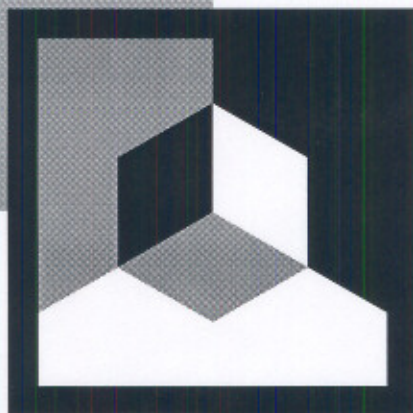


A M E R I C A N A R C H I T E C T U R A L

AAMA 501.2-03

**Quality Assurance and
Diagnostic Water Leakage
Field Check of Installed
Storefronts, Curtain Walls,
and Sloped Glazing Systems**



M A N U F A C T U R E R S A S S O C I A T I O N



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American Architectural Manufacturers Association

1827 Walden Office Square, Suite 550, Schaumburg, IL 60173

PHONE 847/303-5664 FAX 847/303-5774

EMAIL webmaster@aamanet.org WEBSITE www.aamanet.org

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1.0 SCOPE AND PURPOSE

The purpose of this document is to provide a quality assurance and diagnostic field water check method for installed storefronts, curtain walls, and sloped glazing systems. The procedure outlined in this document is not intended to test the rated or specified water performance representative of a wind driven rain event. AAMA 503 is the proper test method for field testing of storefronts, curtain walls, and slope glazing for air leakage resistance and water penetration resistance performance.

NOTE: This field check method is not appropriate for testing of operable components such as operable windows and doors. AAMA 502-02 is the proper test method for field air leakage resistance and water penetration resistance testing of operable windows and doors.

This field check procedure is intended to evaluate those joints, gaskets and sealant details in the glazing which are designed to remain permanently closed and water tight.

The primary units of measure in this document are metric. The values stated in SI units are to be regarded as the standard. The values given in parentheses are for reference only.

2.0 PREPARATION OF TEST AREA

All framing and/or units shall be installed on the lower two typical floors of the building for curtain wall testing and on the lowest typical floor for storefront or sloped glazing system testing. The area shall be fully glazed to provide a completed installation. All of this work shall be done in strict accord with approved shop drawings and job specifications. The architect and/or owner's representative shall designate an area of the completed portion to be tested. The test area shall be a representative sample of typical construction and shall have no outstanding punch list items or other visible defects. If no test area and/or location has been identified, the persons doing the test shall select an area. This area shall be selected to provide representative performance data, usually a minimum of 9.3 m² (100 ft²). The area to be tested shall include, perimeter caulking, typical splices, frame intersections, and, if applicable, at least 2 entire vision lites and 2 entire spandrel lites containing an intermediate vertical member and an intermediate horizontal member. All operable components within the test area shall be isolated and exempt from the test procedure. See Figures 1, 2 and 3 for typical test assemblies.

NOTE: Testing shall be performed as soon as possible after the fenestration product is installed and prior to the installation of drywall or other interior finish wall materials. If interior wall materials have been installed

they shall be removed at the test area to allow visual access to check for water penetration, or other means of visual access shall be provided. If removal of interior finish work is required the sponsor of the test is responsible for the cost of removal and repairs.

3.0 APPARATUS

The test shall be conducted using a Type B-25, #6.030 brass nozzle with a 1/2" FPT as manufactured by Monarch Manufacturing Works, Inc./Newton Tool & Mfg. Company, 500 Pedricktown Road, Swedesboro, NJ 08085 (Phone: 856-241-1500 or 800-394-7377). The nozzle shall be connected to a hose [19 mm (3/4 in) diameter is suggested] and shall be provided with a control valve and a pressure gauge between the valve and the nozzle. The water pressure to the nozzle shall be adjusted to produce 205 to 240 kPa (30 to 35 psi) at the nozzle inlet. The pressure gauge shall be calibrated at a maximum of 6 month intervals. Record of calibration certificates shall be made available upon request.

