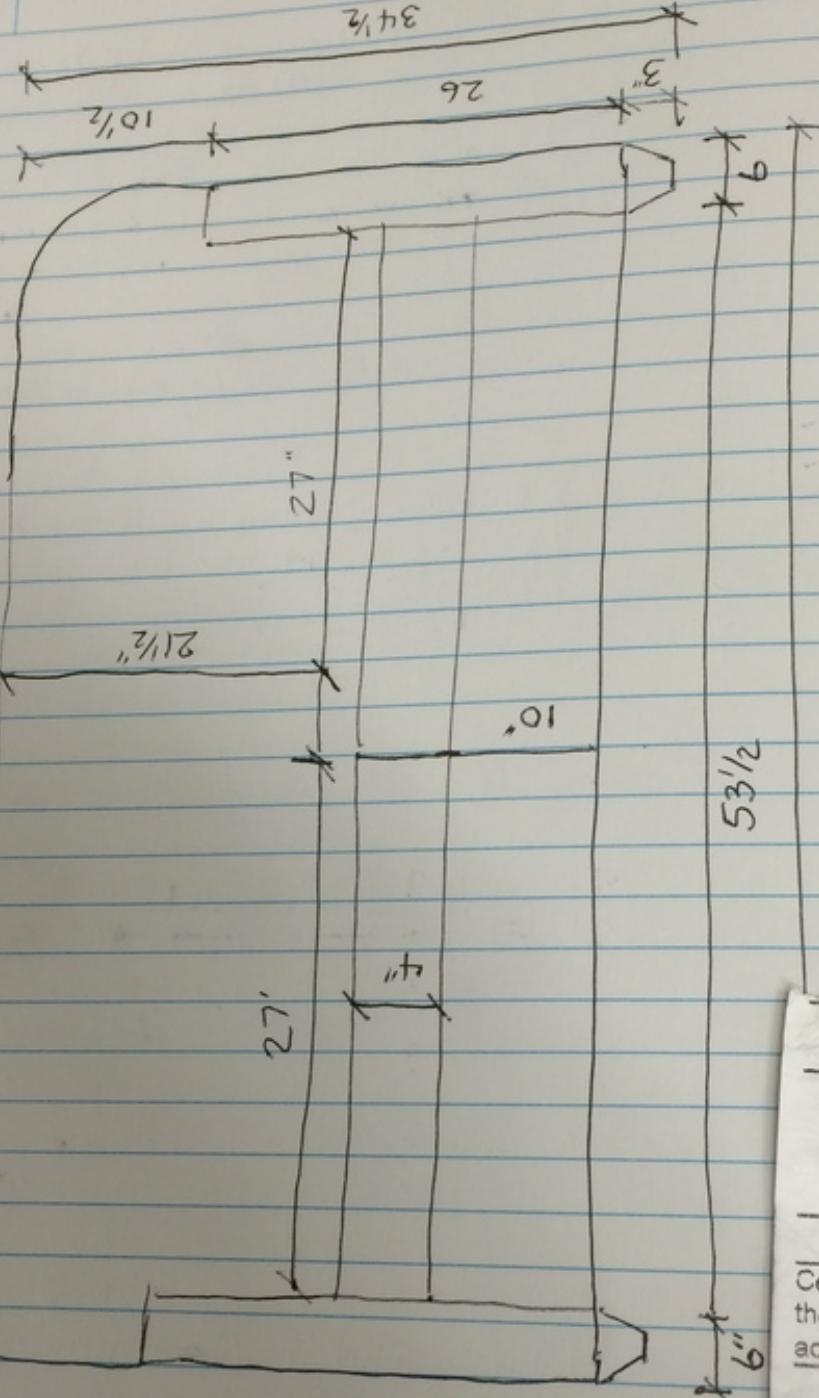


10



Cushion
4" x 22" x 27"
Depth 35"

Back Cushion
Thk
9"

Mattress 5" x 50" x 71"

UN
BE REMOVED EXCEPT BY THE CONSUMER

ALL NEW MATERIAL CONSISTING OF
URETHANE FOAM 60%
DEFABRICATED FIBER PAD 40%
SPRING UNIT

REG. NO. NC-700

Certification is made by the manufacturer
the materials in this article are described in
accordance with law.

MADE BY
PRESTIGE FABRICATORS, INC
ASHEBORO, NC

NOTICE
THIS PRODUCT CONTAINS CAL 117 FLAME
ARDANT POLYURETHANE FOAM. AVOID
CONTACT WITH OPEN FLAME.
MEETS CONSUMER PRODUCT SAFETY
COMMISSION FLAMMABILITY STANDARD
FOR MATTRESSES.

Date of Delivery 12/20/2005

DELCo - 2014-4 : Setup

• Measuring Furniture

2x4 platform 7.4 kg

9/15/14

11

Mattress #1 = 14.7 kg

Cushion #1a = 2.1 kg

Cushion #1b = 2.0 kg

Wood & Metal Frame = 55.8 kg

Couch (total) = 74.8 kg

No Metal mattress frame = 22.7 kg

Wood Frame only ^{PU} back = 33.0 kg

#2

#2 14.7 kg

#2a 2.0 kg

#2b. 2.0 kg

* 74.0 kg

#3

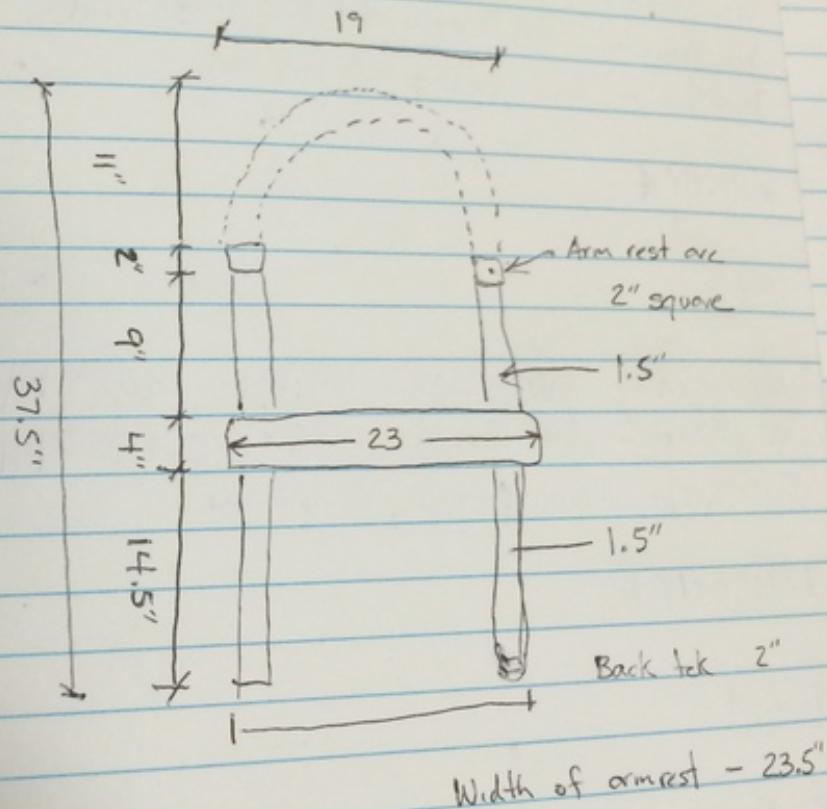
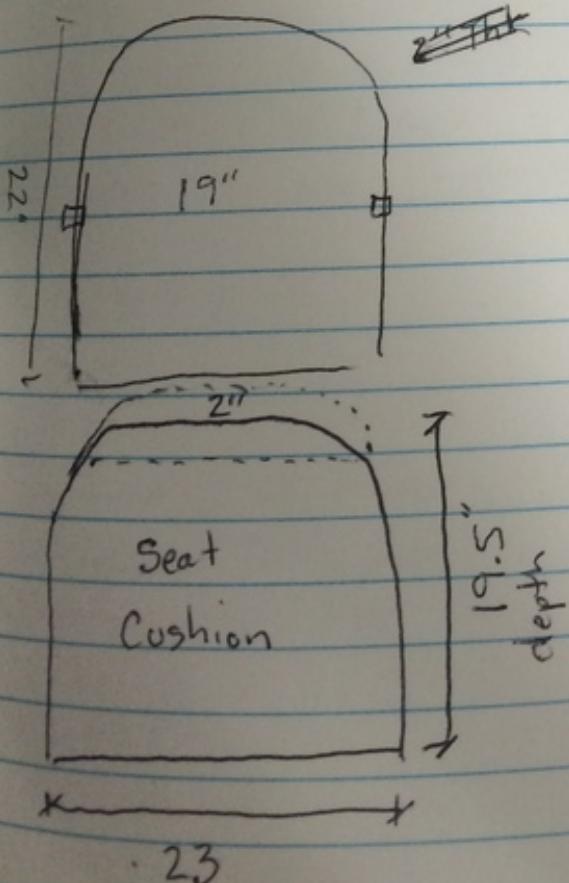
#3 14.5 kg

#3a 2.0 kg

#3b 2.0 kg

+ 75.9 kg

Chair #1 10.8 kg.
#2 11.8 kg.
#3 11.2 kg.



