

Thermodur® XLL EFS

Technical Datasheet

Chemistry

Typical	C	Si	Mn	S	Cr	Mo	V	Add
Analysis %	0.35	0.30	0.30	<0.003	5.00	1.90	0.70	+

Description

Thermodur® Xtra Long Life EFS maximizes the lifetime of dies and inserts, in particular in extrusion, forging, and low pressure die casting applications. This high-performance hot work tool steel generates advantages against standard materials. Available in Rounds.

Characteristics

- Excellent temperature resistance
- Excellent dimensional stability
- Excellent thermal shock resistance
- High toughness

Applications

- Forging dies and inserts
- Automotive lightweight constructions
- Extruded metal products
- Low pressure die casting

Physical Properties

Coefficient of thermal expansion at °C at 45 HRc 10 ⁻⁶ m/(m•K)	20-100	20-200	20-300	20-400	20-500	20-600	
		11.5	12	12.3	12.6	12.9	
Thermal conductivity at °C W/(m • K)	RT	100	200	300	400	500	600
	28.3	29.3	30.9	31.0	30.7	29.5	27.8

Heat Treatment

Soft Annealing

Temperature	Cooling	Hardness
750°C - 800°C	Furnace	230 HB Max.

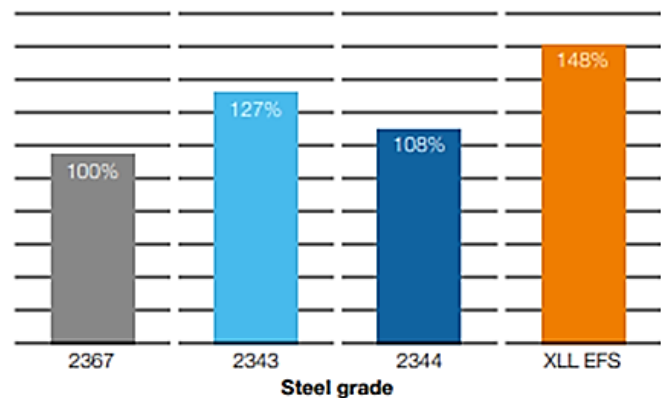
Hardening

Temperature	Quenching	Hardness
1020°C - 1040°C	Air, oil or saltbath	55 after quenching in HRc

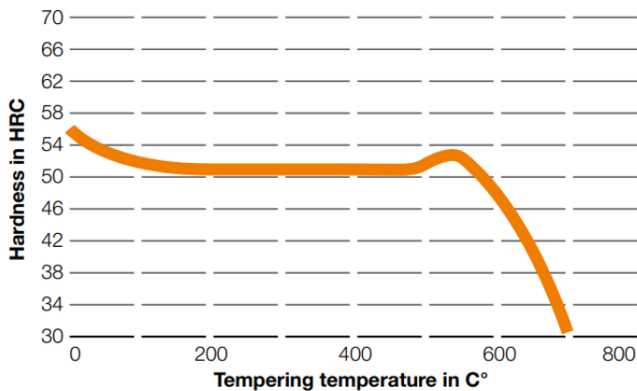
Tempering

Temperature °C	300	400	500	550	600	650
Hardness HRc	51	51	52	51	48	36

Toughness Comparison



Tempering Diagram



Tempering

Temperature °C	300	400	500	550	600	650
Hardness HRc	51	51	52	51	48	36

General Note

All statements regarding the properties or utilization of the materials or products mentioned are for the purpose of description only. Guarantees regarding the existence of certain properties or a certain utilization are only valid if agreed upon in writing.

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