548	527	497	454	438	401	0	243	117	50	28	25
34	563	542	512	468	452	414	0	252	121	54	29	26
35	575	554	524	480	463	426	0	260	124	58	31	27
36	586	566	536	491	474	437	0	269	128	61	32	28
37	597	577	548	503	485	447	0	276	132	64	34	30
38	608	588	559	514	497	458	0	284	134	67	36	31
39	621	600	571	526	508	469	0	291	137	73	38	32
40	635	613	584	538	520	480	0	298	138	79	39	34
41	649	626	596	550	531	490	0	306	141	87	42	35
42	660	637	607	560	542	500	0	312	145	92	45	37
43	671	647	616	570	551	510	0	319	150	94	48	39
44	681	657	626	579	560	518	0	326	154	96	51	41
45	692	668	636	589	570	527	0	333	157	98	54	44

TABLE 10 cont.**Temperatures Recorded in the Steel Section at the 'F' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
46	702	678	646	598	579	536	0	339	161	98	58	46
47	711	687	656	608	588	545	443	345	164	99	62	49
48	720	696	665	616	597	554	450	351	165	99	67	52
49	728	705	674	625	606	562	457	357	166	100	70	54
50	735	713	683	634	614	570	464	363	168	100	72	57
51	741	720	690	641	621	577	470	368	171	101	74	60
52	749	726	697	648	628	584	477	373	175	101	76	62
53	756	732	703	655	635	591	483	379	180	102	79	64
54	765	738	710	662	642	597	489	385	184	103	82	67
55	773	745	716	669	649	604	494	390	189	104	84	70
56	781	752	722	675	655	610	501	396	193	104	86	73
57	788	760	728	682	662	616	506	401	197	106	89	77
58	795	768	734	687	668	622	512	406	201	106	91	81
59	803	775	740	693	674	628	518	411	205	109	92	84
60	810	782	746	699	679	633	523	417	208	111	94	89
61	816	789	752	704	684	639	528	422	211	113	95	93
62	823	795	759	709	689	644	533	426	215	115	96	96
63	829	802	765	714	695	649	538	430	218	117	98	98
64	835	808	770	719	699	654	542	435	221	119	100	99
65	839	812	775	723	703	658	547	439	224	122	100	100
66	844	817	780	727	707	662	551	443	227	123	100	100
67	849	822	785	731	711	666	555	447	230	126	101	101
68	853	826	789	735	715	670	559	451	234	128	101	101
69	858	831	794	739	718	674	563	455	237	130	102	101
70	862	835	798	743	722	677	566	458	240	134	103	101
71	866	840	802	747	726	681	570	462	243	137	105	102
72	870	844	807	751	729	685	574	466	246	139	106	102
73	875	849	811	756	733	688	577	469	249	141	107	102
74	879	853	816	760	737	692	581	473	251	143	108	103
75	884	858	820	765	741	696	585	477	254	145	109	103
76	888	863	825	769	746	700	588	480	257	147	110	104
77	892	867	829	773	750	704	592	484	260	148	111	104
78	896	872	834	778	755	708	596	487	262	150	112	105
79	900	876	838	782	759	712	599	491	265	151	112	105
80	904	880	842	787	763	716	603	494	267	153	114	106
81	908	885	847	791	768	720	606	498	270	154	115	106
82	912	889	852	796	772	724	610	501	272	155	115	107
83	917	894	857	801	777	729	614	504	274	157	116	107
84	920	898	861	805	782	733	617	507	277	158	117	108
85	923	902	866	810	786	737	621	511	279	159	118	108
86	927	906	870	814	790	742	625	514	281	160	119	109
87	930	910	874	818	795	746	628	518	283	162	119	110
88	934	913	878	823	799	750	632	521	286	163	121	111
89	937	917	882	827	803	754	635	524	288	164	121	111
90	941	921	887	831	807	758	639	528	291	165	122	112

TABLE 10 cont.**Temperatures Recorded in the Steel Section at the 'F' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
91	944	925	891	836	812	763	642	531	293	167	123	113
92	948	929	895	840	816	767	646	534	295	168	124	114
93	951	932	898	844	820	771	650	538	298	169	125	114
94	951	933	901	847	823	775	653	541	300	171	126	115
95	953	935	903	850	826	778	657	544	303	172	127	116
96	954	936	905	853	829	781	659	547	305	173	128	117
97	954	938	907	855	832	784	662	550	307	175	129	118
98	956	940	909	858	835	787	665	553	309	176	130	119
99	957	941	911	861	838	791	668	556	311	178	131	120
100	959	943	913	863	841	793	671	558	314	179	132	121
101	961	945	916	866	843	796	674	561	316	180	133	122
102	964	948	919	870	847	799	676	564	318	182	135	123
103	968	952	923	874	851	803	679	566	320	183	136	124
104	973	956	928	878	856	807	682	569	322	184	137	125
105	977	961	932	882	860	811	685	572	324	186	138	126
106	982	965	937	887	865	816	688	575	326	187	138	126
107	987	970	941	892	869	820	691	578	328	188	140	128
108	991	974	946	896	874	825	694	581	330	190	141	129
109	995	978	950	900	878	829	698	583	331	191	142	130
110	997	981	953	904	882	833	701	587	333	192	143	130
111	997	982	954	906	884	836	705	589	335	193	144	131
112	997	982	955	908	886	838	708	592	337	195	145	132
113	997	982	956	909	888	841	711	595	339	196	146	133
114	997	983	957	911	890	843	713	598	341	197	147	134
115	998	984	958	912	892	845	716	600	343	198	148	135
116	999	985	959	914	894	847	718	603	345	200	149	136
117	1000	986	960	916	896	849	721	605	347	201	150	137
118	1001	987	962	918	898	852	723	608	349	202	151	138
119	1002	988	963	920	900	854	725	610	351	204	152	139
120	1003	990	965	922	902	856	728	612	353	205	153	140

TABLE 11**Temperatures Recorded in the Steel Section at the 'G' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
0	21	21	21	21	21	21	21	21	21	21	21	21
1	21	21	21	21	21	21	21	21	21	21	21	21
2	32	29	27	26	24	21	21	21	21	21	21	21
3	46	42	38	36	33	27	22	21	21	21	21	21
4	57	52	48	44	41	33	27	21	21	21	21	21
5	70	63	57	53	48	40	32	24	21	21	21	21
6	84	75	68	62	57	46	38	28	22	22	22	22
7	97	88	79	73	65	54	44	32	22	22	22	22
8	112	102	91	83	76	62	51	36	22	22	22	22
9	127	115	104	95	86	71	58	41	22	22	22	22
10	144	130	117	107	98	81	66	47	22	22	22	22
11	163	148	132	121	111	92	74	53	22	22	22	22
12	184	166	147	135	124	104	84	58	24	22	22	22
13	203	184	162	149	137	114	95	65	25	23	23	23
14	222	201	177	163	150	126	106	73	26	23	23	23
15	241	220	194	179	164	138	115	84	29	23	23	23
16	261	238	211	194	178	151	125	95	31	23	23	23
17	283	259	229	211	194	164	137	104	34	23	23	23
18	305	279	248	228	210	178	148	109	37	23	23	23
19	324	298	265	245	225	191	159	114	41	23	23	23
20	343	316	282	260	240	205	171	125	46	23	23	23
21	362	334	299	277	255	218	183	135	53	23	23	23
22	381	352	316	293	271	232	196	147	60	24	24	24
23	399	370	333	309	286	246	208	157	69	26	24	24
24	416	387	349	325	301	260	220	166	76	28	24	24
25	433	403	365	340	316	273	232	175	82	30	24	24
26	449	419	381	356	330	286	243	184	86	33	24	24
27	465	434	396	370	344	299	255	194	90	35	24	24
28	479	449	410	384	358	311	266	203	94	38	24	24
29	493	463	424	397	371	324	277	212	97	41	24	24
30	507	478	438	411	384	335	287	221	101	44	25	24
31	521	492	452	426	398	348	298	229	105	47	27	24
32	538	508	468	441	412	360	309	238	108	51	28	25
33	554	524	484	456	427	373	320	246	111	57	30	25
34	568	539	498	470	441	385	331	254	117	65	32	26
35	580	552	511	483	453	397	341	263	123	72	34	27
36	590	562	522	494	464	407	351	271	128	78	37	29
37	601	574	534	506	476	418	360	279	132	83	39	30
38	613	586	546	517	487	428	369	287	136	89	42	32
39	625	598	558	530	499	439	379	295	140	93	44	34
40	637	610	570	542	511	449	388	302	143	96	47	36
41	650	622	583	554	523	460	398	310	147	97	50	38
42	661	634	594	565	534	470	407	318	150	98	53	40
43	670	643	603	574	543	479	416	325	154	99	55	42
44	678	652	613	584	552	488	424	332	157	99	57	44
45	688	662	623	594	562	497	432	339	160	100	59	46

TABLE 11 cont.**Temperatures Recorded in the Steel Section at the 'G' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
46	697	672	633	603	572	505	440	345	164	100	61	48
47	706	680	642	613	581	514	448	352	167	101	63	50
48	714	690	652	622	590	523	455	359	170	102	65	52
49	721	698	661	631	599	531	463	365	173	102	67	54
50	728	707	669	639	607	538	471	371	176	103	68	56
51	734	712	677	647	614	546	477	377	179	104	71	57
52	740	719	684	654	622	553	484	383	182	105	72	59
53	747	725	691	661	629	559	490	389	185	105	74	62
54	755	730	698	669	636	566	497	394	188	106	76	64
55	762	737	704	675	643	573	503	400	191	107	78	66
56	769	743	710	682	649	579	509	405	194	107	80	68
57	777	751	716	689	656	585	514	410	197	108	82	70
58	784	759	723	694	662	591	520	415	199	108	83	72
59	791	766	729	701	668	597	526	420	202	109	85	73
60	798	773	735	706	674	602	531	425	204	110	85	75
61	804	780	741	712	679	608	536	430	207	111	87	76
62	811	787	747	717	684	613	541	434	210	112	88	78
63	817	793	754	722	689	618	546	438	213	113	89	79
64	823	799	760	727	694	622	550	442	216	114	90	80
65	828	804	766	732	698	627	555	447	219	117	91	81
66	832	809	770	736	702	631	559	451	222	120	93	82
67	837	814	775	741	707	636	563	455	225	123	95	84
68	841	819	781	745	710	639	567	459	228	125	97	85
69	846	823	785	749	714	643	571	462	232	127	98	87
70	851	827	790	753	717	647	575	466	235	129	99	89
71	855	832	794	758	722	651	579	470	237	131	100	90
72	860	837	798	762	725	654	582	474	240	133	101	91
73	865	842	803	767	730	658	586	477	243	135	102	92
74	869	846	808	771	733	662	590	481	245	137	103	93
75	874	851	812	776	738	666	593	485	248	139	103	94
76	879	856	817	780	742	670	597	488	251	141	104	95
77	883	860	822	785	746	673	601	491	253	143	105	96
78	887	865	827	790	751	677	605	495	256	144	106	97
79	891	870	832	794	756	681	608	498	258	146	107	99
80	895	874	836	799	760	685	612	502	261	148	109	100
81	900	879	840	804	765	689	616	505	263	150	110	102
82	904	883	846	808	769	693	619	508	266	151	112	102
83	908	888	850	813	774	697	623	512	268	153	113	103
84	912	892	855	817	778	701	627	515	270	155	115	103
85	916	896	860	822	783	705	630	519	273	156	116	104
86	919	900	865	826	787	709	634	522	275	158	117	105
87	922	904	868	830	791	713	638	525	277	159	118	106
88	926	908	873	835	796	717	641	529	279	161	119	107
89	930	911	877	839	800	721	645	532	282	162	120	108
90	933	915	881	844	804	725	648	535	284	163	121	109

TABLE 11 cont.**Temperatures Recorded in the Steel Section at the 'G' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
91	937	919	885	848	809	729	652	538	286	165	123	110
92	940	922	889	852	813	734	656	542	288	166	124	110
93	943	926	893	856	817	737	660	545	290	168	124	111
94	944	927	895	859	820	741	663	548	293	169	125	112
95	946	929	897	862	823	745	666	551	295	170	127	113
96	947	930	899	864	826	748	670	553	297	172	127	113
97	948	932	901	867	829	751	673	557	299	173	128	114
98	949	933	903	870	832	754	675	560	301	174	129	115
99	952	936	906	872	835	757	678	562	303	175	131	116
100	953	938	908	875	838	760	681	565	305	177	131	117
101	955	940	910	878	842	763	684	568	307	178	133	118
102	958	942	914	881	845	766	687	571	309	179	134	119
103	962	947	918	885	849	770	690	573	311	181	135	120
104	967	951	922	890	854	774	693	576	313	182	136	121
105	971	956	926	895	858	778	697	579	315	184	137	122
106	976	960	931	899	863	783	700	582	317	185	138	123
107	980	965	935	904	868	787	704	585	319	187	139	124
108	984	969	939	908	872	791	707	588	322	188	140	124
109	989	973	944	912	877	796	711	591	324	189	141	125
110	991	976	947	916	880	800	715	594	326	191	142	126
111	991	977	948	918	883	803	718	597	329	192	143	127
112	991	977	949	919	885	807	721	600	331	194	145	128
113	991	977	950	920	887	809	724	603	333	195	146	129
114	991	978	951	922	888	812	727	606	335	197	147	130
115	992	979	952	923	891	814	730	609	338	198	148	131
116	993	980	954	925	892	816	732	611	340	200	149	132
117	994	981	955	927	894	819	735	614	342	201	150	133
118	996	982	957	929	897	821	737	616	344	203	151	133
119	997	984	958	931	899	824	740	619	346	205	152	135
120	998	985	960	932	901	826	742	621	348	206	154	135

