

Canadian General Standards Board

CGSB

Office des normes générales du Canada

ONGC

1-GP-187

December/Décembre 1969

CANCELLATION

May 1983

**CANADIAN GENERAL
STANDARDS BOARD**

Standard for

**COATING COMPOUNDS,
ANTICONDENSATION**

This standard is hereby cancelled,
because this material is no longer
needed.

ANNULATION

Mai 1983

**OFFICE DES NORMES
GÉNÉRALES DU CANADA**

Norme

**COMPOSÉ POUR REVÊTEMENT PAR
PEINTURE, ANTICONDENSATION**

Cette norme est annulée par la
présente, parce que le matériau dont
elle fait l'objet n'est plus utilisé.



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SPECIFICATION
FOR
COATING COMPOUND: ANTICONDENSATION

1-GP-187
DECEMBER 1969

THIS SPECIFICATION HAS BEEN PREPARED BY A GOVERNMENT -
INDUSTRY COMMITTEE TO COMPLY WITH THE SPECIFIC REQUIREMENTS
OF THE FEDERAL GOVERNMENT. IT IS INTENDED FOR USE IN A PRO-
CUREMENT SYSTEM THAT INCLUDES INSPECTION PROCEDURES TO
ENSURE COMPLIANCE WITH THE REQUIREMENTS OF THE SPECIFICA-
TION AND ITS USE WITHOUT SUCH INSPECTION PROCEDURES MAY
NOT BE ADVISABLE.

THIS SPECIFICATION APPLIES TO A COMPOUND SUITABLE FOR ANTISWEAT PROTECTION
OF PRIMED OR SEALED SURFACES SUBJECTED TO CONDENSATION.

MINISTÈRE DES APPROVISIONNEMENTS ET SERVICES



DEPARTMENT OF SUPPLY AND SERVICES

OTTAWA

CANADA

25 cents

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and

Marine Subcommittee

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CANADIAN GOVERNMENT SPECIFICATION BOARD

Specification
for

COATING COMPOUND: ANTICONDENSATION

1. DEFINITION

1.1 This specification applies to a compound suitable for antisweat protection of primed or sealed surfaces subjected to condensation.

1.2 For more detailed information on use see par. 8.1.

2. APPLICABLE PUBLICATIONS

2.1 The following publications are applicable to this specification:

2.1.1 CGSB 1-GP-12c, Standard Paint Colors.

2.1.2 CGSB 1-GP-71, Methods of Testing Paints and Pigments.

2.1.3 ASTM Standards on Paint, Varnish, Lacquer and Related Products.

2.1.4 Regulations of the Board of Transport Commissioners.

2.2 Reference to the above publications, to test methods therein, and to other specifications is to the issues in effect on the date of invitation to tender, unless otherwise specified.

3. CLASSIFICATION

3.1 This compound shall be supplied in one type.

4. GENERAL REQUIREMENTS

4.1 The compound, as received, shall consist of suitable pigments and vehicle, so combined as to produce a compound meeting all the requirements of this specification.

4.2 The compound, as received, shall be readily applied by the use of airless spray or pot-type pressure-spray equipment adapted with a self-cleaning nozzle.

4.3 The compound shall also be capable of being applied by brush but a certain amount of pulling is unavoidable due to the high viscosity and fibrous nature of the material.

4.4 The odor of the compound shall not be pungent either during or after application.

4.5 The compound shall be supplied in such 1-GP-12c tint colors as may be specified by the purchaser.

4.6 When the compound is stored one year in the original container at temperatures between 40 and 100°F (4 and 38°C), it shall be suitable for use and shall meet all of the requirements of this specification.

5. DETAIL REQUIREMENTS

Compound to this specification shall comply with the following detail requirements:

		<u>Min.</u>	<u>Max.</u>	<u>Test Method</u>	
				<u>1-GP-71</u>	<u>ASTM</u>
5.1	Flash Point, P.M., ^{°F} _{°C}	95 35	- -	3.1	-
5.2	Consistency (Stormer seconds)	40	-	4.5*	-
5.3	Drying Time, Hard, hr	-	16	5.1**	-
5.4	Volatile Matter, % by wt	-	60	17.1	-
5.5	Nonvolatile Vehicle, % by wt	12	-	19.1	-
5.6	Pigment Content, % by wt	28	32	21.1	-
5.7	Titanium Dioxide, % by wt of pigment	9	-	50.14	-
5.8	Water Soluble Material, % by wt	-	5.0	Par. 7.6	

5.9 Condensation Resistance - There shall be no run-off from the dried coating within 8 hours. (Run-off is defined as the first drop observed in the graduate.)

Par. 7.7

* Except time required for 100 revolutions with 1,000 gram load.

