REPORT NUMBER 103-GTL-07-005

SAFETY COMPLIANCE TESTING FOR FMVSS NO. 103 WINDSHIELD DEFROSTING AND DEFOGGING SYSTEMS

HONDA MOTOR CO.
2007 HONDA FIT, PASSENGER CAR
NHTSA NO. C75300

GENERAL TESTING LABORATORIES, INC.
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MARCH 3, 2008

FINAL REPORT

PREPARED FOR

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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16. Abstract Compliance tests were conducted on the subject, 2007 Honda Fit Passenger Car in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-103-13 for the determination of FMVSS 103 compliance. Test failures identified were as follows: None		
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SECTION 1

PURPOSE OF COMPLIANCE TEST

1.0 PURPOSE OF COMPLIANCE TEST

A 2007 Honda Fit Passenger Car was subjected to Federal Motor Vehicle Safety Standard (FMVSS) No. 103 testing to determine if the vehicle was in compliance with the requirements of the standard. All tests were conducted in accordance with NHTSA, Office of Vehicle Safety Compliance (OVSC) Laboratory Procedure, TP-103-13 dated 26 June 1996 and General Testing Laboratories, Inc. (GTL) Test Procedure, "Windshield Defrosting and Defogging Systems – Passenger Vehicles, Mulitpurpose Vehicles, Trucks and Buses".

1.1 TEST VEHICLE

The test vehicle was a 2007 Honda Fit Passenger Car. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: JHMGD37647S056969

B. NHTSA No.: C75300

C. Manufacturer: HONDA MOTOR CO.

D. Manufacture Date: 06/07

1.2 TEST DATE

The test vehicle was subjected to FMVSS No. 103 testing on October 25-26, 2007.

SECTION 2

COMPLIANCE TEST PROCEDURE AND SUMMARY OF RESULTS

2.0 GENERAL

The 2007 Honda Fit 4-door passenger car, NHTSA No. C75300 was subjected to FMVSS No. 103 tests on October 25-26, 2007. Photographs of the test vehicle are shown in Figures 5.1 through 5.4. The manufacturer's certification and tire information labels are shown in Figures 5.5 and 5.6. The test instrumentation and instrument panel setups are depicted in Figures 5.7 and 5.8. Figures 5.9 through 5.14 depict the windshield pre and post test defrost conditions.

2.1 TEST PROCEDURE

Prior to test the test vehicle was inspected for completeness, systems operability, and appropriate fuel and liquid levels, i.e., oil and coolant to include antifreeze protection. The vehicle was then photographically documented as required by the DOT/NHTSA test procedure. The windshield patterns for areas A, B, C, and D had been furnished prior to testing and these areas were outlined on the windshield with a marker. The vehicle was then installed in the cold chamber and pre-conditioned for a 14-hour minimum, 0º ±5º F temperature soak for the first test run. After the pre-condition, the hood was raised to assure engine coolant and lubricant were stabilized within the test temperature range for a minimum of 2 hours.

At the end of the 2-hour minimum stabilization period, the entire windshield was sprayed evenly with 0.010 ounces of water per square inch of glass area. Refer to Section 3, Compliance Test Data, for test specifics such as total amount of water sprayed, spray gun identification, and air pressure regulation. The vehicle soak continued for an additional 30 minutes minimum but no more than 40 minutes after the windshield was sprayed.

At the conclusion of the additional soak time the vehicle's engine was started and operated at a target speed of 1500-1600 rpm or at the manufacturer's specification if different as noted on data sheets. The defroster blower was turned on to the high speed setting with the heater selector in the de-ice (defrost) position, and the temperature control in the maximum temperature position. All doors and windows were closed. The heater air intake was fully open and the vehicle's hood closed. At no time during the test were the windshield wipers used.