TABLE 12**Temperatures Recorded in the Steel Section at the 'H' Position**

Time min.	1	3	5	8	11
0	14	14	14	14	14
1	19	18	17	14	14
2	29	25	22	14	14
3	45	37	31	16	14
4	58	48	39	19	14
5	72	58	48	22	14
6	88	70	56	25	14
7	103	83	66	30	14
8	120	96	77	34	14
9	136	110	88	39	14
10	154	124	100	45	14
11	174	141	114	50	14
12	192	157	127	56	14
13	209	174	141	64	14
14	225	190	154	72	14
15	243	206	169	81	14
16	262	223	183	90	15
17	283	241	198	100	15
18	305	260	214	107	15
19	326	277	230	115	15
20	345	295	245	127	16
21	365	312	260	137	16
22	385	331	276	147	17
23	404	349	292	157	17
24	423	366	308	166	18
25	441	383	323	176	19
26	458	399	338	186	20
27	475	415	352	195	21
28	490	431	366	204	22
29	506	446	380	213	23
30	520	460	393	222	25
31	534	475	407	230	26
32	551	491	421	239	28
33	568	507	436	248	30
34	582	521	449	256	32
35	595	534	461	265	34
36	605	545	472	272	36
37	616	557	483	279	39
38	628	568	494	287	41
39	640	581	506	294	44
40	653	593	518	302	46
41	665	605	529	310	48
42	676	617	540	317	50
43	685	627	549	323	53
44	693	636	558	329	55
45	702	646	568	335	58

TABLE 12 cont.**Temperatures Recorded in the Steel Section at the 'H' Position**

Time min.	1	3	5	8	11
46	711	656	577	341	61
47	719	665	586	347	64
48	726	674	595	353	68
49	733	683	604	359	72
50	741	691	612	366	78
51	748	698	619	372	82
52	755	705	626	378	87
53	763	711	633	384	90
54	771	717	640	390	93
55	778	723	647	396	95
56	785	729	653	402	96
57	793	735	660	407	97
58	800	742	666	412	98
59	807	748	671	417	99
60	813	755	677	422	99
61	819	761	682	427	100
62	825	768	687	432	100
63	831	774	691	436	101
64	837	780	695	441	101
65	841	784	698	444	102
66	846	789	702	448	104
67	851	794	706	452	105
68	855	798	709	456	106
69	859	802	712	459	108
70	864	806	716	463	109
71	867	810	719	466	110
72	872	814	722	470	111
73	876	819	726	473	112
74	881	824	730	476	113
75	885	828	734	480	113
76	889	832	738	483	114
77	893	837	743	486	115
78	896	841	747	489	116
79	901	846	751	493	117
80	904	850	755	496	118
81	908	854	759	499	119
82	912	859	764	503	120
83	915	863	768	506	120
84	919	868	773	509	121
85	923	872	777	512	122
86	926	876	782	515	123
87	929	880	786	519	124
88	932	884	790	522	125
89	935	887	794	525	126
90	939	892	799	528	126

TABLE 12 cont.**Temperatures Recorded in the Steel Section at the 'H' Position**

Time min.	1	3	5	8	11
91	942	896	803	531	127
92	946	900	807	535	128
93	949	903	811	538	129
94	950	905	815	541	130
95	951	907	818	544	131
96	952	909	821	547	132
97	952	911	824	550	133
98	954	913	827	553	134
99	955	915	829	555	134
100	957	917	832	558	136
101	959	920	835	561	137
102	961	922	838	564	138
103	965	926	842	566	138
104	969	930	846	569	139
105	974	934	850	572	140
106	978	939	855	574	141
107	983	943	859	577	142
108	987	948	864	580	143
109	991	952	868	584	144
110	995	955	872	587	145
111	995	957	875	590	146
112	994	957	877	593	147
113	994	958	879	596	149
114	994	959	881	598	150
115	994	960	883	601	151
116	995	961	885	603	152
117	996	962	887	606	153
118	997	964	889	608	154
119	999	965	891	611	155
120	1000	967	893	613	156

TABLE 13**Temperatures Recorded in the Steel Section at the 'I' Position**

Time min.	1	3	5	8	11
0	14	13	14	13	14
1	19	17	16	14	14
2	29	24	22	14	14
3	44	36	30	16	14
4	57	46	39	19	14
5	70	56	47	23	14
6	84	68	56	27	14
7	98	80	66	31	14
8	112	92	76	36	14
9	126	104	87	42	14
10	142	118	99	48	14
11	160	133	112	54	14
12	179	148	125	60	14
13	198	164	138	68	14
14	216	179	151	77	15
15	236	196	165	87	15
16	256	213	180	98	15
17	276	232	195	105	15
18	297	250	211	114	15
19	315	268	226	124	15
20	332	285	241	133	16
21	349	302	256	143	16
22	366	319	271	153	17
23	383	335	286	162	17
24	400	351	301	171	18
25	416	367	314	179	18
26	433	382	328	187	20
27	450	397	341	194	21
28	465	411	354	202	23
29	479	425	366	210	25
30	493	438	378	218	28
31	507	452	391	227	30
32	523	467	405	236	33
33	538	482	418	245	36
34	553	496	431	254	39
35	566	509	443	263	43
36	577	520	454	272	47
37	588	531	465	281	52
38	599	543	476	289	56
39	611	555	488	297	60
40	623	567	500	305	64
41	635	579	511	312	68
42	646	590	522	319	71
43	656	600	531	326	73
44	665	609	540	333	74
45	674	619	549	340	73

TABLE 13 cont.**Temperatures Recorded in the Steel Section at the 'I' Position**

Time min.	1	3	5	8	11
46	684	629	558	346	75
47	693	638	568	353	76
48	702	647	577	360	77
49	710	657	585	366	79
50	718	665	594	373	80
51	724	673	601	379	81
52	730	680	609	385	82
53	735	687	616	390	83
54	742	694	623	396	84
55	749	700	630	401	85
56	756	706	636	406	87
57	764	712	643	411	88
58	771	718	649	416	89
59	778	723	655	421	91
60	785	728	661	426	93
61	792	734	666	431	95
62	798	739	672	435	96
63	805	746	677	439	97
64	811	752	681	444	98
65	816	758	685	448	99
66	820	763	689	452	99
67	825	768	693	457	100
68	830	773	697	460	100
69	835	778	701	464	100
70	839	782	705	468	101
71	843	787	708	472	101
72	848	791	712	475	102
73	852	795	715	479	102
74	857	800	719	482	103
75	861	805	723	486	104
76	866	809	727	489	105
77	871	814	731	493	106
78	875	818	735	496	107
79	879	822	740	500	108
80	883	827	744	503	109
81	887	831	748	506	110
82	892	836	753	510	111
83	896	841	757	513	111
84	901	845	762	516	112
85	905	850	766	519	113
86	908	854	771	523	113
87	913	859	776	527	115
88	916	863	780	529	115
89	919	867	783	532	115
90	923	872	788	536	116

TABLE 13 cont.**Temperatures Recorded in the Steel Section at the 'I' Position**

Time min.	1	3	5	8	11
91	927	876	792	539	117
92	930	880	797	542	117
93	934	884	801	545	118
94	936	888	805	549	119
95	937	889	808	551	119
96	939	892	811	555	120
97	940	894	814	558	121
98	942	897	817	561	122
99	943	899	820	563	122
100	945	901	823	566	123
101	947	904	826	569	124
102	950	906	829	571	124
103	953	910	833	574	125
104	958	915	838	577	126
105	963	920	842	580	127
106	967	924	846	583	127
107	972	929	851	585	128
108	977	934	856	589	129
109	981	938	861	592	130
110	984	942	865	595	131
111	985	944	868	598	131
112	985	945	870	601	132
113	985	946	872	604	133
114	985	947	874	607	134
115	986	948	876	609	135
116	987	950	879	612	136
117	988	951	881	614	136
118	989	953	883	617	137
119	991	955	885	619	138
120	991	956	887	621	139

TABLE 14**Temperatures Recorded in the Steel Section at the 'J' Position**

Time min.	1	3	5	8	11
0	13	13	13	13	14
1	19	17	16	14	14
2	31	25	22	15	14
3	45	36	30	16	14
4	56	46	38	19	14
5	69	56	46	23	14
6	83	67	54	27	14
7	96	79	64	31	14
8	111	91	75	36	14
9	126	104	85	41	14
10	143	118	97	47	14
11	161	133	111	53	14
12	179	147	125	61	14
13	197	163	139	71	14
14	213	179	152	81	14
15	228	196	166	91	15
16	245	213	181	99	15
17	264	231	196	105	15
18	283	248	211	115	15
19	302	265	227	124	16
20	319	282	241	132	16
21	337	299	256	140	16
22	354	316	270	149	17
23	371	333	285	158	17
24	389	350	299	167	18
25	404	366	313	176	19
26	420	381	327	184	20
27	435	396	340	192	21
28	449	411	353	202	22
29	463	425	366	211	23
30	477	438	378	220	25
31	490	452	391	230	27
32	505	467	405	240	29
33	521	482	419	250	31
34	536	496	432	260	34
35	551	509	445	269	37
36	563	521	455	278	41
37	574	532	466	285	45
38	586	544	477	292	49
39	599	556	488	300	54
40	613	569	499	308	58
41	625	581	511	315	63
42	637	592	521	323	68
43	647	602	530	329	72
44	657	611	539	336	76
45	668	621	549	341	79

TABLE 14 cont.**Temperatures Recorded in the Steel Section at the 'J' Position**

Time min.	1	3	5	8	11
46	678	631	557	347	81
47	689	640	566	352	84
48	698	650	574	356	86
49	708	659	583	361	89
50	716	668	590	365	90
51	723	675	597	369	92
52	729	683	604	373	93
53	735	690	610	378	94
54	741	696	616	382	95
55	749	703	623	388	96
56	757	709	629	393	96
57	765	715	635	399	97
58	773	721	642	404	97
59	780	726	648	409	98
60	787	732	653	414	98
61	794	738	659	418	99
62	801	744	664	423	99
63	808	751	670	428	99
64	814	758	675	433	99
65	819	764	680	439	98
66	824	769	684	444	99
67	829	774	689	448	100
68	834	780	693	453	101
69	839	784	697	457	102
70	843	789	702	462	104
71	848	794	705	466	105
72	852	798	709	470	106
73	857	803	713	474	107
74	862	808	718	478	109
75	867	812	722	482	110
76	872	817	726	486	111
77	876	822	731	490	112
78	881	826	735	493	113
79	885	831	739	497	114
80	890	836	744	500	115
81	894	841	748	504	116
82	898	846	753	508	117
83	903	850	758	511	118
84	907	855	763	515	119
85	911	860	767	518	120
86	915	864	771	522	121
87	919	869	776	525	122
88	922	873	780	529	123
89	925	877	785	532	124
90	929	882	789	536	125

TABLE 14 cont.**Temperatures Recorded in the Steel Section at the 'J' Position**

Time min.	1	3	5	8	11
91	933	886	794	539	126
92	937	890	798	542	127
93	940	894	802	546	128
94	942	897	806	549	130
95	943	899	809	552	130
96	944	901	812	555	131
97	945	903	815	558	132
98	947	906	818	561	133
99	948	907	821	564	134
100	949	909	823	567	135
101	952	912	827	570	136
102	954	915	830	572	136
103	958	918	834	575	137
104	963	923	838	578	139
105	967	927	843	581	140
106	971	932	847	584	140
107	976	936	852	587	141
108	980	941	856	590	142
109	984	945	861	594	143
110	988	949	866	597	144
111	989	951	869	600	145
112	988	952	871	603	146
113	989	953	873	606	147
114	989	954	875	609	148
115	989	955	877	611	149
116	990	956	879	614	150
117	992	958	882	616	150
118	993	959	884	619	152
119	994	961	886	621	153
120	995	962	888	624	154

TABLE 15**Temperatures Recorded in the Steel Section at the 'K' Position**

Time min.	1	3	5	8	11
0	14	14	13	13	14
1	19	18	16	14	14
2	30	26	22	14	14
3	45	36	30	16	14
4	57	46	37	19	14
5	69	55	45	22	14
6	83	66	53	26	14
7	97	77	61	30	14
8	111	89	71	35	14
9	125	100	81	40	14
10	141	113	92	45	14
11	159	129	104	51	14
12	177	144	117	56	14
13	194	159	129	63	14
14	212	174	142	71	14
15	231	190	155	80	15
16	250	206	169	89	15
17	269	223	183	98	15
18	290	241	198	104	15
19	309	258	213	114	15
20	328	274	227	123	16
21	346	290	241	130	16
22	365	307	255	139	16
23	382	323	269	147	17
24	399	339	283	152	17
25	415	353	295	157	18
26	430	367	308	162	19
27	446	382	320	167	21
28	459	395	331	173	23
29	473	408	342	180	26
30	486	421	354	189	29
31	500	434	366	197	34
32	515	449	379	206	38
33	530	463	392	216	43
34	544	478	405	226	48
35	557	490	418	236	53
36	566	501	429	246	58
37	577	513	440	256	62
38	588	524	452	266	66
39	600	536	464	274	70
40	613	549	475	282	74
41	625	561	487	289	78
42	636	572	498	293	81
43	646	582	507	299	83
44	655	591	516	307	85
45	665	601	526	314	88

TABLE 15 cont.**Temperatures Recorded in the Steel Section at the 'K' Position**

Time min.	1	3	5	8	11
46	675	611	535	322	90
47	685	621	545	329	92
48	694	631	554	336	93
49	704	640	563	343	94
50	712	649	572	350	94
51	719	657	580	357	95
52	725	665	587	364	95
53	731	672	595	370	95
54	737	680	602	377	96
55	744	687	610	383	96
56	751	693	617	389	96
57	758	700	624	395	96
58	766	707	631	401	97
59	773	713	638	407	97
60	780	718	644	413	97
61	787	724	651	418	98
62	794	730	657	424	98
63	800	735	663	429	98
64	806	741	668	434	99
65	811	747	673	439	99
66	816	752	678	444	100
67	820	757	682	449	101
68	825	762	686	453	102
69	830	766	690	457	103
70	834	771	694	461	104
71	838	775	698	465	105
72	842	779	701	469	106
73	847	784	705	473	108
74	852	788	708	476	108
75	857	793	712	480	110
76	861	797	716	484	110
77	866	802	719	487	111
78	871	806	724	491	112
79	875	810	727	494	114
80	879	815	731	497	116
81	884	820	735	501	115
82	888	824	739	504	117
83	893	829	744	508	117
84	896	833	748	511	118
85	900	838	752	514	118
86	905	843	757	518	120
87	908	847	761	521	120
88	912	851	765	524	121
89	915	855	770	528	122
90	919	860	774	531	123