** Except the film shall be 30 ± 2 mils (dry).

5.10 Application and Appearance

5.10.1 *Spraying Properties* - When sprayed to a dry film thickness of 30 ± 5 mils, the material shall have good flow-out and levelling, and shall produce a uniform surface without sagging or cracking.

Par. 7.5

5.10.2 *Brushing Properties* - When brushed to a dry film thickness of 30 ± 5 mils, there shall be no excessive pulling, and the film so produced shall be uniform in appearance and shall not sag or crack.

Par. 7.5

5.11 Fire Resistance - The compound shall not support combustion and shall have an average char of not greater than 6 inches; the combustion-plus-ignition time shall not exceed $4\frac{1}{4}$ minutes.

Par. 7.8

6. PREPARATION FOR DELIVERY

6.1 Unless otherwise specified, commercial packaging, packing and marking shall be acceptable.

6.2 Labelling - In addition to the labelling requirements of any relevant Acts or Regulations, each container shall be suitably labelled to show the following information:

Manufacturer's Name and Address
Name of Material
CGSB Specification No.
1-GP-12c Color
Qualification No. (When required)
Manufacturer's Batch No.
Manufacturer's Code No.
Date of Manufacture
Application Instructions

7. INSPECTION

7.1 General - Unless otherwise stipulated in the contract, it is the prime contractor's responsibility to satisfy the inspection authority that the commodity conforms to this specification. This may be accomplished either by performing the tests specified in this specification or by demonstrating to the satisfaction of the inspecting authority that manufacturing processes and techniques are so controlled that conformity to this specification is ensured. The contractor may utilize his own facilities or any commercial testing establishment acceptable to the inspection authority.

7.2 Sampling - Sampling shall be carried out in accordance with Method 1.1 of CGSB 1-GP-71.

7.3 Testing - The methods of testing shall be as specified with each requirement.

7.4 Classification of Tests - Tests for determining compliance with this specification shall be classified as follows:

7.4.1 Qualification Tests - Those tests that are performed on samples submitted for qualification as a satisfactory product. They shall consist of the tests necessary to establish compliance with all the requirements of this specification.

7.4.2 Lot Acceptance Tests - Those tests that are used to determine the acceptability of a lot or batch of a qualified product. The inspecting authority may request the testing of the material for compliance with any of the requirements of this specification, except Fire Resistance (par. 5.11) and may reject a lot or batch on the basis of noncompliance with any of the requirements.

7.5 Panel Preparation - Mount vertically a 2 x 2 ft clean steel panel previously primed (Method 98.4) with 1-GP-48 marine primer. Apply the thoroughly mixed coating compound by spray or brush as required, and as recommended by the manufacturer, to give a dry film thickness of 30 ± 2 mils in one application. Unless otherwise specified, allow the film to dry 24 hr before proceeding with the tests.

7.6 Water Soluble Material - Spray the compound onto glass panels (Method 98.1), dry for 7 days (Method 103.1), then scrape or chip into small pieces 6-8 g of the dried film off the panel. Add 200 ml of water, stir thoroughly and allow to stand 24 hr at $73 \pm 3.5^{\circ}\text{F}$ ($23 \pm 2^{\circ}\text{C}$). Decant and retain the liquid, wash the residue by stirring with two 50 ml washings of water, combine the extracts and centrifuge free from suspended particles. Evaporate to dryness in a tared container at 100°C and calculate the per cent water soluble material.

7.7 Condensation Resistance - Apply by brush the thoroughly mixed coating compound to the cylinder outlined in Figure 1 to give a dry film thickness of 30 ± 2 mils. After drying the film for 7 days (Method 103.1), fill the cylinder with ice cubes and water and maintain the temperature between 32 and 38°F throughout the test period. Maintain the interior of the cabinet at a temperature of $68 \pm 2^{\circ}\text{F}$ and a relative humidity of $67 \pm 2\%$, which is obtained by inserting in the cabinet a tray containing a saturated solution of monoammonium phosphate. Examine the cylinder for presence of condensation and note the time for the first drop of water to fall into the graduate.

7.8 Fire Resistance

7.8.1 Apparatus - The fire resistance of the compound shall be determined by an apparatus as shown in Figures 2, 3 and 5, which consists of

communicating horizontal and vertical flues constructed of asbestos board-lined steel sheets, with the exception of the horizontal bottom plate which is all steel. The enclosure shall be 36 in. long overall; the flue shall be 8 in. wide and 6 in. high. The horizontal bottom plate shall be cut away 3 in. at the firing end to provide clearance for the flames of four open blast burners. Details of the test hood and specimen holder are shown in Figure 5. Details of the burner supply manifold and open burner nozzle are shown in Figure 6. A schematic flow diagram for the apparatus is shown in Figure 7.