Seat - 19.5 x 23

12

4/17/14 DELCO PPV tests - 8ft from C Doors

all binary
parameters

Key - (Fan @ C Doors) (Door A) (C Doors) (Fan @ A Door) (Interior Doors)

~~Y/N~~ O/C O/C Y/N O/C

Test 1

WS Green - WSW 2 mph, 49°F, 49% RH

WS Yellow - SW 4 mph, 48^{reptile}°F, 52% RH

Duration - 2 min w/ 1 min pre-test

BD always
closed

NCCNY

Test 2

WS Green - SW 3 mph, 49°F, 50% RH

WS Yellow - SW 5 mph, 49°F, 53% RH

Duration - 1 min pretest, 3 min run

* NOCNY *

Test 3

WS Green - SW 0 mph, 50°F, 48% RH

WS Yellow - SW 3 mph, 49°F, 49% RH

Duration - 1 min pretest, 3 min run

* NCONY *

Test 4

WS Green - WSW 7 mph, 51°F, 48% RH

WS Yellow - WNW 6 mph, 49°F, 50% RH

Duration - 1 min pretest, 3 min

* NOOBY *

Yellow Station - 20' centerline C doors
 Green Station - 10' centerline A doors

Electric Fan - 2200 (mm?)
 Super Vac Mod 720VSZ

21.5"

13

Test 5

WS Green - SE 1 mph, 50°F 48%RH
 WS Yellow - SSW 2 mph 49°F 49%RH
 Duration - 1 min pre, 3 min run
 ↳ 1:10 pretest

* Y_i CONY
 ↳ fan outside

Test 6

WS Green - W 2 mph 51°F 44%RH
 WS Yellow - NNW 0 mph 50°F 50%RH
 Duration - 1 min,

* Y_i OONY *

* 8ft from BC door PPV fan for Y_i tests

Test 7

WS Green W 8 mph, 51°F, 42%RH
 WS Yellow W 5 mph, 50°F, 46%RH
 Duration 1 min, 3 duration

* Y_i CONY *

Test 8

WS Green W 7 mph, 51°F, 43%RH
 WS Yellow SW 5 mph, 50°F, 45%RH
 Duration 1 min 4 sec

C
 * Y_i OONY *

Test 9

WS Green - W 5 mph 52°F 42% RH
 WS Yellow - SE 3 mph 50°F 45% RH
 Duration - 1 min pretest, 3 min run

* Yi CONY *

Test 10

WS Green - SSW 3 mph, 53°F, 44% RH
 WS Yellow - W 8 mph, 50°F, 48% RH
 Duration - 1 min pretest, 3.21 run

+ Yi CONY *

Test 11

WS Green W 5 mph 53°F 45% RH
 WS Yellow W 8 mph 51°F 50% RH
 Duration 1 min pretest, 3 min 2 sec

* Yo CORNY *

Test 12

WS Green W 1 mph 53°F 44% RH
 WS Yellow SW 4 mph 51°F 47% RH
 Duration 1 min pretest, 3 min 2 sec

* Yo CORNY *

Test 13

15

WS Green	WAN	W 6 mph	53°F	45% RH
WS Yellow		W 9 mph	52°F	49% RH
Duration	1 min	pretest , 3 min 2 sec		

* YO COI NY *

Test 14

WS Green	W 3 mph	53°F	46% RH
WS Yellow	W 1 mph	51°F	49% RH
Duration	1 min pretest		

* YO COI NY *

Test 15

WS Green	W 1 mph	52°F	47% RH
WS Yellow	W 1 mph	52°F	49% RH

Duration - 1min pretest , 2min run

* NCCNN *

Test 16

WS Green	W 11 mph	47 °F	44 %RH
WS Yellow	W 12 mph	48 °F	48 %RH
Duration -	NOCNN	3min run time	
	1min pretest		

* NOCNN *

Test 17

WS Green	W 6 mph	52°F	45 % RH
WS Yellow	W 4 mph	51°F	49 % RH
Duration	1 min pretest, 3 min duration		

* NCONN *

Test 18

WS Green	W 3 mph	51°F	49 % RH
WS Yellow	W 5 mph	51°F	51 % RH
Duration	1 min pretest, 3 min duration		

* NOCONN *

Test 19

WS Green	W 5 mph	53°F	48 % RH
WS Yellow	WSW 4 mph	51°F	50 % RH
Duration	1 min pretest, 3 min duration		

* Yo CONN *

Test 20

WS Green	W 4 mph	53°F	46 % RH
WS Yellow	W 5 mph	51°F	51 % RH
Duration	1 min pretest, 3 min run		

* Yo OCONN *

Test 21

WS Green	W 8 mph	52°F	46 %RH
WS Yellow	W 3 mph	51°F	50 %RH
Duration	1 min pretest, 3 min duration		

* Y_i CNN *

Test 22

WS Green	W 7 mph	51°F	49 %RH
WS Yellow	W 11 mph	50°F	52 %RH
Duration	1 min /s pretest, 3 min duration		

* Y_i CNN *

Test 23

WS Green	W 5 mph	51°F	48 %RH
WS Yellow	W 8 mph	49°F	51 %RH
Duration	1min(1/s) pretest, 3min run		

* Y_i CNN *

Test 24

WS Green	W 1 mph	51°F	49% RH
WS Yellow	W 5 mph	49°F	51% RH
Duration	1min(6s) pretest, 3min run		

* Y_i CNN *

Test 25

WS Green	W 5 mph	51°F	48
WS Yellow	NNW 6 mph	50°F	52
Duration	1min pretest, 3min run		

* Y_o CNN **

WS
W.
D.

Test 26
 WS Green WNW 1 mph 51 °F 50 %RH
 WS Yellow SSW 4 mph 49 °F 51 %RH
 Duration 1 min 3 min run

* Y.00rNN *

*

Test 27

WS WS Green SSW 2 51 °F 49 %RH
 W. WS Yellow W 9 49 °F 53 %RH
 D. Duration 1 min 45, 3 min run

* * Y. COINN *

T Test 28

= WS Green SW 1 mph 50 °F 49 %RH
 W. WS Yellow W 5 mph 49 °F 52 %RH
 W. Duration

D

* Y.001NN *

*

T

W

D

* Note Wind hitting B side of the structure.

*

WS Green - 20 ft behind & 20 ft east of A
 WS Yellow - 20ft in front & 20 ft east of C

4/18/14

19

- straight

Test 29

WS Green - E2 mph 44°F 62%
 WS Yellow - SE2 mph 43°F 63%

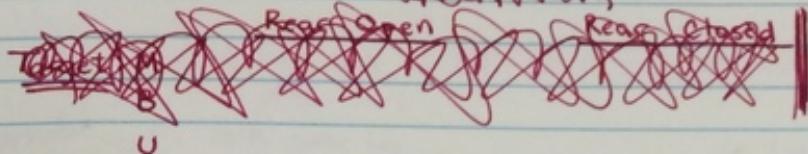
Duration - ~~1 min 4s~~ pretest,

1 min 4s door closed

Rear Open

Rear Closed

1 min 4s door open



	<u>Start</u>	<u>Rear Open</u>	<u>Rear Closed</u>	<u>Stop</u>
Target M:	2:30	3:00	3:36	3:49
INB/NF				
U:	4:30	5:00	5:30	5:44

~~HOSE~~ * HOSE_DSTODF *

	<u>Start</u>	<u>Rear Open</u>	<u>Rear Closed</u>	<u>Stop</u>
M:	7:00	7:30	8:00	8:19
U:	9:00	9:30	10:00	10:12

- Fog -

Test 30

WS Green SE 3 mph 45°F 63% RH
 WS Yellow SE4 mph 44°F 62% RH

Duration 1 min closed, 1 min open

* HOSE_DNTODF * \Rightarrow HOSE_DNTODF **

	<u>Start</u>	<u>Rear Open</u>	<u>Rear Closed</u>	<u>Stop</u>
M:	2:30	3:00	3:30	4:00
U:	5:00	5:30	6:00	6:30
M:	7:30	8:00	8:30	9:00
U:	9:30	10:00	10:30	11:00

WS	WS Green	5E	46°F	60%RH
W	WS Yellow	2E	45°F	64%RH
D	Duration	1:30	open	protest
U	1:00	open	protest	
				* HOSE-DNTADM *
W	Start	Right	Fixed	Left
M:	3:30	4:00	4:30	5:00
W	10:00	10:30		
D	0:	9:00	9:30	
U:	10:00	10:30		
				end water 14:00
				(narrow)
				(wide)
W	Start	Right	Fixed	Left
M:	21:30	22:00	22:30	23:00
W	23:30	24:00		
D	29:00	29:30		
U:	27:30	28:00	28:30	29:00
				31:30
				32:00
				32:30
				33:00
				end water

