

Data Sheet



**SOREL
FORGE**

LENS MOULD QUALITY STEEL SF-2000 LQ40

Delivery Condition:

Pre-Hardened Mould Steel
352 - 388 HB (38-42 Rc)

Options:

E.F.V.D. - High Quality - High Hardness
Remelted E.S.R. materials for super optical finish

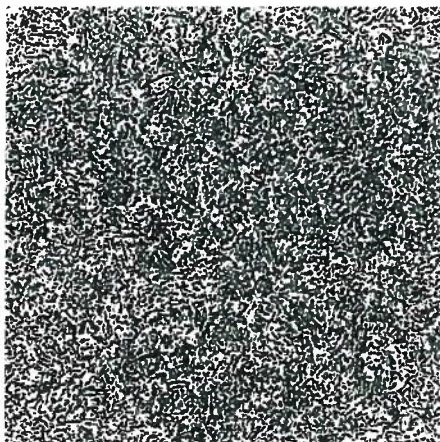
SF-2000 LQ40 is the finest and most reliable Sorel Forge mould steel.

SF-2000 LQ40 has high impact strength and good temper resistance. Hardness loss due to mass is minimal.

SF-2000 LQ40 is characterized by :

- Good machinability
- Excellent polishability
- Great hardness uniformity
- High purity and homogeneity

SF-2000 LQ40 is uniform in composition and material structure. This uniformity of fine bainite microstructure results in superior polishing characteristics.



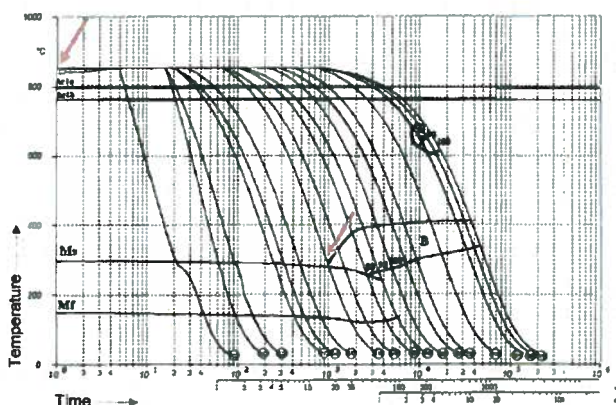
Typical Analysis (%)

C	Mn	Si	Cr	Ni	Mo	V
0,35	0,85	0,35	1,85	0,45	0,50	0,15

*micro-alloying elements added

SF-2000 LQ40 is an excellent material for Photo-Etching & Texturing. In the E.S.R. elaboration the remelting process eliminates nearly all elements segregation.

SF-2000 LQ40 cleanliness provides for the best possible surface integrity. Its high hardenability ensures that hardness levels are maintained at the working surfaces. Polishability of remelted SF-2000 LQ40 will yield the Society of the Plastics Industry SPI A-1 quality.



CCT curve of SF-2000 LQ40

The bainite region of the CCT Curve is moved to 1000s to ensure the uniformity of the quenched structure.

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LENS MOULD QUALITY STEEL
SF-2000 LQ40

APPLICATIONS:

- High volume moulds
- Clear lens moulds
- High polish moulds

EDM (Electric Discharge Machining)

When SF-2000 LQ40 is subjected to EDM machining, a harmful white layer is generated. It is advisable to remove this layer, or at least temper at 450°C subsequent to EDM machining.

Stress Relieving Treatment

It is necessary to exercise caution during heat treating. Heat slowly to 450°C at a maximum rate of 10°C/hr and soak for ½ hour per 25 mm mould thickness and resume heating by air cooling to room temperature.

Surface Treatment

Clean steel with uniform grain structure facilitate hard coating.

PHYSICAL PROPERTIES:

Temperature	[°C]	20	200	425	540	650
Density	[Mg/m ³]	7,85	7,75	7,70		
Coefficient of thermal expansion	[10 ⁻⁶ m/(m.K)]	from 20°C	12,7	13,9	14,4	14,7

Temperature	Thermal diffusivity	Thermal capacity	Thermal conductivity
[°C]	[mm ² /s]	[J/(g.K)]	[W/(m.K)]
27	9,684	0,443	33,458
350	7,706	0,613	36,861

Material	Y.S	T.S	Elong.	ROA	KV (long.)	KV Trans	Temp.
	Mpa	Mpa	%	%	Joules	Joules	Deg C
SF-2000 LQ40	1190	1325	14	40	20	8	Room Temp



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