7.8.2 *Procedure* - Apply the compound by a drawdown method that will produce a dry film thickness of 1/32 in. onto the steel plates (1/8 in. thick) that have been prepared by removing all rust, mill scale and organic matter, and finish off by grinding the surface with No. 24 grit abrasive cloth or paper. Cure the film for 96 hr (Method 103.1). Secure the holder (1/8 in. thick mild steel plates 31½ in. long by 7 in. wide with longitudinal flanges for mounting in the horizontal flue) 2 in. above the bottom plate, with the inner end spaced 3 in. from the flue end, to permit hot gases passing beneath the holder to be vented through the vertical flue. Locate the four open blast burners side by side, and parallel to the front end of the holder, on 1-¾ in. centers, equidistant from each side of the flue. Locate the center of the burners 4 in. below the bottom surface of the holder and ½ in. in front of the firing end of the holder. Use commercial propane gas having a heating value of 2,550 Btu per cubic foot at a temperature of 60°F and atmospheric pressure of 30 in. of mercury. Supply the gas and air to a common manifold at rate of 9.6 and 150 cu ft per hr, respectively, when referred to standard conditions of 60°F and 30 in. of mercury. Apply the burner flames for 4 min, then immediately remove. Maintain a draft of 0.06 to 0.07 in. of water in the flue of the apparatus for the duration of the test.

7.8.3 *Measurement* - Note the average char and the ignition-plus-combustion time, which are defined as follows:

- (a) Average char is the length of specimen permanently damaged by burning and charring as averaged over the entire width of the specimen. This measurement shall be taken after all flaming and glowing ceases.
- (b) Ignition-plus-combustion time is the time taken from the initial application of the burner flames until all flaming of the specimen ceases.

8. NOTES

8.1 Intended Uses

8.1.1 This coating compound is intended for application on previously primed or sealed surfaces such as concrete, plaster, asbestos

sheeting, iron, steel, galvanized or zinc coated metal, aluminum, copper and brass tubing, and bituminous coated surfaces that are subjected to intermittent condensation.

- 8.1.2 The compound is not intended to be used where condensation is continuous or where there is no opportunity of a recovery period.
- 8.1.3 Surfaces should be free from all dirt, grease, rust and loose particles.
- 8.1.4 Prior to application of this coating compound, substrates should be primed as follows:

<u>Substrate</u>	<u>Prime Coat</u>
Plaster or wallboard	1-GP-119
Galvanized or zinc coated metal	1-GP-178
Ferrous metal	1-GP-48

- 8.1.5 *Brushing* - When brushing the coating compound, a thick coat should be applied without any attempt to obtain a smooth surface. Additional coats should be applied at right angles to the direction of the previous coat.

8.1.6 *Spraying*

- 8.1.6.1 *Pot-type Air Pressure Spray* - The compound should be thinned according to the manufacturers' instructions. The nozzle and pot pressures should be 40-50 psi and 15-20 psi respectively. The type of equipment used should be that recommended by the manufacturer.

- 8.1.6.2 *Airless Spray* - Airless spray has been found more economical for large areas. Thinning is not normally required unless otherwise stipulated in the manufacturer's instructions.

- 8.2 Ordering Data - Purchasers should specify color required (par. 4.5); packaging, packing and marking details if commercial practice is not suitable (par. 6.1); and if a qualified product is required.

8.3 Qualification

- 8.3.1 *Qualification Procedure* - Details regarding the procedure for qualification of 1-GP-187 coating compound may be obtained from:

Director General Quality Assurance,
Canadian Forces Headquarters,
Department of National Defence,
Ottawa 4, Ontario.

8.3.2 *Qualified Products* - Federal Government departments and agencies may also obtain information from the above address regarding availability of qualified products.