* * HOSE - DNTADM *

* * HOSE - FTADF *

W	Test 32	WS Green	0 mph	48°F	53%RH
W		WS Yellow	0 mph	49°F	53%RH
D	Duration	(2 min closed 1 open)	pre	Open Rear	
U:	9:30	10:00	10:30	11:00	11:30
M:	3:30	4:00	4:30	5:00	5:30
W	6:00	6:30	7:00	7:30	8:00
D	12:00	12:30			
U:	11:00	11:30			
					end water 9:00
					13:00
					13:30
					14:00
					14:30
M:	Start	Right	Fixed	Left	Fixed
W:	10:00	10:30	21:00	21:30	22:00
D:	20:00	20:30			22:30
U:	26:30	27:00	27:30	28:00	28:30
					29:00
					29:30
					30:00
					30:30
					31:00
					31:30
					end test 32:00

Test 33

WS Green S2 mph 50°F 51% RH
 WS Yellow SE2 mph 50°F 52% RH
 Duration 1 min pretest

* HOSE UNPRODRA *

TMTADM
IMAOADM

Fixed
Close
7:35

	<u>start</u>	
door closed	S	<u>start</u> #R1
(narrow)	NF	1:00
(wide)	WF	1:30
		2:00
		<u>start</u> #R2
	S	7:30
	NF	8:00
	WF	8:30

2:30 Water stop

door open

S	9:30
NF	10:00
WF	10:30

flows are due to back door open (post test #1)

IMAOADM



22

Test #34 * rear door closed *
 pre test data - 2 min 30 s
 * HOSE-IMT ADM *

Start (straight cell B) fix right ~~3:00~~
 2:30 3:00

straight (room A) fix right
 3:30 4:00

narrow cell B fix right
 4:30 5:00

narrow room A right
 5:30 6:00
 covering
 second door w/fog

wide cell B fix right
 6:30 7:00

wide room A right
 7:30 8:00

Stop water @ 8:30

Straight cell B fix left
 13:00 13:30

Straight room A fix left
 14:00 14:30

narrow cell B fix left
 15:00 15:30

narrow room A fix left
 16:00 16:30

wide cell B fix left
 17:00 17:30

wide room A fix left
 18:00 18:30

Stop water at: 19:00

4/21/14

Test # 35

* NOOYY *

WS Green: S 1 mph 64°F 37% RH

WS Yellow: W 0 mph 65°F 34% RH

Duration: 2 min

Tempest Power Blower 6.5 hp
24" diameter

Fan placement: 3.3m to BDPs
8' from A door

- 1600, 1800, 2000, 2200 - electric (2 min runs)
- blue arrow, full blast

Electric off @ 10 min

1600 rpm - 2 min
1800 rpm - 4 min
2000 rpm - 6 min
2200 rpm - 8 min

gas off @ 17:55 SSE 4 mph

blue arrow - 13:55
full blast - 15:55

stop recording → 18:55

24

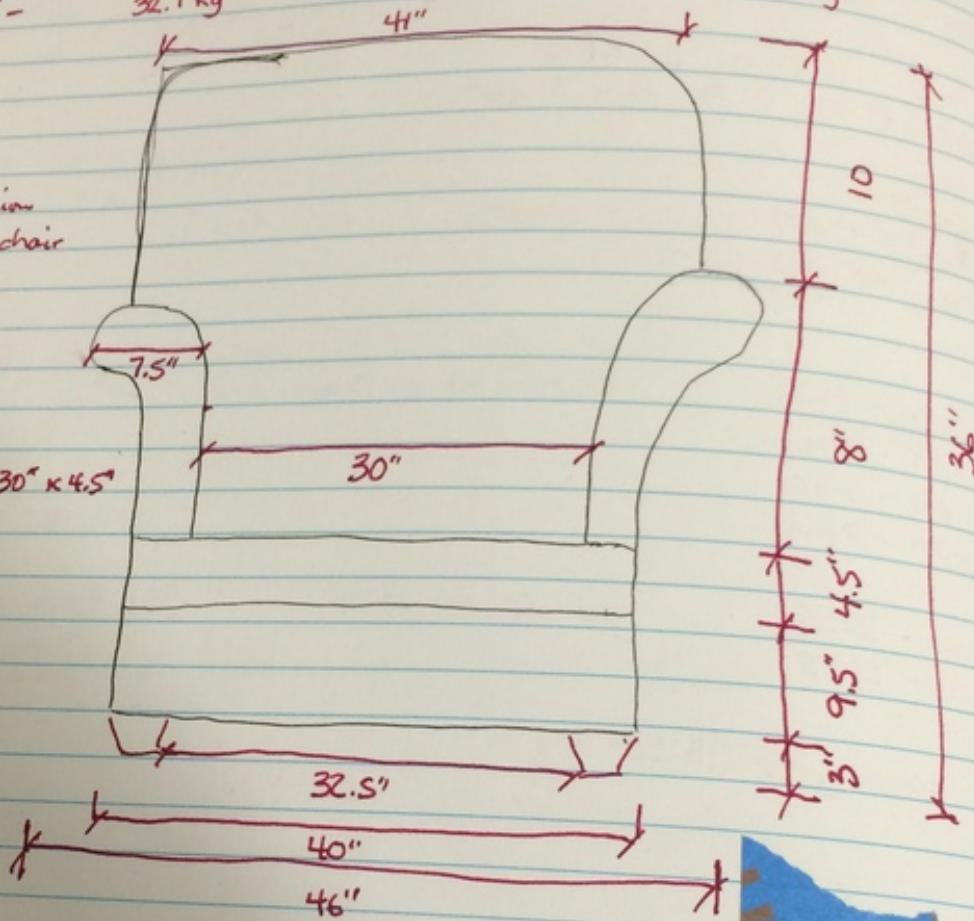
Fire Test #1:
 carpet padding - 29.7 kg
 carpet - 32.1 kg

Chair (sleeper) #1 - 55.6 kg

cushion - 2.6 kg
 mattress - 7.6 kg

W.W.L.
 Top of cushion
 to top of chair
 23"

W.W.L.
 Cushion depth
 22"
 Overall 22" x 30" x 4.5"



cushion
 20.5" x 2

wood legs
 both

ALL NEW INNOVATION
URETHANE FOAM 60%
DEFABRICATED FIBER PAD 40%
SPRING UNIT

REG. NO. NC-700

Certification is made by the manufacturer that the materials in this article are described in accordance with law.

MADE BY
PRESTIGE FABRICATORS, INC.

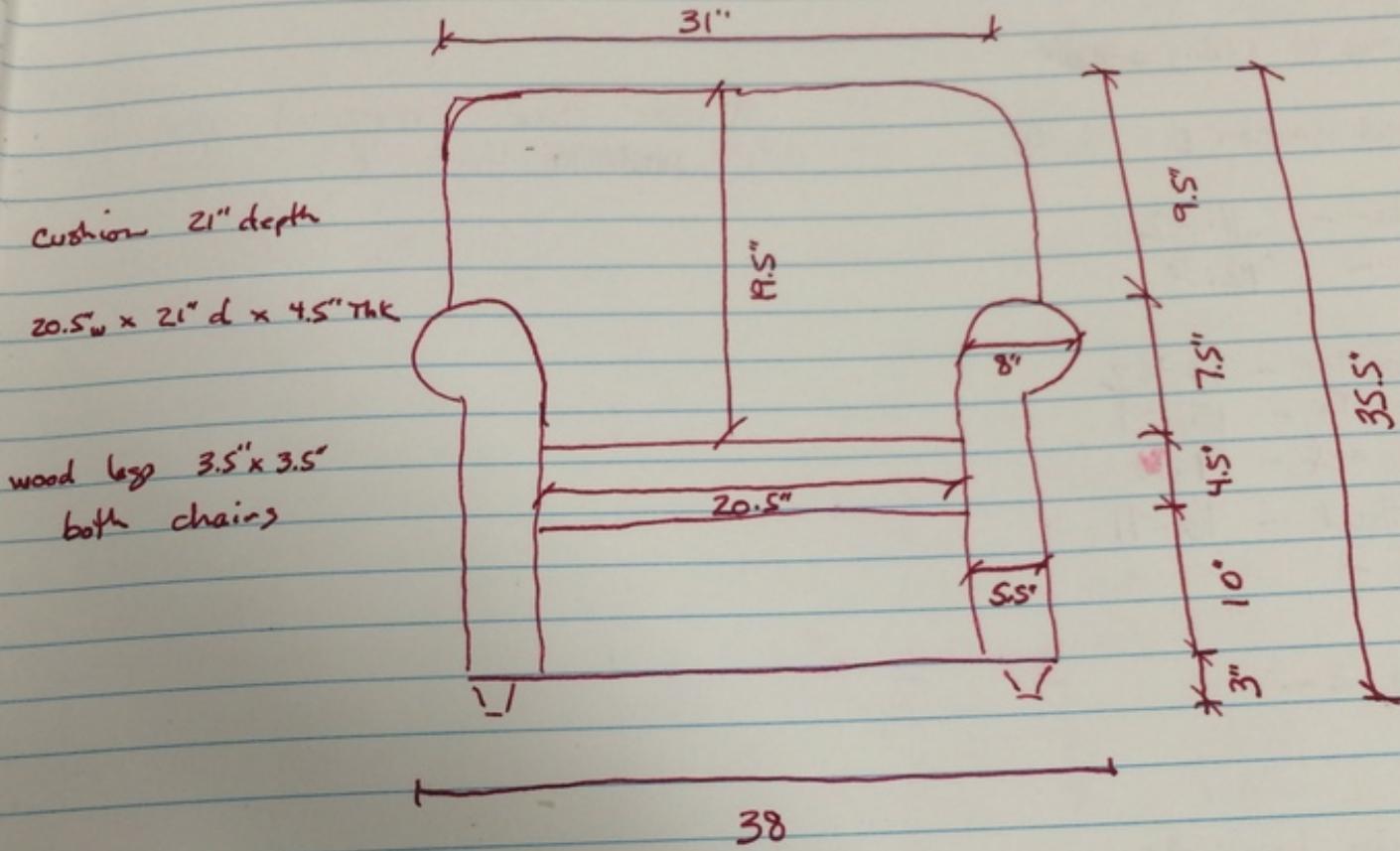
Date of Delivery
 ASHEBORO, N.C.

