

**CONSTRUCTION CHARACTERISTICS:**

Laboratory benches produced in according to **EN-13150: 2001**, european standard concerning "Working benches for laboratories: dimensions, safety requirements and test methods".

**Modular and stackable components** make the system suitable for every customer need.

**Utilities arrangement, supply piping distribution and suspended accessory installation** are just few functions which technical wall can perform. Thanks to modular elements, it can be designed vertically and horizontally to adapt itself to the most appropriate laboratory disposition.

The modular system with integrated utilities is designed for a **functional distribution, easily upgradable and changeable**. Technical panels accept any kind of fittings.

"C" frame workstations are **extremely steady** and they **can be loaded up to 200 Kg/m2**.

The lack of frontal legs and the ergonomic design ensure the right work positioning.

**Technical characteristics of structures**

The modular components (benches of support) are realized in outlined of tubular steel mm 60x40, mm 60x20, with thickness mm 2 conforming to the norms UNI 7947 with employment of rolled material to cold quality FEP 01 superficial aspect MA-RM according to UNI 5866.

The weldings among the various parts, follow the procedure TIG or to continuous thread.

The construction in series and the holds tolerances of workmanship allow the interchangeability and the substitution of any component.

Dusts painting Epossidic to tall resistance.

Opaque superficial finish with effect rough.

Grey color of the metallic structures RAL 7001

**DATA SHEET TEST PAINTING**

<b>Surface appearance</b>		JUST ROUGH
Color	Gray	RAL 7001
	Test	Result
Brilliance Gardner	DIN 675330	from 65to a 75 gloss Class 212-213-214
<b>Mechanical Properties</b>		
	Test	Result
Adherence reticulum	DIN 53151	GtO
Hardness		3H H-2H
Schoch	ASTM d2794/69	100(60) kg/cm
Erichsen	DIN 53156	8(7) mm
Resistance to solvents		
	Test	Result
Alcool ethyl-butyl		No damage
Benzene-toluene-xylene		No damage
Tricloreto-percloreto		No damage
Metiletilchetone		No damage

Acetone		No damage
Resistance to acids and bases		
dilute mineral acids (hydrochloric acid, phosphoric acid 10%)		No damage
Acetic acid		No damage
Idr. Sodium-potassium to 10%		No damage
Ammonia-hydr. 10% ammonium		No damage

### Removable panels

The panels serve to close the compartment contain the lines of feeding. They has fixed with n° 4 grapevines therefore easily detachable for possible maintenances.

They are realized in plastic laminate fire resistant class 1.

### Worktop in Monolithic Vitreous Enamel Steel Asepsi-LabSteel

The tops in ceramic are the result of the fusion of glassy material (enamel) on a steel of high quality, rolled to cold.

Technical characteristics:

The perfect adherence of I enamel him/it ceramic to the support in steel confers to this material, besides the inalterability in the time, also the following ownerships:

- resistance class AA
- elevated hardness
- elevated resistance to the abrasion
- elevated resistance to the bumps
- elevated resistance to the usury

Duration and resistance to the degradation

Resistance to the chemical agents

Resistance to the corrosion

Poliuretano Inside

Injected to tall pressure, with function of stiffening and no rhombus.

Resistance to the thermal starts

the chemical ownerships and physics of the steel ceramic Asepsis-LabSteel they don't suffer alterations because of inclusive thermal excursions between a maximum temperature of 450°C and a least of -50°.

Bacterical

the surface of Asepsis-LabSteel prevents the growth of the bacterias and other germs contributing to maintain low the number of particles in circulation of the environment.

Igienic

the surface of the steel ceramic Asepsis-LabSteel, being particularly hard, smooth and deprived of porosity, it doesn't allow the absorption of dusts, fat, urines.