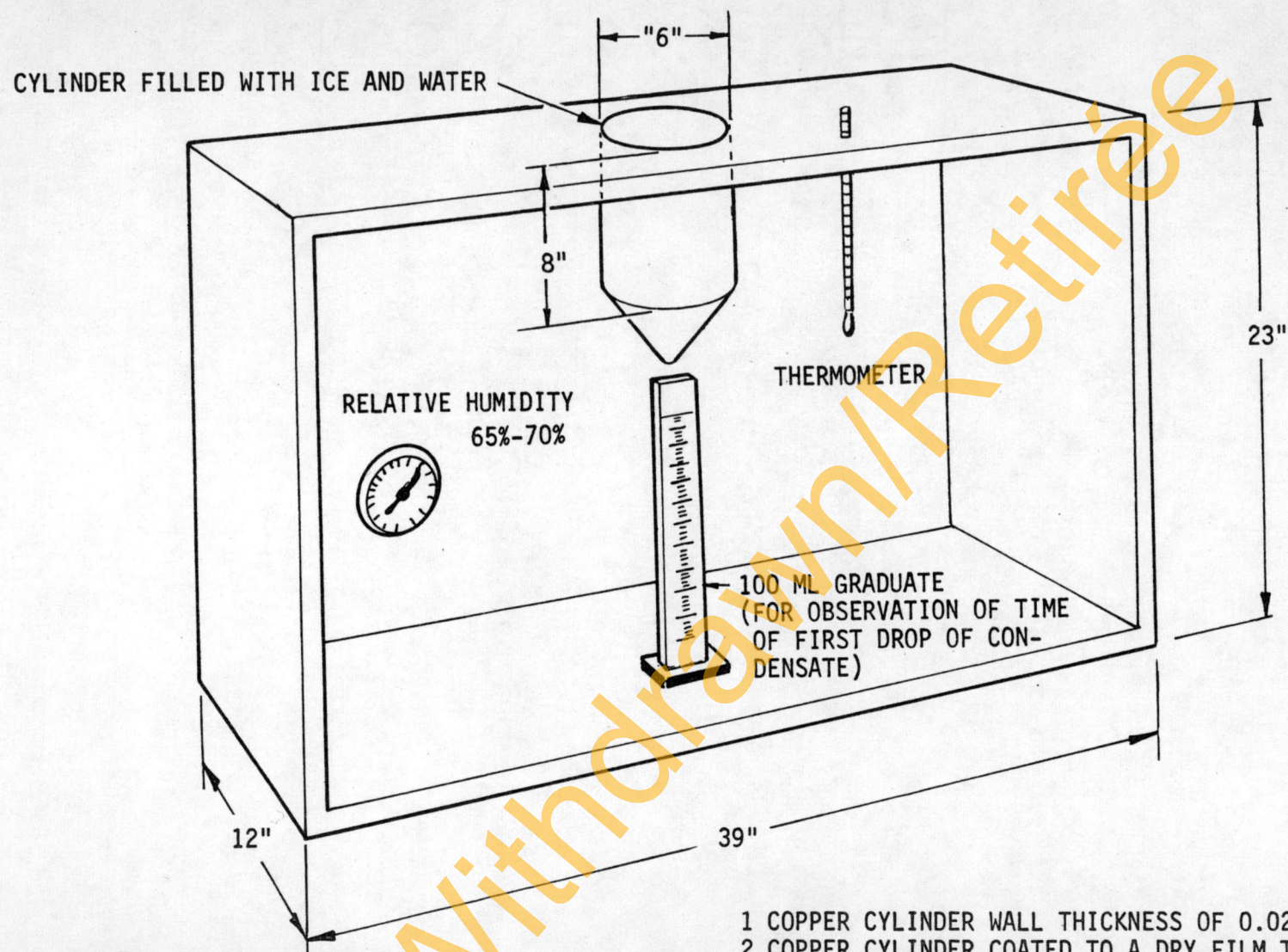
8.4 Related Specifications - U.S. Federal Specification TT-C-492a, Coating Compound; Paint, Antisweat.

8.5 The publications referred to in par. 2.1.1 and 2.1.2 are obtainable from the Canadian Government Specifications Board.

8.6 The publication referred to in par. 2.1.3 is obtainable from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa., 19103, U.S.A.

8.7 The publication referred to in par. 2.1.4 is obtainable from the Queen's Printer, Ottawa, Canada.

Correspondence regarding this specification should be addressed to the Canadian Government Specifications Board, c/o Department of Supply and Services, Ottawa 4, Canada.



- 1 COPPER CYLINDER WALL THICKNESS OF 0.021 IN.
- 2 COPPER CYLINDER COATED TO A DRY FILM THICKNESS OF 1/32 IN.
- 3 FRONT OF CABINET COVERED WITH REMOVABLE GLASS PANEL

FIGURE 1 CONDENSATION RESISTANCE APPARATUS.