SECTION 2 continued

At start of testing and during test, at each 5-minute interval after engine start, cold chamber, engine coolant, heater coolant in and defroster air left/defroster air right temperatures were recorded. Likewise at each 5-minute interval the boundary of the defrosted area was marked on the inside surface of the windshield. The test was run for a maximum of 40 minutes from engine start, or until such time as 100 percent windshield clearance was achieved. Photographs were made of the windshield at the pre-test frosted state and 20-minute and 25-minute intervals. Post test actions included placing a vellum pattern on the windshield and tracing the windshield's 5-minute interval defrosted area boundary lines onto the vellum pattern.

After the traces were obtained, the windshield was again thoroughly cleaned and the vehicle engine coolant and lubricant stabilization period at 0º ± 5º F temperature commenced for a repeat of the procedure discussed. The windshield patterns for both tests were used subsequently to determine the cleared area percentages.

2.2 SUMMARY OF RESULTS

Based on the test performed, the test vehicle appears to be in compliance with the requirements of FMVSS 103.

SECTION 3

COMPLIANCE TEST DATA

3.0 TEST RESULTS

The following data sheets document the results of testing on the 2007 Honda Fit.

SUMMARY DATA SHEET
FMVSS 103, WINDSHIELD DEFROSTING AND DEFOGGING SYSTEMS

VEH. MOD YR/MAKE/MODEL/BODY: 2007 HONDA FIT PASSENGER CAR
VEH. NHTSA NO: C75300; VIN: JHMGD37647S056969
VEH. BUILD DATE: 06/07 TEST DATE: OCTOBER 25-26, 2007
TEST LABORATORY: GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

WINDSHIELD AREA: 1655 in^2 AREA C = 245.0 in^2 AREA D = 245.0 in^2 AREA A= 1015.0 in^2

MANUFACTURER'S WINDSHIELD PATTERN USED: Yes X No

ENGINE THERMOSTAT NOMINAL REGULATING TEMPERATURE: 180 ºF

HEATER-DEFROSTER SYSTEM INCLUDES AIR CONDITIONER: YES X NO

DESCRIBE UNUSUAL FEATURES OF DEFROSTING SYSTEM: Close side defroster Vents and do not use A/C

DESCRIBE UNUSUAL FEATURES OF TEST CAR: NONE

DESIGNATION	AREA PERCENT DEFROSTED					
	TEST 1	TEST 2	AVG	REQ'D	PASS	FAIL
CRITICAL AREA C AT 20 MINUTES	100%	100%	100%	80% MINIMUM	PASS	
PASSENGER AREA D AT 25 MINUTES	100%	100%	100%	80% MINIMUM	PASS	
TOTAL AREA A AT 40 MINUTES	100%	100%	100%	95% MINIMUM	PASS	

REMARKS:

RECORDED BY: G. FARRAND DATE: 10/26/07

APPROVED BY: D. MESSICK

FMVSS 103 TEST DATA RECORD – TEST RUN NO. 1

VEH. MOD YR/MAKE/MODEL/BODY: 2007 HONDA FIT PASSENGER CAR
VEH. NHTSA NO: C75300; VIN: JHMGD37647S056969
VEH. BUILD DATE: 06/07; TEST DATE: OCTOBER 25, 2007
TEST LABORATORY: GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

If 1st Test Run, chamber conditioned 22 hours @ 0º ±5º F (14 hrs. min.)

Cold Soak Period: 22 HOURS

Time engine coolant and lubricant remained stabilized at 0º F: 15 hrs. 0 minutes

Water Spray Gun and Nozzle Type: BINKS #66 S

Spray Gun Pressure: 50 psi (50 psi ± 3 psi)

Water used: 16.6 fluid oz. (0.010 ounces per square inch of windshield area)

Soak Period Between Ice Application and Test Start: 35 minutes (30 to 40 minutes)

Engine Speed: 1550 rpm (Target engine speed 1500 to 1600 rpm)

Wind at specified location in front of windshield: 1 mph (0 to 2 mph)

Number of Vehicle Occupants: 1 (2 maximum)