NOTE: This test method may be conducted at pressures lower than 205 kPa (30 psi) providing that the reason (i.e. not practical at a multistory building location) for not achieving this pressure is 1) acceptable to the specifier, 2) the pressure is not lower than 170 kPa (25 psi) and 3) the reason and the actual pressure are so noted in the test report as an exception to the method.

4.0 PROCEDURE

4.1 The designated test area shall be divided into and evaluated in 1.5 m (5 ft) sections of the framing and joint. The nozzle shall be held at a distance of 305 mm (1 ft) ±25 mm (1 in) from the location under test. Each 1.5 m (5 ft) section of test area shall be evaluated for a period of 5 minutes by slowly moving the nozzle back and forth over the test section (see Figure 4) while maintaining the nozzle perpendicular to the plane of the wall.

NOTE: It is recommended that a gauge be attached to the end of the nozzle to ensure that the specified distance from the joint under test is maintained.

4.2 Working from the exterior, the wall test section shall be selectively wetted progressing from the lowest horizontal framing member, then the adjacent framing intersections, then the adjacent vertical framing members, etc. During the test, an observer on the indoor side of the wall, using a flashlight if necessary, shall check for any water leakage and shall note where it occurs.

NOTE: For this water leakage field check, water leakage is defined as any uncontrolled water that appears on any normally exposed interior surfaces, that is not contained or drained back to the exterior, or that can cause damage

to adjacent materials or finishes. Water contained within drained flashings, gutters, and sills is not considered water leakage. The collection of up to 15 ml (1/2 oz) of water in a five minute test period on top of an interior stop or stool integral with the system shall not be considered water leakage.

4.3 If no water leakage occurs during the five minute test, the next 1.5 m (5 ft) of framing shall be wetted for five minutes, and testing continued in this manner until the entire test area is tested.

4.4 If water leakage occurs and the source of the leakage cannot be identified, the following sequence shall be followed:

4.4.1 After allowing the wall to dry completely and working downward from the top of the area to be checked, all joints, gaskets and framing within this area shall be completely and tightly covered, on the outdoor side, with a water proof adhesive masking tape. If necessary, use small amounts of sealant where the tape wraps around the framing corners and joints to ensure that the masking is complete and waterproof.

4.4.2 Starting at the bottom of the prepared area, the masking tape shall be removed from the lowest horizontal framing for a distance of not more than 1524 mm (5 ft) from one end of the frame, including the joint intersection or corner at the end. This exposed length shall be subjected to the nozzle spray as directed in Section 4.1.

4.4.3 If no water leakage occurs during the five minute test period, this length of framing shall be considered satisfactory and shall remain uncovered. If leakage has occurred at any point, the framing shall be retaped at such points to prevent further leakage of these points during the subsequent checking of joints and framing adjacent to or above them.

4.4.4 This process shall then be repeated on all framing, gaskets and joint intersections within the designated area, using increments of exposed framing length not exceeding 1524 mm (5 ft) and always working upward on the wall.

NOTE: In some cases, due to unforeseen delays or other causes, more than one working day may be required to completely check the designated area, necessitating that some or all of the masking tape be left in place over night. The tape should not remain on finished metal or glass surfaces any longer than necessary, especially where subjected to strong sunlight, as this may make its removal difficult. It is the responsibility of the party contracting for the test to properly clean any residual adhesive or sealant resulting from the testing.

4.5 Testing shall be performed by an AAMA accredited independent testing agency.

SPECIFIER NOTE: AAMA accredited laboratories are required to comply with AAMA 204-98 "Guidelines for AAMA Accreditation of Independent Laboratories Performing On-site Testing of Fenestration Products". The requirement of AAMA accreditation assures the specifier that the laboratory has the staff, training, experience, and calibrated equipment to properly perform field testing.

5.0 REMEDIAL WORK AND RE-CHECKING

5.1 Wherever water leakage has occurred, the framing shall be made watertight in a manner acceptable to the architect and/or owner's representative. Remedial work involving the use of curing-type compounds shall be allowed to set before it is re-checked for leakage.