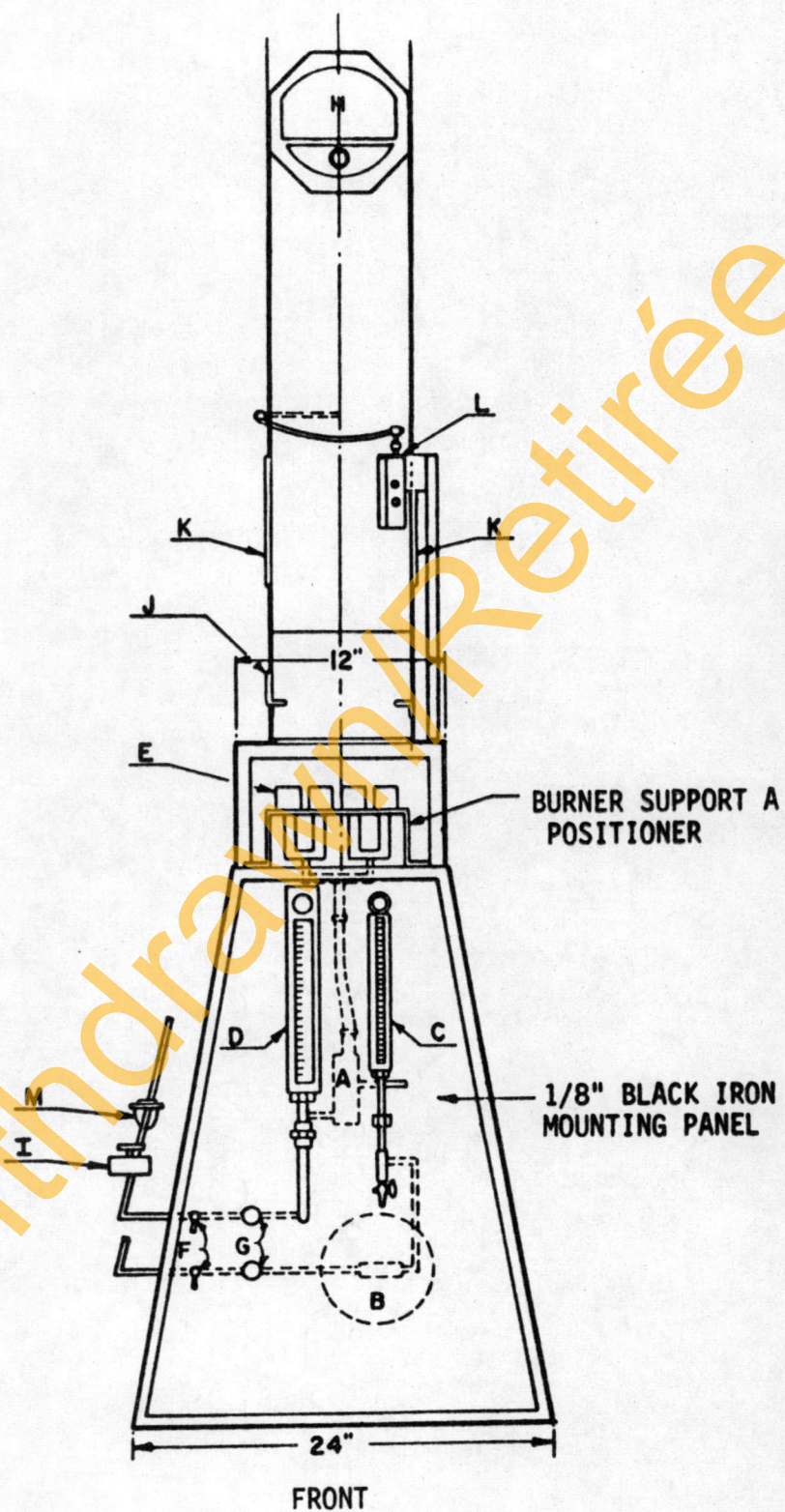


FIGURE 2 - FIRE TEST APPARATUS (FRONT VIEW).