Describe window openings, if any: NONE

TIME FROM START (minutes)	MOTOR VOLTAGE (volts)	TEMPERATURE, ºF					DEFROSTED AREA, %		
		TEST ROOM	ENGINE WATER	HEATER WATER IN	DEFROSTER AIR				
					DRVR	PSGR	A	C	D
0	13.5	-1.0	-.7	-.7*	-.5	-.2	0%	0%	0%
5	14.8	-1.3	31.0	53.6*	79.5	87.5	13.5%	0%	0%
10	14.7	-.2	73.6	111.9*	133.2	136.5	89.1%	95.1%	100%
15	14.6	0.0	114.9	145.7*	152.4	158.2	100%	100%	100%

REMARKS: *Heater Water In thermocouple is located on outside of heater hose due to location of fittings.

RECORDED BY: G. FARRAND DATE: 10/25/07

APPROVED BY: D. MESSICK

FMVSS 103 TEST DATA RECORD – TEST RUN NO. 2

VEH. MOD YR/MAKE/MODEL/BODY: 2007 HONDA FIT PASSENGER CAR
VEH. NHTSA NO: C75300; VIN: JHMGD37647S056969
VEH. BUILD DATE: 06/07 ; TEST DATE: OCTOBER 26, 2007
TEST LABORATORY: GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

If 1st Test Run, chamber conditioned N/A hours @ 0º ±5º F (14 hrs. min.)

Cold Soak Period: 22.0 HOURS

Time engine coolant and lubricant remained stabilized at 0º F: 15 hrs. 30 minutes

Water Spray Gun and Nozzle Type: BINKS #66S

Spray Gun Pressure: 50 psi (50 psi ± 3 psi)

Water used: 16.6 fluid oz. (0.010 ounces per square inch of windshield area)

Soak Period Between Ice Application and Test Start: 36 minutes (30 to 40 minutes)

Engine Speed: 1500 rpm (Target engine speed 1500 to 1600 rpm)

Wind at specified location in front of windshield: 1 mph (0 to 2 mph)

Number of Vehicle Occupants: 1 (2 maximum)

Describe window openings, if any: NONE

TIME FROM START (minutes)	MOTOR VOLTAGE (volts)	TEMPERATURE, ºF					DEFROSTED AREA, %		
		TEST ROOM	ENGINE WATER	HEATER WATER IN	DEFROSTER AIR				
					DRVR	PSGR	A	C	D
0	13.5	-.7	-.5	0.0*	-.4	-.3	0%	0%	0%
5	14.7	-1.7	33.2	76.3*	103.7	106.9	24.2%	4.2%	10.3%
10	14.6	-1.1	87.3	131.1*	140.0	144.7	97.0%	99.7%	100%
15	14.6	0.7	122.5	158.1*	163.8	169.9	100%	100%	100%

REMARKS: *Heater Water In thermocouple is located on outside of heater hose due to location of fittings.

RECORDED BY: G. FARRAND DATE: 10/26/07

APPROVED BY: D. MESSICK

SECTION 4
INSTRUMENTATION AND EQUIPMENT LIST

TABLE 1 - INSTRUMENTATION & EQUIPMENT LIST

EQUIPMENT	DESCRIPTION	MODEL/ SERIAL NO.	CAL. DATE	NEXT CAL. DATE
TIMER	ACCU-SPLIT	ACT1	10/07	10/08
TAC/RECORDER	MONARCH	1444664	08/07	08/08
TEMPERATURE RECORDER	OMEGA	B/55662	06/07	06/08
SPRAY GUN	BINKS	66S	BEFORE USE	BEFORE USE
ANEMOMETER	OMEGA	53668	06/07	06/08
AIR PRESSURE GAGE	BINKS	0-160	10/07	10/08
SCALE	METTLER	H315/ 445951	BEFORE USE	BEFORE USE
GRADUATED BEAKER	PHOTAX	N/A	N/A	N/A
EVENT RECORDER	COMPUTER	GEO1	BEFORE USE	BEFORE USE

