
STANDARD FOR SECTION INTERFACES ON RESIDENTIAL GARAGE DOOR SYSTEMS

ANSI / DASMA 116-2011

Door & Access Systems Manufacturers' Association, International

Sponsor:



1300 Sumner Avenue
Cleveland, Ohio 44115-2851

Door & Access Systems Manufacturers Association
**Standard For Section Interfaces On
Residential Garage Door Systems**

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Suggestions for improvement of this standard will be welcome.

They should be sent to the Door & Access Systems Manufacturers' Association, International.

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Foreword (This foreword is included for information only and is not part of ANSI/DASMA 116-2011, *Standard for Section Interfaces on Residential Garage Door Systems*.)

This standard was developed by the Technical Committee of the DASMA Commercial & Residential Garage Door Division. It incorporates years of experience in testing sectional doors commonly found in garages.

The DASMA Commercial & Residential Garage Door Division approved the standard as a DASMA standard on June 14, 2000. The ANSI Board of Standards Review granted approval of the document as an American National Standard on January 29, 2007. The standard was revised, with the revised version being recognized as an American National Standard on May 19, 2011.

DASMA recognizes the need to periodically review and update this standard. Suggestions for improvement should be forwarded to the Door & Access Systems Manufacturers' Association, International, 1300 Sumner Avenue, Cleveland, Ohio, 44115-2851.

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STANDARD FOR SECTION INTERFACES ON RESIDENTIAL GARAGE DOOR SYSTEMS

1. SCOPE

- 1.1 This standard defines performance-based and prescriptive-based methods of evaluating section interfaces.
- 1.2 Without limitation, DASMA does not represent or imply that this standard relates to any component or system other than section interfaces expressly identified and described herein.
- 1.3 Inclusions: This specification is intended to cover residential garage door systems generally used for vehicular traffic.

2. DEFINITIONS

- 2.1. **Section Interface:** The section to section interface defined by the horizontal door section edge surfaces that move relative to each other as the door opens and closes.
- 2.2 **Finger Probe:** A device, made to the specifications of IEC 61032 test probe B.2, featuring a restricted joint movement simulating the characteristics of the human finger. (IEC 61032, Protection of Persons and Equipment by Enclosures – Probes for Verification)
- 2.3. **Residential Garage Door System:** Sections, tracks, counterbalance, and other components necessary to produce

an operational residential sectional garage door per ANSI/DASMA 102.

- 2.4. **Pinch Point:** A point where an opening can be created in a section interface when the door is moved either from the closed-to-open position or from the open-to-closed position such that an object placed in the opening may be held captive or damaged.
- 2.5. **Lift Handle:** Handle installed on, or incorporated into, a door system that may be used to manually open or close the door.
- 2.6. **Gripping Points:** Point at which a person may be able to take hold of the door and be able to manually open or close the door.
- 2.7. **Pull Point:** A point at which a door system may be manually moved to the open or closed position.
- 2.8. **Guard:** A means by which an object is kept from being inserted into a pinch point.
- 2.9 **Admit:** The probe passing through the reference plane as shown in Figure 4 for the front of a section interface and as shown in Figure 5 for the back of a section interface.

3. SECTION INTERFACE COMPLIANCE – ACCEPTABLE ALTERNATIVES

- 3.1. Residential garage door systems shall meet this standard by at least one of the following means:
 - 3.1.1. Testing of section interfaces in accordance with the provisions of Sections 4-6.
 - 3.1.2. Handles or suitable gripping points in accordance with the provisions of Section 7.

4. TEST SAMPLE REQUIREMENT – SECTION INTERFACE COMPLIANCE

- 4.1. Doors tested under these performance requirements shall be regular production doors of a manufacturer's standard construction, materials and design.
- 4.2. The test door shall be the configuration allowing the highest degree of interface rotation.

5. TEST APPARATUS – SECTION INTERFACE COMPLIANCE

- 5.1. A door frame fixture comprising jambs and headers suitable for mounting the test door.
- 5.2. Probe #1: Finger Probe
- 5.3. Probe #2a: A probe consisting of a 0.35 inch (9 mm) diameter metal rod, with a full spherical 0.175 inch (4.5 mm) radius end, sufficiently long to insert into door section interfaces, as shown in Figure 2.

