



# ALATNI I BRZOREZNI ČELICI / ČELICI PROIZVEDENI METALURGIJOM PRAŠKA

## TOOL AND HIGH-SPEED STEELS / STEELS PRODUCED BY POWDER METALLURGY

Alatne čelike u mogućnosti smo isporučiti proizvedene u tri različite izvedbe - konvencionalnoj, pretaljene pod troskom i proizvedne metalurgijom praška. Svaka od njih je „upgrade“ mehaničkih svojstava, a samim time i alati proizvedeni od ovakvih čelika imaju veću trajnost u eksploataciji. Isporučujemo ih u obliku okruglih i plosnatih šipki, te u blokovima, raspoložemo pilama sa kapacitetom rezanja pravokutnih dimenzija do 800x700 i okruglih dimenzija Ø 700. Naš partner **Dörrenberg Edlestahl** je razvio veliki dio ovih materijala kao brand i patentirao ih.

We are able to deliver tool steels produced in three different executions - conventional, remelted under the slag, and produced by powder metallurgy. Each of them is an "upgrade" of mechanical properties, and therefore the tools produced from these types of steel have greater durability in exploitation. We deliver them in the form of round, flat bars, and in blocks, we have saws with the capacity to cut rectangular dimensions up to 800x700 and round dimensions Ø 700. Our partner **Dörrenberg Edlestahl** developed many of these materials as a brand and patented them.

Čelici za hladni rad / Cold work tool steels / * DE BRAND			
1.1730	1.2550	1.4122 *	CPR *
1.2067	1.2631	CP2M *	CMD550 *
1.2358	1.2709	CP4M *	PMD9 *
1.2363	1.2764	CP72 *	PMD10 *
1.2379	1.2767	CP72 plus *	PMD V10 *
1.2379 plus *	1.2826	CP8E *	
1. 2436	1.2842	CPOH *	
1. 2510	1.4112	CPOH plus *	

Čelici proizvedeni metalurgijom praška Powder metallurgical steels / * DE BRAND			
PMD M4 *	PMD23 *	PMD550 *	1.3343 plus *
PMD9 *	PMD30 *	CPOH plus *	CMD550 *
PMD10 *	PMD52 *	CP72 plus *	PMD9 *
PMD V10 *	PMD60 *	1.2379 plus*	PMD10 *



Čelici za topli rad / Hot work tool steels / * DE BRAND			
1.2311	1.2343 ESR	1.2365	1.2714
1.2312	1.2344	1.2367	WP7V *
1.2343	1.2344 ESR	1.2367 ESR	

Čelici za preradu plastičnih masa / Plastic mould steels / * DE BRAND			
1.1730	1.2316	1.2738	CMD550 *
1.2083 ESR	1.2343	1. 2738+HH	
1.2085	1.2344	1.4122	

Brzorezni čelici / High speed steels / * DE BRAND			
1.3243	1.3343	PMD23 *	PMD52 *
1.3247	1.3343 plus *	PMD30 *	PMD60 *



Na zalihi imamo slijedeće materijale i u mogućnosti smo prema zahtjevima kupca izrezati ih na tražene dimenzije i isporučiti ih u najkraćem roku / Following materials are in stock and we are able to cut them on the required dimensions according to customer requirements and deliver them promptly

Werkstoff Nu.	Okruglo / Round	Plosno, Kvadrat, Blok / Flat, Square, Block
1.1730	-	20x800 - 150x800
1.2085	-	30x800 - 150x800
1.2312	-	20x800 - 500x800
1.2343	Ø 20 - 232	30x800 - 500x800
1.2343 ESR	-	30x800 - 500x800

### Dodana vrijednost za naše kupce:

Ploče rezane na mjeru, ploče glodane na mjeru po zahtjevu kupca, ploče rezane na mjeru sa dodacima za brušenje, precizno glodani čelik u plosnatim dimenzijama dužina 500 mm ili 1.000 mm dobavljiv sa centralnog skladišta, blokovi za erodiranje – glodani i kaljeni, tehnička podrška, mogućnost dostave na vrata vašeg pogona

Werkstoff Nu.	Okruglo / Round	Plosno, Kvadrat, Blok / Flat, Square, Block
1.2344	Ø 20 - 232	-
1.2379	Ø 12 - 253	10x100 - 500x800
1.3343	Ø 15 - 123	-
1.4112	Ø 20 - 183	
CPOH	Ø 20 - 71	20x300

### Added value for our customers:

Plates sawn to size according to the customer's request, plates milled to the measure according to the customer's request with allowances for grinding, precisely milled steel in flat dimensions, length 500 mm or 1,000 mm available from the central warehouse, blocks for EDM - milled and hardened, technical support, possibility of delivery to the door of your facility