SECTION 5

PHOTOGRAPHS

2007 HONDA FIT
NHTSA NO. C75300
FMVSS NO. 103

FIGURE 5.1
LEFT SIDE VIEW OF VEHICLE

2007 HONDA FIT
NHTSA NO. C75300
FMVSS NO. 103

FIGURE 5.2
RIGHT SIDE VIEW OF VEHICLE

2007 HONDA FIT
NHTSA NO. C75300
FMVSS NO. 103

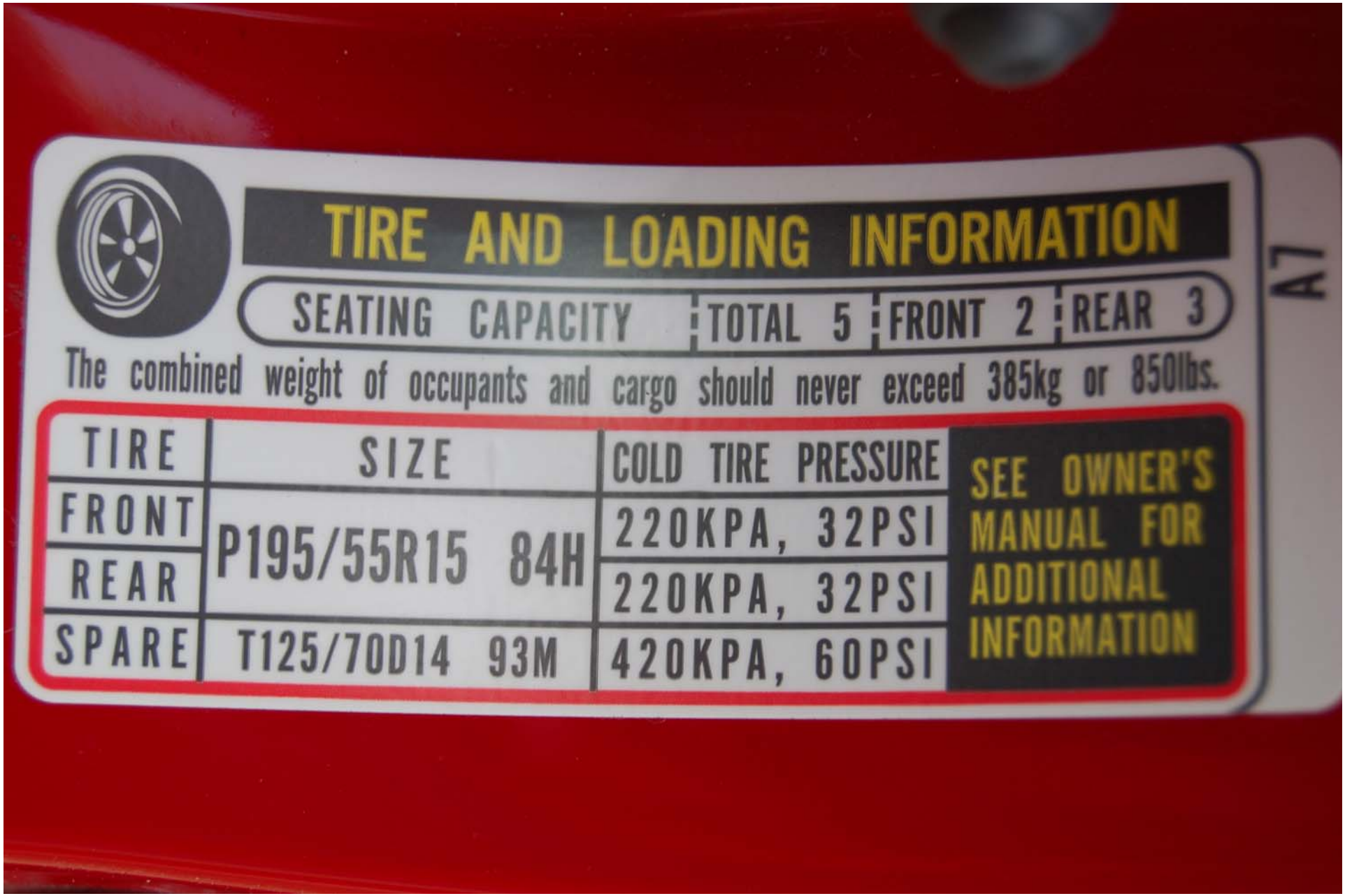
FIGURE 5.3
¾ FRONTAL VIEW FROM LEFT SIDE OF VEHICLE

