

MASTERBLOCK[®]

The global standard for quality hardness test blocks

TEST BLOCKS & INDENTERS 2014



Hardness test blocks or hardness reference plates are comparison plates most commonly made of Steel or Aluminum but could also be made of Brass or custom materials.

They are used for the day to day Indirect Verification and Calibration of hardness testing machines and instruments.

There are hardness test blocks for almost all hardness testing methods and scales. Verifying the display reading of a hardness tester against ISO/ASTM certified hardness test block values part of a normal quality assurance process.

Adjusting your hardness tester according to the value engraved in a hardness test block, as long as the adjustments are minor, can be done after assurance that a correct and undamaged indenter/penetrator is installed and the tester operates normally.

ISO & ASTM HARDNESS TEST BLOCKS (UKAS, Etc.)

Hardness test blocks MASTERBLOCK® branded are manufactured according to standards ISO (International) and ASTM (American). Such standards apply to the physical requirements as well to the method & the way the final value is found and confirmed. By adding a grid on the blocks they meet the requirements of NADCAP.

MASTERBLOCK® hardness test blocks are not “just” hardness test blocks. Our blocks are of excellent finish and have very low variation, excellent repeatability.

RAW MATERIALS USED

In order to manufacture good hardness test blocks, strict control over the quality of raw materials (Steel, Brass, Aluminum) is required. The entire block material needs to be homogenous, to assure low spread of readings and excellent repeatability.

HEAT TREATMENT

Distribution of the blocks in the hardening furnaces is of utmost importance, time, temperature and quench are all carefully controlled processes, to assure a top class product.

FINISHING

The next step in the process to ensure high quality ‘blanks’ is the grinding, polishing and lapping of the block surfaces. Any concerns on the surface quality are eliminated due to thorough selection after inspection.

QUALITY CONTROL

Before proceeding with the ultimate verification and engraving of the block hardness, blocks are undergoing a full inspection to ensure that they meet the physical requirements of ISO and ASTM (thickness, flatness, parallelism, surface roughness).

The MASTERBLOCK® appointed Calibration Laboratory D. Ellis, is accredited to ISO / IEC 17025 by NVLAP*.

The National Voluntary Laboratory Accreditation Program (NVLAP) provides third-party accreditation to testing and calibration laboratories in response to legislative actions or requests from government agencies or private-sector organizations. NVLAP-accredited laboratories are assessed against the management and technical requirements published in the International Standard, ISO/IEC 17025:2005 (ISO: Organization for Standardization).

*NVLAP is affiliated to the National Institute of Standards and Technology, NIST.

The blocks are also compliant for the use by organizations or companies that are under the NADCAP Program. (National Aerospace and Defense Contractors Accreditation Program).

Nadcap compliant “grid” blocks, are available on request.

ILAC: GLOBAL RECOGNITION OF ACCREDITING BODIES

UKAS, NVLAP, DAKKS, Cofrac and many national accrediting bodies & laboratories are signatories (members) of ILAC.

ILAC is an international cooperation of laboratory and inspection accreditation bodies. Accreditation bodies are established in many countries with the primary purpose of ensuring that conformity assessment bodies are subject to oversight by an authoritative body. A laboratory calibration performed under the scope of accreditation recognized by the ILAC agreement is considered to be an equivalent calibration to any other laboratory recognized by the ILAC agreement.

For a complete list of ILAC recognized accrediting bodies or ILAC members please refer to www.ilac.org.

- BE CERTAIN, USE MASTERBLOCK® -

BRINELL SCALES ISO / ASTM

The MASTERBLOCK® hardness calibration laboratory is accredited to ISO 17025 by NVLAP, an ILAC member.

DUAL CERTIFIED according to ISO 6506-3 & ASTM-E10-01

ILAC members are **DAkkS, UKAS, A2LA, Cofrac** (for more info see: www.ilac.com), **NADCAP compliant**

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All mentioned hardness values are nominal values, the actual calibrated values may vary.

