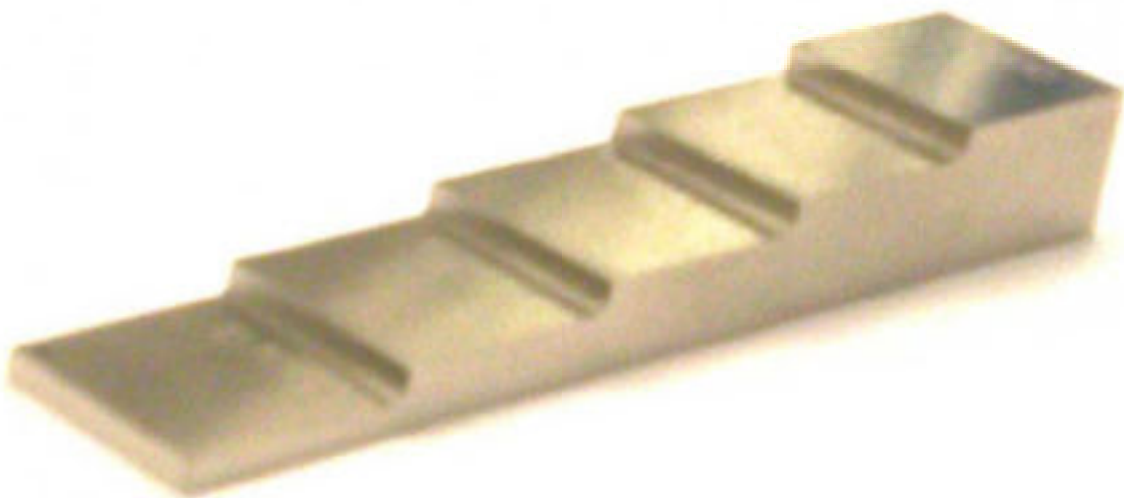


# Ultrasonic Reference Blocks



Custom and Standard Test Blocks for Nondestructive Testing

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## **Ultrasonic Reference Blocks from ATS**

*Quality Products for precision applications*

Our quality test blocks are manufactured in accordance to MIL-I-45208A and MIL-C-45662A. Reference Blocks are serialized and supplied with certification traceable to the National Institute of Standards and Technology (NIST) and available in English and metric units. ASTM blocks are supplied with a DAC Report. All certifications are permanently kept on file for easy customer reference.

Our standard, off the shelf Reference Blocks are available in 1018 Steel, 7075-T6 Aluminum, and 304 Stainless Steel. Other materials are available upon request, contact ATS for more information.

### *Custom Solutions*

#### **Custom Certifications:**

- Raw Material Certification
- 100% Dimensional Certification
- Surface Finishing
- Plating Thickness
- Material Velocity
- Index Point Verification according to specification

#### **Custom Materials:**

- Inconel ®
- Titanium
- Carbon Steel
- other Stainless Steels
- Aircraft Alloys
- Super Alloys
- other grades of Aluminum
- Copper
- Brass

#### **Custom Logo:**

Custom engraving is available

Contact ATS for a quote on all your custom needs.



## IIW Type 1 Calibration Block

**Specifications:**

ASTM E164, MIL-STD-2154.

**Calibration Function:**

Straight Beam -  
Distance, Amplitude, Resolution,  
Horizontal linearity.



Angle Beam -  
Sweep length, index point, sound path in  
wedge, sound path angle (35°—80°).

## Miniature Angle Beam (ROMPAS) Calibration Block

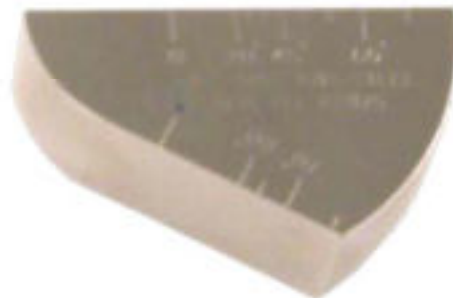
**Specifications:**

U.S.A.F. T.O. 33B-1-1, ASTM E164.

**Calibration Function:**

Straight Beam -  
Distance

Angle Beam -  
Index point, Sound path angle (30° - 70°).



## Distance Calibration (DC) Block

**Specifications:**

ASTM E164, AASHTO / AWS D1-5-95

**Calibration Function:**

Straight Beam -  
Distance, Amplitude.

