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**Title:**

Indicative fire test

**WF Report No:**

192007



**Prepared for:**  
**Rutland UK**  
Whittington Way  
Chesterfield  
S41 9AG

**Date:**

**19<sup>th</sup> May 2010**

### **Indicative Fire Test**

We have pleasure in enclosing the information obtained from the indicative fire test conducted on your behalf on the 30<sup>th</sup> April 2010 on a small scale doorset specimen.

The information enclosed relates to a test, which utilised the heating and pressure conditions given in BS EN 1364-1: 1999, the full requirements of the Standard were not, however, complied with. The information is provided for the test sponsor's information only and should not be used to demonstrate performance against the Standard nor compliance with a regulatory requirement.

The test was not conducted under the requirements of UKAS accreditation.

The test specimen consisted of a small scale timber doorset nominally 1500 mm high by 850 mm wide, incorporating a 1445 mm x 760 mm by 44 mm thick Vicaima Solid Core door leaf, the door leaf comprised a solid chipboard core with hardboard facings, softwood stiles and rails and hardwood lippings to the vertical edges. The leaf was hung within a softwood door frame on two steel hinges so that it opened towards the heating conditions of the test. The doorset incorporated a concealed overhead door closer referenced 'ITS 11204' that was fitted within the head of the leaf with the closer arm rail fitted into the head of the door frame. The closer was fitted a protective intumescent pack reference 'IP.114'. The door frame was fitted with a 15 mm x 4 mm graphite based intumescent seal along the jams and head. The doorset was unlatched for the duration of the test.

The specimen formed the front one and a half metre square vertical face of a gas fired furnace, the temperature rise of which was controlled to conform to the relationship given in BS EN 1364-1: 1999. The pressure conditions of the test were controlled to simulate the pressure conditions at the head of a full size doorset.

The following information relating to the test is enclosed:

- ◆ Table 1 - Specified and actual furnace temperatures.
- ◆ Table 2 - Individual and mean temperatures recorded on the unexposed face of the Doorset (Thermocouples 10 to 14)
- ◆ Table 3 - Individual temperatures recorded on the unexposed face of the doorset at mid-height 100 mm in from the edges of the leaf (Thermocouples 17 and 18) and at two positions 100 mm in from the top of the leaf and 100 mm in from the edges of the leaf (Thermocouples 15 and 16).
- ◆ Table 4 - Individual temperatures recorded on the unexposed face of the frame (Thermocouples 19 to 22).
- ◆ Graph 1 - Graph showing the specified and actual furnace temperatures.
- ◆ Graph 2 - Graph showing the mean temperatures on the unexposed face of the Doorset.
- ◆ Observations made during the test.
- ◆ Photographs: - during the test.

The test was discontinued after a period of 41 minutes.

We trust that the information obtained from the test will be useful to you.

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'S. Gilfedder', written in a cursive style.

**S. Gilfedder**  
Testing Officer  
**Exova Warringtonfire**

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**Table 1**

Time Mins	Specified Furnace Temperature Deg. C	Actual Furnace Temperature Deg. C
0	20	18
2	445	490
4	544	625
6	603	598
8	645	653
10	678	647
12	705	713
14	728	729
16	748	745
18	766	755
20	781	767
22	796	806
24	809	813
26	820	827
28	832	830
30	842	842
32	851	856
34	860	858
36	869	872
38	877	881
40	885	885
41	888	886

**Table 2**

Time Mins	T/C Number 10 Deg. C	T/C Number 11 Deg. C	T/C Number 12 Deg. C	T/C Number 13 Deg. C	T/C Number 14 Deg. C	Mean Temp. Deg. C
0	18	18	18	18	18	18
2	18	19	18	19	18	18
4	19	19	20	20	20	20
6	19	19	19	19	19	19
8	23	21	23	21	21	22
10	31	25	31	29	25	28
12	39	30	38	36	30	35
14	44	35	43	42	35	40
16	49	40	47	47	39	44
18	52	44	51	51	43	48
20	55	48	54	55	47	52
22	58	52	57	57	51	55
24	61	56	60	60	55	58
26	64	59	63	62	59	61
28	66	63	66	65	63	65
30	69	67	69	67	67	68
32	71	71	72	70	70	71
34	73	74	74	72	73	73
36	75	77	77	74	76	76
38	77	79	78	76	78	78
40	79	81	80	78	80	80
41	81	83	81	79	81	81