THIS PRODUCT CONTAINS NON-FLAME RETARDANT POLYURETHANE FOAM.
 AVOID CONTACT WITH OPEN FLAME.

MEETS CONSUMER PRODUCT SAFETY COMMISSION FLAMMABILITY STANDARD FOR MATTRESSES.

No 049633

OS chair - 26.3 kg
~~cushion~~ cushion - 1.9 kg



38

2 26

Fire carp + /22/14 Test #35 = Hot Test
carp NCONN + fire + monitor at C door +
ignition - 1 min 30s

Top of
to top
=

shin
22

all

flame @ ceiling 3:10

Second ignition @ 4:45

monitor - 11:32

water - 12:30

nf monitor - 14:32

wf monitor - 15:39

monitor off - 19:30

rear attack - 16:41

rear off -

rear attack 2 -

* Stop 34 min 1 sec *

GWS - NW 8 mph
YWS - W 3 mph 68°F 62°F (22°C)

smoke exit < 3 mins

* rear door dropped open
during monitor test *

4/2

pre

ign

fla

s

sec

fi

fi

4/24/14 Test #36

FIRE - NCONN 2

GWS -	51 °F	mph	31	T/RH
YWS -	51 °F	mph	29	T/RH

pretest - 8:00

(O Analyzer B - mrsbehavin'

ignition - 8:00

Gas Lag time - ~12s (1)

flames @ ceiling
size 40 11:15

A1	4:55
A2	- 5:35 ~35s

secondary ignition

first water on ~ 16:00
first water off - 17:00

stream type -

smoke out back door ~9min

nf on	19:00
nf off	20:00

13:00	10 mph N	YWS
14:00	5 mph W	
15:00	11 mph NW	
16:00	6 mph NW	
17:00	7	NNW
21:00	7	NNW
23:00	7	NNW
27:	9	W
28	10	NW
31	5	NNW

wf on	19:00
wf off	20:00

24:00

off @ 44:30

28

Test #37

FIRE - NCONN3

Pre-test 3:00 4:00
 Ignition 3:00 4:00
 L→ video e 4:15

straight water on - 12 min (12:58)
 water off 13 min

monitor - narrow fog on - 15 min
 (6 min)

monitor - wide fog - 17:30
 18:50

25 min flashover

flames at back @ 30. 32 min

34 min handline @ door

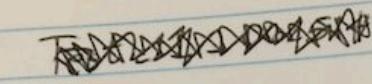
35:30 handline interior

WSGreen - 2 mph N

WSYellow 6 mph NW

5 min	NW	6 mph
6 min	NW	5 mph
7 min	N	3 mph
8 min	NW	3 mph
9	NNW	9 mph
10	NNN	8 mph
11	NW	5 mph
12	NN	6 mph
17:30	NNW	5 mph
20	NW	4 mph
23	NW	4 mph
28	NW	3 mph
35:30	NN W	5 mph

6/25/14

- Wind Test -

Test - 1 - East - 062514

~~Boat doors open, roof closed, front hatch open~~

A door open, roof closed, C doors closed = initial config

"C channel" interior

rear open 2:00

right open 3:00

left open 4:00

right closed 5:30

left closed 6:30

test end 7:30

Weather Stations

TX1 - Yellow - North Door

TX2 - Green - South Door

Test -2 - East - 062514

- Burner Test -

A door "closed", roof closed, C doors closed = initial config
 "C channel" interior
 gap on rear door 5 1/4"

ignition @ : ~~MMNNNN~~
 corner burner ↘ 21:00 min DAQ time
 middle burner ↘ 24:00 min DAQ time
 center burner ↘ 27:00 min DAQ time

HF1 - 150792
 RAD1 - 179084

open ^A ~~door~~ door - 31:00 min (31:10)

HF2 - NA
 RAD2 - NA

open C door - 28:00 min (right)

HF3 - 150313
 RAD3 - 179083

center burner off - 33:00

HF4 - 146502
 RAD4 - 179082

middle burner off - 35:00

HF5 - 90321
 RAD5 - 179081

corner burner off - 37:00

~~time after~~

ppr fan on at - ~~MMDD~~ 42:01
 "A side door"

62" from front bottom
 of fan to doorway

gas pump off 52:20

ppr off @ 52:30

note: Gas analyzer A
 located in A1/A2 (fire room)
 Gas analyzer B
 located in A4/A5 (target room
 w/ double doors)

gas analyzer setup same as Test 2

- Burner Test -

Test 3 - East - 062514

A door "closed", C doors closed, roof closed - initial state

I "C channel" interior
gap on rear door 5 1/4"

ignition

corner burner - 4:00 min

middle burner - 7:00 min

center burner - 10:00 min (10:04 video)

open (right) C door - 11:00

open (left) C door - 13:00

open A door - 14:00

Center corner burner off - 17:00

Middle burner off - 19:00

Corner burner off - 21:00

PPV start - 26:00

off - 36:00

Test 4. East - 062514

prior to gas
flowing

gas analyzer setup same

as Test 2

41

- Burner Test -

(static 102 F) → 90 F @ flow

A door "closed", C doors closed, roof closed, - initial state
'channel' interior gap on rear door $5\frac{1}{4}$ "

ignition pilot - 20200 3:40

corner burner	4:00	90°F gas temp reading
middle burner	7:00	88°F gas temp reading
center burner	11:00	86°F gas temp reading

} at flow meter

open (right) C door	11:00
open (left) C door	13:00
open A door	14:00

center burner off	17:00
middle burner off	19:00
corner burner off	20:00 21:00

ppr start 26:00 (~26:10)

off

gas analyzer setup
same as Test 2

42

Test - 5 - East - 062614

- Burner Test -

"A door closed", "C doors closed", roof closed - can open - initial state
C channel config
ignition - pilot : start of test (pre-test door open 8:23, 10:05)

corner burner: 14:00 meter temp 105°F
middle burner: 14:15
center burner: 14:30

& roof vent open: - 16:38
front C door (right) open - 17:03
C door (left) open - 20:03
roof vent closed - 21:30
center burner off: 23:00
middle burner off: 23:20
corner burner off: 23:40

programme:

roof vent open - 26:05
C door (left) closed - 33:17
C door (right) closed - 33:30
corner burner on - 34:30
middle burner on - 34:45
center burner on - 35:00

roof vent closed 33:45

roof vent open - 36:30
C door open (right) - 38:00
C door open (left) - 39:30

close roof vent 42:45

center burner off - 44:15
middle burner off - 44:30
corner burner off - 44:45

open roof vent - 45:30

43

C door(left) closed - 52:38

C door(right) closed - 52:55

roof vent closed - 53:54

corner burner on - 54:30

middle burner on - 54:45

center burner on - 55:00

roof vent open - 56:30

C door open (right) - 58:00

C door open (left) - 59:31

close roof vent - 61:30 announced ; 61:43 closed

center burner off - 63:30

Middle burner off - 63:45

corner burner off - 64:00

open roof vent - 65:30

end replicates @ 69:00 minutes

gas analyzer setup save as
Test 2

44

Test-6-East-062614

- Burner Test -

A door closed, C doors closed, roof vent closed, can open - initial state
-C channel config -

