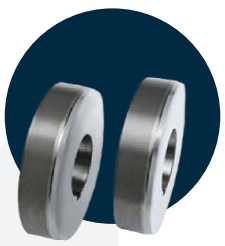
PerfoCut®

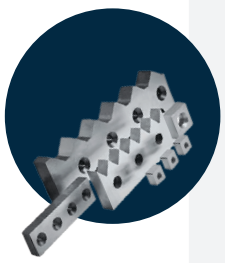
COLD WORK TOOL STEEL

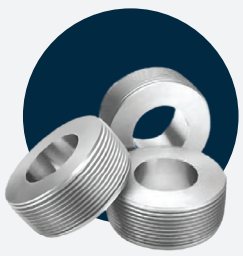
PerfoCut is a cold work tool steel that provides excellent toughness and wear resistance approaches those of high speed steels. PerfoCut is an improvement over alloyed tool steel 1.2379. It eliminates the disadvantages of insufficient hardness and toughness.

APPLICATION AREAS OF PERFOCUT

- Punches and dies
- Shear blades
- Shredder knives
- Thread and form rolls
- Cold heading dies
- Cold forging dies
- Blanking dies
- Trimming dies for bolt







C%	Cr%	Mo%	V%	Others
0,95	8,00	2,00	0,30	+

ADVANTAGES OF PERFOCUT

- **Higher hardness than 1.2379 after heat treatment.**

PerfoCut reaches 62-64 HRC hardness after heat treatment. In this way, it shows higher abrasion resistance than 1.2379.

- **Twice the toughness of 1.2379 with superior wear resistance.**

PerfoCut has relatively well-performing toughness among all cold die steels. Therefore, tools and dies made of PerfoCut are less faced with the problems such as cracking and chipping, which often seriously affect conventional tools and dies.

- **Machines and grinds up to 40% faster than 1.2379.**

PerfoCut is superior to 1.2379 in machinability and grindability. Therefore, the use of PerfoCut is expected to provide relatively longer tool life and reduces the number of processes in die making.

- **Less residual stress after wire Electro Discharge Machining.**

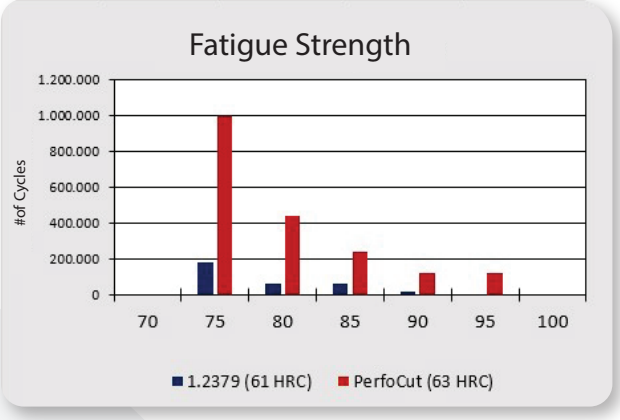
Residual stress is lessened by means of high-temperature tempering. Therefore, problems such as cracking and distortion are prevented during and after wire EDM. PerfoCut was initially developed with the wire EMD process in mind.

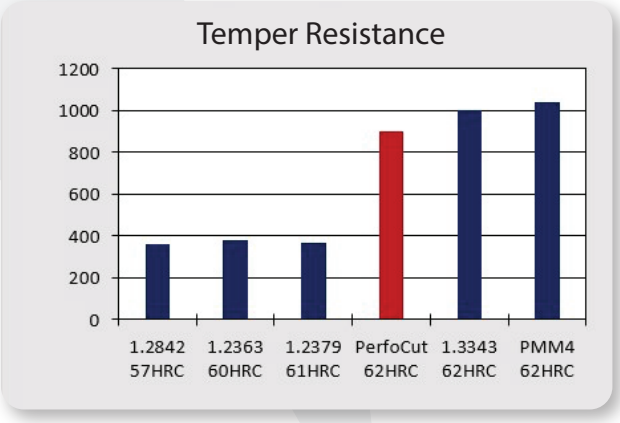
- **High temper resistance to support PVD and Nitride surface treatments.**