TABLE 15 cont.**Temperatures Recorded in the Steel Section at the 'K' Position**

Time min.	1	3	5	8	11
91	923	865	779	534	124
92	927	869	783	537	124
93	930	873	787	541	126
94	932	876	791	544	126
95	934	879	795	548	129
96	935	881	798	551	129
97	936	884	801	554	129
98	938	886	804	557	130
99	940	888	807	559	131
100	942	891	810	562	133
101	944	893	813	565	133
102	946	897	817	568	134
103	951	901	820	571	136
104	955	905	824	573	136
105	960	910	829	576	136
106	964	914	833	579	137
107	969	919	838	582	138
108	974	924	843	586	140
109	978	928	847	589	140
110	981	932	852	592	141
111	982	934	855	595	143
112	983	935	858	598	144
113	983	936	860	601	144
114	983	937	862	604	144
115	984	939	864	607	147
116	985	940	867	609	147
117	986	942	869	612	147
118	987	943	871	614	148
119	988	945	874	617	149
120	990	947	876	619	150

TABLE 16**Temperatures Recorded in the Steel Section at the 'L' Position**

Time min.	1	3	5	8	11
0	14	13	13	13	14
1	19	17	16	13	14
2	29	24	21	14	14
3	44	34	28	16	14
4	55	43	34	18	14
5	67	52	42	21	14
6	81	62	50	25	14
7	94	72	57	29	14
8	107	83	65	33	14
9	120	95	74	37	14
10	136	107	85	42	14
11	153	120	95	48	14
12	169	134	107	53	14
13	183	147	119	60	14
14	197	161	131	67	14
15	212	175	144	76	15
16	229	190	156	85	15
17	247	205	169	95	15
18	267	222	183	102	15
19	286	238	197	110	16
20	305	254	211	119	16
21	323	270	225	128	16
22	343	287	239	136	17
23	362	304	253	144	17
24	380	320	266	152	18
25	398	336	280	160	19
26	415	352	293	170	20
27	431	367	307	179	21
28	447	382	320	189	23
29	462	397	333	199	26
30	477	411	345	207	30
31	493	426	358	215	35
32	509	442	371	224	43
33	526	457	385	232	52
34	541	472	398	240	63
35	554	485	409	247	71
36	565	497	420	254	78
37	577	509	430	260	83
38	589	521	440	266	86
39	602	533	451	273	89
40	615	545	462	280	92
41	627	557	473	288	94
42	638	569	483	295	96
43	648	579	493	303	97
44	657	589	503	309	98
45	667	599	513	315	98

TABLE 16 cont.**Temperatures Recorded in the Steel Section at the 'L' Position**

Time min.	1	3	5	8	11
46	677	609	522	321	99
47	687	619	531	328	99
48	696	629	541	334	99
49	706	639	550	341	99
50	714	648	559	348	99
51	721	656	567	355	100
52	726	664	575	362	100
53	732	671	582	368	100
54	738	678	590	374	100
55	744	685	597	380	101
56	751	692	605	386	101
57	758	698	612	392	102
58	766	705	619	398	102
59	773	711	626	404	103
60	780	716	632	410	103
61	787	721	638	415	104
62	793	726	644	421	104
63	799	732	650	426	105
64	805	738	656	431	105
65	810	743	661	436	106
66	815	748	665	440	107
67	820	753	670	445	108
68	824	759	674	449	108
69	829	763	678	453	109
70	833	768	682	457	110
71	838	773	685	461	111
72	842	777	689	465	112
73	847	782	693	469	113
74	852	787	697	472	114
75	857	792	700	476	115
76	862	796	704	479	115
77	866	801	707	482	116
78	871	805	711	486	117
79	875	810	714	489	118
80	879	814	718	492	119
81	884	819	721	495	120
82	888	823	725	499	121
83	893	828	729	502	122
84	897	832	733	505	122
85	901	837	737	508	123
86	905	841	741	511	124
87	909	845	745	515	125
88	912	850	749	518	126
89	916	854	754	521	127
90	919	858	758	524	127

TABLE 16 cont.**Temperatures Recorded in the Steel Section at the 'L' Position**

Time min.	1	3	5	8	11
91	924	863	762	527	128
92	927	867	766	530	129
93	931	871	770	534	130
94	932	874	774	537	131
95	933	877	777	540	133
96	934	879	780	543	134
97	936	881	783	546	134
98	938	884	786	549	135
99	939	886	789	552	135
100	941	888	792	554	137
101	943	891	795	557	137
102	945	894	798	560	138
103	949	897	802	563	140
104	954	902	806	565	140
105	959	906	810	568	141
106	963	911	814	571	142
107	968	916	819	574	143
108	972	920	823	577	144
109	976	924	828	580	145
110	980	928	832	583	146
111	981	931	835	586	147
112	981	932	838	589	148
113	981	933	841	592	149
114	981	935	844	595	149
115	982	936	846	597	150
116	983	938	849	600	151
117	984	940	851	603	152
118	986	942	854	605	153
119	987	943	856	608	154
120	989	945	859	611	155

TABLE 17**Temperatures Recorded in the Steel Section at the 'M' Position**

Time min.	1	3	5	8	11
0	13	13	13	13	14
1	18	16	15	13	14
2	25	22	19	14	14
3	36	30	26	15	14
4	46	39	32	18	14
5	56	47	39	21	14
6	67	56	47	24	14
7	78	65	53	28	14
8	89	74	60	32	14
9	100	84	69	36	14
10	112	95	78	40	14
11	126	106	87	45	14
12	140	118	97	50	14
13	154	130	107	55	14
14	167	142	117	61	14
15	181	154	128	67	14
16	196	167	139	74	14
17	212	180	150	82	15
18	228	194	162	90	15
19	245	209	174	98	15
20	260	222	186	104	15
21	276	237	197	110	15
22	292	251	210	116	16
23	307	264	221	126	16
24	322	278	233	134	16
25	336	291	245	141	17
26	350	305	257	149	17
27	364	318	269	157	18
28	378	330	280	164	18
29	391	342	291	171	19
30	404	355	302	178	20
31	417	367	313	186	20
32	431	380	325	193	21
33	445	393	337	201	22
34	459	407	348	207	23
35	471	419	359	213	24
36	482	430	368	220	25
37	494	441	378	226	27
38	505	452	388	232	28
39	517	464	399	238	29
40	530	476	409	245	31
41	541	488	419	251	32
42	553	499	430	257	34
43	563	509	439	264	35
44	573	519	448	270	37
45	583	529	457	276	39

TABLE 17 cont.**Temperatures Recorded in the Steel Section at the 'M' Position**

Time min.	1	3	5	8	11
46	593	539	466	282	40
47	603	549	475	287	42
48	613	559	483	293	44
49	623	569	492	300	45
50	633	579	501	306	47
51	641	587	509	313	48
52	649	595	517	319	50
53	657	603	524	325	52
54	665	611	532	331	54
55	673	619	539	337	56
56	680	627	547	343	57
57	688	634	554	349	60
58	695	642	562	354	62
59	702	650	569	360	64
60	709	657	576	365	67
61	715	664	582	371	70
62	720	670	589	376	73
63	726	677	595	382	77
64	732	683	602	387	80
65	737	689	607	392	83
66	742	694	613	397	86
67	747	698	618	402	89
68	752	703	623	407	92
69	757	707	628	411	94
70	762	711	633	416	96
71	767	715	637	420	98
72	771	718	642	424	99
73	776	722	647	429	100
74	781	726	651	433	101
75	786	730	655	437	101
76	791	735	660	441	102
77	796	739	664	445	102
78	800	744	668	449	103
79	805	749	672	453	103
80	810	753	676	456	104
81	815	758	680	460	104
82	820	763	683	463	105
83	825	768	687	467	106
84	830	773	690	470	107
85	835	778	694	474	107
86	840	782	697	477	108
87	844	786	701	480	108
88	849	791	704	483	109
89	853	795	707	486	110
90	857	799	711	490	110

TABLE 17 cont.**Temperatures Recorded in the Steel Section at the 'M' Position**

Time min.	1	3	5	8	11
91	862	804	714	493	111
92	866	808	718	496	112
93	871	812	721	499	113
94	874	816	724	502	114
95	876	819	727	505	115
96	878	822	730	508	115
97	881	825	733	510	116
98	883	828	736	513	117
99	886	831	739	516	117
100	888	834	741	518	118
101	891	836	744	521	119
102	894	840	747	524	119
103	897	843	751	526	120
104	902	848	754	529	120
105	907	853	759	531	121
106	911	857	762	534	122
107	915	862	767	537	123
108	920	866	771	540	123
109	925	871	775	542	124
110	929	876	779	545	125
111	932	879	783	548	126
112	933	882	786	551	127
113	934	884	789	553	128
114	936	886	791	556	129
115	937	888	794	559	130
116	939	891	797	561	130
117	941	893	800	564	131
118	943	896	803	566	132
119	945	898	805	569	133
120	947	900	808	571	134

TABLE 18**Horizontal Temperature Profiles in the Steel Section**

Time min.	1	2	3	4	5	6	7	8	9	10
0	13	13	13	13	13	13	13	14	14	13
1	13	13	13	13	13	13	13	14	14	13
2	13	13	13	13	13	13	13	14	14	13
3	13	14	13	14	13	14	14	14	14	14
4	13	14	13	14	14	14	14	14	14	14
5	14	14	14	14	14	14	14	14	14	14
6	14	15	14	15	15	15	15	15	15	15
7	15	15	15	15	15	15	15	15	15	15
8	16	16	16	16	16	16	16	16	16	16
9	17	17	17	18	18	17	17	17	17	17
10	18	19	19	19	19	18	19	19	19	19
11	20	20	20	21	21	20	20	20	20	20
12	22	22	22	23	22	21	22	22	22	22
13	23	24	24	24	24	23	23	24	23	24
14	25	25	25	26	26	24	25	25	25	25
15	27	27	27	28	27	27	27	27	27	27
16	29	30	29	30	29	29	30	30	29	30
17	32	33	32	33	32	32	33	33	32	32
18	35	36	35	36	35	35	36	36	35	36
19	39	40	39	40	38	39	40	40	39	40
20	43	44	43	44	42	43	44	44	43	45
21	48	48	47	48	46	48	49	50	48	51
22	53	53	52	52	50	54	55	55	54	58
23	59	59	57	57	54	60	62	61	60	68
24	65	66	63	62	58	67	69	68	66	85
25	72	74	69	68	64	74	76	76	74	92
26	80	82	76	75	70	83	84	83	80	97
27	88	92	84	85	77	92	93	91	86	99
28	98	97	95	96	85	97	98	97	90	101
29	102	100	100	100	93	100	101	100	94	103
30	103	102	103	103	97	102	103	103	96	105
31	103	103	105	104	99	104	105	104	99	108
32	105	104	106	106	100	109	104	105	101	109
33	108	105	109	108	102	112	105	107	103	111
34	115	106	109	112	105	113	108	111	103	113
35	118	115	116	116	108	115	111	114	105	120
36	123	123	122	120	110	120	115	117	107	125
37	126	128	127	124	113	123	118	122	116	129
38	130	133	130	127	115	126	119	127	124	134
39	135	137	135	130	116	129	121	131	130	138
40	139	141	138	133	117	133	126	135	134	142
41	143	145	142	135	118	138	132	139	138	146
42	146	148	145	138	119	141	136	143	142	150
43	150	151	148	141	121	145	141	147	146	153
44	154	154	151	145	122	148	144	151	150	157
45	157	157	154	147	127	149	147	155	154	161

TABLE 18 cont.**Horizontal Temperature Profiles in the Steel Section**

Time min.	1	2	3	4	5	6	7	8	9	10
46	161	160	157	150	128	150	150	159	158	164
47	164	163	160	153	131	151	151	163	162	168
48	167	166	163	157	135	153	156	166	166	171
49	170	169	166	160	140	156	161	170	170	174
50	174	172	169	164	145	159	166	174	174	178
51	178	176	173	168	150	163	169	178	177	181
52	182	180	177	172	155	166	172	182	181	185
53	186	183	180	176	161	170	177	185	185	188
54	190	187	184	180	167	175	181	189	188	192
55	194	191	187	184	172	180	185	192	192	195
56	198	195	191	188	177	186	190	196	195	198
57	202	199	194	191	181	190	193	200	199	201
58	206	203	197	195	185	194	196	203	202	204
59	210	206	201	198	189	198	200	206	205	207
60	213	210	204	202	193	201	203	209	208	210
61	217	213	207	205	197	205	206	212	211	213
62	220	216	211	209	201	208	209	215	214	216
63	223	220	214	213	205	212	212	218	217	219
64	226	223	217	216	209	216	216	222	220	222
65	230	227	221	220	213	218	219	225	223	224
66	233	230	224	223	216	221	222	228	226	227
67	236	233	227	227	220	224	225	231	229	230
68	239	236	231	230	223	227	228	233	231	233
69	242	239	234	233	227	230	231	236	234	235
70	245	242	237	237	230	233	234	239	237	238
71	247	245	240	240	233	236	236	242	239	241
72	250	248	242	243	236	239	239	244	242	243
73	253	250	245	246	239	241	242	247	245	246
74	255	253	248	248	242	244	245	250	248	249
75	258	256	251	251	245	247	247	252	250	251
76	260	258	253	254	248	249	250	255	253	254
77	263	261	256	257	251	252	253	258	256	257
78	265	263	258	259	254	254	255	260	258	259
79	267	266	261	262	256	257	257	262	261	261
80	270	268	263	264	259	259	260	265	263	263
81	273	271	266	267	262	261	262	267	266	266
82	275	273	268	270	264	264	265	269	268	268
83	277	275	270	272	267	266	267	272	270	270
84	279	277	273	275	269	268	270	274	273	273
85	281	280	275	277	272	271	272	276	275	275
86	284	282	277	280	275	273	274	279	278	277
87	286	284	280	282	277	275	277	281	280	280
88	288	286	282	284	280	277	279	283	282	282
89	290	288	284	287	282	279	282	286	285	284
90	292	291	286	289	285	282	284	288	287	286