Ability of containment of versed liquids accidentally:

- plain from cm 120 x 75 6 liters
- plain from cm 180 x 75 9 liters

Indication for the use

particularly suitable in the food industry, pharmaceutical and cosmetics, in biochemistry, bacteriology and in the sterile departments, in the laboratories of analysis, histological.

hardness	4-6 Mohs
Resistance to chip	70% test Porcelain Enamel Institut
Resistance to torsion	200°C
Thermoresistance	max 650°C
Resistance photochemical	resist UV
Reflection of dispersion	fino a + 85%
chemical resistance	resistant to all acids and salts no resistant hydrofluoric acid
total reflection	+1- 93%
Extension to break	0.2-0.3%
Softening point	450-550°C
Expansion coefficient	1/K 10X10-6/°C
Resistance to thermal shock	NEM2702 513 K >240°C
resistance to impact	1 mm d > 20 N
Resistance to fire	Classe 1
Legislation of reference	P.E.I. S-100/65 (UNI 9757)

### **Work top in High Pressure Laminate Duropal®**

Duropal high pressure laminates (HPL) are hard-wearing, versatile, and available in many attractive designs. In order to get the best use from the product and ensure that its attractive appearance is retained, please observe the chemical, mechanical and physical properties of our Duropal high pressure laminates (HPL).

In terms of reaction to fire, protection against formaldehyde emission and surface processing are concerned, there are some minor differences between Duropal-HPL and Duropal-HPL-Solid. All other points apply to both high pressure laminates.

Built fire retardant wood conglomerate F1 according to DIN 52634, DIN 68763, UNIEN 120/92, Class E1, bending strength DIN 52362, 30 mm, which is often treated with a special antideformante.

Duropal HPL ® coating thickness of 0.8 mm, DIN 52634, resistant to abrasion and impact resistance according to DIN 53799; therefore easy to clean and decontaminate.

Working front and rear rounded with a radius of 4 mm with technical POSTFORMING

Guaranteed a maximum overload of 300 kg/m<sup>2</sup>

The surfaces of Duropal-HPL and Duropal-HPL-Solid are resistant to contact with most normal chemicals and substances. Cleaning products such as acetone and substances such as vinegar, coffee and blood will not stain the surface.

Nor will spillages of any of the following (listed here as examples) affect the surface provided they are wiped up promptly (e.g. within 10-15 minutes). This means the tops must be wiped with a wet cloth and rubbed dry within 10-15 minutes.

SUBSTANCE	CHEMICAL FORMULA	SUBSTANCE	CHEMICAL FORMULA
Antacid (more than 10%)	HCOOH	Lacquers/paints and adhesives (chemically hardening)	
Aminosulphonic acid (to 10%)	NH <sub>2</sub> SO <sub>3</sub> H	Methylene blue	C <sub>16</sub> H <sub>18</sub> N <sub>3</sub> ClS
Aniline dyes		Millon's reagent	OHg <sub>2</sub> NH <sub>2</sub> Cl
Inorganic acids (to 10%)		Sodium hydrosulphate	NaHSO <sub>4</sub>
Arsenic acid (to 10%)	H <sub>3</sub> AsO <sub>4</sub>	Sodium hypochlorite	NaOCl
Boric acid	H <sub>3</sub> BO <sub>3</sub>	Sodium thiosulphate	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>
Iron (II) chloride solution	FeCl <sub>2</sub>	Sodium hydroxide (more than 10%)	NaOH
Iron (III) chloride solution	FeCl <sub>3</sub>	Nylanders reagent	
Esbachs reagent		Oxalic acid	COOH x COOH
Fuchsin solution	C <sub>19</sub> H <sub>19</sub> N <sub>3</sub> O	Phosphoric acid (to 10%)	H <sub>3</sub> PO <sub>4</sub>
Hair dyes and bleaches		Picric acid	C <sub>6</sub> H <sub>2</sub> OH(NO <sub>2</sub> ) <sub>3</sub>
Iodine solution	I	Mercury dichromate	HgCr <sub>2</sub> O <sub>7</sub>
Limescale remover		Nitric acid (to 10%)	HNO <sub>3</sub>
Potassium hydroxide (more than 10%)	KOH	Hydrochloric acid (to 10%)	HCl
Potassium chromate	K <sub>2</sub> CrO <sub>4</sub>	Sulphuric acid (to 10%)	H <sub>2</sub> SO <sub>4</sub>
Potassium dichromate	K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>	Sulphurous acid (to 10%)	H <sub>2</sub> SO <sub>3</sub>
Potassium hydrogen sulphate	KHSO <sub>4</sub>	Silver nitrate	AgNO <sub>3</sub>
Potassium iodide	KI	Mercury bichloride solution	HgCl <sub>2</sub>
Potassium permanganate	KMnO <sub>4</sub>	Hydrochloric peroxide (3-30% perhydrol)	H <sub>2</sub> O <sub>2</sub>
Methyl violet	C <sub>24</sub> H <sub>28</sub> N <sub>3</sub> Cl		
CHEMICAL; EACH IN CONCENTRATION OVER APPROX. 10%	CHEMICAL FORMULA	CHEMICAL; EACH IN CONCENTRATION OVER APPROX. 10%	CHEMICAL FORMULA
Aminosulphic acid	NH <sub>2</sub> SO <sub>3</sub> H	Phosphoric acid	H <sub>3</sub> PO <sub>4</sub>
Arsenic acid	H <sub>3</sub> AsO <sub>4</sub>	Hydrochloric acid	HCl
Chromic sulphuric acid	K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> + H <sub>2</sub> SO <sub>4</sub>	Sulphuric acid	H <sub>2</sub> SO <sub>4</sub>
Hydrofluoric acid	HF	Hydrogen bromide	HBr
Nitrohydrochloric acid	HNO <sub>3</sub> + HCl = 1 : 3		