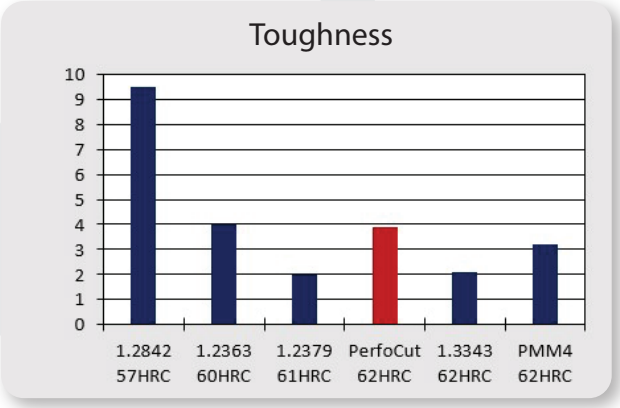
PerfoCut can also be hot process CVD and TD (Thermal Diffusion) coated however post heat treatment is generally recommended.

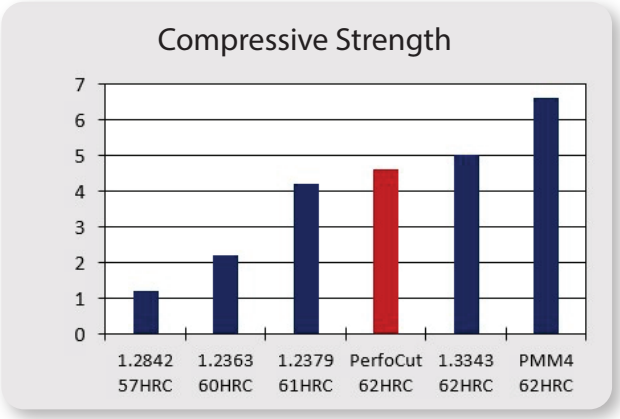
- **Uniform distribution of fine carbides.**

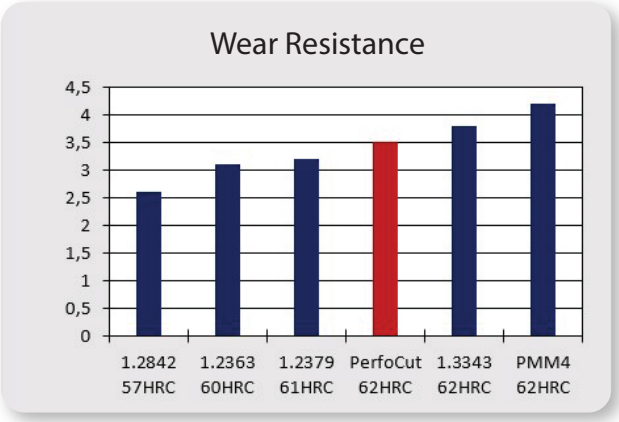
Smaller primary carbides than 1.2379 protect the die from chipping and cracking