- 5.4. Probe #2b: A probe consisting of a 1.00 inch (25 mm) diameter metal rod, with a full spherical 0.50 inch (12.5 mm) radius end, sufficiently long to insert into door section interfaces, as shown in Figure 2.
- 5.5. Probe #3a: A 3/8 inch (10 mm) diameter, full spherical 3/16 inch (5 mm) radius end, polyurethane probe with a Shore Hardness of 90-A, as shown in Figure 3.
- 5.6. Probe #3b: A 1/2 inch (13 mm) diameter, full spherical 1/4 inch (6.5 mm) radius end, polyurethane probe with a Shore Hardness of 90-A, as shown in Figure 3.
- 5.7. Probe #3c: A 5/8 inch (16 mm) diameter, full spherical 5/16 inch (8 mm) radius end, polyurethane probe with a Shore Hardness of 90-A, as shown in Figure 3.
- 5.8. Probe #3d: A 3/4 inch (19 mm) diameter, full spherical 3/8 inch (9.5 mm) radius end, polyurethane probe with a Shore Hardness of 90-A, as shown in Figure 3.
- 5.9. Probe #3e: A 7/8 inch (22 mm) diameter, full spherical 7/16 inch (11 mm) radius end, polyurethane probe with a Shore Hardness of 90-A, as shown in Figure 3.
- 5.10. Probe #3f: A 1 inch (25 mm) diameter, full spherical 1/2 inch (12.5 mm) radius end, polyurethane probe with a Shore Hardness of 90-A, as shown in Figure 3.

5.11 Pull Force Scale: Scale that measures manually applied tensile force of a minimum of 35 lbs. (156 N), with an accuracy of plus or minus 2 lbs. (9 N) at 35 lbs. (156 N), when attached to a fixed object.

6. TEST PROCEDURE – SECTION INTERFACE COMPLIANCE

6.1. Finger Probe

6.1.1 The door shall be opened and closed manually and Probe #1 shall be attempted to be inserted without appreciable force into the pinch point areas on the front and back of each section interface for each interface up to 96 inches (2438 mm) from the floor during the full motion.

6.1.2 Insertion using Probe #1 shall be defined as a minimum of 0.25 inches (6.1 mm) oriented as shown in Figure 1, moving the finger joints through their full range of articulations.

6.1.3 If Probe #1 is inserted beyond a depth of 0.25 inches (6.1 mm), the area(s) shall be subject to the testing in Section 6.2.

6.1.4 If Probe #1 cannot be inserted to a depth of more than 0.25 inches (6.1 mm), the area(s) shall be deemed compliant with this section, and no further testing is required.

6.2 Maximum/Minimum Diameter Rod Testing

6.2.1 Remove or cut holes in the door or guard as needed to

gain access to the area(s) identified by Probe #1.

6.2.2 If the area(s) identified by Probe #1 admits the full diameter of both Probe #2a and Probe #2b, or does not admit both Probe #2a and Probe #2b, at the position and orientation identified by Probe #1, such area(s) shall be deemed compliant with this section, and no further testing is required.

6.2.3 If Section 6.2.2 cannot be complied with, the area(s) shall be subject to the testing in Section 6.3.

6.3 Probe Retention Testing

6.3.1 For Probes #3a through #3f, move the door to a position where the probe can be inserted into the area(s) identified by Probe #1 to a maximum penetration without appreciable force.

6.3.2 Beginning with Probe #3a, holding the probe in place with minimal force, and within the orientation shown in Figure 1, move the door into a position where the probe is most difficult to remove.

6.3.3 Attach the pull force scale to the probe.

6.3.4 Exert a steady, constant force, parallel to the orientation of the probe, to attempt to remove the probe.

6.3.5 Record the force required to remove the probe.

6.3.6 Repeat Sections 6.3.2 through 6.3.5 for Probes #3b through #3f.

6.3.7 If the force required to remove each probe is not greater than 35 pounds (156 N), such interface shall be deemed compliant with this section.

7. LIFT HANDLES OR GRIPPING POINTS

7.1. Lift handles or suitable gripping points for manually raising and lowering the door shall be installed on, or incorporated into, both the inside and the outside of the door as follows:

7.1.1. On the bottom section within 8 inches (203 mm) of the bottom edge of the section and located in line with the device listed in Section 7.1.2.

7.1.2. On the second or third section from the bottom of the door.

7.1.3. Lift handles that are installed within 4 inches (102 mm) of a section interface shall promote vertical orientation of the hand.

7.2. Other means, devices, or combination of devices that will provide the function equal to Section 7.1 as a method for manually raising and lowering the door without the assistance of a section interface pull point shall be acceptable.