ignition - pilot on at start

corner burner on - 3:15
middle burner on - 3:30
center burner on - 3:45

C door (right) open - 5:15

roof vent open - 6:45

~~C door (left) open~~

center burner off 8:15
middle burner off 8:30
corner burner off 8:45
open C door (left) - 9:30
roof vent closed - 11:35
C door (left) closed - 12:02
C door (right) closed - 12:18

corner burner on - 12:45
middle burner on - 13:00
center burner on - 13:15

gas temp e meter 84°F

C door (right) open - 14:45

roof open - ~~15:00~~ 15:45

center off - 17:15
middle off 17:30
corner corner off 17:45
C door (left) open 18:30
C door (right) closed 20:11
^{left} C door (right) closed ~ 20:24
roof closed ~ 20:41

corner on 21:15
middle on 21:30
center on 21:45

rooftop open C door (right) open 23:15

roof open 24:45

center off center off 26:00
middle off
corner off

} kill gas at truck - 26:15
drain time ~ 26:25

left door 27:25

Test-7_East_06 27 2014

- config: flow loop / don't/
V-shape

Cold flow - double doors open, rear single door
closed, PPV fan ~~off~~ flow loop, no fire
cold

00:00	pretest	- no fan
1:00	fan at	1200
2:00	fan at	1400
3:00	fan at	1600
4:00	fan at	1800
5:00	fan at	2000
6:00	fan at	2200
7:00	fan at	1200
8:00	fan	off

3:1

note: gas analyzer unused

note: for tests 7, 8, 9, 10, 11, the arrays
A1 & A3 appear to oscillate together due
to being wet and/or damaged, but readings
are generally good

H

H

HF

Test - 8 - East - 062714

notes: gas analyzer unused.

Config: same as test 7

47

Hot flow - double doors open, rear single door closed,
PPV fm hot flow loop w/ fire, no targets

00:00 pretest - fan on 1200 rpm

3:17 3:00 1st burner open ignition 1/2 open ~~3~~

4:35 2nd burner 1/2 open (ignition + inc)

5:35 3rd burner 1/2 open (ignition + inc)

+0:50

11:00 fan up to 2200 rpm

14:30 gas burners off

note: fan was on 1200 rpm at start of test,
bad pretest flow data (non zero)

Heat Flux Notes

HF2 V - 65285 } placed in A3 room; else same as test 2
HF2 H - 65287 }

Test_9 - East - 062714

config! Same as test 7
note: gas analyzer unused

Hot flow, double doors open, rear single door closed
PPV hot flow loop, w/ fire
targets: helmet~~x~~ and FF fabric
(880, plastic) [red]

TC-Helmet_1: outside gear pocket (fabric sample)

TC-Helmet_2: inside gear pocket (fabric sample)

TC-Helmet_3: front helmet surface

TC-Helmet_4: ambient gas in front of helmet

TC-Helmet_5: inside helmet, backside front of dome

TC-Helmet_6: chin strap clip (plastic fastener)

00:00 - pretest - no pilot no fan

2:00 - pilot lit & walking in bldg. (pilot at 2:37)

3:22 - fan on @ 1200 rpm

~~4:40~~ 4:40 - all burners on, all valves 1/2 turn
Same position as test 8

7:45 - fan set to 2200 rpm

10:50 - g's off

Note: Dan's handheld windmeter measured

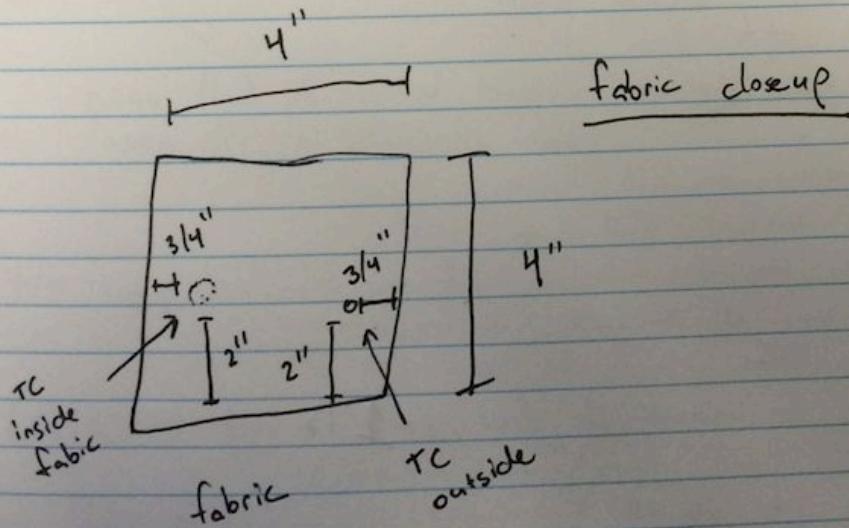
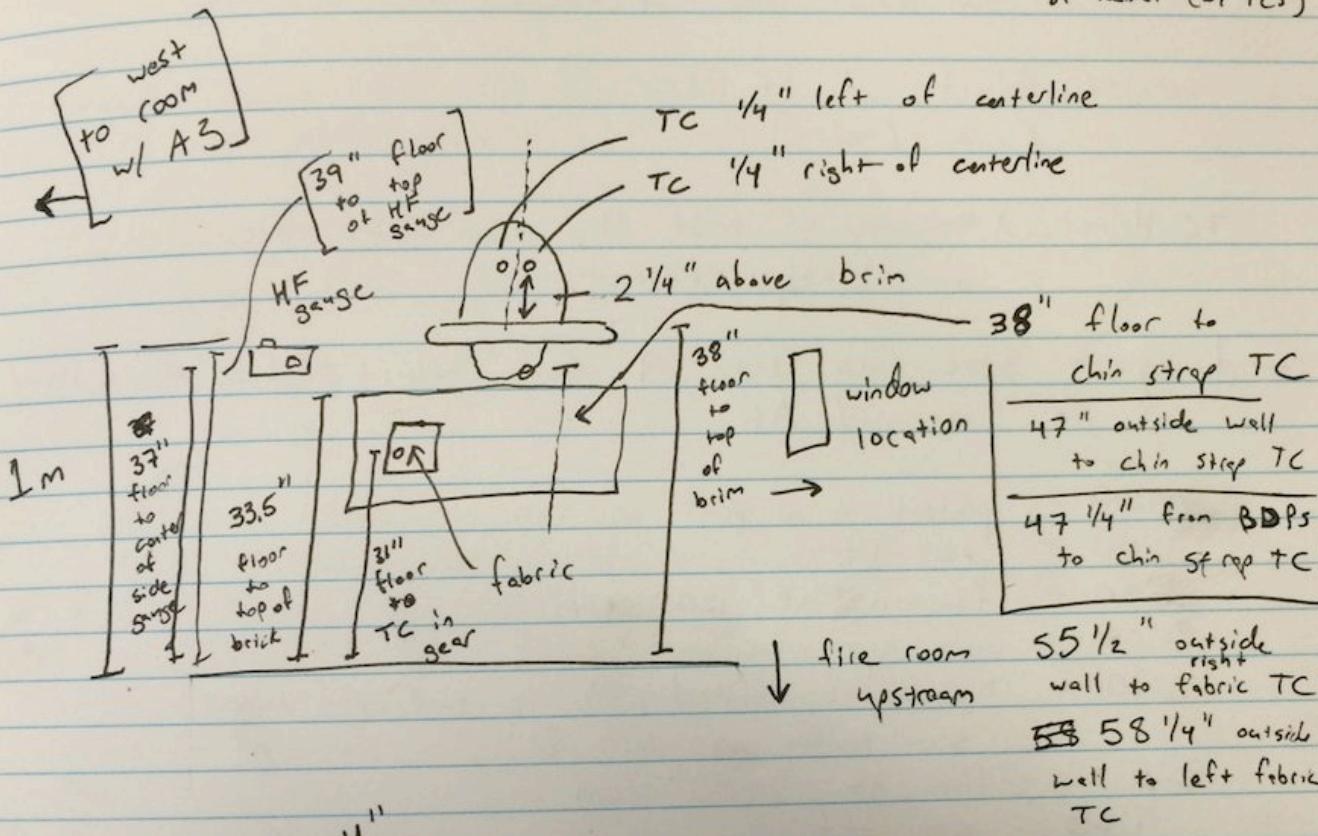
~ 1.2 m/s flow speed at BDPs,
Same as cold flow tests

Test - 9 - East - 06/27/14

56" from inner wall
to centerline of helmet 51 1/2" from outer wall
to centerline of helmet

49

note: 48" from
BDPs to front
of helmet (w/ TCs)