# KONSTRUKCIJSKI I LEGIRANI ČELICI ZA STROJNU OBRADU I NEHRĐAJUĆI ČELICI STRUCTURAL AND ENGINEERING STEELS FOR MACHINING and STAINLESS STEELS

EN 10025 Toplo valjani konstrukcijski čelici Hot rolled structural steels	
S235JR / S235J0 / S235J2	1.0038 / 1.0114 / 1.0117
S275JR / S275J0 / S275J2	1.0044 / 1.0143 / 1.0145
S355JR / S355J0 / S355J2	1.0045 / 1.0553 / 1.0577

EN 10083 Čelici za poboljšavanje Steels for quenching and tempering			
C22R/C22E	1.1149/1.1151		
C35/C35R/C35E	1.0501/1.1180/1.1181		
C45/C45R/C45E	1.0601/1.1223/1.1221		
41CrS4	1.7035/1.7039		
25CrMoS4	1.7218/1.7213		
34CrMoS4	1.7220/1.7226		
42CrMoS4	1.7225/1.7227		
50CrMo4	1.7228	36NiCrMo16	1.6773
34CrNiMo6	1.6582	39NiCrMo3	1.6510
30CrNiMo8	1.6580	40NiCrMo8-4	1.6565

EN 10084 Čelici za cementaciju / Case hardening steels	
C15R/C15E	1.1140 / 1.1141
20NiCrMoS2	1.6523 / 1.6526
16/20MnCrS5	1.7131 / 1.7139 / 1.7147 / 1.7149
16NiCrS4	1.5714 / 1.5715
17NiCrMoS6-4	1.6566 / 1.6569
18CrNiMo7-6	1.6587

EN 10085 Čelici za nitiranje / Nitriding steels			
31CrMoV9	1.8519	34CrAlMo7-10	1.8550
31CrMo12	1.8515	41CrAlMo7-10	1.8509

**EN 10277/EN 10278** Svijetlovučeni, Ljušteni, Brušeni čelici/  
Bright, Drawn, Peeled, Ground steels:

(h6, h7, h8, h9, h10, h11) +C, +SH, +SL

**EN 10027** Stanje toplinske obrade/Heat treatment condition:

+AR +N, +M, +A, +QT, +FP, +H, +HH

**EN 10060** Toplovaljani čelici/Hot rolled steels

**EN 10250** Kovani čelici/Forged steels

EN 10087 Čelici za obradu na automatima Free cutting steels	
11SMn30/37	1.0715/1.0736
11SMnPb30/37	1.0718/1.0737
35S20/35SPb20	1.0726/1.0756
36SMn14/36SMnPb14	1.0764/1.0765
44SMn28/44SMnPb28	1.0762/1.0763
46S20/46SPb20	1.0727/1.0757

EN 10088 Nehrđajući čelici ( Vatrootporni, duplex, superduplex ) Stainless steel ( Heat resistant, duplex, superduplex )			
X5CrNi18-10	1.4301	X5CrNiMo17-12-2	1.4401
X2CrNi18-9	1.4307	X2CrNiMo17-12-2	1.4404
X8CrNiS18-9	1.4305	X6CrNiMoTi17-12-2	1.4571
X17CrNi16-2	1.4057	X15CrNiSi25-21	1.4841
X20Cr12	1.4021	X3CrNiMoN27-5-2	1.4460
X30Cr13	1.4028	X2CrNiMoN22-5-3	1.4462
X46Cr13	1.4034	X2CrNiMoN25-7-4	1.4410
X6CrNiTi18-10	1.4541	X2CrNiMoCuWN25-7-4	1.4510

EN 10089 Opružni čelici / Spring steels			
56Si7	1.5026	60SiCr7	1.7108
65Si7	1.5028	67SiCr5	1.7103
50Mn7	1.0913	51CrV4	1.8159

Dimenzije / Dimensions	
Okruglo / Round	2 mm - 1200 mm
Šesterokut / Hexagon	4 mm - 100 mm
Kvadrat / Square	4x4 mm - 300x300 mm
Plosno / Flat	8x3 mm - 400x100 mm
Lim, Blok / Plate, Block	20 mm - 650 mm
Cijevi / Tubes, Pipes	OD 10 mm - 1000 mm
	ID / WT 1 mm - 60 mm

## KOVANI I STROJNO OBRADENI OTKIVCI PO ZAHTJEVIMA KUPCA

### FORGED AND MACHINED FORGINGS ACCORDING TO CUSTOMER REQUIREMENTS:

prstenovi, diskovi, vratila, čahure, pribubnice, propelerska vratila, specijalni otkivci  
rings, discs, shafts, bushes, flanges, propeller shafts, special forgings