5.2 After all necessary remedial work has been completed and the required curing time, if any, has elapsed, all repaired framing sections shall again be checked, following the same procedure as before (Section 4). Should leakage still be found, further remedial measures shall be taken and checking shall be repeated until all framing in the designated area is found to be satisfactory.

6.0 TEST REPORT

6.1 The test report shall include the following general information: testing agency, date and time of test, date of report, identification and location of the building.

6.2 The test report shall include the following information regarding the fenestration test specimen: Manufacturer, model, dimensions, materials, etc.; identification and locations of fenestration product(s) on the building; physical condition of fenestration product; description of any modifications made to the fenestration products.

6.3 The test report shall include a statement regarding sampling procedures.

6.4 The test report shall include all test results (and all retests) and a record of all points of water leakage.

6.5 The test report shall include a compliance statement indicating that the tests were conducted in accordance with this method or completely describe any deviation. Also state whether or not the results indicate compliance with the field testing specification requirements for the project.

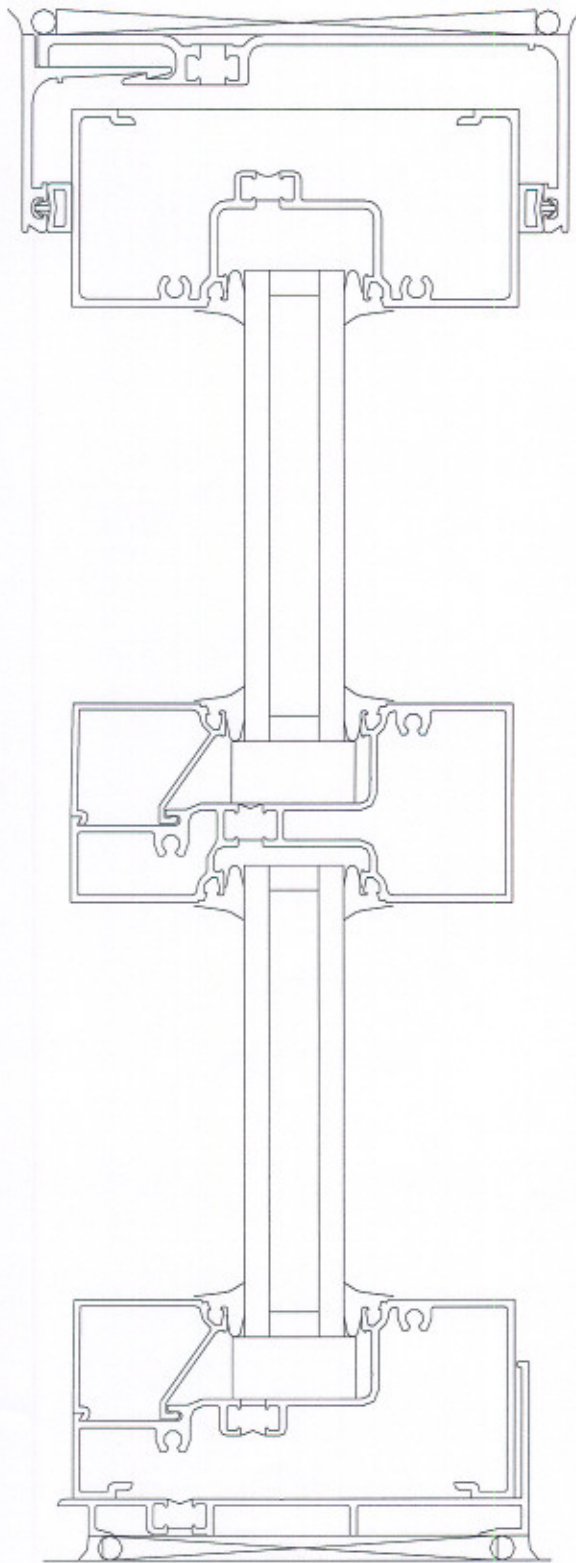


FIGURE 1: STOREFRONT

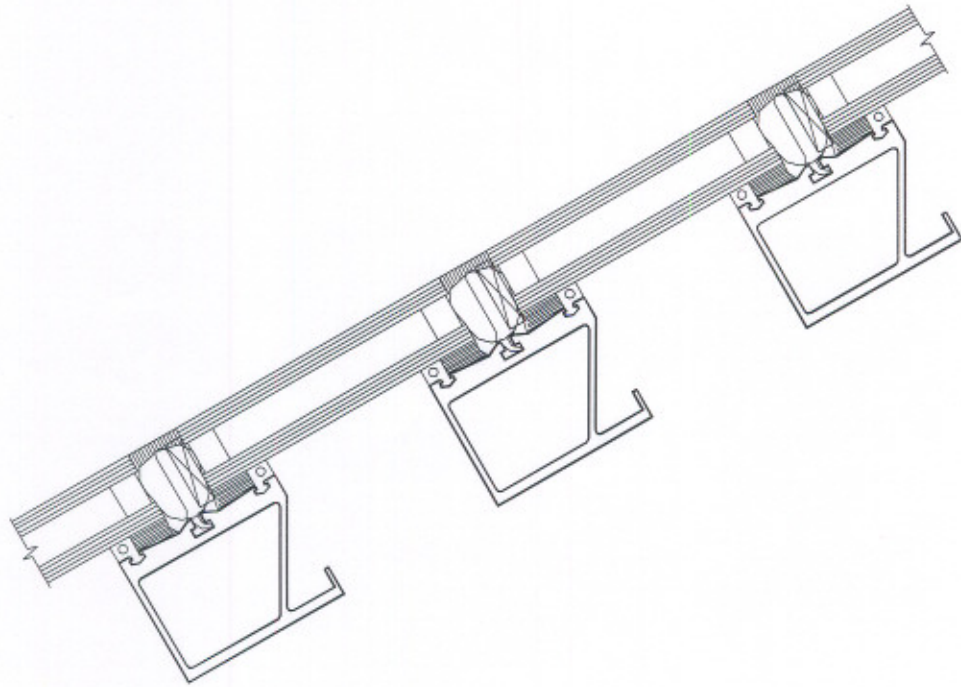


FIGURE 2: SLOPED GLAZING

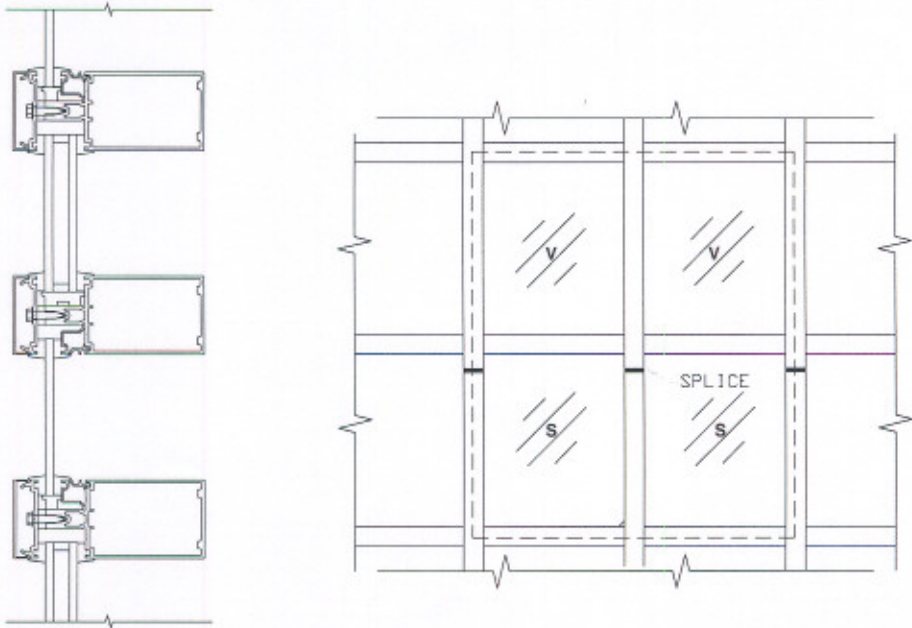


FIGURE 3: CURTAIN WALL

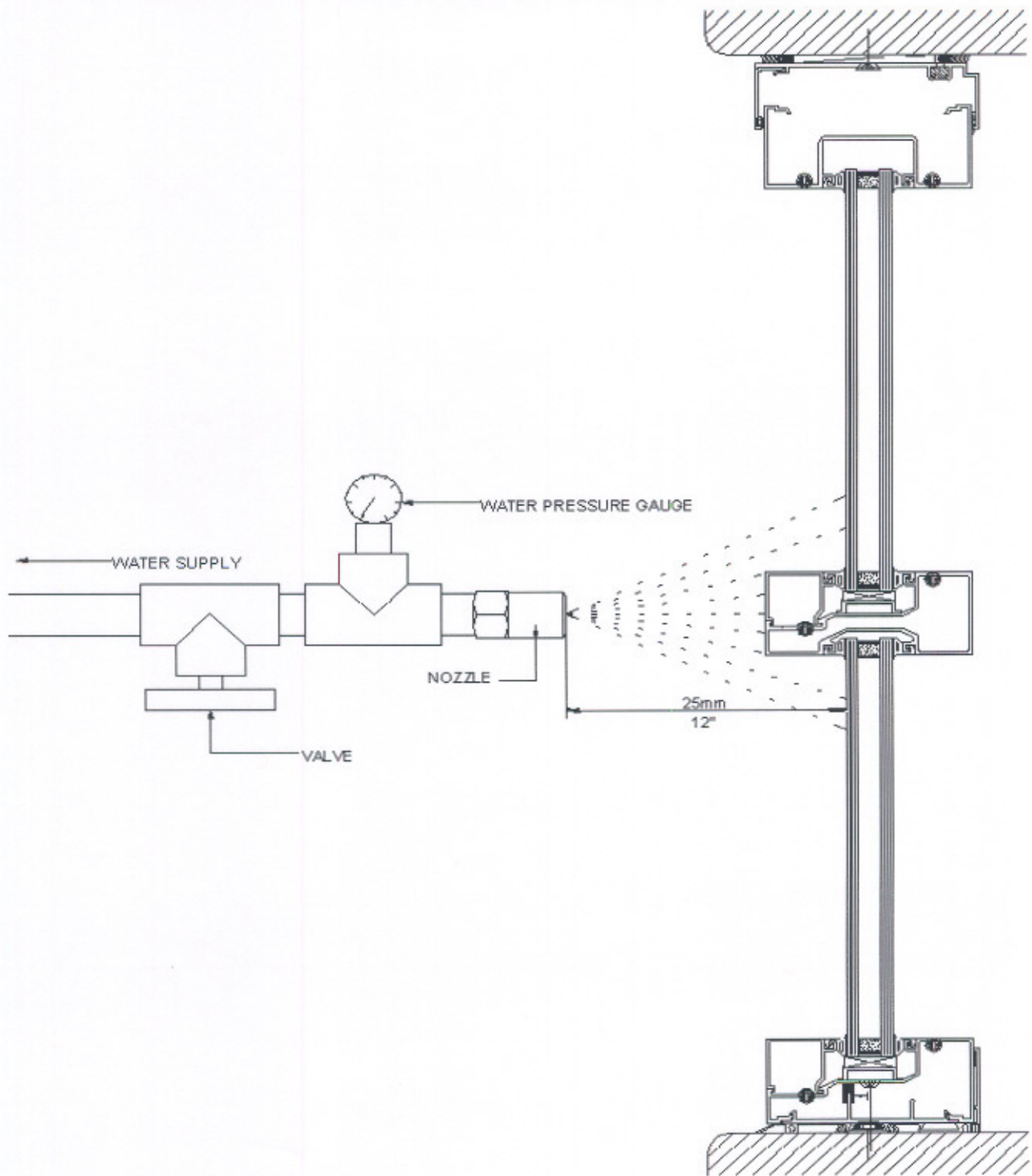


FIGURE 4: WATER LEAKAGE FIELD CHECK



American Architectural Manufacturers Association

1827 Walden Office Square, Suite 550

Schaumburg, IL 60173

PHONE (847) 303-5664 FAX (847) 303-5774

WEBSITE www.aamanet.org

EMAIL webmaster@aamanet.org