HBW 10/3000	70	100	150	170	200	250	300	350	400	450	500	550	600	650	
HBW 10/1500	70	100	150	170	200	250	300	350	400	450	500	550	600	650	
HBW 10/1000	70	100	150	170	200	250	300	350	400	450	500	550	600	650	
HBW 10/500	70	100	150	170	200	250	300	350	400	450	500	550	600	650	
HBW 10/250	70	100	150	170	200	250	300	350	400	450	500	550	600	650	
HBW 5/750	70	100	150	170	200	250	300	350	400	450	500	550	600	650	
HBW 5/250	70	100	150	170	200	250	300	350	400	450	500	550	600	650	

Block size: 150mm x 50mm x 20mm thickness * Also available in aluminum

Remark XXX Outside the ranges specified in ISO and ASTM standards.

All mentioned hardness values are nominal values, the actual calibrated values may vary.

HBW 10/100	40	70	100	150	170	200	250	300	350	400	450	500	550	600	
HBW 5/125	40	70	100	150	170	200	250	300	350	400	450	500	550	600	
HBW 5/62.5	40	70	100	150	170	200	250	300	350	400	450	500	550	600	
HBW 5/25	40	70	100	150	170	200	250	300	350	400	450	500	550	600	
HBW 2.5/187.5	40	70	100	150	170	200	250	300	350	400	450	500	550	600	
HBW 2.5/62.5	40	70	100	150	170	200	250	300	350	400	450	500	550	600	
HBW 2.5/31.25	40	70	100	150	170	200	250	300	350	400	450	500	550	600	
HBW 2.5/15.625	40	70	100	150	170	200	250	300	350	400	450	500	550	600	
HBW 2.5/6.25	40	70	100	150	170	200	250	300	350	400	450	500	550	600	
HBW 1/30	40	70	100	150	170	200	250	300	350	400	450	500	550	600	
HBW 1/10	40	70	100	150	170	200	250	300	350	400	450	500	550	600	
HBW 1/5	40	70	100	150	170	200	250	300	350	400	450	500	550	600	
HBW 1/2.5	40	70	100	150	170	200	250	300	350	400	450	500	550	600	
HBW 1/1	40	70	100	150	170	200	250	300	350	400	450	500	550	600	

Block size: $\varnothing 64\text{mm} \times 15\text{mm}$ thickness

Remark XXX Outside the ranges specified in ISO and ASTM standards.

BRINELL SCALES ISO DAKKS

The MASTERBLOCK® hardness calibration laboratory is accredited to ISO 17025.

Block CERTIFIED according to ISO 6506-3

Other ILAC members are **NVLAP, UKAS, A2LA, Cofrac** (for more info see: www.ilac.com)

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Rectangular		<i>All mentioned hardness values are nominal values, the actual calibrated values may vary.</i>											
HBW 10/3000	150	200	250	300	350	400	450	500	600				
HBW 10/1500													
HBW 10/1000	150	200											
HBW 10/500	150												
HBW 5/750	150	200	250	300	350	400	450	500	600				
HBW 5/250	150	200											
HBW 5/125	150												

Block size at hardness 150 HBW: 150mm x 100mm x 16mm thickness
Block size all others: 100mm x 100mm x 16mm thickness

Triangular		<i>All mentioned hardness values are nominal values, the actual calibrated values may vary.</i>											
HBW 2.5/187.5	100	150	200	250	300	350	400	450	500	600			
HBW 2.5/62.5	100	150	200										
HBW 2.5/31.25	100												
HBW 2.5/15.625	100												
HBW 1/30	150	240	300	400	450	540	620						
HBW 1/10	150	240											
HBW 1/5	150												

Above reference blocks HBW 1 have a polished surface
Block size: 70mm x 70mm x 70mm x 6mm thickness

BRINELL SCALES ISO DAKkS

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Block CERTIFIED according to ISO 6506-3

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Aluminum rectangular				<i>All mentioned hardness values are nominal values, the actual calibrated values may vary.</i>												
HBW 10/1000	60	80	100													
HBW 10/500	60	80	100													
HBW 10/250	60	80														
HBW 5/250	60	80	100													
HBW 5/125	60	80	100													
HBW 5/62.5	60	80														

Block size: 150mm x 100mm x 16mm thickness

Aluminum square				<i>All mentioned hardness values are nominal values, the actual calibrated values may vary.</i>												
HBW 2.5/62.5	60	80	100													
HBW 2.5/31.25	60	80	100													
HBW 2.5/15.625	60	80														

Block size: 75mm x 75mm x 16mm thickness