**Frequent exposure to the following aggressive gases will cause changes to the Duropal-HPL surface.**

CHEMICAL	CHEMICAL FORMULA	CHEMICAL	CHEMICAL FORMULA
Bromine	Br <sub>2</sub>	Sulphur dioxide	SO <sub>2</sub>
Chlorine	Cl <sub>2</sub>	Acid vapours	
Nitrous gases	N <sub>x</sub> O <sub>y</sub>		

## MECHANICAL AND PHYSICAL PROPERTIES OF DUROPAL-HPL

DIN EN 438-3: 2005 REQUIREMENTS FOR APPLICATION CLASSIFICATION				HPL CLASSIFICATION TO DIN EN 438-3: 2005 THICKNESS <2 MM ALPHABETICAL CLASSIFICATION*		
QUALITY CRITERION	PROCESS DIN EN 438-2 OR TEST STANDARD	PROPERTY	UNIT	HDS	HGS	VGS
				HDF	HGF	VGF
				HDP	HGP	VGP
Resistance to surface abrasion	10	Abrasion resistance	Revs. (min.) (IP + FP)/2	1,000	350	150
			Numerical classification	4	3	2
Resistance to shock loading (small ball)	20	Elastic force	N (min.)	25	20	15
			Numerical classification	4	3	2
Scratch resistance	25	Force	Level	4	3	2
			Numerical classification	4	3	2
<b>GENERAL REQUIREMENTS AND PROPERTIES</b>						
Dimensional stability at higher temperature	17	Dimensional change (cum.)	% (max.) lengthwise	0.45	0.55	0.75
			crosswise	0.90	1.05	1.25
Resistance to boiling water	12	Appearance	Level (min.) Glossy surface	3	3	3
			Other surface	4	4	4
Resistance to dry heat (180 °C)	16	Appearance	Level (min.) Glossy surface	3	3	3
			Other surface	4	4	4
Resistance to moist heat (100 °C)	EN 12721	Appearance	Level (min.) Glossy surface	4	3	3
			Other surface	4	4	4
Stain resistance	26	Appearance	Level (min.) Substances groups 1 & 2	5	5	5
			Substances group 3	4	4	4
Lightfastness (Xenon arc lamp)	27	Contrast	Grey scale	4-5	4-5	4-5
Resistance to steam	14	Appearance	Level (min.) Glossy surface	3	3	3
			Other surface	4	4	4
Resistance to a glowing cigarette	30	Appearance	Level (min.)	3	3	3
Crack resistance under load	23	Appearance	Level (min.)	4	4	4
Thickness	5	Thickness tolerance	mm HPL thick: 0.5 - ≤1.0	Maximum deviation ±0.10		
			mm HPL thick: 1.0 - <2.0	Maximum deviation ±0.15		
Dimensional stability	9	Levelness	mm/m	Maximum deviation 60		
	6	Length and width	mm	+10/-0		
	7	Edge straightness	mm/m	Maximum deviation 1.5		
	8	Right angularity	mm/m	Maximum deviation 1.5		
Surface texture Dirt, stains and similar surface flaws; fibres, hair and scratches	Section 4	Sight check		Permitted fault size/length		
			mm <sup>2</sup> /m <sup>2</sup>	max. 1.0		
			mm <sup>2</sup> /m <sup>2</sup>	max. 10.0		
<b>OTHER REQUIREMENTS TYPE P (POST-FORMING)</b>						
QUALITY CRITERION	PROCESS	PROPERTY	UNIT	HDP	HGP	VGP
Post-formability	32	Radius	mm lengthwise	≤10 x HPL nominal thickness		
			crosswise	≤20 x HPL nominal thickness		
Resistance to blistering	34	Time to blistering	Seconds	nominal thickness <0.8 mm: ≥10		
				nominal thickness ≥0.8 mm: ≥15		