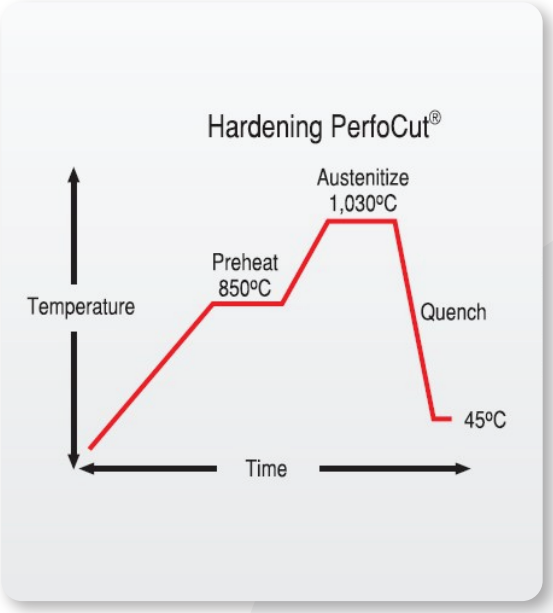
PerfoCut®

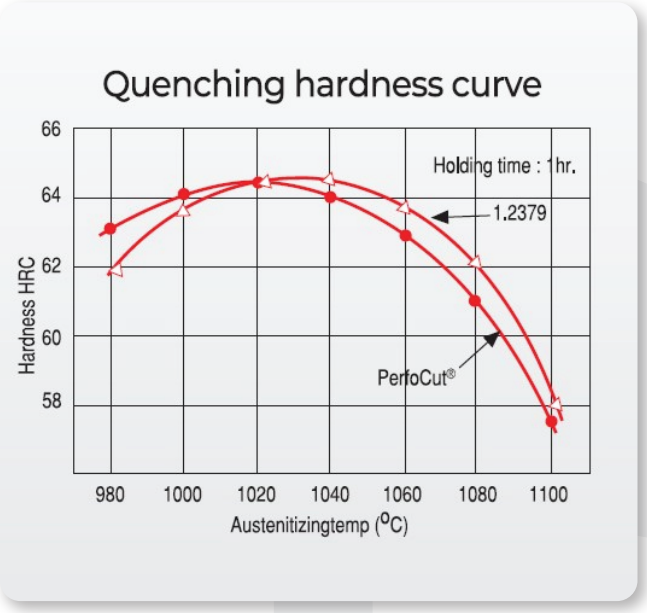
COLD WORK TOOL STEEL

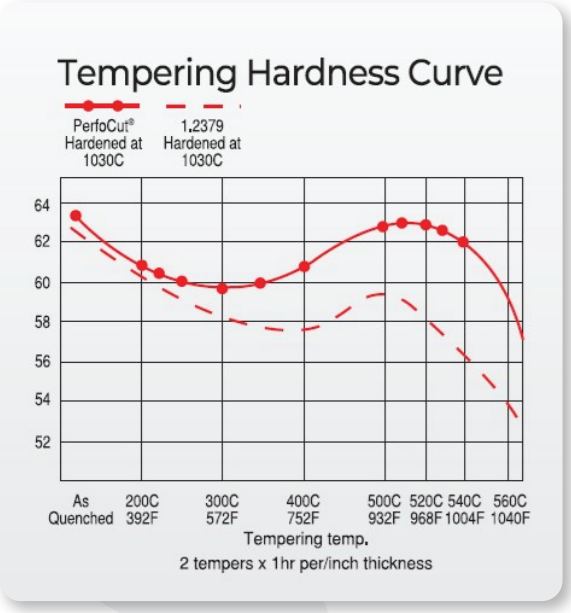
BİRLEŞİK performance steels

HEAT TREATMENT PROCESS OF PERFOCUT

PerfoCut is only as good as the heat treatment it receives. The heat treat process can be broken down into two segments, Hardening & Tempering. PerfoCut is typically hardened using a vacuum furnace.







PHYSICAL PROPERTIES OF PERFOCUT

Thermal Expansion

Temperature	20~100°C	20~200°C	20~300°C	20~400°C	20~500°C	20~600°C
$x10^{-6}$ /K	10,8	11,6	12,2	12,8	13,2	13,5

Thermal Conductivity

Temperature	25°C	100°C	200°C	300°C	400°C	500°C	600°C
W/m.K	17,8	19,3	20,0	22,5	24,3	24,5	26,3

Özgül Isı

Temperature	25°C	100°C	200°C	300°C	400°C	500°C	600°C
J/kg.K	450	466	476	544	608	646	737

Young's Modulus	Modulus of Rigidity	Poisson's Ratio (25°C)
207GPa	79GPa	0,31

PerfoCut-Nb®

COLD WORK TOOL STEEL

PerfoCut, which was designed by Birleşik Metal and presented to the market with in the Birleşik—Performance concept, also introduces a much more special high-performance product as the brand PerfoCut-Nb in addition to Niobium.

C%	Cr%	Mo%	V%	Nb %	Others
0,95	8,40	2,00	0,50	0,15	+