TABLE 18 cont.**Horizontal Temperature Profiles in the Steel Section**

Time min.	1	2	3	4	5	6	7	8	9	10
91	294	293	289	292	287	284	286	290	289	289
92	296	295	291	294	290	286	288	293	292	291
93	298	297	293	296	292	288	291	295	294	293
94	300	299	295	298	294	290	293	297	296	295
95	303	301	298	301	297	292	295	300	298	298
96	305	304	300	303	299	294	297	302	301	300
97	307	306	302	305	301	296	300	304	303	302
98	309	308	304	308	304	298	302	306	305	305
99	311	310	306	310	306	301	304	308	307	306
100	313	312	308	312	308	303	306	311	309	309
101	315	314	310	314	310	305	309	313	312	311
102	318	317	313	317	313	307	311	315	314	313
103	319	318	315	319	315	309	313	317	316	315
104	321	320	317	321	317	311	315	320	318	317
105	324	323	319	323	319	314	317	322	320	319
106	326	325	321	325	321	316	319	324	322	321
107	328	327	323	327	323	318	322	326	324	324
108	330	329	325	330	326	320	324	328	326	326
109	331	330	326	331	327	322	325	330	328	326
110	334	333	328	333	330	323	327	332	330	328
111	336	334	330	336	332	325	329	334	333	330
112	338	336	332	338	334	327	331	336	335	332
113	340	338	334	340	336	330	333	339	337	335
114	342	340	337	343	339	331	335	341	339	337
115	344	342	339	344	341	333	337	343	341	339
116	346	344	341	346	343	335	339	345	343	341
117	349	347	343	349	345	337	341	347	345	343
118	351	349	345	351	347	339	343	349	347	345
119	353	351	347	353	349	342	346	351	349	347
120	355	353	349	355	351	343	347	353	351	349

TABLE 19**Temperatures Recorded on the Steel Decking**

Time min.	B	D	F
0	14	13	14
1	25	14	24
2	47	17	47
3	59	23	59
4	66	31	74
5	75	39	102
6	91	48	128
7	122	59	153
8	155	70	174
9	178	82	197
10	199	89	220
11	219	94	239
12	235	99	236
13	243	103	260
14	265	106	271
15	273	111	282
16	278	116	298
17	261	125	317
18	269	133	333
19	290	144	349
20	295	156	359
21	301	168	369
22	307	180	379
23	315	193	383
24	322	205	387
25	328	218	390
26	336	230	394
27	342	242	400
28	348	254	409
29	353	264	416
30	359	274	422
31	366	284	429
32	373	294	431
33	381	305	443
34	387	316	450
35	392	328	450
36	400	338	452
37	418	348	454
38	445	358	460
39	470	368	470
40	491	379	511
41	512	389	537
42	533	401	549
43	545	413	558
44	554	424	564
45	563	435	573

TABLE 19 cont.**Temperatures Recorded on the Steel Decking**

Time min.	B	D	F
46	572	447	580
47	580	458	588
48	589	468	593
49	595	478	602
50	597	489	605
51	597	499	608
52	598	511	613
53	600	521	620
54	602	531	629
55	606	541	638
56	607	550	647
57	610	559	657
58	616	569	664
59	623	578	675
60	631	587	684
61	637	597	693
62	647	606	704
63	657	615	713
64	664	624	719
65	673	632	737
66	681	640	746
67	690	647	754
68	699	655	761
69	708	662	768
70	718	669	773
71	728	675	780
72	735	682	785
73	743	688	793
74	750	695	799
75	757	702	804
76	763	708	811
77	768	715	817
78	776	721	821
79	783	727	826
80	788	733	831
81	794	740	837
82	800	746	843
83	806	753	848
84	812	759	854
85	816	765	858
86	822	771	862
87	826	777	868
88	833	782	872
89	837	787	876
90	842	792	882

TABLE 19 cont.**Temperatures Recorded on the Steel Decking**

Time min.	B	D	F
91	847	797	888
92	851	801	0
93	856	805	0
94	855	809	0
95	856	812	0
96	856	815	0
97	858	818	0
98	860	820	0
99	862	822	0
100	865	825	0
101	869	827	0
102	873	830	0
103	877	833	0
104	884	835	0
105	888	838	0
106	893	841	0
107	900	844	0
108	903	847	0
109	912	851	0
110	915	854	0
111	914	858	0
112	913	860	0
113	915	863	0
114	915	865	0
115	917	867	0
116	920	869	0
117	921	871	0
118	923	874	0
119	924	876	0
120	926	878	0

TABLE 20**Temperatures Recorded in the Concrete at the 'F' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
0	13	13	13	14	13	13	13	13	13	14	13	13
1	13	13	13	14	13	13	13	14	13	16	14	14
2	13	13	13	14	13	13	13	13	13	21	15	14
3	14	13	13	14	13	13	14	14	13	26	18	15
4	14	13	13	14	13	13	15	14	13	30	21	16
5	16	13	13	16	13	13	16	14	13	33	23	18
6	17	13	13	17	13	14	18	14	13	35	25	20
7	20	14	13	19	13	14	21	14	13	38	26	21
8	22	14	13	22	13	14	24	15	14	41	27	23
9	25	14	13	25	14	14	28	15	14	45	29	25
10	29	15	13	28	14	15	32	16	14	49	30	27
11	33	15	14	33	14	15	37	17	14	60	31	29
12	37	16	14	43	14	16	45	17	14	73	33	31
13	43	16	14	53	15	16	54	18	14	81	36	33
14	51	18	14	64	15	17	61	19	15	87	43	36
15	61	19	14	78	16	18	67	20	15	91	48	38
16	72	20	15	92	16	18	72	21	16	94	52	41
17	81	22	15	96	17	19	76	22	16	96	56	43
18	88	23	15	99	18	20	79	24	16	98	59	45
19	93	25	16	99	19	21	83	26	17	101	61	48
20	97	28	16	100	21	22	86	28	18	104	64	50
21	101	30	17	101	22	23	89	30	18	106	65	52
22	103	33	18	101	24	24	92	32	19	108	67	54
23	103	36	19	102	26	25	96	33	20	109	68	56
24	103	40	20	101	28	26	100	35	20	111	70	58
25	103	44	21	101	30	27	103	37	21	113	71	60
26	103	49	22	101	32	28	105	38	22	115	72	62
27	104	53	23	102	34	29	108	40	23	117	74	65
28	105	58	24	102	36	30	111	42	24	119	76	67
29	107	62	26	102	39	31	113	43	25	121	78	69
30	111	65	28	102	41	33	115	45	26	124	80	71
31	114	68	30	103	43	34	118	47	27	127	81	73
32	118	71	32	106	46	35	120	49	29	129	84	76
33	122	73	34	109	48	37	122	50	30	132	86	78
34	127	75	36	113	50	38	124	52	31	131	88	80
35	135	77	39	118	53	40	128	54	33	132	90	83
36	143	79	41	123	55	41	132	56	35	133	92	85
37	151	81	44	128	57	42	137	58	36	135	94	87
38	159	83	46	134	60	44	141	61	38	137	97	90
39	166	84	49	140	62	46	146	63	40	141	99	92
40	174	86	52	146	64	47	151	65	41	150	103	94
41	181	87	56	152	66	49	156	67	43	159	106	97
42	187	88	59	157	68	51	162	69	45	168	110	99
43	195	89	62	162	70	53	168	72	47	184	114	100
44	202	91	65	168	72	55	173	74	49	207	118	102
45	209	92	67	175	74	56	179	76	51	231	122	104

TABLE 20 cont.**Temperatures Recorded in the Concrete at the 'F' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
46	216	93	69	182	77	58	186	79	53	253	124	105
47	223	95	71	189	80	61	192	82	55	272	126	105
48	230	97	72	196	83	63	199	85	57	290	128	106
49	237	98	73	203	85	65	205	89	59	307	128	107
50	244	99	75	209	88	67	212	91	61	323	128	108
51	251	100	76	216	89	70	220	94	63	338	129	110
52	258	101	78	223	91	72	227	96	66	353	132	112
53	264	101	79	229	93	74	234	98	68	367	136	115
54	270	102	81	236	94	77	242	100	70	381	141	117
55	277	103	83	243	95	79	249	102	72	395	146	120
56	282	103	84	249	97	81	257	103	74	409	152	122
57	289	105	86	255	97	83	264	105	76	423	159	124
58	293	104	86	261	98	85	271	106	78	437	167	126
59	299	105	88	268	99	87	278	107	80	451	175	128
60	304	105	88	274	101	89	285	107	82	464	183	131
61	309	105	89	279	102	91	292	107	84	477	191	133
62	315	105	90	285	103	93	299	107	86	489	200	136
63	320	106	92	292	104	94	306	107	88	502	208	140
64	325	106	93	298	104	96	313	107	90	514	217	144
65	330	106	93	303	105	98	320	106	92	525	225	148
66	335	107	94	309	105	99	326	106	94	535	234	153
67	340	108	96	315	105	101	333	106	95	545	242	158
68	345	108	96	320	105	102	340	106	96	555	251	162
69	351	111	98	327	105	103	346	106	97	565	259	168
70	355	111	98	332	105	103	353	106	98	575	267	173
71	360	112	99	338	105	104	360	106	99	584	276	178
72	365	113	99	343	105	104	366	107	100	592	284	184
73	370	115	101	349	105	104	372	108	101	601	292	189
74	375	117	101	355	105	104	379	109	101	609	300	195
75	379	118	102	360	105	104	385	111	102	617	308	200
76	385	120	103	366	105	104	391	112	103	625	316	206
77	391	122	105	372	105	104	397	114	103	633	324	211
78	394	122	104	377	105	104	403	116	103	640	331	217
79	399	124	104	383	105	104	409	118	103	647	339	222
80	404	125	104	388	105	104	415	119	103	654	346	227
81	409	127	105	394	105	104	421	122	103	660	354	232
82	414	129	105	399	105	105	427	124	103	666	361	237
83	418	131	105	404	106	107	433	127	103	671	368	241
84	424	134	106	410	106	109	438	130	104	677	375	246
85	428	135	106	415	107	111	444	133	104	682	382	251
86	432	137	106	420	107	113	449	137	104	687	389	256
87	437	140	107	425	108	114	455	140	103	691	396	260
88	441	142	107	430	109	115	460	143	104	695	402	265
89	446	145	108	435	110	116	465	147	104	698	409	269
90	451	148	109	441	111	117	471	152	105	702	415	274

TABLE 20 cont.**Temperatures Recorded in the Concrete at the 'F' Position**

Time min.	1	2	3	4	5	6	7	8	9	10	11	12
91	455	150	109	446	111	118	476	154	104	704	421	278
92	459	153	110	450	113	119	480	158	105	706	428	282
93	464	155	110	455	114	119	485	162	105	709	434	286
94	468	158	111	460	115	121	490	166	105	710	439	290
95	472	161	111	465	117	122	495	171	106	712	445	295
96	476	164	112	469	119	123	499	175	106	713	451	299
97	481	167	112	474	120	124	504	179	107	715	456	303
98	485	169	113	478	122	125	508	183	107	717	461	306
99	489	172	113	482	124	127	512	188	108	719	466	310
100	493	175	114	487	127	128	516	192	109	721	471	314
101	497	178	115	491	131	130	520	196	110	724	475	317
102	501	182	116	495	135	133	524	201	111	726	480	321
103	505	185	116	500	138	135	528	206	112	0	485	324
104	509	188	117	504	142	136	532	210	113	0	489	328
105	513	191	118	508	145	139	536	215	114	0	494	331
106	516	194	118	512	149	141	540	219	115	0	498	334
107	520	197	119	516	153	143	543	223	116	0	502	338
108	524	201	120	520	157	146	548	228	118	0	507	341
109	527	204	121	524	160	148	552	232	118	0	511	345
110	530	208	122	528	165	150	556	236	119	0	516	348
111	534	210	122	531	169	152	560	240	121	0	520	352
112	537	213	123	535	172	155	564	244	122	0	525	355
113	540	216	124	539	176	157	568	248	123	0	529	358
114	544	220	125	542	181	159	572	252	124	0	533	362
115	547	223	125	546	185	162	576	256	126	0	537	365
116	550	226	127	550	189	164	579	260	127	0	541	368
117	554	229	127	553	192	166	583	264	129	0	545	371
118	558	232	128	557	196	169	586	268	131	0	549	375
119	562	235	129	561	200	171	590	272	132	0	553	378
120	566	239	131	565	203	174	594	276	135	0	557	381

TABLE 21

Temperatures Recorded in the Concrete at the 'G' Position

Time min.	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
0	13	13	13	14	13	14	14	14	13	14	13	14	14	14	0	14	14	14
1	13	13	13	14	14	14	14	14	13	14	14	14	17	14	0	19	14	14
2	13	13	13	14	13	14	14	14	13	14	14	14	25	14	0	26	14	14
3	14	13	13	14	14	14	14	14	13	15	14	14	33	14	0	35	15	14
4	15	13	13	14	14	14	14	14	13	17	14	14	42	14	0	44	16	14
5	17	13	13	15	14	14	15	14	13	20	14	14	51	15	0	53	17	14
6	19	13	13	16	14	14	17	14	13	23	14	14	60	16	0	64	19	15
7	22	14	13	18	14	14	19	14	13	27	14	14	70	17	0	87	21	16
8	25	14	13	20	14	14	21	14	13	31	14	14	81	18	0	91	23	17
9	29	14	13	23	14	14	24	14	13	36	15	14	87	20	0	93	25	18
10	33	14	14	25	14	14	27	14	14	42	15	14	92	21	0	95	28	19
11	37	15	14	29	14	14	31	14	14	47	16	14	99	23	0	96	31	21
12	42	15	14	32	14	14	35	15	14	53	16	14	107	25	0	99	34	22
13	48	15	14	36	15	14	39	15	14	59	17	15	115	28	0	110	38	24
14	54	16	14	41	15	14	44	16	14	65	18	15	122	31	0	121	41	26
15	60	17	14	45	16	14	48	16	14	71	19	15	130	34	0	132	44	28
16	66	18	14	50	17	14	52	17	14	75	20	16	138	36	0	143	47	30
17	73	19	15	55	18	14	56	18	14	78	21	16	147	39	0	154	50	32
18	79	21	15	60	19	15	60	19	15	82	23	17	157	42	0	168	53	34
19	86	22	15	65	20	15	63	20	15	85	24	17	168	45	0	183	56	36
20	96	24	16	69	21	15	67	22	15	88	26	18	178	47	0	196	60	39
21	104	27	16	74	23	16	70	23	16	91	27	18	189	50	0	210	63	41
22	106	30	17	78	25	16	73	25	16	94	29	19	201	53	0	225	68	44
23	107	34	18	81	27	17	76	27	17	97	31	20	213	56	0	241	75	47
24	106	39	18	84	29	17	79	29	17	99	34	20	224	59	0	258	84	50
25	106	43	19	87	32	18	82	31	18	102	36	21	236	63	0	274	91	52

TABLE 21 cont.