# REZANJE # CUTTING



## CIJEVI (šavne, bešavne, precizne) TUBES, PIPES (welded, seamless, precise)

- EN 10297** Bešavne okrugle čelične cijevi za strojarstvu i inženjersku namjenu / Seamless circular steel tubes for mechanical and general engineering purposes
- EN 10255** Cijevi od nelegiranih čelika pogodne za zavarivanje i narezivanje navoja / Non-Alloy steel tubes suitable for welding and threading
- EN 10216** Bešavne čelične cijevi za tlačne namjene / Seamless steel tubes for pressure purposes
- EN 10210** Toplo oblikovani šuplji profili za čelične konstrukcije / Hot finished steel structural hollow sections
- EN 10219** Hladno oblikovani zavareni šuplji profili za čelične konstrukcije / Cold formed welded steel structural hollow sections
- EN 10305** Precizne čelične cijevi / Precise steel tubes



## OBOJENI METALI NON FERRUS METALS

Bakar/Copper Cu-ETP, CuCrZr...  
Bronza/Bronze CuSn7Zn4Pb7, CuSn12, CuAl10Fe5Ni5...  
Mesing/Brass CuZn39Pb3, CuZn37...  
Berilijeva bronca/Beryllium bronze CuCoNiBe, CuCoBe, CuCo2Be...  
Wolframbakar/Copper Tungsten

Sivi i nodularni ljev / Grey and nodular cast: GJL 250 / GJL 300 / GJS 400 / GJS 500 / GJS 600 / GJS 700...

Precizno vučene žice (mesing, bronca, inox, Al, Cu, Ni legure) okruglog i specijalnih presjeka 0,01 – 6,00 mm,  
Precisely drawn wires (brass, bronze, stainless steel, Al, Cu, Ni alloys) of round and special section 0.01 – 6.00 mm)

Aluminijske legure za strojogradnju i alate u šipkama, pločama i blokovima rezano na mjeru, glodano na traženu dimenziju prema zahtjevu kupca / Aluminum alloys for mechanical engineering and tools, in bars, plates, and blocks cut to size, milled to required dimension according to customer request: AW 2011, AW 2017, AW 5083, AW 6082, AW 7075...

# BRZA ISPORUKA # FAST DELIVERY

## TOPLINSKA OBRADA HEAT TREATMENT

### Peći za toplinsku obradu

Naš partner **TAV VACUUM FURNACES** već četrdeset godina izrađuje vakuumske peći. Do sada je proizvedeno 1.000 vakuumskih peći i instalirano u 50 zemalja na 5 kontinenata. Vlastiti odjel za istraživanje i razvoj osigurava da peći uvijek budu opremljene najnovijim materijalima i tehnologijom.

### Oprema i rezervni dijelovi za toplinsku obradu

Rešetke, košare, ventilatori, lanci, izolacije, prigušnice, termoparovi, kisikove sonde, zaštitne paste

### Furnaces for heat treatment

Our partner **TAV VACUUM FURNACES** has been making vacuum furnaces for forty years. So far, 1,000 vacuum furnaces have been produced and installed in 50 countries on 5 continents.

Our own research and development department ensures that the furnaces are always equipped with the latest materials and technology.

### Equipment and spare parts for heat treatment

Grids, baskets, fans, chains, insulation, chokes, thermocouples, oxygen probes, protective pastes

## TVRDI METAL CEMENTED CARBIDE

Tvrđi metal u blokovima, štapićima ili sinteriran prema nacrtu za dijelove alata ili strojne dijelove naročito izložene trošenju. Posebno smo ponosni na blokove iz novih vrsta tvrdih metala, otpornih na koroziju koja se pojavljuje tijekom erodiranja, ali i onu nastalu tijekom eksploatacije alata, izazvanu upotrebom različitih maziva.

Cemented carbides in blocks, rods, or sintered according to design for tool parts or machine parts particularly exposed to wear. We are very proud of the blocks made of new types of cemented carbides, resistant to corrosion that occurs during CNC eroding, but also that which occurs during tool exploitation, caused by the use of different lubricants.

Blokovi brušeni sa dvije strane / Blocks grinded on two sides

Štapići sirovo sinterirani, sa dodacima za brušenje ili brušeni h6; bez kanala za hlađenje ili sa jednim / dva kanala za hlađenje  
Rods raw sintered, with grinding allowances or ground h6; without cooling channels or with one / two cooling channels



## ŽICA I PRIBOR ZA ELEKTROEROZIJU WIRE AND ACCESSORIES FOR EDM MACHINES

EDM žice **Bedra**, bez parafina: „klasična“ mesingana žica, žice presvučene Zn, Cu i prevlakama patentiranim od strane Bedra, prilagođene specifičnim zahtjevima rezanja i personalizirane za pojedinu vrstu strojeva

EDM žice **ZeCut**, CuZn37 i CuZn40, kao i Zn prevučenu žicu, ovu liniju žice odlikuje jako dobra učinkovitost u kombinaciji sa vrlo povoljnom cijenom.