#### PHYSIOLOGICAL PROPERTIES

Duropal-HPL and Duropal-HPL-Solid are physiologically safe and suitable for use in rooms where food is stored, handled and consumed. This property is confirmed by a safety declaration from research and testing company ISEGA-Forschungs- und Untersuchungs-GmbH (tested to DIN EN 1186 / DIN EN 13130).

#### PROTECTION AGAINST THE EMISSION OF FORMALDEHYDE FROM CORE MATERIALS

When Duropal-HPL and the core material are bonded, Duropal-HPL offers highly effective protection against the possible diffusion of formaldehyde from the core material even in the lowest thickness.

#### ANTISTATIC BEHAVIOUR

The specific surface resistance of Duropal-HPL under ordinary ambient conditions is between  $1 \times 10^9$  and  $1 \times 10^{12}$  Ohm (tested in accordance with DIN EN 61349). There is therefore little likelihood of an electro-static charge building up, and they do not attract dust.

#### QUALITY MONITORING

Duropal guarantees that the following standards are fulfilled e.g. with regard to the product properties: EN 438: 2005, ISO 4586 part 1: 2004, DIN EN ISO 9001: 2000 and with regard to its reaction to fire: DIN 4102, AFNOR NFP 92.501, B/S 476 – parts 6.7, Önorm B 3800-1

#### **Sink Polypropylene Moplen**

The polypropilene is the ideal material to resolve the problems of corrosion, thanks to the good resistance to the acids, alkali and bases.

Excellent resistance to acids, alkalines and base chemicals, and thus ideal for use in chemical laboratories.

Excellent resistance to corrosion, thus suitable for use in all situations where acid substances or elevated levels of humidity are present, such as steamy environments, marine areas, the food industry and so on.

Excellent mechanical resistance and high elasticity.

Recyclable

Smooth surfaces which reduce the possibility of the build up of dirt and make cleaning easier.

Products made as a single piece, cutting out the need for soldering and joining and thus aiding decontamination and guaranteeing greater laboratory hygiene.

Constant thickness in all parts of the product, including angles, edges and joints, guaranteeing excellent mechanical resistance, unlike products made using other techniques.

Elevated aesthetic qualities.

Passive anti-knock absorption: enormously reducing the risk of breakage of the glassware normally used in laboratories, with an obvious saving and major safety for the worker, thus reducing the risk of harm and contact with dangerous substances.

Anti-glare "Polysink" colour for greater worker comfort, easily matched with various furnishings for excellent aesthetic results.

Even when the product is scratched or scored the characteristics of chemical resistance remain unchanged.

Good aesthetical impact through an elegant design.

The possibility to insert tubs of various measures they make the plans in Polypropilene the available most flexible solution in commerce today.

Productive scheme and characteristics

The plans in Polypropilene are realized according to the technique of the injection molding in an only piece.

The least thickness is of mm 8.

Total absence of alive edges.

#### **Closet on wheels**

The benches from us planned they assure ample and functional operational spaces in the laboratory.

An accurate planning, integrated with a valid system of lockers assures a rational

setup to the job utensils and the required equipments in the daily practice of laboratory.

The Program of Production foresees lockers from laboratory actions to satisfy a rapids mobility.

Provided of four wheels with firm (those frontal) and they bear a loaded max. of Kg. 120.

Easy insertion in the special spaces.

The shutters are endowed with special adjustable zippers 3D with closing to rubber band and opening to 165°.

The drawers are realized in steel plate painted with resins epossidic.

The slide, happens above against guides in steel c.s.d., provided of pads with firm of end run to drawer all open.

The façades of the drawers and the shutters are of Blue color and they have the rounded off edges ABS 2 mm around four sides second the normative.

Handle in plastic polymer.