Temperatures Recorded in the Concrete at the 'G' Position

Time min.	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
26	105	47	21	89	35	19	84	33	19	105	38	22	248	66	0	291	97	55
27	105	51	22	91	37	20	87	36	19	108	40	23	258	70	0	309	102	59
28	105	54	23	93	40	21	89	38	20	111	43	24	271	74	0	327	107	63
29	108	57	25	95	43	22	91	41	21	115	45	25	284	78	0	345	111	66
30	112	60	27	96	45	23	94	43	22	119	48	26	295	82	0	361	114	69
31	116	63	29	98	48	25	96	46	24	123	50	28	306	86	0	375	116	69
32	120	66	31	99	51	26	98	48	25	127	52	29	316	91	0	392	117	70
33	126	69	34	101	53	28	100	51	26	129	55	30	327	96	0	409	118	71
34	132	71	36	102	56	30	103	53	28	131	57	31	341	101	0	425	119	72
35	138	73	40	103	58	32	104	56	29	133	59	33	358	106	0	440	119	73
36	145	75	44	104	61	34	104	58	31	135	61	34	374	111	0	453	119	76
37	152	77	48	105	63	36	105	60	32	137	64	36	392	115	0	467	118	78
38	160	79	52	106	65	39	105	62	34	140	66	37	409	118	0	481	118	80
39	168	80	55	109	67	41	105	65	36	143	69	39	426	121	0	494	118	82
40	176	82	59	112	70	44	106	67	38	147	71	40	442	123	0	507	118	84
41	184	83	61	115	72	46	108	69	39	152	74	42	457	125	0	521	119	92
42	192	84	64	118	73	48	112	71	41	157	77	43	472	126	0	534	120	99
43	201	86	66	121	75	50	115	73	43	164	81	45	484	127	0	545	121	101
44	209	87	68	125	77	52	119	75	45	175	84	47	495	128	0	556	123	101
45	217	88	69	129	79	54	124	78	47	186	88	49	507	129	0	568	125	102
46	226	89	71	133	81	56	129	80	49	198	91	50	520	129	0	581	127	102
47	234	90	72	137	83	57	135	82	50	209	94	52	532	129	0	593	129	102
48	241	92	73	142	85	59	141	85	52	219	97	54	542	128	0	604	132	102
49	249	93	74	147	86	60	147	87	54	230	100	56	552	128	0	615	135	102
50	257	94	76	153	88	62	155	89	56	240	103	58	562	127	0	626	140	102

TABLE 21 cont.

Temperatures Recorded in the Concrete at the 'G' Position

Time min.	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
51	264	95	77	159	90	63	162	91	57	250	106	60	572	127	0	635	145	102
52	272	95	78	166	91	65	170	93	59	260	108	62	581	127	0	644	150	102
53	279	96	79	173	93	66	177	95	61	269	111	65	590	128	0	652	156	102
54	287	97	80	180	94	68	184	97	63	278	112	67	599	129	0	661	161	102
55	294	98	81	187	95	69	191	99	64	287	114	69	608	131	0	670	167	102
56	302	99	81	195	96	70	198	100	66	295	115	71	617	134	0	678	173	102
57	309	100	82	202	97	71	205	102	68	304	115	73	626	137	0	687	179	102
58	316	101	83	209	98	73	212	103	69	312	116	75	635	141	0	694	185	102
59	323	102	84	216	99	74	220	104	71	320	116	77	644	146	0	702	191	102
60	330	103	85	223	100	75	227	105	72	328	116	79	652	152	0	710	197	102
61	337	104	86	231	101	77	234	106	74	336	116	82	660	158	0	717	203	102
62	344	104	86	238	102	78	241	107	76	343	116	84	668	165	0	724	209	103
63	350	105	87	245	103	79	248	107	77	351	117	86	676	172	0	732	215	106
64	357	105	88	252	104	80	255	108	79	358	117	88	683	180	0	738	222	108
65	363	105	89	259	104	81	261	109	80	365	116	90	690	187	0	744	228	110
66	370	105	89	265	105	82	268	110	82	373	116	91	697	194	0	748	234	113
67	376	106	90	272	106	84	275	111	83	380	116	93	703	201	0	754	240	115
68	382	106	91	279	106	85	281	111	84	387	115	94	709	208	0	759	246	118
69	388	106	91	285	107	86	287	112	86	393	115	95	714	215	0	764	252	121
70	394	107	92	291	108	87	293	112	87	400	114	96	720	221	0	769	258	124
71	400	107	93	298	109	88	300	112	88	407	114	96	726	228	0	774	264	127
72	406	108	94	304	109	89	306	112	89	413	114	97	732	234	0	779	270	131
73	411	109	94	310	109	90	312	112	90	419	113	98	737	241	0	784	276	135
74	417	111	95	316	110	91	318	112	92	425	113	98	743	247	0	789	282	139
75	423	112	96	322	110	92	324	113	93	431	113	99	748	254	0	793	287	143

TABLE 21 cont.

Temperatures Recorded in the Concrete at the 'G' Position

Time min.	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
76	428	114	96	328	111	93	329	113	94	437	113	99	754	260	0	798	293	148
77	433	116	97	334	111	94	335	113	95	443	113	100	759	266	0	803	299	152
78	438	117	98	339	112	95	341	113	95	448	114	100	764	272	0	808	305	156
79	444	119	99	345	113	96	346	113	97	454	115	101	770	278	0	813	311	161
80	449	120	100	351	113	97	352	114	97	459	117	101	775	284	0	817	316	165
81	454	122	101	356	114	98	357	114	98	464	118	101	780	290	0	822	322	169
82	459	124	101	362	115	99	362	114	100	470	120	102	785	296	0	827	328	172
83	463	126	102	367	116	100	368	115	101	474	122	102	790	302	0	831	333	176
84	468	128	103	372	117	101	373	115	102	479	125	103	795	308	0	836	339	180
85	473	131	104	378	118	103	378	116	103	484	127	103	799	313	0	840	345	183
86	478	134	105	383	119	104	383	117	104	488	129	104	804	319	0	844	350	187
87	482	136	106	388	121	105	388	118	104	493	133	104	808	325	0	847	356	190
88	487	139	107	393	122	106	392	119	105	497	136	104	812	330	0	851	362	194
89	491	142	108	398	123	107	397	120	106	501	139	104	816	335	0	855	368	197
90	496	144	109	403	125	108	401	122	107	505	142	104	820	341	0	859	373	201
91	500	147	109	408	126	109	406	124	107	509	146	104	824	346	0	864	379	204
92	505	150	110	413	128	109	410	126	108	513	149	105	827	352	0	867	385	207
93	509	152	111	418	130	110	414	128	108	517	153	105	831	357	0	871	390	210
94	513	155	112	422	132	110	419	130	109	520	157	105	834	362	0	874	396	214
95	518	157	112	427	134	111	423	132	109	524	160	105	837	367	0	877	402	217
96	522	160	113	432	136	111	427	135	109	527	163	105	840	373	0	879	407	220
97	526	163	113	436	140	111	431	138	109	531	167	105	842	378	0	882	413	224
98	530	165	113	441	144	112	436	142	110	534	170	106	845	383	0	885	418	227
99	534	168	113	445	148	112	439	145	110	537	173	106	847	388	0	888	424	230
100	538	170	114	450	152	112	444	148	110	541	176	106	850	393	0	891	429	233

TABLE 21 cont.

Temperatures Recorded in the Concrete at the 'G' Position

Time min.	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
101	542	173	114	454	156	112	448	152	110	544	180	106	852	398	0	893	434	236
102	546	176	114	458	159	112	452	155	110	548	183	107	854	403	0	897	440	239
103	549	178	114	462	163	112	456	159	110	551	186	107	857	407	0	901	445	242
104	554	181	115	466	167	112	459	162	110	555	189	108	860	412	0	905	450	246
105	558	184	115	470	170	112	463	166	110	559	193	108	864	417	0	910	455	250
106	562	187	115	474	174	112	467	169	110	563	196	108	867	422	0	913	460	253
107	566	189	115	478	177	112	471	173	110	567	199	109	870	426	0	917	465	257
108	570	192	116	482	181	112	475	177	110	572	203	110	873	431	0	920	471	261
109	574	195	116	486	184	112	479	180	109	576	206	110	876	435	0	923	476	264
110	578	197	116	490	187	112	482	183	109	580	209	111	879	440	0	925	481	268
111	583	200	117	494	191	112	486	187	110	584	213	112	881	445	0	926	486	272
112	587	203	118	497	194	112	490	190	110	588	216	113	883	449	0	927	491	276
113	591	205	118	501	197	112	494	194	110	592	220	114	884	454	0	927	496	279
114	595	208	119	505	200	112	498	197	110	596	223	115	885	458	0	929	501	283
115	599	211	120	509	204	113	501	200	110	600	227	116	887	462	0	930	505	286
116	603	213	120	512	207	113	505	204	111	604	230	117	888	467	0	932	510	290
117	607	216	121	516	210	113	508	207	111	608	234	118	889	471	0	933	515	293
118	611	219	122	519	213	113	512	211	112	611	237	119	891	475	0	934	519	296
119	615	221	123	523	217	114	515	214	112	615	241	120	892	479	0	935	524	300
120	618	224	123	526	220	114	518	217	113	618	244	122	893	484	0	937	528	304

TABLE 22**Central Vertical Deflection (WFRC)**

Time min.	Deflection mm	Rate mm/min	Time min.	Deflection mm	Rate mm/min	Time min.	Deflection mm	Rate mm/min
0	0	0	37	60	1	74	103	2
1	0	0	38	62	2	75	104	1
2	1	1	39	63	1	76	106	2
3	2	1	40	65	2	77	108	2
4	3	1	41	66	1	78	109	1
5	4	1	42	68	2	79	112	3
6	6	2	43	69	1	80	114	2
7	7	1	44	70	1	81	116	2
8	8	1	45	71	1	82	119	3
9	10	2	46	72	1	83	121	2
10	11	1	47	74	2	84	124	3
11	13	2	48	75	1	85	127	3
12	15	2	49	76	1	86	130	3
13	17	2	50	77	1	87	133	3
14	18	1	51	78	1	88	136	3
15	18	0	52	79	1	89	140	4
16	20	2	53	80	1	90	143	3
17	22	2	54	81	1	91	147	4
18	24	2	55	82	1	92	151	4
19	26	2	56	83	1	93	155	4
20	28	2	57	84	1	94	159	4
21	31	3	58	85	1	95	163	4
22	33	2	59	86	1	96	167	4
23	35	2	60	87	1	97	172	5
24	37	2	61	87	0	98	176	4
25	39	2	62	88	1	99	180	4
26	41	2	63	89	1	100	185	5
27	43	2	64	90	1	101	189	4
28	45	2	65	91	1	102	194	5
29	47	2	66	92	1	103	199	5
30	48	1	67	93	1	104	204	5
31	50	2	68	94	1	105	209	5
32	52	2	69	96	2	106	216	7
33	54	2	70	97	1	107	222	6
34	56	2	71	98	1	108	228	6
35	57	1	72	99	1			
36	59	2	73	101	2			