2007 HONDA FIT
NHTSA NO. C75300
FMVSS NO. 103

FIGURE 5.4
¾ REAR VIEW FROM RIGHT SIDE OF VEHICLE

2007 HONDA FIT
NHTSA NO. C75300
FMVSS NO. 103

FIGURE 5.5
VEHICLE CERTIFICATION LABEL



2007 HONDA FIT
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FIGURE 5.6
VEHICLE TIRE INFORMATION LABEL

2007 HONDA FIT
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FIGURE 5.7
CLOSE-UP VIEW OF DEFROSTER CONTROL SETTING ON DASH

2007 HONDA FIT
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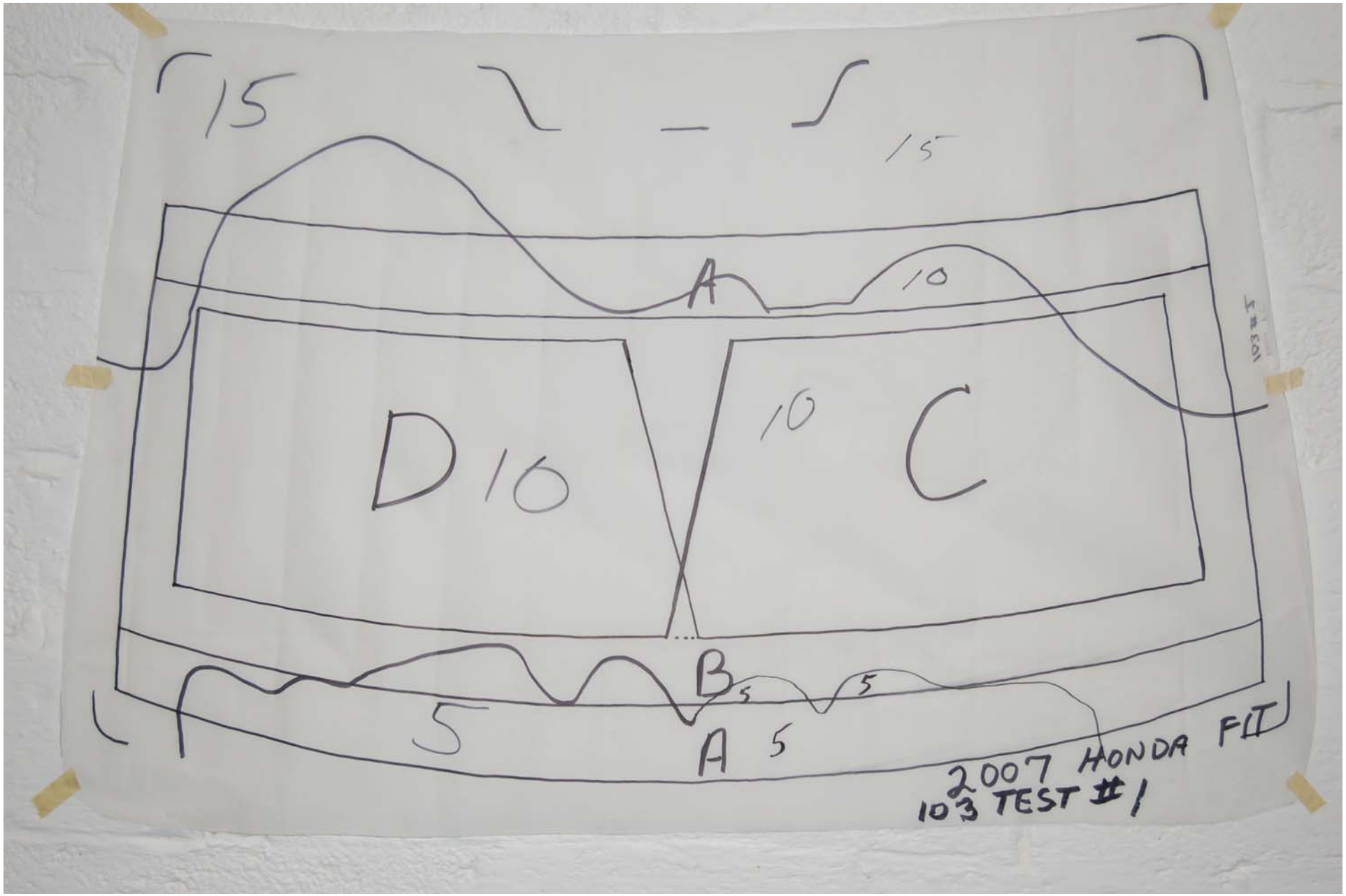
FIGURE 5.8
INSTRUMENTATION SET-UP