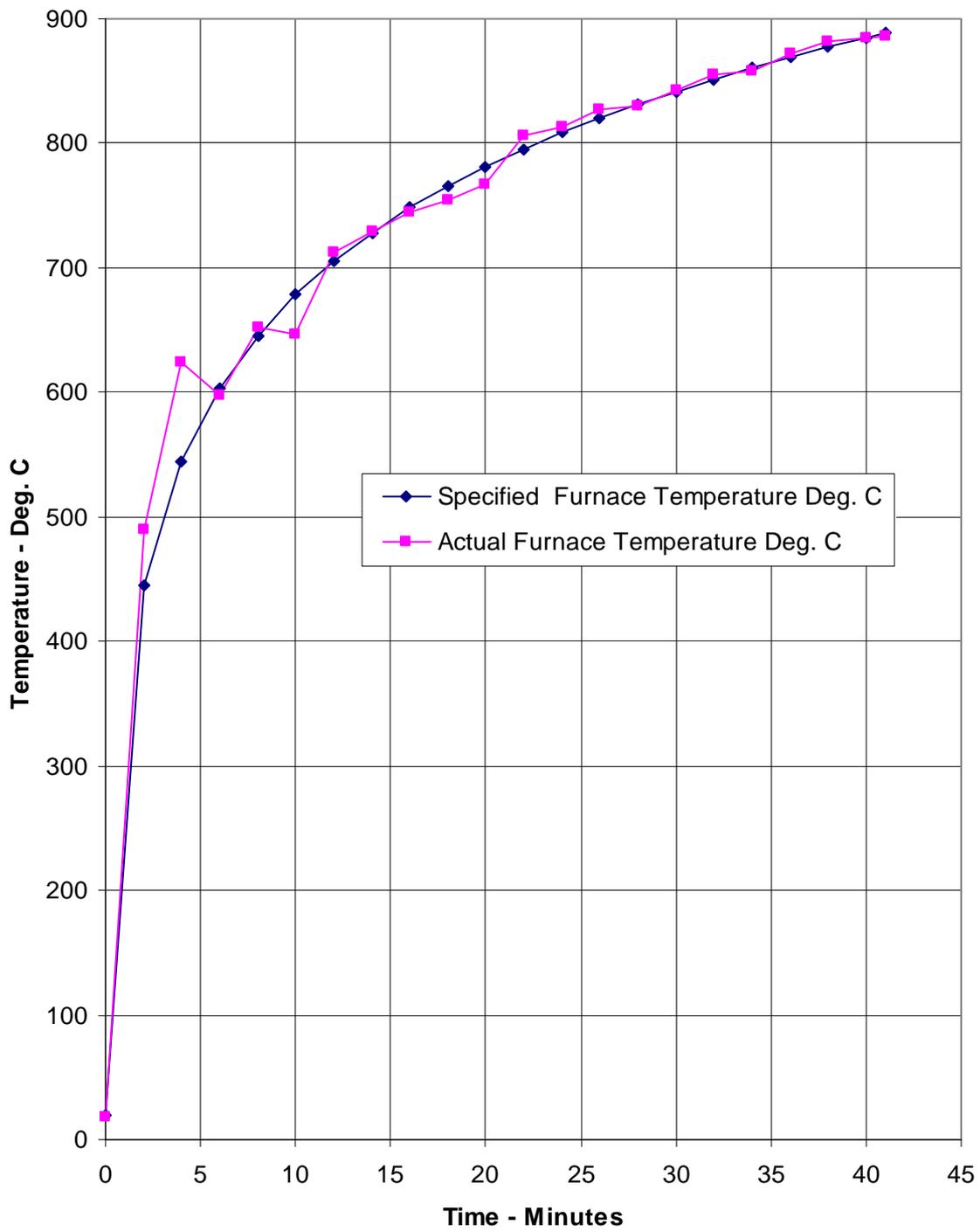
**Table 3**

Time Mins	T/C Number 15 Deg. C	T/C Number 16 Deg. C	T/C Number 17 Deg. C	T/C Number 18 Deg. C
0	18	18	18	18
2	19	25	19	19
4	19	28	20	19
6	19	25	19	19
8	23	30	23	22
10	33	38	30	27
12	41	45	37	32
14	47	52	43	37
16	52	59	47	42
18	56	69	51	46
20	59	70	54	50
22	61	70	57	54
24	64	71	60	55
26	66	73	63	60
28	69	74	66	63
30	71	76	69	66
32	73	78	72	68
34	75	80	74	71
36	77	83	77	73
38	79	86	79	75
40	81	89	80	77
41	82	100	81	78