Angle Beam -  
Index point, Distance.





## IIW Type 2 Calibration Block

### **Specifications:**

U.S.A.F. T.O. 33B-1-1 (6-1-84).

### **Calibration Function:**

Straight Beam -  
Sensitivity, Distance, Resolution,  
Horizontal linearity.



Angle Beam -  
Beam index, Sound path angle, Distance  
time base, Distance sensitivity curve.

## Distance / Sensitivity Calibration (DSC) Block

### **Specifications:**

ASTM E164, AASHTO / AWS D1-5-95

### **Calibration Function:**

Straight Beam -  
Distance, Amplitude

Angle Beam -  
Index point, Sound path angle (45° -  
70°), Distance, sensitivity.



## Sensitivity Calibration (SC) Block

### **Specifications:**

ASTM E164, AASHTO / AWS D1-5-95

### **Calibration Function:**

Angle Beam -  
Sound path angle (45°, 60°, 75°)  
sensitivity.





## Distance / Sensitivity (DS) Calibration Block

**Specifications:**

ANSI, AASHTO / AWS D1-5-95

**Calibration Function:**

Straight Beam -  
Distance horizontal linearity, sensitivity.



## AWS Resolution Calibration (RC) Block

**Specifications:**

ANSI, AASHTO / AWS D1-5-95

**Calibration Function:**

Angle Beam -  
Angle Beam resolution (45°, 60°, 70°).



## Miniature Resolution Block

**Specifications:**

None

**Calibration Function:**

Straight Beam -  
Sensitivity, Resolution, Distance amplitude  
correction.





## Step Wedges / Thickness Gauges

**Specifications:**

ASTM E797

**Calibration Function:**

Straight Beam -  
Thickness and Linearity  
Calibration, Thickness  
gauging, Specials quoted  
upon request.



## 30 FBH Resolution Reference Block

**Specifications:**

ASTM E127, ASTM E428 (Hole  
Dimensions Only).

**Calibration Function:**

Straight Beam -  
Sensitivity, Resolution, Flaw size, Flaw  
depth.



## IOW Beam Profile Block

**Specifications:**

BS 2704: 1978

**Calibration Function:**

Angle Beam -  
Beam profile (45°, 60°, 70°), Probe  
angle.





## Navships Test Block

### Specifications:

MIL-STD-271F (SH) -6-27-86, Navships  
0900-006-3010 Sec. 6.

### Calibration Function:

Angle Beam -  
Sensitivity.



## ASME N-625 Reference Plate

### Specifications:

ASME Boiler & Pressure Vessel Code,  
Section III ...Nuclear Vessels, 1965.

### Calibration Function:

Straight .....Sensitivity.  
Angle Beam ..... Sensitivity.  
Surface Wave ..... Sensitivity.



## ASTM Basic Calibration Block

### Specifications:

Many available including:

- ASME Section V, Article 5, Fig. T-542.2.1
- ASTM Section V, Article 4, Fig. T-441.1
- ASME Section V, Article 5, Fig. T-542.8.1.1



## ASTM Area Amplitude Blocks (set of 8)

**Specifications:**

ASTM E127, ASTM E428.

**Calibration Application:**

Determining the relationship between flaw size and echo amplitude.



Metal Path (In.)	Hole Dia. 1/64 in.
3.000	1
3.000	2
3.000	3
3.000	4
3.000	5
3.000	6
3.000	7
3.000	8

## ASTM Distance / Area - Amplitude Blocks (set of 10)

Metal Path (In.)	Hole Dia. (1/64 In.)	Metal Path (In.)	Hole Dia. (1/64 In.)
3.000	3	1.500	5
0.125	5	3.000	5
0.250	5	6.000	5
0.500	5	3.000	8
0.750	5	6.000	8

**Specifications:**

ASTM E127, ASTM E428

**Calibration Application:**

Determining Dead Zone, Sensitivity, Distance and Area Amplitude.



## ASTM Distance - Amplitude #3, #5, #8 FBH Blocks (set of 19)



**Hole Dia. (In.)**

3/64, 5/64, 8/64

**Metal Path (In.)**

0.063, 0.125, 0.250, 0.375, 0.500, 0.625, 0.750, 0.875, 1.000, 1.250, 1.750, 2.250, 2.750, 3.250, 3.750, 4.250, 4.750, 5.250, 5.750.