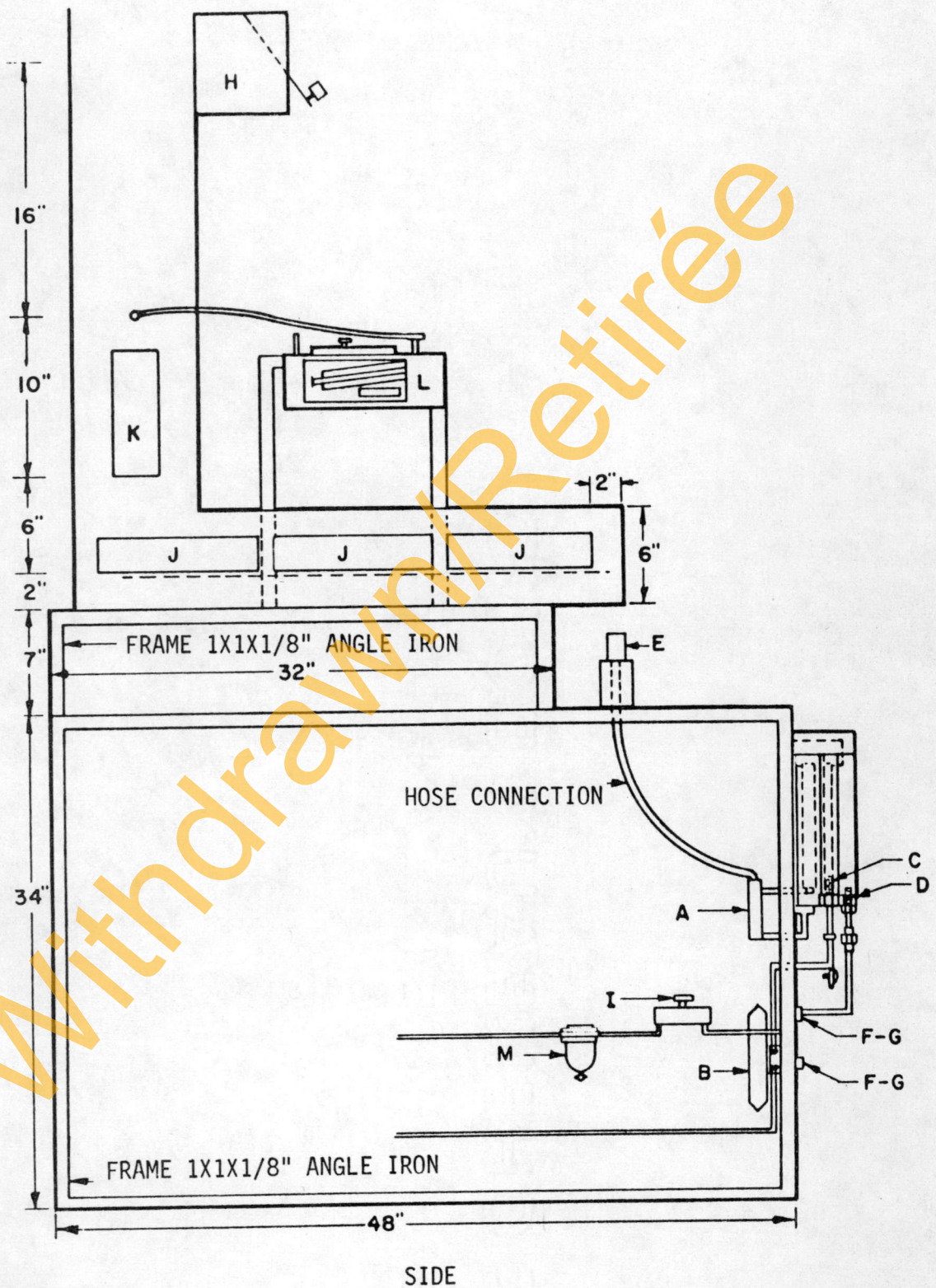


FIGURE 3 - FIRE TEST APPARATUS (SIDE VIEW).

Part	Quantity	Description	Function	Suggested source
A	1	Venturi mixer # 13-12	Mixing of propane and air	American Gas Furnace Co., Elizabeth, N.J. U.S.A.
B	1	Zero governor for propane #ZG-1	Reduction of propane Pressure to atmospheric	American Gas Furnace Co., Elizabeth, N.J. U.S.A.
C	1	Flowmeter, propane-X15-155-3	Measurement of propane flow	American Gas Furnace Co., Elizabeth, N.J. U.S.A.
D	1	Flowmeter, air-3x5-100-6	Measurement of air flow	American Gas Furnace Co., Elizabeth, N.J. U.S.A.
E	4	Nozzles, Sticktite ST 2A, alloy steel	Control of igniting and heating flame characteristics	Eclipse Fuel Engineering Co., Rockford, Ill. U.S.A.
F	2	Toggle valves #455, brass	Gas and air quick shut-off valves	Hoke, Inc., Englewood, N.J. U.S.A.
G	2	Metering valves, straight pattern #4RB281	Fine adjustment of propane and air flow	Hoke, Inc., Englewood, N.J. U.S.A.
H	1	Oil burner type draft regulator	Maintenance of constant draft	Any domestic oil burner supply house
I	1	Nullmatic pressure regulator and pressure gauge (0-60 psi) #40-11-50	Regulation of air pressure supply to apparatus	Moore Product Co., Philadelphia, Pa. U.S.A.
J	3	Windows, vycor glass, ground and polished 10-1/4 by 2-1/4 by 1/8 in.	Viewing of flames	F.S. Gray and Co., Inc., 182 So. Portland Ave., Brooklyn, N.Y. U.S.A.
K	2	Windows, vycor glass, ground and polished 8 by 3 by 1/8 in.		" "
L	1	Inclined draft gauge	Measurement of draft in flue	Ellison Draft Gage Co., 345 W. Monroe St., Chicago, Ill. U.S.A.
M	1	Air line filter	Removal of contaminants from air supply	Commercial

Notes: Blower, external exhaust and damper not shown. Damper to be installed not less than 12 in. upstream of draft regulator.

Figure 4 - Parts List for Fire Test Apparatus as Applicable to Figures 2 and 3.

