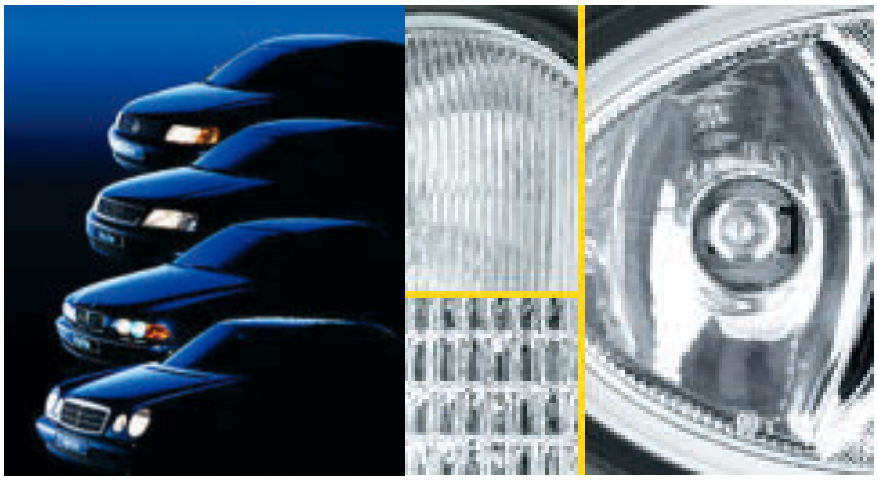
THRUHARD SUPREME® HIGH GLOSS







THE MOULD STEEL FOR HIGH GLOSS FINISH

Buderus

PCK Buderus (INDIA)

Special Steels Private Limited

THRUHARD SUPREME® HIGH GLOSS (TSHG)

The Rapid development in high-tech area is putting more demands on the mold makers and ultimately the Mold Steels. High demands on surface finishes, low mold making time is the call for the day.

THRUHARD SUPREME® HIGH GLOSS is the answer for such exacting demands!

New Process has been developed to meet these demanding requirements on surface finish Namely SUPER CLEAN+ISO-B to increase the purity of steel.



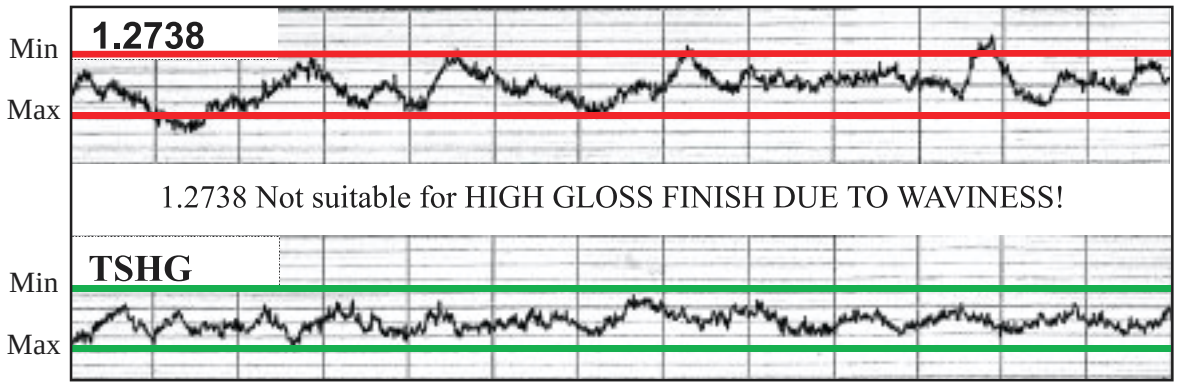
Chief Characteristics:

- ***Excellent & Uniform High Gloss polishability One Micron finish (SPE#1)***
- ***Uniform hardness***
- ***Excellent machinability***
- ***Good wear resistance***
- ***High thermal conductivity***

Excellent Polishability:

When polishing to 1-micron finish, the important feature for the steel to perform is not just bright finish but to avoid waviness on the surface, this becomes more so important for Automotive Lighting molds.

THRUHARD SUPREME® HIGH GLOSS is delivered in hardness range up to 38HRC and with high cleanliness due to Super Clean technology, mirror surface with uniform brightness is attainable.