**Specifications:**

ASTM E127, ASTM E428

**Calibration Application:**

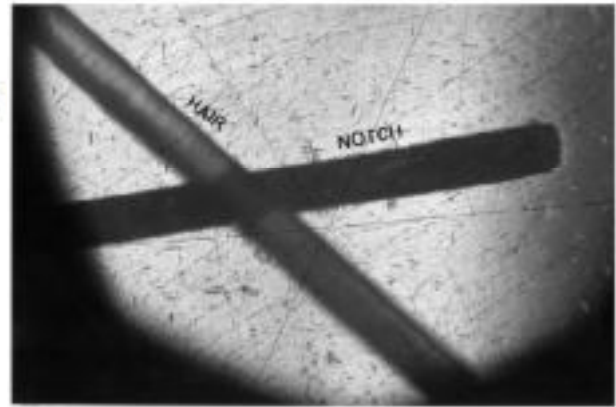
Determining relationship between metal distance and signal amplitude.



## EDM Notches by ATS

### As thin as a human hair .....

Precision machined widths from 0.0015 in. ATS produces notch standards in the materials, dimensions, and locations you specify.



- For Ultrasonic and Eddy Current Standards
- Internal, External Notches
- Special EDM Notch Standards and Flat Bottom Hole Standards
- Custom made to order in a wide variety of materials including Inconel Alloys, Titanium, Tool Steels, etc.
- Various configurations available including longitudinal, circumferential, and v-shaped notches with straight or radius corners
- Certification reports
- Replicas furnished



### Industries Served

- Steel, gas, and oil industry
- Nuclear industry
- Roller bearing applications
- Turbine industry



# Other Products

## Lab Furnaces

Temperatures to 1800°C  
(3272°F)

Tube, Split,  
and Box  
Types

Accessories &  
Custom  
Furnaces  
Available



## Industrial Furnaces

EHS Electro Heat Systems  
Temperatures to 1800°C  
(3272°F)

Standard &  
Custom Box  
Types



## Furnace Heating Elements

EHS Electro Heat Systems  
Temperature Ratings 1010°C to  
1204°C  
(1850°F to 2200°F)



Standard and Custom Elements

## Universal Testing Machines Grips & Fixtures

Manual and computer controlled units  
available in floor and bench top models.

- Tension
- Compression
- Shear
- Flexure

Choose from a selection of grips and fixtures  
available in capacities from 1,000 to 70,000  
lbs. Other accessories available.



(Right) 1600 Computer controlled Universal  
Testing Machine

## Extensometers

Choose from various  
types of extensometers  
used to test metals,  
ceramics, and plastics.  
Extensometers are also  
available for the  
following applications:

- Averaging
- Alignment checking
- Crack opening displacement
- High temperature



## SHRP Asphalt Binder Testing Equipment

- Pressure Aging Vessels
- Bending Beam Rheometers
- Direct Tension Test Systems
- Vacuum Degassing Ovens



## Creep Testing Systems

Systems for your tensile, compression,  
and stress/relaxation  
testing needs

- Lever Arm Tester (load capacity to 50,000 lbs.)
- Direct Load Tester (load capacity to 50,000 lbs.)



## Other Products

### Pressure / Pipe Test Systems



Applied Test Systems, Inc. has been supplying *quality* test equipment and *superior* services for the plastic pipe industry for more than 35 years. We offer a full line of quality pipe/pressure testing systems, fixtures, end caps, and accessories. Our testing equipment meets the testing needs of ASTM D1598 and D1599. We can also design and manufacture similar equipment to meet most any application.



### Sealant Testing Equipment



The Series 540 Sealant Tester is designed to perform reliable cyclic testing of sealants, adhesives, and coating to various specifications.

- Optional heat/cool chamber with control system
- PC with Windows™ based software.

## How to Contact ATS



Calibration Laboratory  
Certificate No. 2132.01

**ATS** APPLIED TEST  
SYSTEMS, INC.

154 East Brook Lane  
Butler, PA 16002

Phone: (724) 283-1212  
Toll-Free: (800) 441-0215  
Fax: (724) 283-6570  
Email: [sales@atspa.com](mailto:sales@atspa.com)  
<http://www.atspa.com>



Certification  
Program Now  
Available