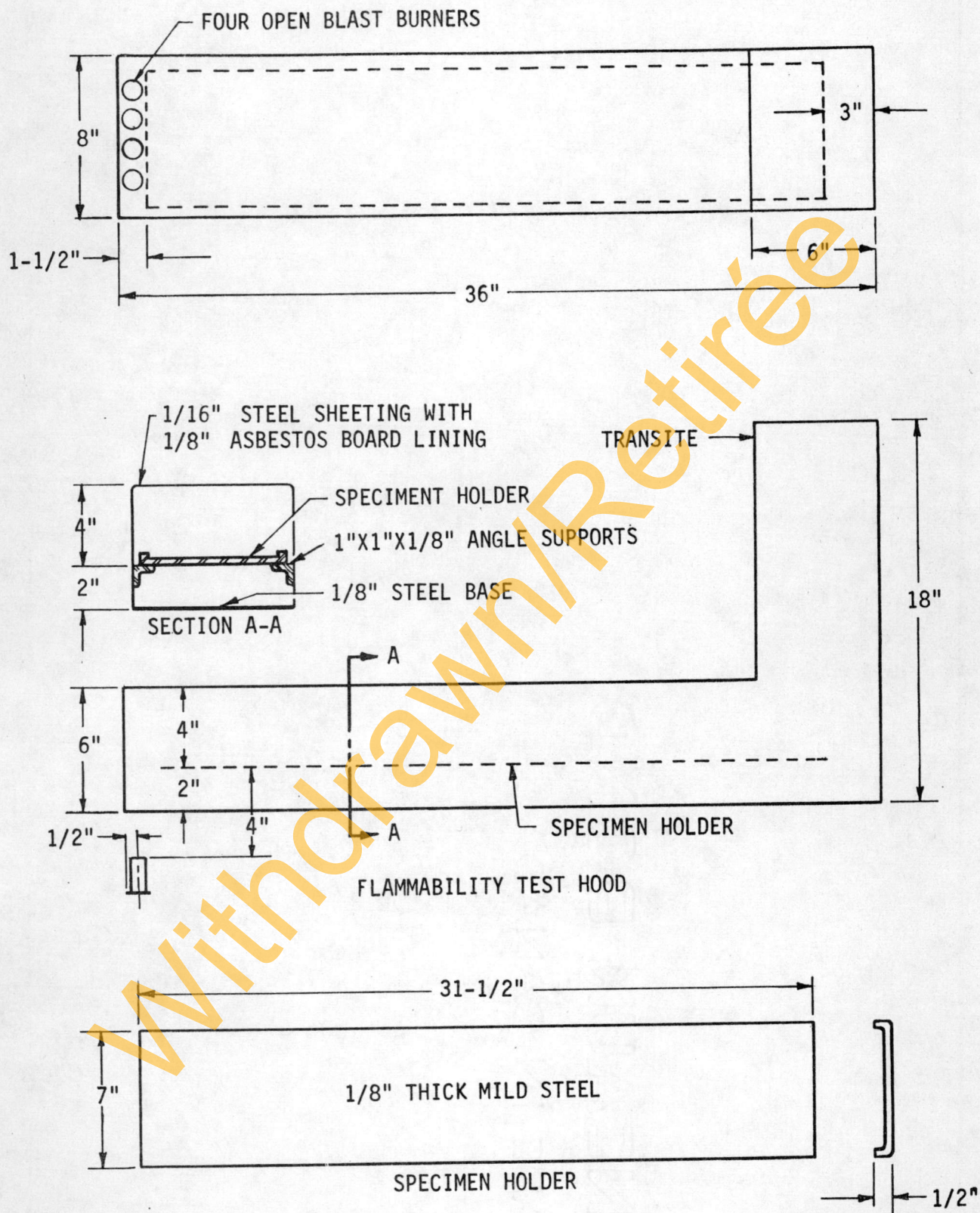


FIGURE 5 - DETAIL OF FIRE-RESISTANCE TEST APPARATUS.