46" from BDP to center top of HF gauge

44" from BDP to front of HF gauge

50

Test-10-East-062714

config: same as test 7
 note: gas analyzer unused

Hot flow, double doors open, rear single door closed,
 PPV hot flow loop w/ fire

targets: helmet and FF fabric
 (leather) [Yellow]

TC-Helmet-X: same as test 9, now 3-6 are
 on leather helmet

- dimensions same as test 9 for helmet / fabric
 in room w/ A6

- 00:00 - pretest - no pilot no fan
- 2:00 - pilot lit
- 2:20 - fan on at 1200 rpm
- 3:00 - main gas valve on
- 3:10 - burners all ignited, all 1/2 turn open valves,
 same position as test 8
- ~~3:20~~ 6:20 - fan at 2200 rpm
- 9:25 - gas off
- 20:30 - main gas valve on, center burner on full open
 side burners at 1/2 open
- 20:43 - ignition on all burners
- 22:30 - all burners full open
- 23:35 - fan stopped due to electric failure, gas off
- 32:15 - gas on, all burners full open
- 37:25 - gas off
- 40:40 - fan on outside of door (~~w/ 1 ft back from BDPs~~)
 at 2200 rpm (maximum setting)
- 45:50 - removed drywall from right hallway
- 60:25 - ppv fan off

Note: initial setup had fan in right doorway w/
 gypsum covering doorway above fan

Test-11-East 062714

config: same as test 7
note: gas analyzer unused

51

Hot flow, double doors open, rear single door closed,
~~hot~~ hot flow loop w/ fire, no PPV fan

targets: helmet and FF fabric
(880, plastic) [red]

TC-Helmet-X: same as test 9, now 3-6 are
on plastic helmet

-dimensions same as test 9 for helmet/fabric
in room w/ A6

00:00 - pretest - no fan, pilot
3:30 - burners all ignited, all full open
8:45 - all gas off

52

Test_12 - East_062914
Single couch, A2

Gas analyzer probes:

A: near A1

B: near A2

lag same as Test 2

all closed initially, C channel

ignition - 3:00 min

video - 3:11

// also
acted
up

{ HF1 - 91834

RAD1 - 146131

X HF2 - 150792

X RAD2 - 179084

else
same
as
test
2

open front right door - 7:30

open vertical vent - 8:30

open left front door - 12:30

building entry

direct attack / water on fire ~ 13:31
(water can)

fire out - 15:50ish

mop up

end 17:10

Test 13 - East - 062914

2 couches, A1 → 1 m apart → 1st along AD corner
Gas same as prior ; A → A1
B → A2 ; lag unchanged

all closed initially, c channel

53

|| No HF 1/2
|| No Rad 1/2

ignition - 2:30

video - 2:38

~~open front right door~~

open front right door - 8:00

open vertical vent - 10:00

~~open front right door~~

~~dry attack
(both sides)~~

fire out

right open - 46:30

roof open - 48:00

left open 50:20

water on fire - 54:15 ~

Second flow - 55:00

third flow - 57:00

→ hole in back of door - 16:10

→ second ignition ↘

→ left door open - 39:08

→ additional fuel in place - 40:18

→ second ignition - ~~43:20~~ 43:20
* both couches *

left closed 43:35

roof closed 43:55

right closed 44:13

~~Test 14 - West - 06/30/14~~

cold flow, fan test

~~Test 14 - West - 06/30/14~~

minimal wind, no flag movement

Test 14 - West - 06/30/14

- all doors closed initially
- gas fan - 68" from door to fan, centered on A5

→ 2 min background

→ open front right door (A5) - 2 min

→ open stairwell door (A10) - 4:30

→ open ~~A10~~ door upstairs, pond side (A11) - 6:30

→ fan off - 8:30

→ data off at 10:00 min

Test-15-West-063014

Test-2-West-063014

→ all closed initially

→ fan distance from doors: 90"

→ location: centered between A5/A6

→ open right door (A5): 2:00

→ open left door (A6): 3:00

→ open stairwell door (A10): 4:30

→ open pond side door (A11): 6:30

→ fan off - 13:58

→ stop at 15:00

2: cold flow ^{fan}, ~~map~~ test
2 doors (A5/A6) open

55

Test_16-West_063014

Test 3 - West - 063014:

Hose flow test, double doors open,
 rear 1st floor door closed, monitor flow from front
 double doors

- 00:00 pretest data started
- 1:00 monitor flowing water, SS, near target
- 2:00 interior stairwell door opened (at A10)
- 3:00 exterior door at A11 opened
- 4:00 exterior door at A11 closed
- 5:00 exterior door at A13 opened
- 6:00 closed all upstairs doors
- 8:00 monitor flowing water, SS, far target
- 9:00 exterior interior stairwell door opened
- 10:00 exterior door at ~~A13~~ opened A13 opened
- 11:00 all upstairs doors closed
- 14:00 monitor flowing water, narrow fog, far target
- 15:00 interior stairwell door opened
- 16:00 exterior door at A11 (accidentally) opened then closed
- 16:20 exterior door at A13 opened
- 17:20 closed all upstairs doors
- 19:00 monitor flowing water, narrow fog, near target
- 20:00 interior stairwell door opened
- 21:00 exterior door at A13 opened
- 23:00 monitor flowing, wide fog, near target
- 24:00 interior stairwell door opened
- 25:00 exterior door at A13 opened
- 26:00 all upstairs doors closed
- 27:00 monitor flowing, wide fog, near far target
- 28:00 interior stairwell door opened
- 29:00 exterior door at A13 opened
- 30:00 all upstairs doors closed; water off

(22:00 all upstairs doors closed)

Test-17-West-063014

Test 4 West-063014

57

Hose flow test, double doors open,
rear 1st floor door open, monitor flow from front doors
double

- 00:00 pretest data started
2:00 monitor flowing water, SS, near target
3:00 interior stairwell door opened (at A10)
4:00 exterior door at A13 opened
5:00 all upstairs doors closed, hose to next position/pattern
6:00 monitor flowing water, SS, far target
7:00 interior stairwell door opened
8:00 exterior door at A13 opened
9:00 all upstairs doors closed, hose to next position/pattern
10:00 monitor flowing water, narrow fog, near target
11:00 interior stairwell door opened
12:00 exterior door at A13 opened
13:00 all upstairs doors closed, hose to next position/pattern
14:00 monitor flowing water, narrow fog, far target
15:00 interior stairwell door opened
16:00 exterior door at A13 opened
17:00 all upstairs doors closed, hose to next position
18:00 monitor flowing water, wide fog, near target
19:00 interior stairwell door opened
20:00 exterior door at A13 opened
21:00 all upstairs doors closed, hose to next position
22:00 monitor flowing water, wide fog, far target
23:00 interior stairwell door opened
24:00 exterior door at A13 opened
25:00 all upstairs doors closed, water off

note: Water pressure dropped from 80 psi to 40 psi
at 22:30

Test-17b-West-063014

Test-14b-West-063014

58

Hose flow test, double doors open
rear 1st floor door open, monitor flow from double doors

redo two last iterations from Test-4-West-063014

now running hose tests off engine b/c of
drop in water pressure - pressure (static) is now
90 psi compared to nominal of 80 psi.

00:00 start protest data

2:00 monitor flowing water, wide fog, rear target

3:00 interior stairwell door opened (at A10)

4:00 exterior door at A13 opened

5:00 all upstairs doors closed; hose to next position

6:00 monitor flowing water, wide fog, far target

7:00 interior stairwell door opened

8:00 exterior door at A13 opened

9:00 all upstairs doors closed; water off

Handline hose flow test, double doors open
rear 1st floor door open, hose flow from double doors (front)