2007 HONDA FIT
NHTSA NO. C75300
FMVSS NO. 103

FIGURE 5.9
WINDSHIELD, PRE-TEST FROSTED STATE TEST #1

2007 HONDA FIT
NHTSA NO. C75300
FMVSS NO. 103

FIGURE 5.10
DEFROSTED AREA AT 15 MINUTES TEST #1



2007 HONDA FIT
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FMVSS NO. 103

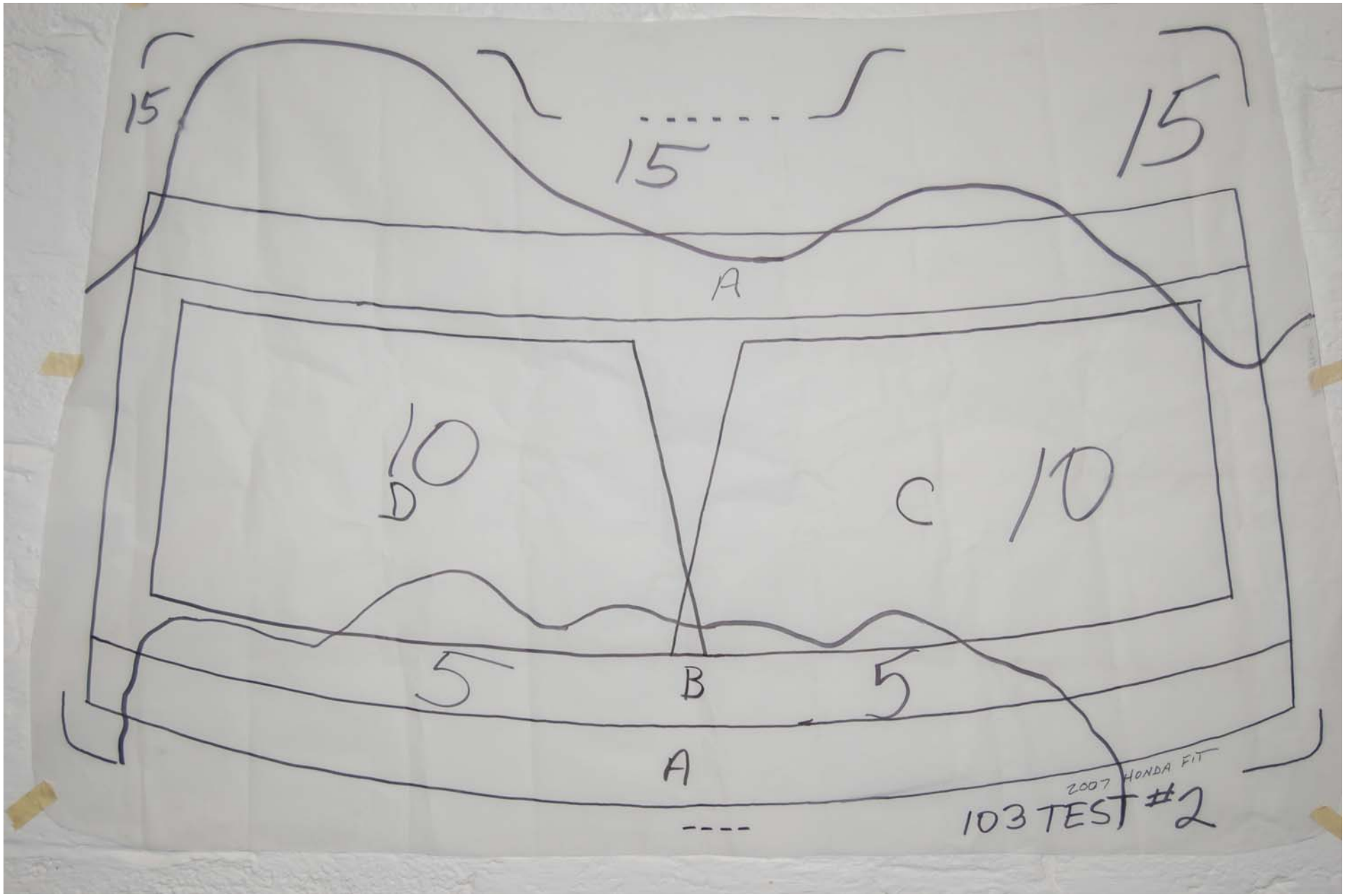
FIGURE 5.11
WINDSHIELD VELLUM PATTERN, POST TEST #1