APPENDIX A - TEST PROBES

A.1 Specifications

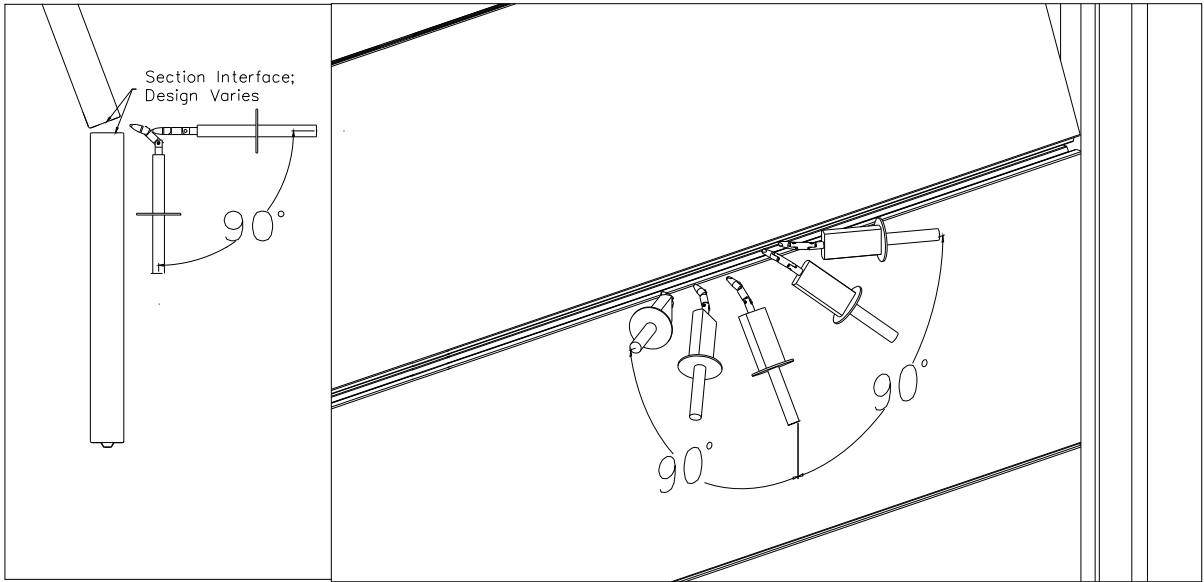
A1.1 The test probes as described in Sections 5.5, 5.6, 5.7, 5.8, 5.9 and 5.10 shall be as follows:

- A1.1.1 Polyether-polyurethane rods, Uniroyal LF-900A or equivalent
- A1.1.2 Shore hardness of 90-A, +0/-5, tested in accordance with ASTM-D2240
- A1.1.3 Linear thermal expansion of $.015 \times 10^{-5}$ in/in/degrees F
- A1.1.4 Low temperature brittleness of -80 degrees F
- A1.1.5 Tensile strength of 4500 psi minimum
- A1.1.6 Specific gravity of 1.10, +/- .05
- A1.1.7 Surface finish of 32 or better