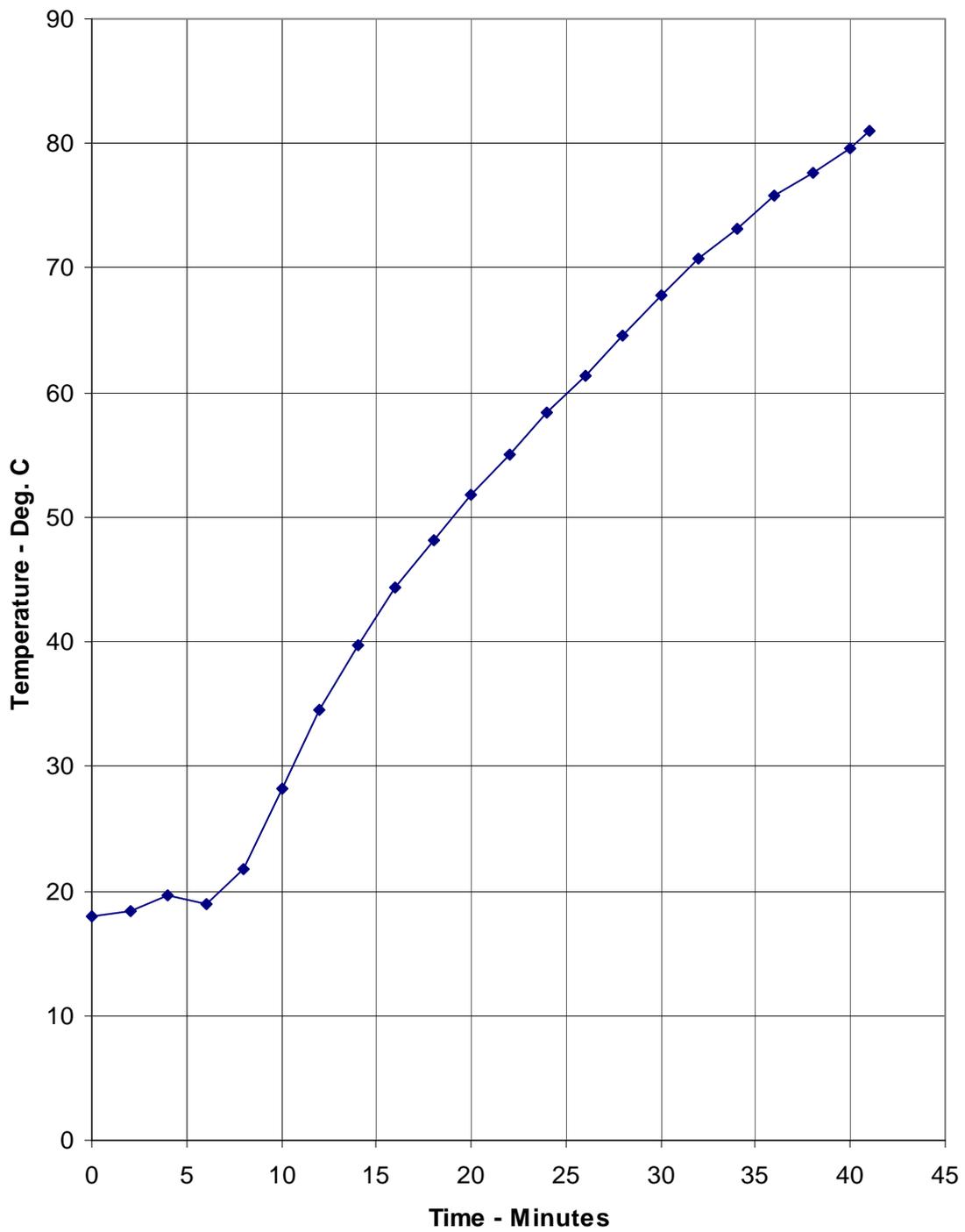
**Table 4**

Time Mins	T/C Number 19 Deg. C	T/C Number 20 Deg. C	T/C Number 21 Deg. C	T/C Number 22 Deg. C
0	17	17	17	17
2	23	29	18	16
4	24	35	19	17
6	26	40	19	17
8	27	41	20	17
10	28	46	20	18
12	28	48	22	19
14	28	52	24	19
16	29	53	27	20
18	31	51	29	20
20	32	47	31	21
22	33	45	33	23
24	34	45	35	25
26	36	45	36	26
28	37	45	37	28
30	41	47	37	30
32	44	48	39	32
34	46	53	40	33
36	47	65	41	35
38	48	78	42	36
40	49	85	44	38
41	53	120	45	39