Nudimo i pribor za elektroeroziju: Smola za deionizaciju, filteri za erozimate, bakrene i mesingane cjevčice s jednim ili više kanala, grafitne i bakrene elektrode za narezivanje navoja

**EDM BEDRA wire**, without paraffin: "classic" brass wire, wires coated with Zn, Cu, and coatings patented by Bedra, adapted to specific machine-cutting requirements and personalized for each type

**EDM wire brand ZeCut**, which includes CuZn37 and CuZn40 brass wires, as well as Zn-coated wire, this brand is characterized by very good efficiency and a favorable price.

We offer accessories for EDM: Deionization resin, Filters for EDM Machines, Copper and brass tubes with one or more channels Graphite and copper electrodes for threading

**PRIBOR ZA ALATNIČARE:** Probijači, izbacivači, opruge, vodilice...

**ACCESSORIES FOR TOOLMAKERS:** Punches, ejector pins, spring, bushes and guidings



## POUZDAN PARTNER # RELIABLE PARTNER



## TVRDO KROMIRANE OKRUGLE ŠIPKE/ HONOVANE CIJEVI CHROME PLATED ROUND BARS/ CYLINDER TUBES

**TVRDO KROMIRANE ŠIPKE / CHROME PLATED BARS**

**EN ISO 286-2** tolerancija vanjskog promjera f7 / OD tolerance f7

**EN 10305** tolerancija unutarnjeg promjera / ID tolerance

**Kvaliteta/Quality:** C45, 20MnV6, 38MnVS6, 42CrMo4

**HONOVANE CIJEVI**

**EN10305-1** bešavne, ljuštene, honovane ISO H8, E355+SR

**EN10305-2** šavne DOM, ljuštene, honovane ISO H8, E355+SR

**EN10305-2** šavne DOM, glatki provrt (RTU-spreman za upotrebu) ISO H9, E355+C

**EN10305-1** bešavne, ljuštene, honovane ISO H8, od nehrđajućeg čelika AISI 304/304L i 316/316L

**CYLINDER TUBES**

**EN10305-1** seamless, skived, and roller burnished/honed h8

**EN10305-2** welded DOM, skived and roller burnished/honed h8

**EN10305-2** welded DOM, smooth bore (RTU-ready to use) h9

**EN10305-1** seamless, skived and roller burnished/honed h8, in SS AISI 304/304L and 316/316L



## TVRDE PREVLAKE PVD CVD HARD COATINGS PVD CVD

U suradnji s našim partnerom OERLIKON BALZERS vaše standardne rezne alate, alate za savijanje, preoblikovanje i štancanje, alate za plastiku ojačanu staklenim vlaknima ili strojne dijelove prevući ćemo PVD ili CVD prevlakama. Ove prevlake daju alatima i strojnim dijelovima visoku površinsku tvrdoću, ali i jako dobru kliznost, pa time smanjuju abrazivno i adhezivno trošenje i značajno produžuju trajnost.


U ponudi su „klasični“ TiN, TiC, CrN... i nove high-tec prevlake – DLC, multilayeri, prevlake s nanostrukturom.


In cooperation with our partner OERLIKON BALZERS, we will coat your standard cutting tools, bending, shaping, and stamping tools, and tools for glass fiber-reinforced plastics or machine parts with PVD or CVD coatings. These coatings give tools and machine parts a high surface hardness, but also very good sliding, thus reducing abrasive and adhesive wear and significantly extending durability.

The offer includes the "classics" TiN, TiC, CrN... and new high-tech coatings - DLC, multilayers, and coatings with a nanostructure.

# LOKACIJE # LOCATIONS



 **ZEPING d.o.o.**  
Varaždinska 61A  
10000 Zagreb  
Hrvatska

 **ZEPING Metali d.o.o.**  
Đorđa Stanojevića 11Đ  
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WIRE  
EDM  
HEAT TREATMENT  
MACHINE TOOLS  
CHROME PLATING  
CEMENTED CARBIDE  
CYLINDER TUBES  
HARD COATINGS  
TOOL HIGH SPEED STEEL  
POWDER METALLURGY  
STRUCTURAL ENGINEERING  
STEEL STAINLESS STEELS  
NON FERRUS METALS  
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