In the parthograph study of identically polished surfaces, we can see that in 1.2738 there are peaks and valleys, which go outside the acceptable band **causing waviness** patterns on the mold surface. IN TSHG this is avoided.

GOOD WEAR RESISTANCE

With higher hardness than conventional P20/1.2738 grades, **THRUHARD SUPREME®** grades support surface coating technologies like PVD, which means SCRATCH FREE MOLD SURFACES. **THRUHARD SUPREME® HIGH GLOSS** with its higher hardness than P20/1.2738 and with this added advantage provides extremely higher wear-resistance when comparing P20/1.2738 mold steels. PVD on P20/1.2738 may not be favorable due to lower base hardness.

Higher Thermal conductivity for faster cycle times :

THRUHARD SUPREME® grades (Both the HIGH HARD AND HIGH GLOSS) have nearly 33% higher thermal conductivity over the P20 grades and nearly double the thermal conductivity as Stainless steels; **THRUHARD SUPREME®** has shown practical evidence in reduction of cycle times.

The table below shows the thermal conductivity of some well-known grades.

Steel grade/Makers mark	Thermal conductivity W/m	
	20°C	200-250°C (molding temp)
1.2311 (P20)	34.0	33.5
1.2738 (P20+Ni)	34.0	33.5
1.2083	23.0	24.0
THRUHARD SUPREME®(HH/HG)	38.0	45.0

Excellent Machinability:

Despite the higher hardness comparing the AISI P20/1.2738 grades, **THRUHARD SUPREME®** grades display superb Machinability and has nearly 20% faster cutting speeds when comparing AISI P20/1.2738 and has comparable machining speed rates with 1.2312 (Sulfur alloyed material which is used to cut down machining times) in end milling. There by reducing machining costs!



The following machining parameters established by us demonstrate this fact.

	Rough Milling				Finish Milling							
	Hard Metal Uncoated		Hard Metal coated		HSS Fz = Max 0.1		Hard Metal		Hard Metal coated		Hard metal Cermet	
	Stable P 25 type	Unstable P 25 type	Stable P 25 type	Unstable P 35 type	Stable (1.3243)	Unstable (1.3243)	Stable P 25	Unstable P 25	Stable K15	Unstable P25	Stable P 15	Unstable —
1.2738 280-325 BHN	** (100)	** (85)	150	120	20	12	** (160)	** (130)	220	220	270	*
1.2312 280-325 BHN	* * (140)	* * (120)	180	150	25	15	** **(210)**	** (180)	**270**	270	**320**	
THRUHARD SUPREME HH/HG 310 – 355 BHN	** (120)	** (100)	180	140	20	12	** **(210)**	** (170)	**270**	260	**320**	*

Notes: Values in the above table are for Vc in m/min

For tool diameter > 70 mm, the speed to be reduced by factor 0.7 mm

For rough milling: Feed per teeth (fz) = 0.1 – 0.3 mm with L/D 3/4

For final milling: Feed per teeth (fz) = 0.033-0.3 mm with L/D 1/10

For uncoated hard metal, depth of cut (ap) = ½ X Lc. For higher depth, use lower feed rate/tooth.

Items marked * means – not recommended.

Items marked ** means that Coated hard metal is only recommended. In case usage of uncoated inserts, please use the values mentioned in the brackets.

Stocking program for THRUHARD SUPREME® HIGH GLOSS

Width ⇨ / Thickness ⇩	160	200	250	300	350	400	500	600	810	1020	1200	1510
125				✓		✓	✓	✓	✓			
150				✓		✓	✓	✓	✓			
175						✓	✓	✓	✓	✓	✓	✓
200		✓				✓	✓	✓	✓	✓	✓	✓
225			✓	✓		✓	✓	✓	✓	✓	✓	✓
250								✓	✓	✓	✓	✓
300							✓	✓	✓	✓	✓	✓
350										✓	✓	✓
400								✓	✓	✓	✓	✓
450									✓	✓	✓	✓
500										✓	✓	✓
610											✓	✓

✓ implies availability of section.

Sizes not mentioned in the above program can be delivered by counter sawing or from stock replenishments in a short period of time.

Ex-Stock delivery any time and every time in shapes you wish



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