**Graph 1**



**Graph 2**



## Test Observations

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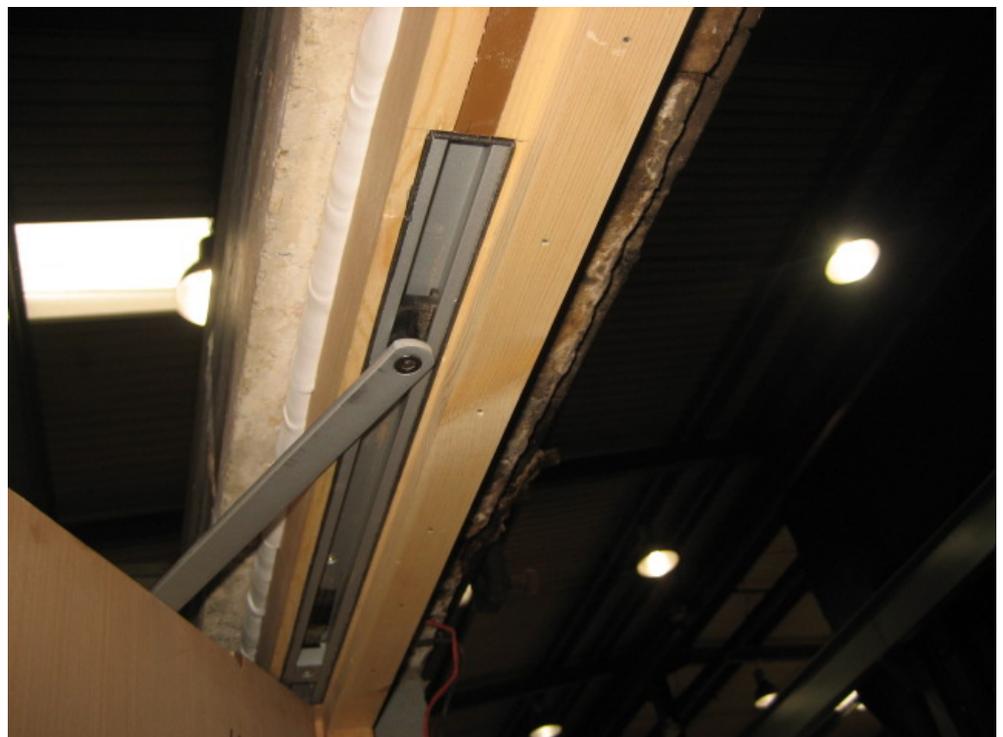
Time		All observations are from the unexposed face unless noted otherwise.
mins	secs	
		The ambient air temperature in the vicinity of the test construction was 16°C at the start of the test with a maximum variation of 1°C during the test.
<b>00</b>	<b>00</b>	<b>The test commences.</b>
<b>02</b>	<b>30</b>	Smoke release commences around the doorset.
<b>05</b>	<b>58</b>	The exposed face of the doorset is blackened; flaming is now visible across the doorset.
<b>08</b>	<b>37</b>	Discolouration is increasing in the top trailing edge corner of the doorset.
<b>15</b>	<b>44</b>	Glowing is visible at the top of jamb on the trailing edge of the doorset,
<b>19</b>	<b>45</b>	The area of glowing at the top of the jamb is sealed off to allow the test to continue, it is not coincidental to the concealed closer.
<b>23</b>	<b>49</b>	Reacted graphite intumescent is visible pushing out between the leaf and frame at the concealed closer position.
<b>28</b>	<b>07</b>	The top and bottom leading edge corners of the door leaf start to bow in towards the furnace.
<b>29</b>	<b>24</b>	Graphite continues to puss out at the head of the doorset around the concealed closer position.
<b>31</b>	<b>55</b>	Smoke release increases at the head of the doorset adjacent to the closer position.
<b>36</b>	<b>22</b>	Discolouration and smoke release continues to increase at the top of the leaf around the closer position, graphite continues to push out.
<b>38</b>	<b>18</b>	The top of the leaf is charred and cracked at the closer position, glowing is now also visible where the leaf is cracked.
<b>40</b>	<b>58</b>	Sustained flaming visible across the head of the doorset starting in the trailing edge corner.
<b>41</b>	<b>00</b>	<b>The test is discontinued.</b>

## Test Photographs

The closer body and intumescent protection at the head of the leaf prior to the start of the test



The closer arm rail at the head of the frame prior to the start of the test



**The unexposed face of the Doorset prior to the start of the test**



**The unexposed face of the Doorset after a test duration of 15 minutes**



**Graphite visible at the head of the Doorset adjacent to the closer position approximately 23 minutes into the test**



**The unexposed face of the Doorset after a test duration of 30 minutes**



**The unexposed face of the Doorset after a test duration of 40 minutes**



**The exposed face of the Doorset immediately after the test**

