

**MASTERBLOCK<sup>®</sup>**

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](http://www.ilac.org).

**- BE CERTAIN, USE MASTERBLOCK® -**

## MACRO VICKERS SCALES ISO / ASTM

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

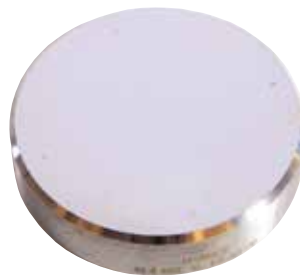
**DUAL CERTIFIED according to ISO 6507-3 & ASTM E384-10e1**

Other ILAC members are **DAkks, UKAS, A2LA, Cofrac** (for more info see: [www.ilac.com](http://www.ilac.com)), **NADCAP compliant**

### Macro Vickers

Round*	<i>All mentioned hardness values are nominal values, the actual calibrated values may vary.</i>										
<b>HV2</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	
<b>HV3</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	
<b>HV5</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	
<b>HV10</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	
<b>HV20</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	
<b>HV30</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	
<b>HV50</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	
<b>HV100</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	

Block size:  $\varnothing 61\text{mm} \times 12\text{mm}$  thickness **Blocks can be supplied with NADCAP compliant grid.**



\*Limited range also available in Brass

## MICRO VICKERS SCALES ISO / ASTM

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

**DUAL CERTIFIED according to ISO 6507-3 & ASTM E384-10e1**

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

### Micro Vickers

Round*	<i>All mentioned hardness values are nominal values, the actual calibrated values may vary.</i>										
<b>HV1</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	
<b>HV0.5</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	
<b>HV0.3</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	
<b>HV0.2</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	
<b>HV0.1</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	
<b>HV0.050</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	
<b>HV0.025</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	
<b>HV0.010</b>	40	70	100	150	200	250	300	350	400	450	
	500	550	600	650	700	750	800	850	900	950	

Block size:  $\varnothing 37\text{mm} \times 12\text{mm}$  thickness **Unparalleled quality, mirror polished surface!**



\*Limited range also available in Brass

## MACRO VICKERS SCALES ISO DAKKS

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

**Block CERTIFIED according to ISO 6507-3**

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

### Standard loads Macro Blocks

<b>Triangular</b>											<i>All mentioned hardness values are nominal values, the actual calibrated values may vary.</i>			
<b>HV1</b>	140	240	300	400	450	540	620	720	840					
<b>HV2</b>	140	240	300	400	450	540	620	720	840					
<b>HT</b>	140	240	300	400	450	540	620	720	840					
<b>HV5</b>	140	240	300	400	450	540	620	720	840					
<b>HV10</b>	140	240	300	400	450	540	620	720	840					
<b>HV20</b>	140	240	300	400	450	540	620	720	840					
<b>HT0</b>	140	240	300	400	450	540	620	720	840					
<b>HV50</b>	140	240	300	400	450	540	620	720	840					
<b>HV60</b>	140	240	300	400	450	540	620	720	840					
<b>HV100</b>	140	240	300	400	450	540	620	720	840					
<b>HV120</b>	140	240	300	400	450	540	620	720	840					
<b>HV125</b>	140	240	300	400	450	540	620	720	840					
<b>HV150</b>	140	240	300	400	450	540	620	720	840					

Macro block size: 70mm x 70mm x 70mm x 6mm thickness **Blocks can be supplied with NADCAP compliant grid.**

## MICRO VICKERS SCALES ISO DAKkS

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

**Block CERTIFIED according to ISO 6507-3**

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

### Micro Vickers

<b>Triangular</b>		<i>All mentioned hardness values are nominal values, the actual calibrated values may vary.</i>											
<b>HV10</b>	240	300	400	450	540	620	720	840					
<b>HV5</b>	240	300	400	450	540	620	720	840					
<b>HT</b>	240	300	400	450	540	620	720	840					
<b>HV2</b>	240	300	400	450	540	620	720	840					
<b>HV1</b>	240	300	400	450	540	620	720	840					
<b>HV0.5</b>	240	300	400	450	540	620	720	840					
<b>HV0.3</b>	240	300	400	450	540	620	720	840					
<b>HV0.2</b>	240	300	400	450	540	620	720	840					
<b>HV0.05</b>	240	300	400	450	540	620	720	840					
<b>HV0.03</b>	240	300	400	450	540	620	720						
<b>HV0.025</b>	240	300	400	450	540	620	720						
<b>HV0.015</b>	240	300	400	450	540								
<b>HV0.010</b>	240												
<b>HV0.005</b>	240												

*Micro block size: 35mm x 35mm x 35mm x 6mm thickness* **Polished surface**