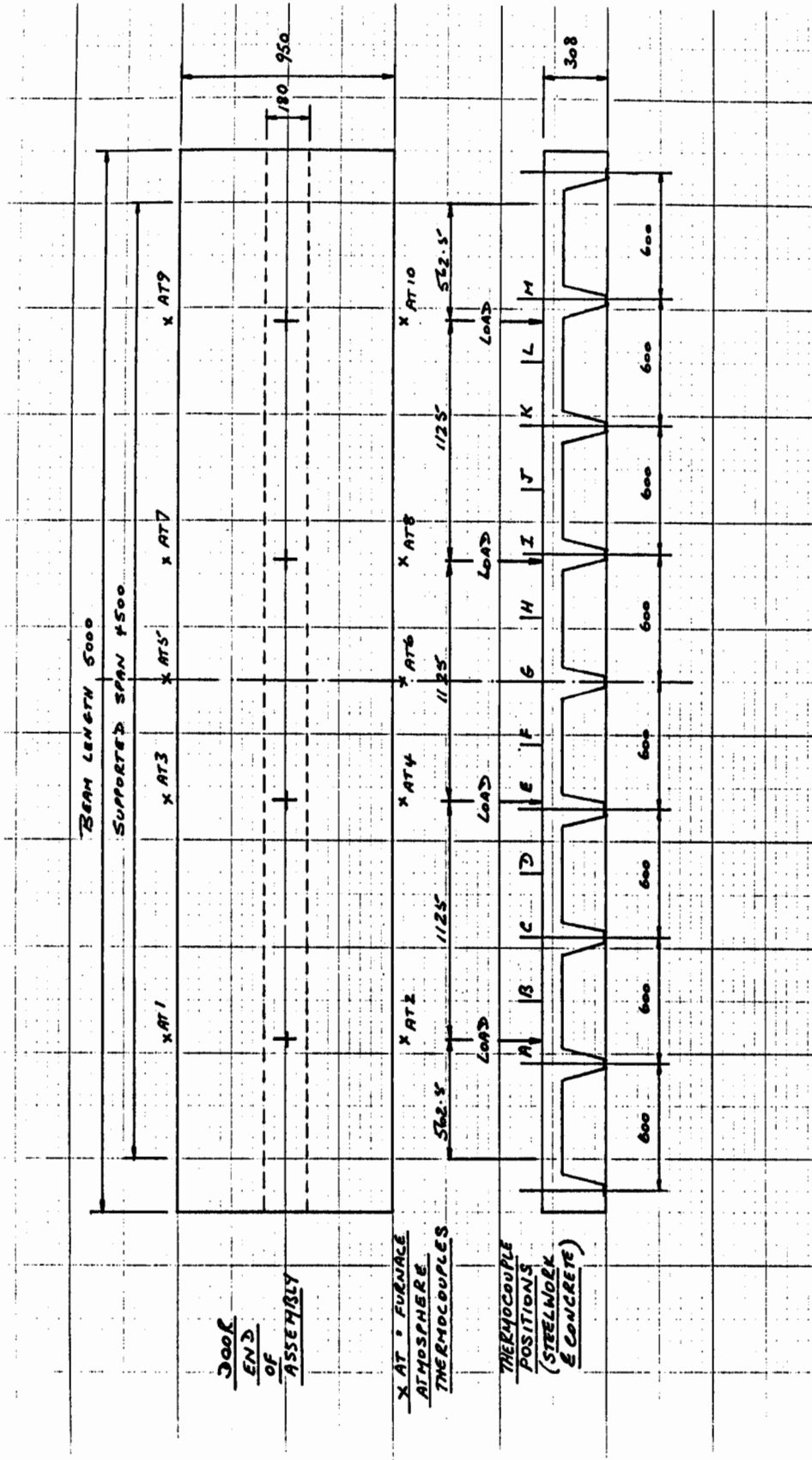


FIG. 2 GENERAL ARRANGEMENT OF THE TEST ASSEMBLY (LONGITUDINAL SECTION and PLAN)

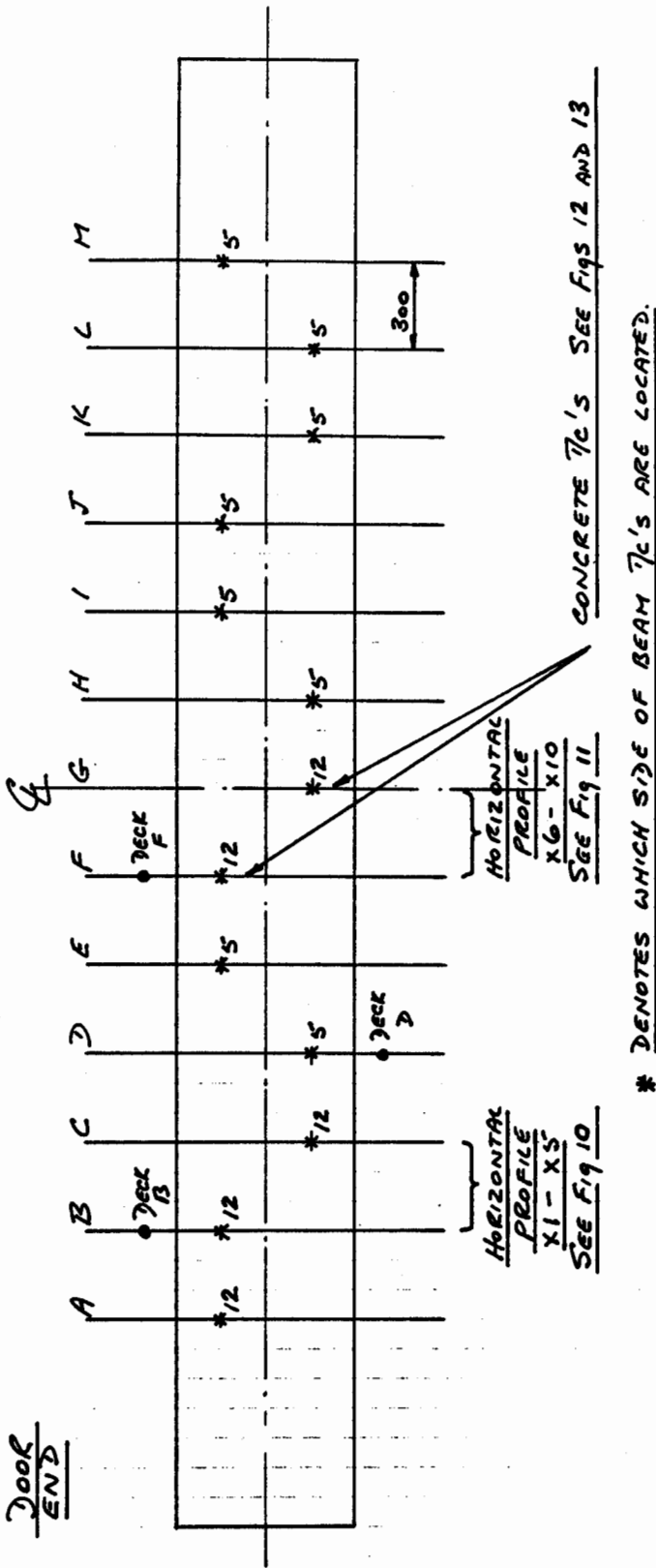


Fig. 3 SHOWING DISPOSITION OF THE STEELWORK AND
CONCRETE THERMOCOUPLES

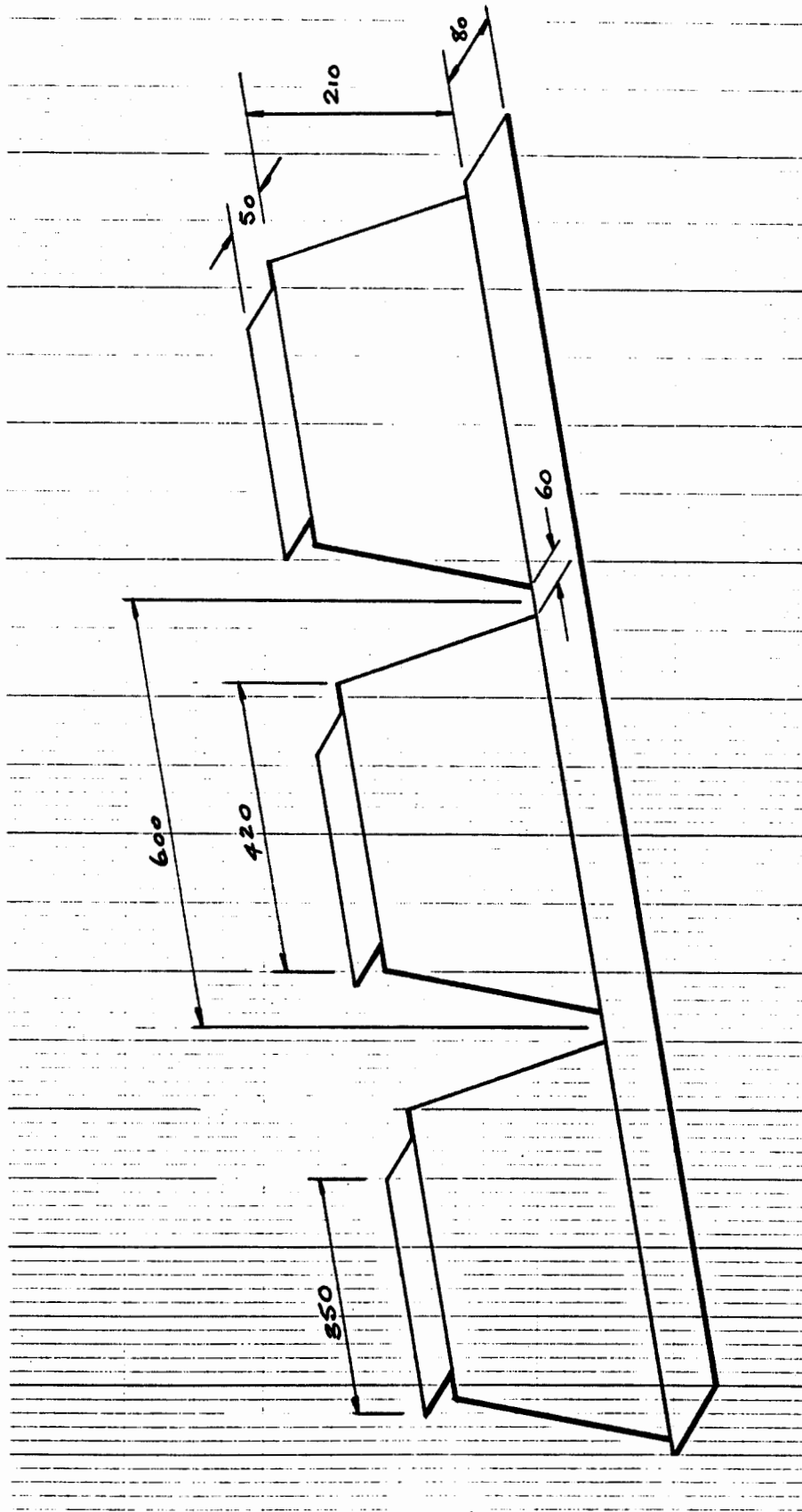
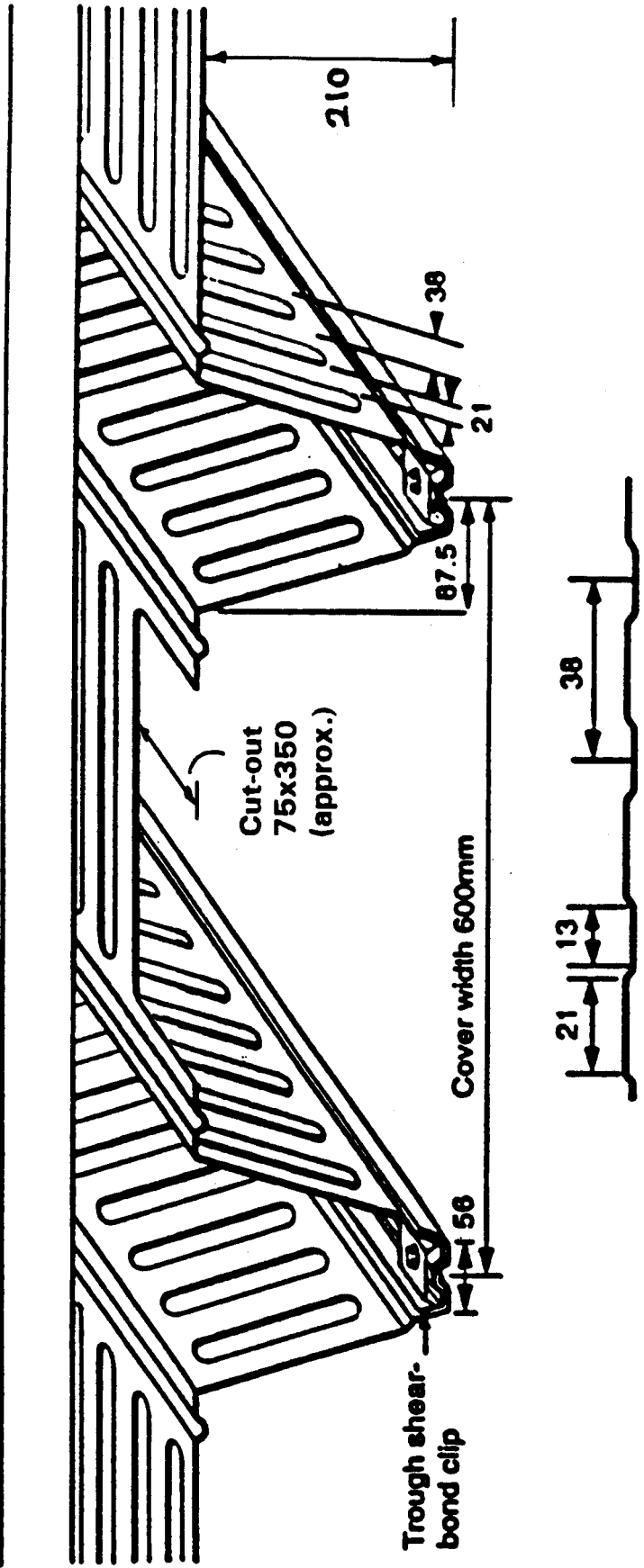


FIG. 4 PMF 210 mm DEEP SIDE CLOSURE FLASHING
(Material - 1.5 mm GALVANISED STEEL)

Profile ComFlor 210



F5.