- 00:00 Start pretest data
- 1:00 hose flowing water, wide fog, stationary/fixed
- 2:00 interior stairwell door opened (at A10)
- 3:00 exterior door at A13 opened
- 4:00 all upstairs doors closed; hose to no water off
- 5:00 hose flowing water, wide fog, sweeping motion
- 6:00 interior stairwell door opened
- 7:00 exterior door at A13 opened
- 8:00 all upstairs doors closed; water off
- 9:00 hose flowing water, wide fog, rotate CW
- 10:00 interior stairwell door opened
- 11:00 exterior door at A13 opened
- 12:00 all upstairs doors closed; water off
- 13:00 hose flowing water, wide fog, rotate CCW
- 14:00 interior stairwell door opened
- 15:00 exterior door at A13 opened
- 16:00 all upstairs doors closed; water off (adjusting)
note: hose
- 17:00 hose flowing water, narrow fog, fixed position
- 18:00 interior stairwell door opened
- 19:00 exterior door at A13 opened
- 20:00 all upstairs doors closed; water off
- 21:00 hose flowing water, narrow fog, sweeping motion
- 22:00 interior stairwell door opened
- 23:00 exterior door at A13 opened
- 24:00 all upstairs doors closed; water off
- 25:00 hose flowing water, narrow fog, rotate CW
- 26:00 interior stairwell door opened
- 27:00 exterior door at A13 opened
- 28:00 all upstairs doors closed; water off
- 29:00 hose flowing water, narrow fog, rotate CCW
- 30:00 interior stairwell door opened
- 31:00 exterior door at A13 opened
- 32:00 all upstairs doors closed; water off

note: 31:30 wind changing

60

- 34:00 hose flowing water, SS, fixed position
- 35:00 interior stairwell door opened
- 36:00 exterior door at A13 opened
- 37:00 all upstairs doors closed; water off
- 38:00 hose flowing water, SS, sweeping motion
- 39:00 interior stairwell door opened
- 40:00 exterior door at A13 opened
- 41:00 all upstairs doors closed; water off
- 42:00 hose flowing water, SS, rotate CW
- 43:00 interior stairwell door opened
- 44:00 exterior door at A13 opened
- 45:00 all upstairs doors closed; water off
- 46:00 hose flowing water, SS, rotate CCW
- 47:00 interior stairwell door opened
- 48:00 exterior door at A13 opened
- 49:00 all upstairs doors closed; water off
- 49:21 end of test

Test_19_West_063014

Test 6_West_063014

61

Handline hose flow test, double doors open
rear 1st floor door closed, hose flow from double doors

- 00:00 start pretest data
1:00 hose flowing water, SS, fixed position
2:00 interior stairwell door opened (at A10)
3:00 exterior door at A13 opened
4:00 all upstairs doors closed; water off
5:00 hose flowing water, SS, sweeping motion
6:00 interior stairwell door opened
7:00 exterior door at A13 opened
8:00 all upstairs doors closed; water off
9:00 hose flowing water, SS, rotate CW
10:00 interior stairwell door opened
11:00 exterior door at A13 opened
12:00 all upstairs doors closed; water off
13:00 hose flowing water, SS, rotate CCW
14:00 interior stairwell door opened
15:00 exterior door at A13 opened
16:00 all upstairs doors closed; water off
18:00 hose flowing water, narrow fog, fixed position
19:00 interior stairwell door opened
20:00 exterior door at A13 opened
21:00 all upstairs doors closed; water off
22:00 hose flowing water, narrow fog, sweeping motion
23:00 interior stairwell door opened
24:00 exterior door at A13 opened
25:00 all upstairs doors closed; water off
26:00 hose flowing water, narrow fog, rotate CW
27:00 interior stairwell door opened
28:00 exterior door at A13 opened
29:00 all upstairs doors closed; water off
30:00 hose flowing water, narrow fog, rotate CCW
31:00 interior stairwell door opened
32:00 exterior door at A13 opened
33:00 all upstairs doors closed; water off

- 34:00 hose flowing water, wide fog, fixed position
35:00 interior stairwell door opened
36:00 exterior door at A13 opened
37:00 all upstairs doors closed; water off
38:00 hose flowing water, wide fog, sweeping motion
39:00 interior stairwell door opened
40:00 exterior door at A13 opened
41:00 all upstairs doors closed; water off
42:00 hose flowing water, wide fog, rotate CW
43:00 interior stairwell door opened
44:00 exterior door at A13 opened
45:00 all upstairs doors closed; water off
46:00 hose flowing water, wide fog, rotate CCW
47:00 interior stairwell door opened
48:00 exterior door at A13 opened
49:00 all upstairs doors closed; water off
end of test

Test_20-West_063014

~~Test 7 West 063014~~

63

Handline hose flow test, double doors open,
rear 1st floor door open, ^{hose} flow from rear door
_{monitor}

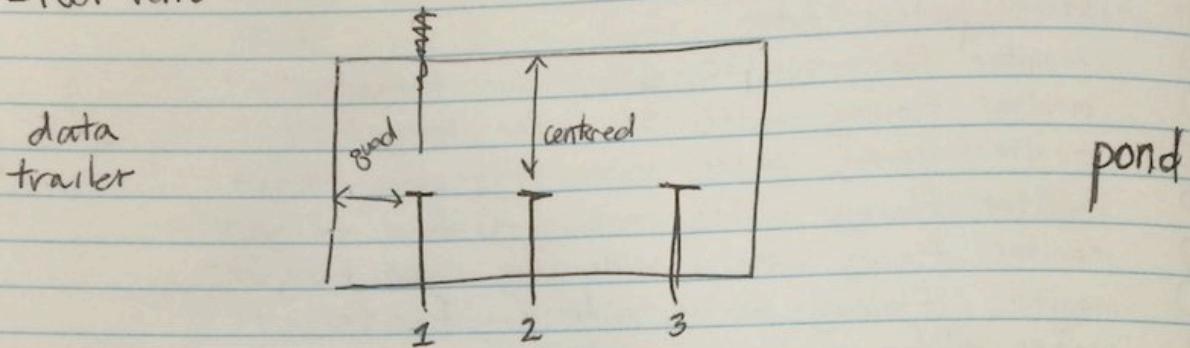
- 00:00 start pretest data
1:00 monitor flowing water, SS, near target
2:00 monitor flowing water, SS, far target
3:00 monitor flowing water, narrow fog, near target
4:00 monitor flowing water, narrow fog, far target
5:00 monitor flowing water, wide fog, near target
6:00 monitor flowing water, wide fog, far target
7:00 water off
8:00 monitor flowing water, SS, near target
9:00 monitor flowing water, SS, far target
10:00 monitor flowing water, narrow fog, near target
11:00 monitor flowing water, narrow fog, far target
12:00 monitor flowing water, wide fog, near target
13:00 monitor flowing water, wide fog, far target
14:00 water off

Note: data were lost, only video data available

64

* Note: 179084 radiometer is now A3 heat flux *

- roof vent -



West House

* TC Gear Left : Red/White } when facing door
 * TC Gear Right : Red/Blue } looking down stairs

Red/White = SC1 Mod3 # 26 - 31 }

Red/Blue = SC1 Mod8 # 16 - 21 }

TC ignition = SC1 Mod5 # 28 → Heat Flux TC
 (YC green #20)

White/Blue = SC1 Mod3 #26 - 31 }

West House ↗
 Gear TC Channels ↘

~~HF~~ - (1) HF_V = 65287 } top o' stairs
~~HF~~ (1) HF_H = 65285 }

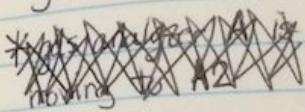
(2) HF_V = 180321

(2) HF_H = ~~180322~~ 180322

14 East

~~Test - 21 - West - 070114~~

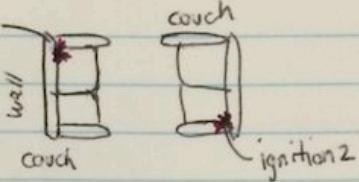
gas B non functional



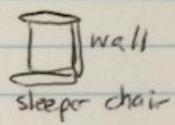
~~exterior door open~~ OSB & carpet
in fire room