2007 HONDA FIT
NHTSA NO. C75300
FMVSS NO. 103

FIGURE 5.12
WINDSHIELD PRE-TEST FROSTED STATE #2

2007 HONDA FIT
NHTSA NO. C75300
FMVSS NO. 103

FIGURE 5.13
DEFROSTED AREA AT 15 MINUTES TEST #2



2007 HONDA FIT
NHTSA NO. C75300
FMVSS NO. 103

FIGURE 5.14
WINDSHIELD VELLUM PATTERN, POST TEST #2

SECTION 6

OWNER’S MANUAL DEFROSTER INSTRUCTIONS

Dehumidify the Interior
Air conditioning, as it cools, removes moisture from the air. When used in combination with the heater, it makes the interior warm and dry and can prevent the windows from fogging up.

1. Turn the fan on.
2. If the A/C is off, turn it on (if equipped).
3. Select and . Adjust the temperature to your preference.

This setting is suitable for all driving conditions whenever the outside temperature is above 32°F (0°C).

To Defog and Defrost
To remove fog from the inside of the windows:

1. Set the fan to the desired speed or high for faster defrosting.
2. Select by sliding the lever.
3. Select . The system automatically turns on the A/C (if equipped). The A/C indicator will not come on if it was previously off.
4. Adjust the temperature so the airflow feels warm.
5. Select to help clear the rear window.
6. To increase airflow to the windshield, close the corner vents.

When you select or , the system automatically turns on the A/C. This helps to dehumidify the air and to defog the windshield. In either mode, you cannot turn off the A/C. When you switch to another mode, the A/C returns to its original setting, either on or off, as indicated by the A/C indicator.

To Remove Exterior Frost or Ice From the Windows

1. Set the fan and temperature controls to maximum level.
2. Select  . The system automatically turns on the A/C (if equipped). The A/C indicator does not come on if it was previously off.
3. Select  .

To clear the windows faster, you can close the dashboard corner vents by rotating the wheel below each vent. This sends more warm air to the windshield defroster vents. Once the windshield is clear, select fresh air mode to avoid fogging the windows.

For your safety, make sure you have a clear view through all the windows before driving.

To Turn Everything Off

Turning the fan speed control dial all the way to the left shuts the system off.

- Keep the system off for short periods only.
- To keep stale air and mustiness from collecting, you should have the fan running at all times.