FIG. 5 PMF 210 mm DEEP METAL DECKING
- DETAIL OF THE CUT AWAY SECTION

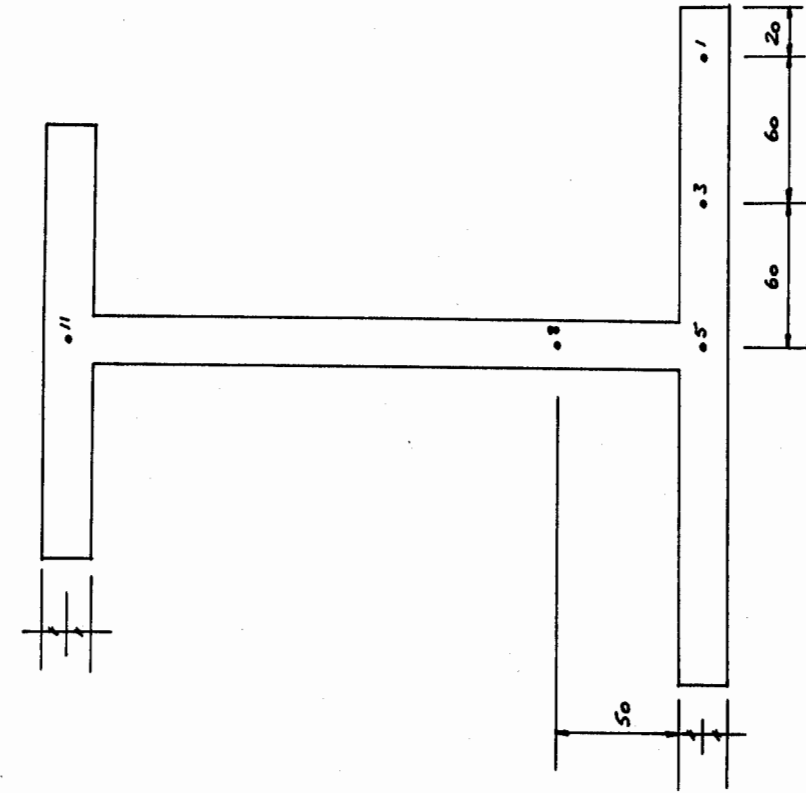


FIG. 9 THERMOCOUPLE POSITIONS IN THE STEELWORK (LOCATIONS "D" "H" "K" and "L")

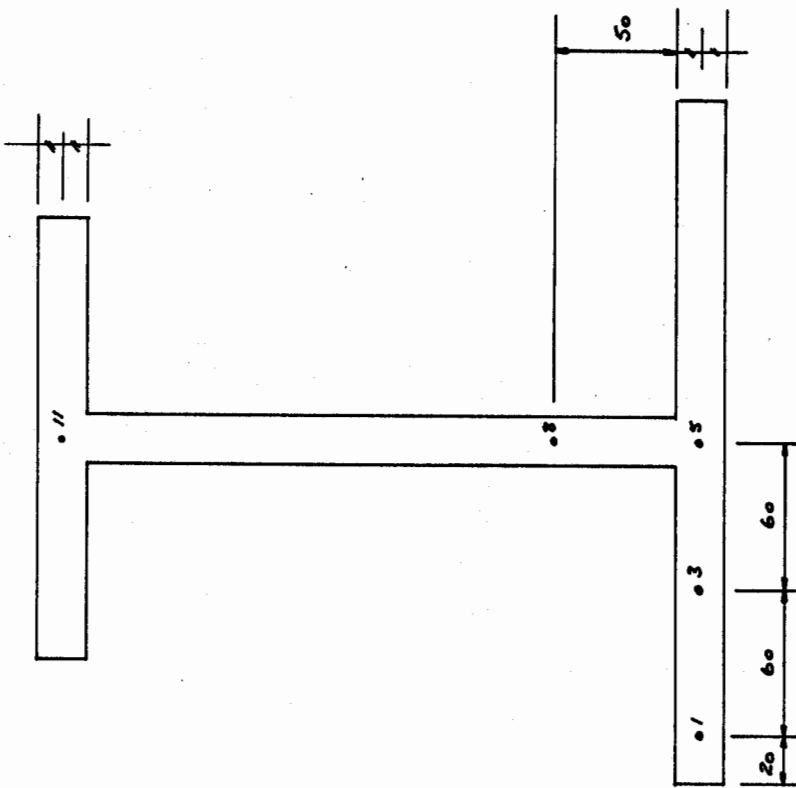


FIG. 8 THERMOCOUPLE POSITIONS IN THE STEELWORK (LOCATIONS "E" "I" "J" and "M")

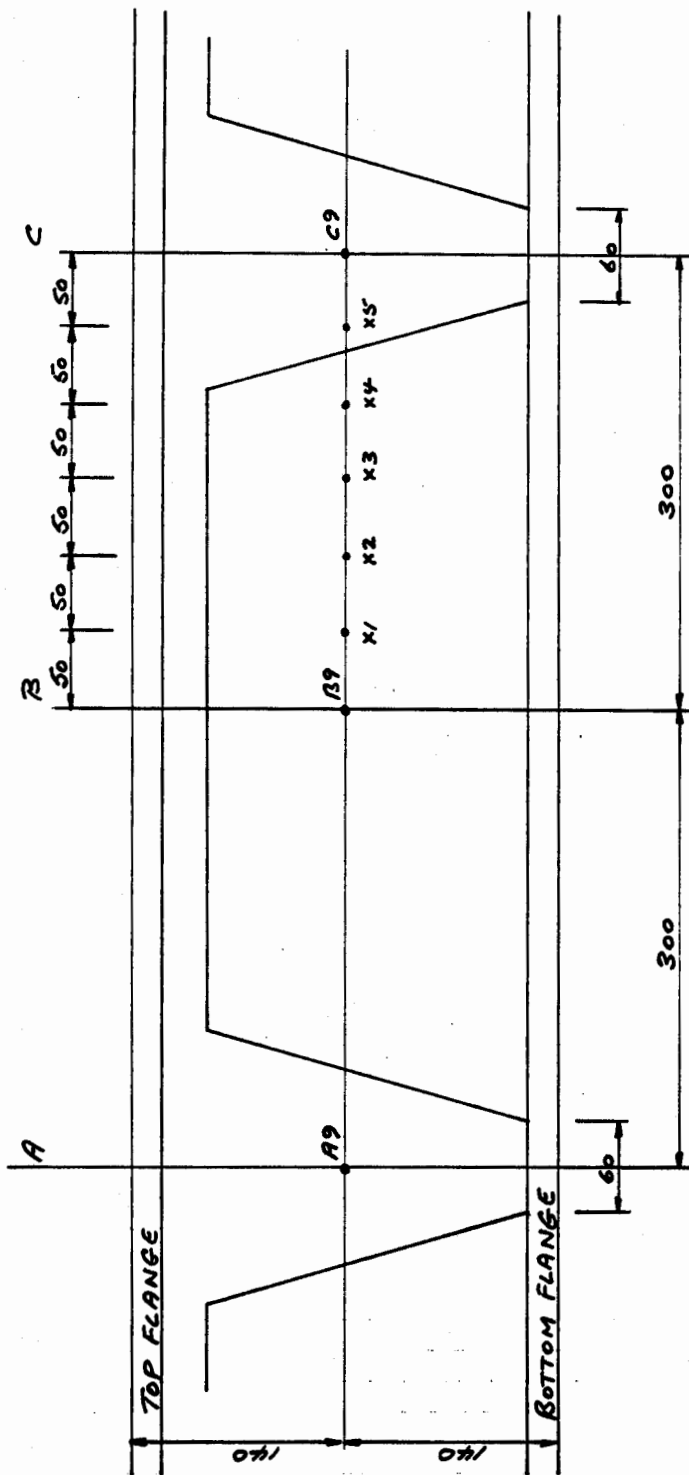


FIG 10 THERMOCOUPLE POSITIONS X1 - X5
 HORIZONTAL PROFILE AT MID-HEIGHT OF SECTION BETWEEN POSITIONS B & C

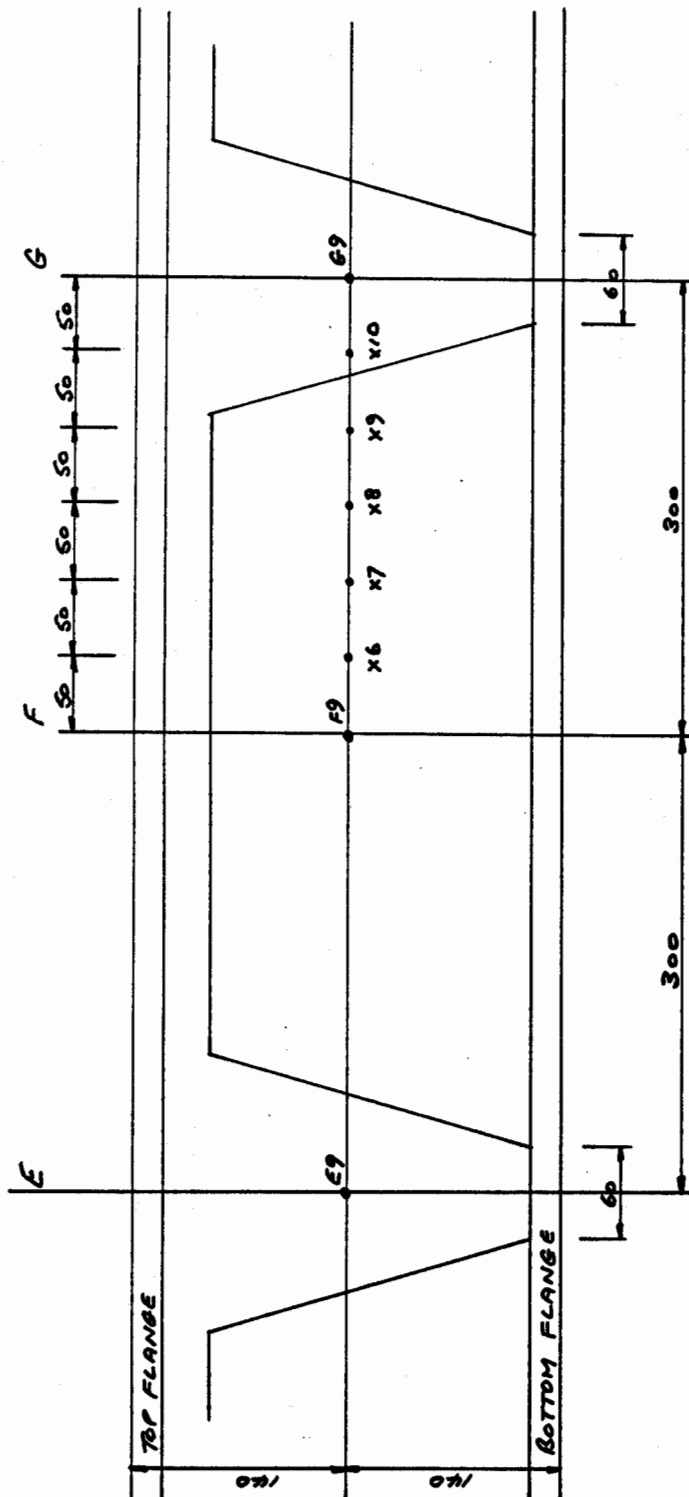


FIG 11 THERMOCOUPLE POSITIONS X6 - X10
HORIZONTAL PROFILE AT MID-HEIGHT OF SECTION BETWEEN POSITIONS F & G

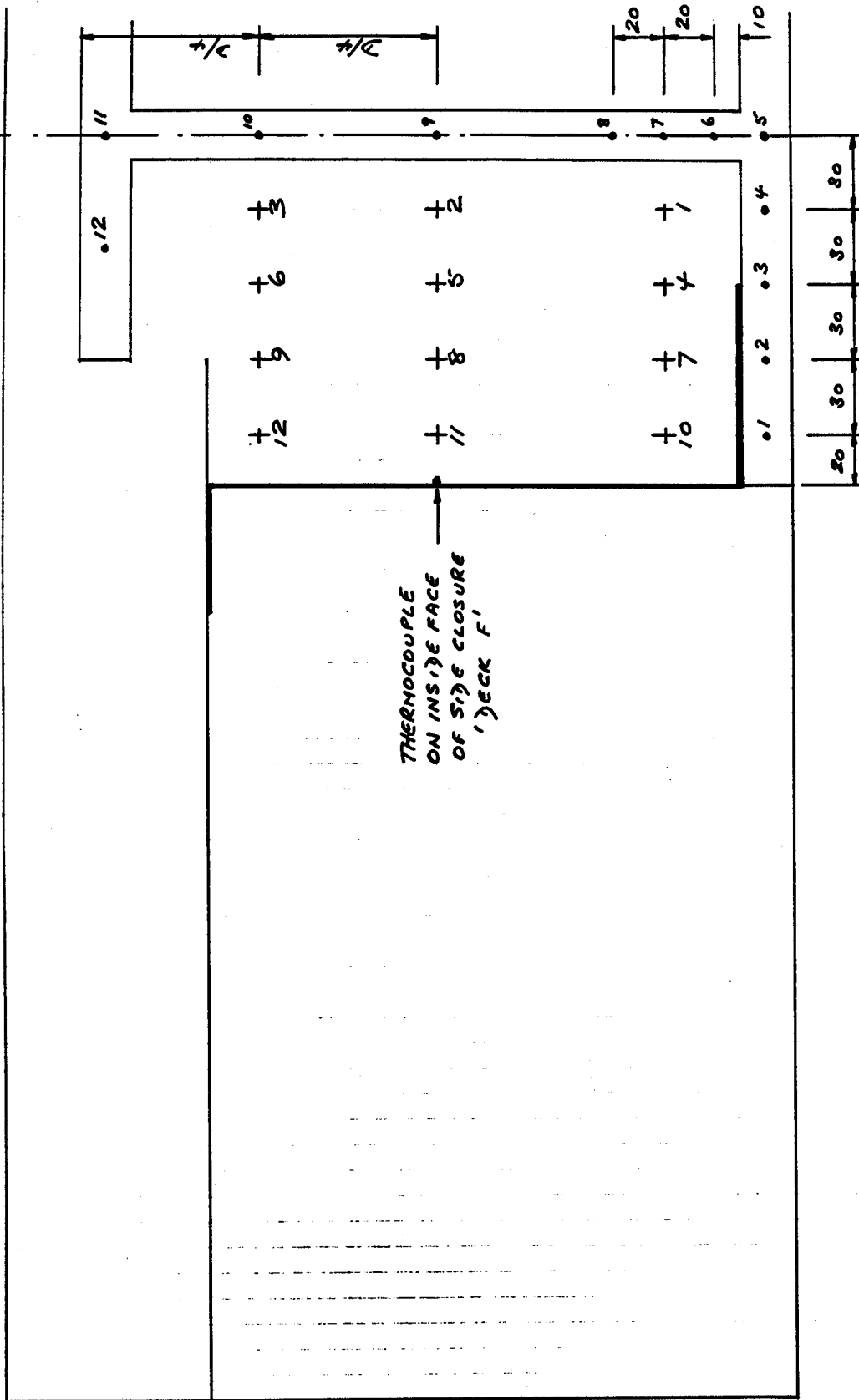


FIG. 12 THERMOCOUPLE POSITIONS IN THE CONCRETE AT LOCATION "F"