Test_21_East_070114

ignition 1 2 couches in fire room - both ignited



65



sleeper ~~chair~~ chair in A3 as well

two "old" chairs
in C side
room A4/A5

ignition - 8:00

C Side

open ~~front~~ right door - 11:13

open roof vent - 12:30

open C Side left door - 13:45

Chair in room C ~ 15:40

interior attack/Water on fire - 15:50

water off 16:30

water on 17:06 , advancing hose

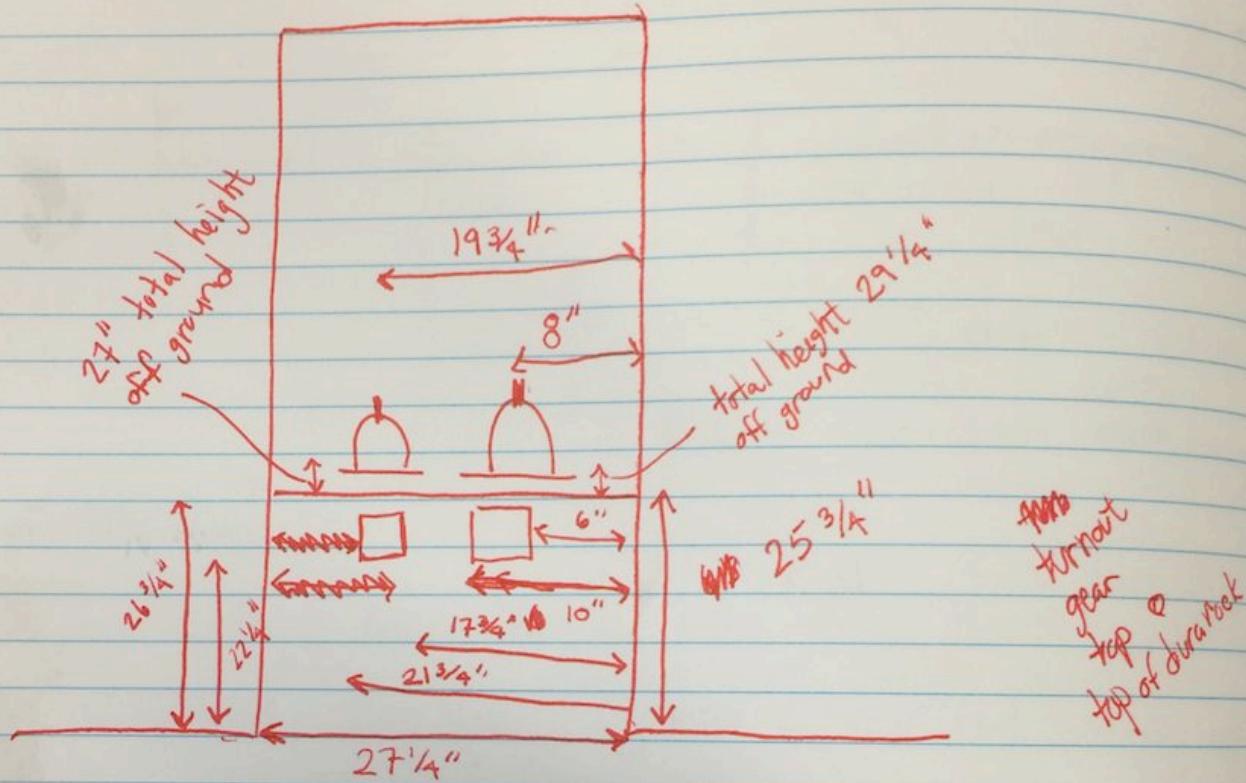
water off 19:06

rear door open - 22:03 ~

water on @ rear - 2348 inside & flowing water

rear water off - 2723

off 29:10



Test-22-West-070214

Test-8-West-070214

67

Gas analyzer A: ^(1st floor) near A1 - 12 s lag
Gas analyzer B: ^(2nd floor) near A10 - 12 s lag

fan is 90" from door

TC-Ignition is on heat flux gauge

BDPs at A11 are high/low opposite of others,
high side facing north (data trailer)
~~low side facing south (pond)~~

ignition - 8:02 (gas on) - 8:18 ignition, 9:07 all burners - 9:23 video confirm

C side, upper level, right side (A13) - 11:30

C side, lower level, right (A5) - 13:30

C side, lower left, left (A6) - 15:45

C side, upper left (A14) 18:00

fan on - 19:30 19:10

fan off - 21:34

gas off - 22:00

flame out - 22:07 off burner

→ A side, second level, door open - 23:19

fan on (cold) - 26:00

A side upper level closed - 27:56

68

Test-23-West-070214

Test-9-West-070214

burner, gear
gas test

ignition - 3:45 (full ignition 4:04)

C side, upper level, right side (A13) - 6:00

C side, lower level, $\frac{1}{2}$ right side (A5) - 8:02

C side, lower level, left side (A6) - 10:00

C side, upper level, left side (A14) - 12:08

fan on - 14:01

fan off - 16:30

gas off 17:00

flameout 17:12

A Side, second level, open - 18:01

fan on (cold) - 19:30

A side, upper level ~~with doors~~ -

test over 20:46

Test_24_West_070214

~~Test_10_West_070214~~

burner test

69

ignition - (2:30) 3:00 all ignited

open interior door ~~for 20 min~~ -(2:00 min) - 5:00

C side
~~right front~~ lower level (A5) -(4:00 min) - 7:00

C side
~~right front~~ upper level (A13) -(6:00 min) - 9:00

A side upper level (A11) -(8:00 min) - 11:00

fan on -(10:00 min) - 13:00

gas off -(12:00) - 15:00

~~ductwork~~ -

C side, upstairs, left side (A14) - 17:15

end @ 22:06

Test-25-West-070214

70

Test 11-West-070214

PPV fan 90" from
C side doors, centered on
A5

ignition - 2:00 (2:10)
(rear door opened & ray closed it)

open interior door (+2) 4:00

C side lower (A5) (+4) 6:11

C side upper (A13) (+6) 8:00

A side upper (A11) (+8) 10:00

fan on (+10) 12:00

gas off (+12) 14:00

C side upstairs, left side 16:00

test over 18:00

*
*

East

Test_26 - 070714

• all closed, A door is a half window

sensors #1-4 on A7

71

ignition - 3:00

• "C" configuration

3:12ish ride both - 3:26

open C side right door (A8) - 5:55

• two couches in ignition

open roof vent (A10) - 7:45

• target chair (sleeper) at
A2 and A3

open A side window (A7) - 7:00

water on fire - 9:05

near

second water - 10:23

flow

[Bullet camera test]

Cam 1, 5 - Speco

Cam 2, 6 - Everfocus

Can 3, 7 - Bosch

Cam 4, 8 - Marshall

* A analyzer over A4 * } lag times remain same as other
* B analyzer over A2 * } East buildings

Blower door fan test, 7/7/2014

1 story East bldg., fan blower on single door (pond side)
 fan set to high speed, 8 s avg., 7 hole low flow
 plate. readings:

- 35.5 Pa, 239 cm²
- 35.6 Pa, 2627 m³/h
- 35.5 Pa, 1546 cfm

2 story West bldg., fan blower on single door, 1st floor (pond side)
 fan set to high speed, 8 s avg., 7 hole low flow
 plate.

[interior stair door open] [interior stair door closed]

- | | |
|--------------------------------|---------------------------------|
| 7.8 Pa, 542 cm ² | 28.8 Pa, 271 cm ² |
| 7.9 Pa, 2754 m ³ /h | 29.0 Pa, 2629 m ³ /h |
| 8.3 Pa, 1613 cfm | 28.8 Pa, 1400 cfm |

[interior stair door is partially closed, as in previous testing]
 observation that door is open ~6 in when blower is on

- | |
|---------------------------------|
| 9.9 Pa, 476 cm ² |
| 11.2 Pa, 2738 m ³ /h |
| 11.7 Pa, 1607 cfm |

Test_27-West_070814

ignition - 9:30
video - 9:45

A side upper door - (smoke to floor) - 13:00

A side window - (60s-120s) - 14:30

right C door lower }
left C door lower } (~30s) - 15:00

basement fully involved ~ (30s-45s)

water on fire (wide fog 15s-30s app) 15:45

16:20

let fire come back

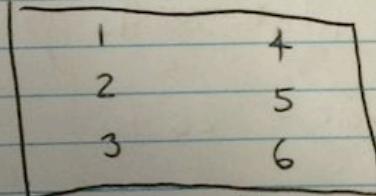
16:45

straight stream (30s-60s app)

19:20 Water off

- stair door open
- all closed to start
- roof / ~~wall~~ remain closed
- real fuel - 3 couches plus OSB basement
- carpet + chair 1st floor
- upstairs target chair is 6 inches from east wall to arm/side; back of chair is against North wall
- A side corner couch is ignition

73



Facing Window

Note: facing door looking down stairs - all channels on left setup; only turnout gear on right setup TCA12 #7 & #8 outside & inside • respectively.

74

Test -28_East_070814

- all closed to start
- C config
- gas same as test 26

i Ignition - 6:30
6:42-video

C A side faults/forced - 10:45 (forced)

C right C side door - 13:00

C roof vent - 14:15

C left C side door - 16:23

fi doors/vent closed - 18:55

fi second ignition - 19:52 / 20:00

water on fire - 25:00

water off - 25:15

C side right - 25:40

roof vent - 26:40

fog near = 38:20 (30:30)

water off - 30:40

fog

Straight + whip - 33:00

water off - 33:58

front water - 34:48
attack

Gear

Test 29 West

- o run A16 out back to yellow cable w/^{brown}~~yellow~~ stripes 75
A17 (Mod2:0-15)
- o A18 & A19 connect to yellow cable - ^{yellow}~~brown~~ stripes (Mod3:0-15)
- o BDP c 18 (Mod 5:0-7)

Gas analyzer

- A is 2 ft above floor at A19 - lag time 10s
- B is 2 ft below ceiling at A18 - lag time 13s

Gear	TC 1	A17 out
	TC 2	A17 in
	TC 3	A18 out
	TC 4	A18 in
	TC 5	A 19 out
	TC 6	A 19 in

76

Test - 29 - West - 071014

ignition - 6:30

video - 6:40

A side upper door - (~3.5min) 10:00

A side window - (~1.5min) 11:30

C side double doors (same time) - (~30s) - 12:30

water on fire (straight stream) - 13:10

water off 14:47

- Straight stream - 2009pm
- all closed at start
- stairwell door open
- real fuel - 3 couches + osb
- A side corner couch is ignited upstairs
- three sets of turnout stages