REFERENCES

ANSI/DASMA 102, *Specifications for Sectional Overhead-Type Doors*

ASTM-D2240-97, *Standard Test Method for Rubber Property - Durometer Hardness*



Side View

Orthogonal View

Figure 1

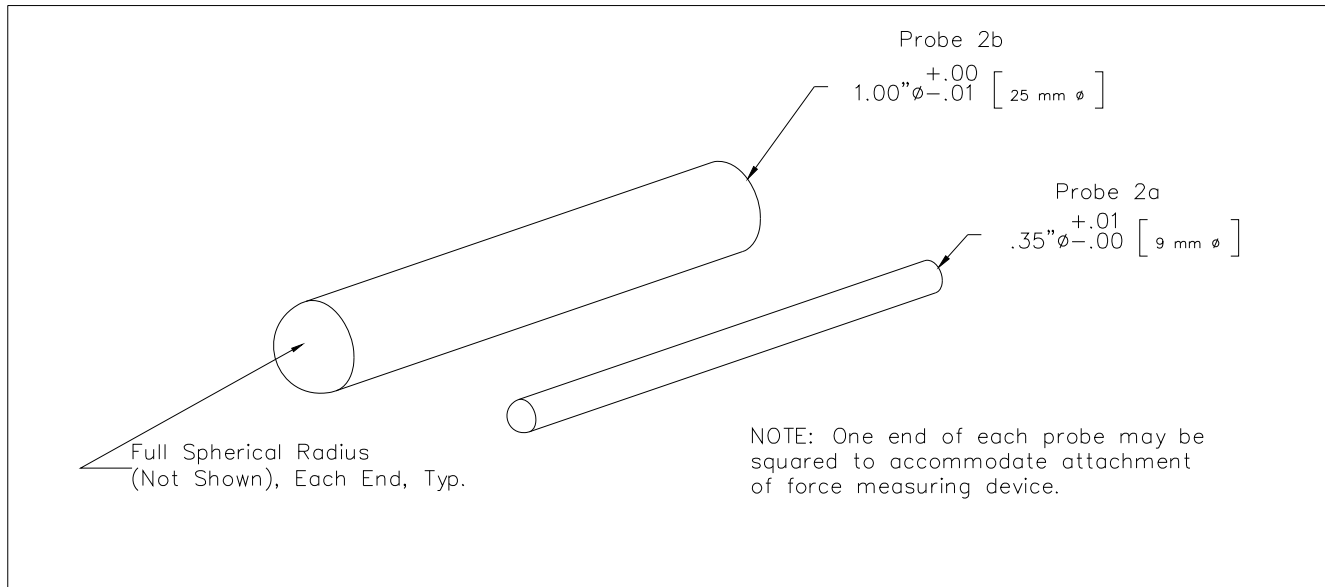


Figure 2

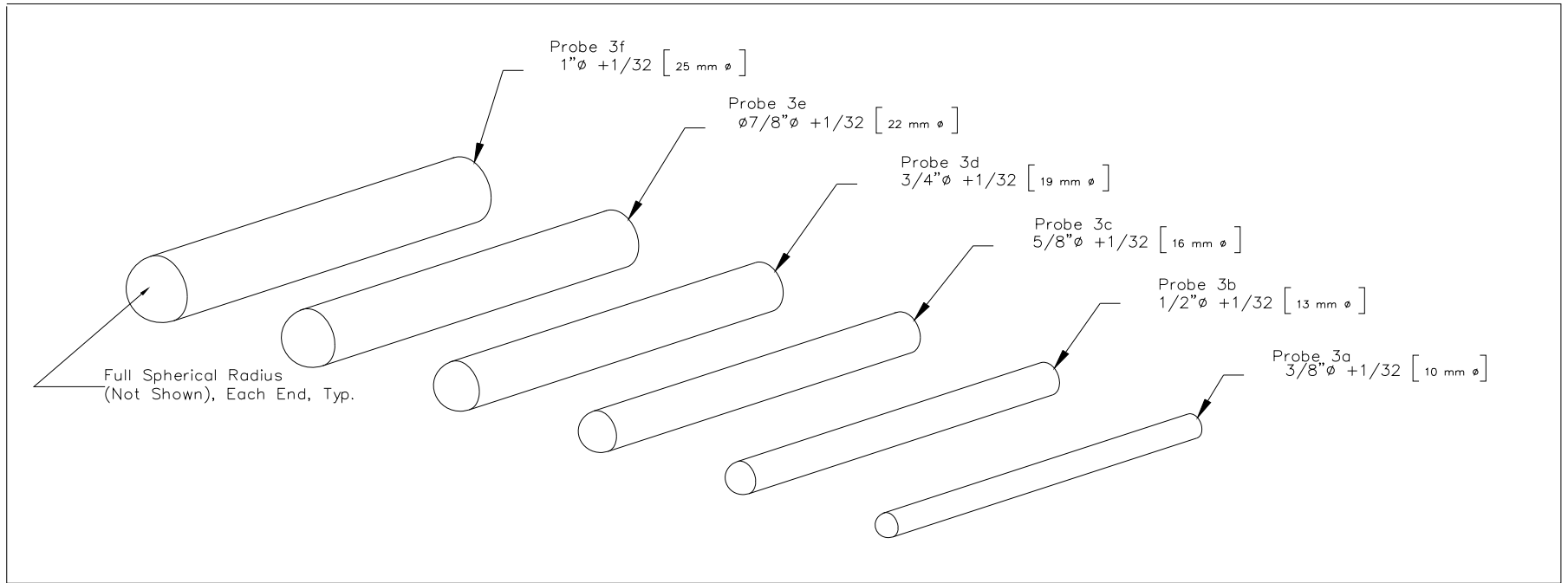


Figure 3

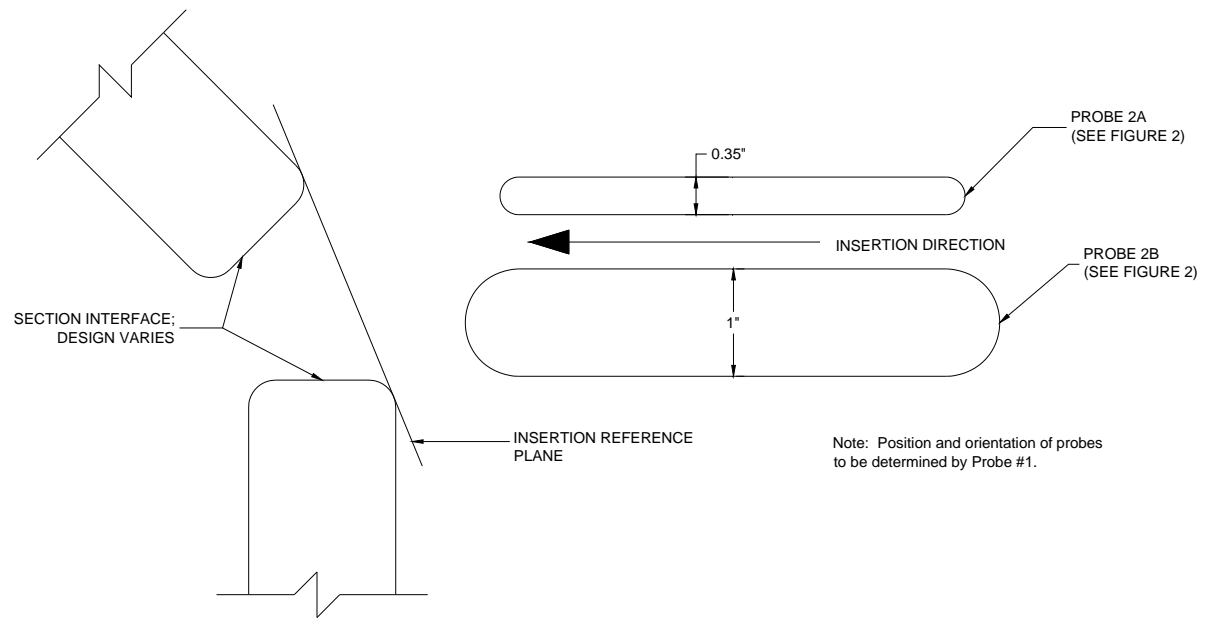


Figure 4

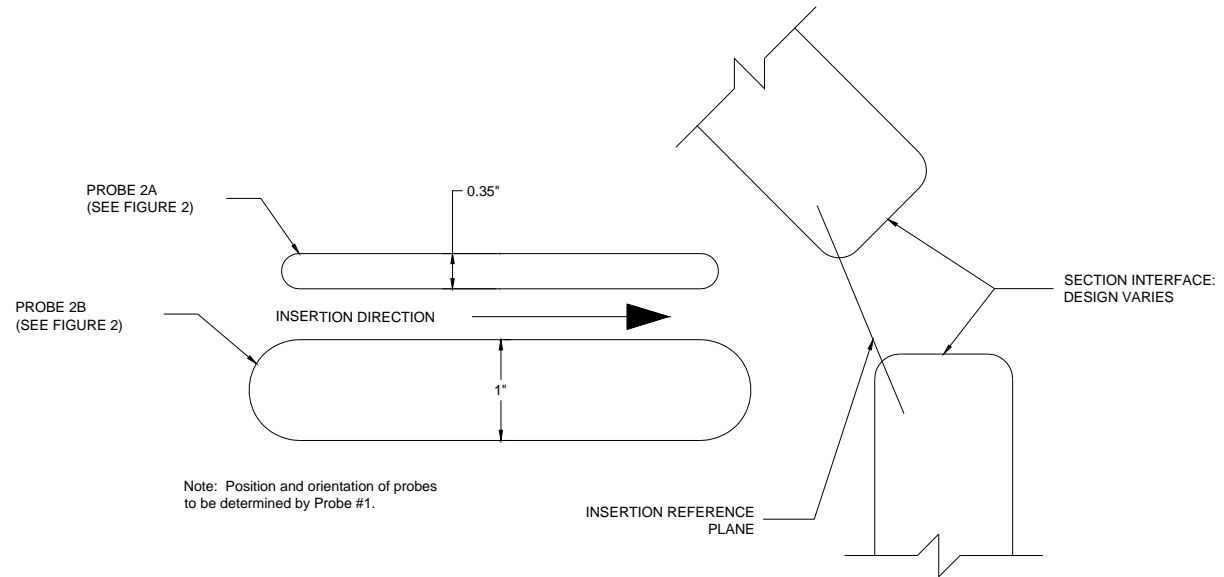


Figure 5



DASMA – the Door & Access Systems Manufacturers Association, International – is North America’s leading trade association of manufacturers of garage doors, rolling doors, garage door operators, vehicular gate operators, and access control products. With Association headquarters based in Cleveland, Ohio, our 90 member companies manufacture products sold in virtually every county in America, in every U.S. state, every Canadian province, and in more than 50 countries worldwide. DASMA members’ products represent more than 95% of the U.S. market for our industry.

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