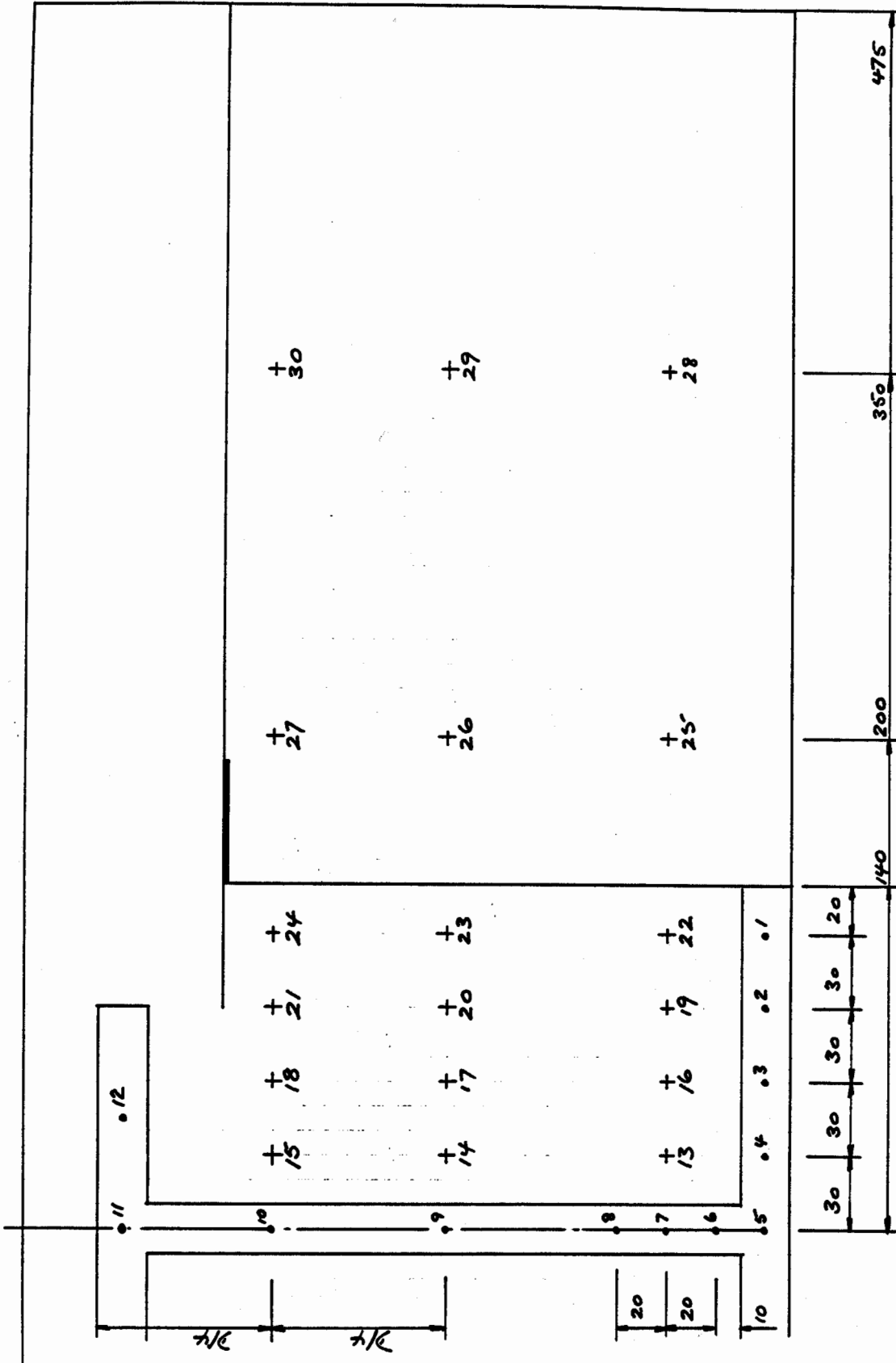


FIG. 13 THERMOCOUPLE POSITIONS IN THE CONCRETE AT LOCATION "G"

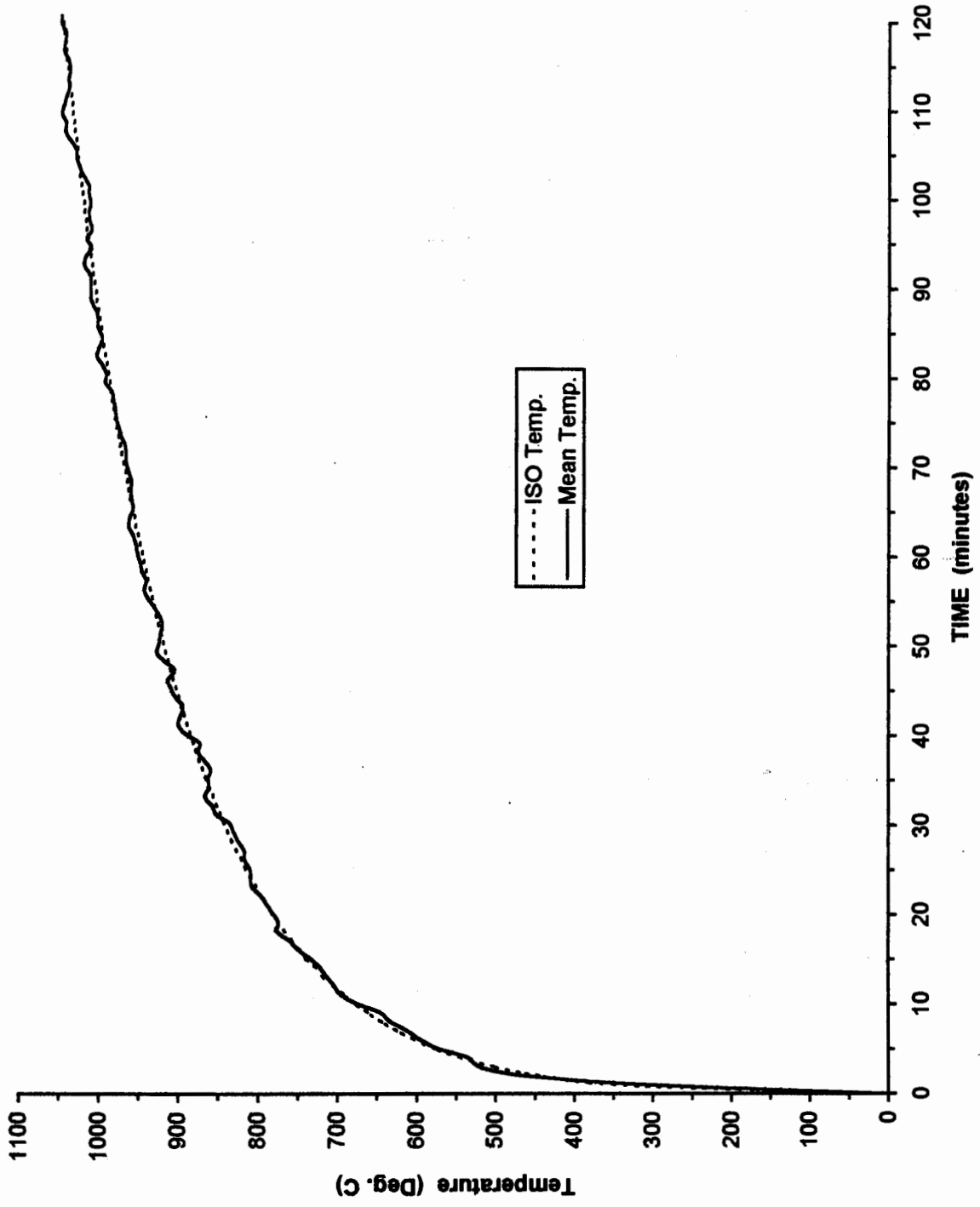


FIG. 14 COMPARISON OF AVERAGE FURNACE ATMOSPHERE TEMPERATURE AND THE STANDARD TEMPERATURE / TIME CURVE

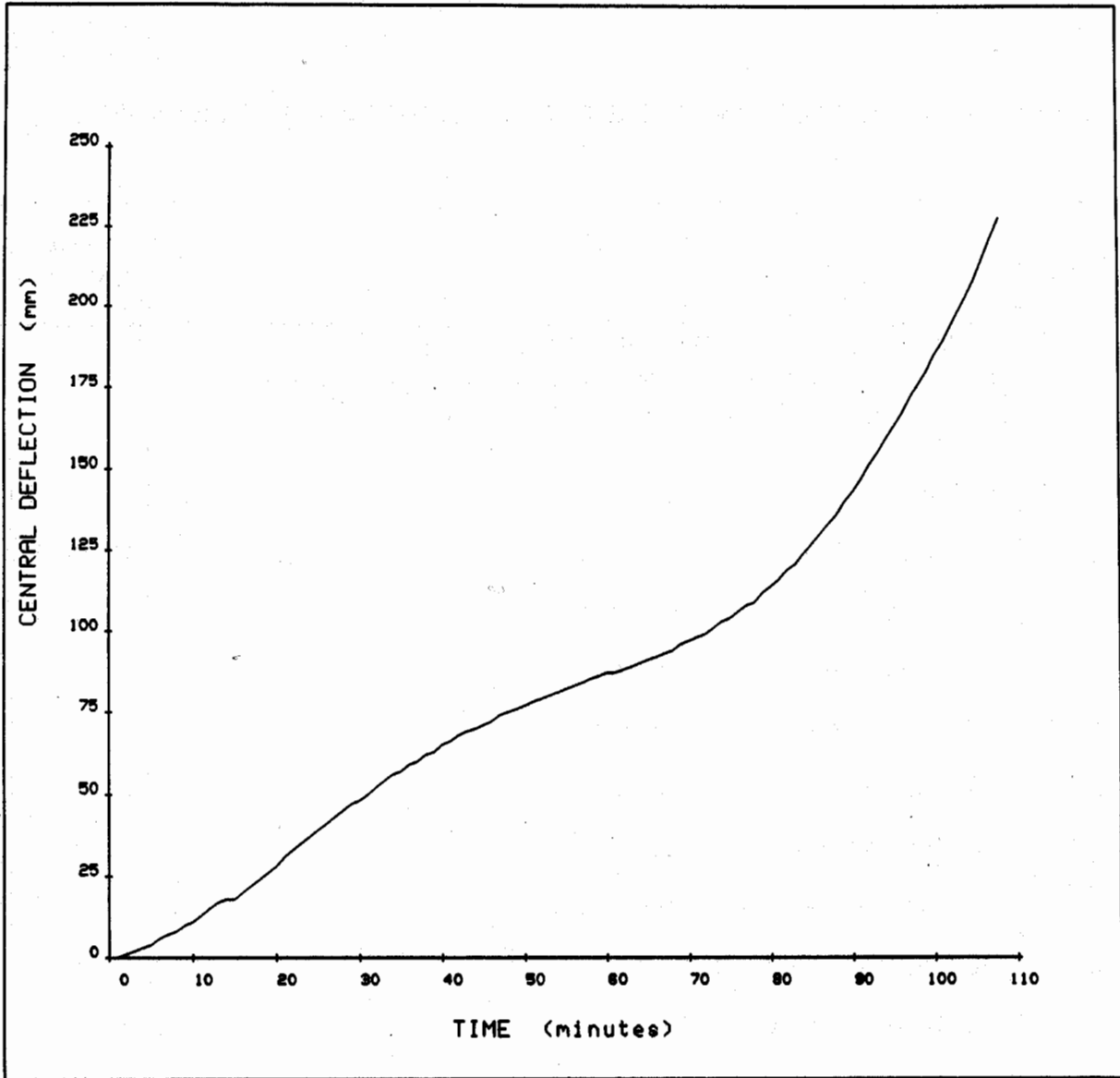


FIG. 15 CENTRAL VERTICAL DEFLECTION OF THE BEAM

APPENDIX 1

SUMMARY OF THE POSITIONS AND IDENTITIES OF THE 153 THERMOCOUPLES

Number of T/Cs	Use	Figure Reference
10	FURNACE ATMOSPHERE TEMPERATURES (*) (Hot junctions set 100 mm below and 100 mm from the edge of the lower flange. All T/Cs were 1.5 mm diameter).	2
12	Steelwork temperatures at position A.	2 3 6
12	Steelwork temperatures at position B.	2 3 6
12	Steelwork temperatures at position C.	2 3 7
5	Steelwork temperatures at position D.	2 3 9
5	Steelwork temperatures at position E.	2 3 8
12	Steelwork temperatures at position F.	2 3 6
12	Steelwork temperatures at position G.	2 3 7
5	Steelwork temperatures at position H.	2 3 9
5	Steelwork temperatures at position I.	2 3 8
5	Steelwork temperatures at position J.	2 3 8
5	Steelwork temperatures at position K.	2 3 9
5	Steelwork temperatures at position L.	2 3 9
5	Steelwork temperatures at position M.	2 3 8
5	Horizontal profile between positions B and C.	3 10
5	Horizontal profile between positions F and G.	3 11
3	Metal decking at positions B, D and F.	3
12	Concrete at position F.	3 12
18	Concrete at position G.	3 13

* WFRC also installed 10 thermocouples of the same size and type at identical locations for the purpose of controlling the furnace.