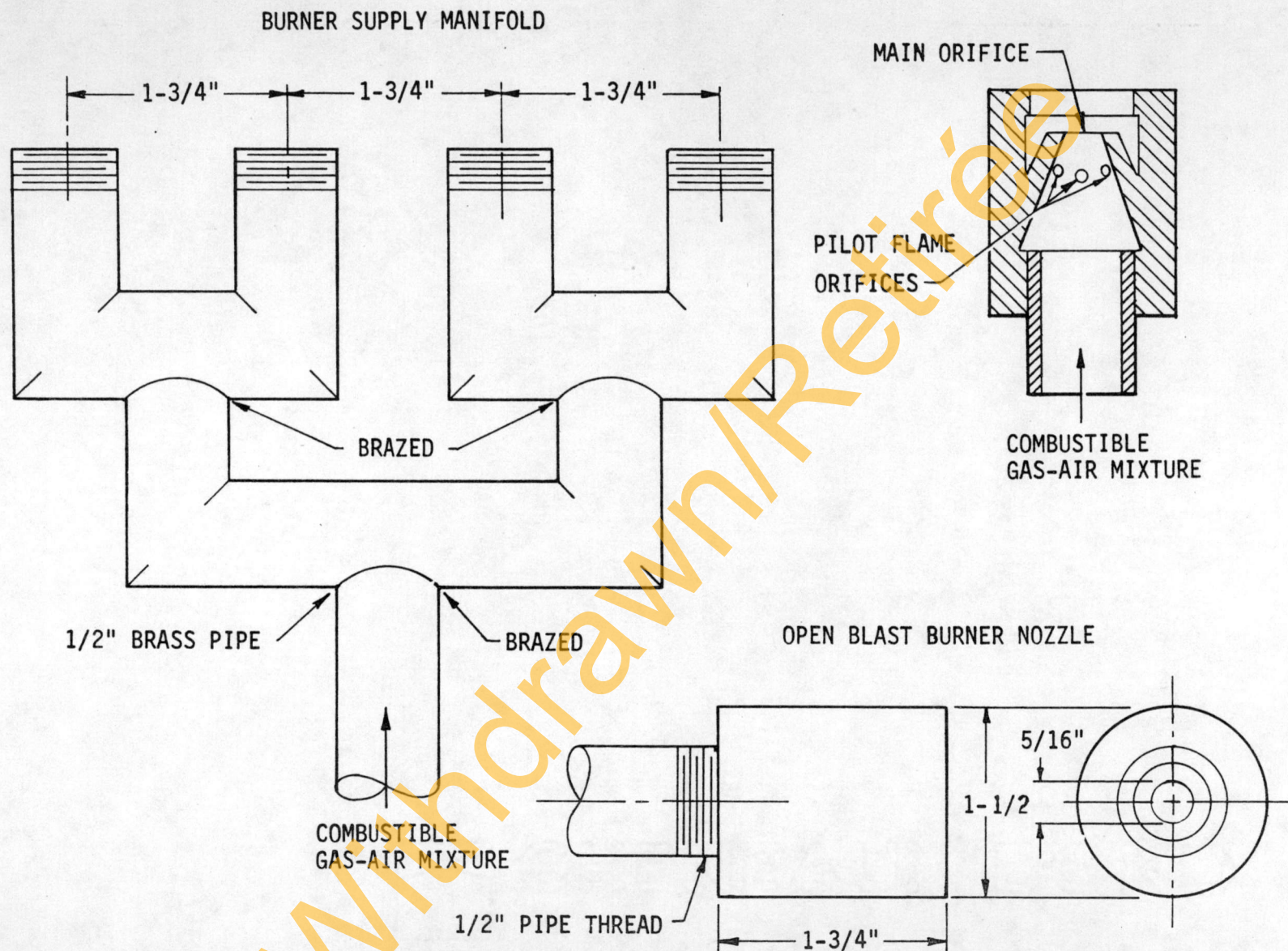


FIGURE 6 - BURNER SUPPLY MANIFOLD AND OPEN BLAST BURNER NOZZLE.

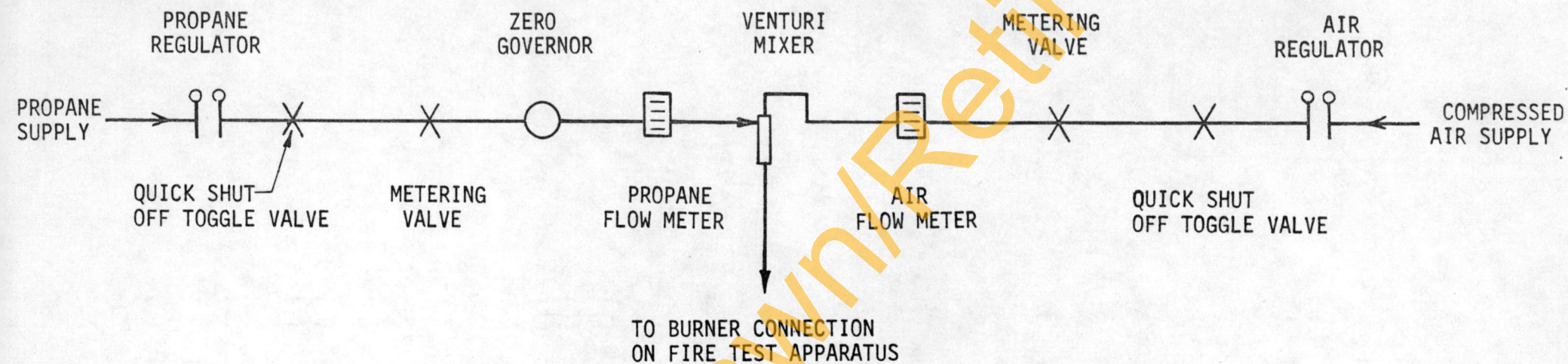


FIGURE 7 - SCHEMATIC FLOW DIAGRAM FOR FIRE TEST APPARATUS.