

MILLING

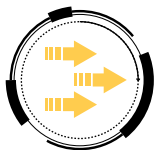
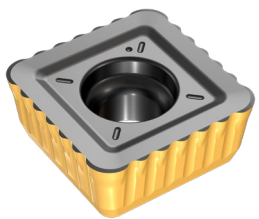
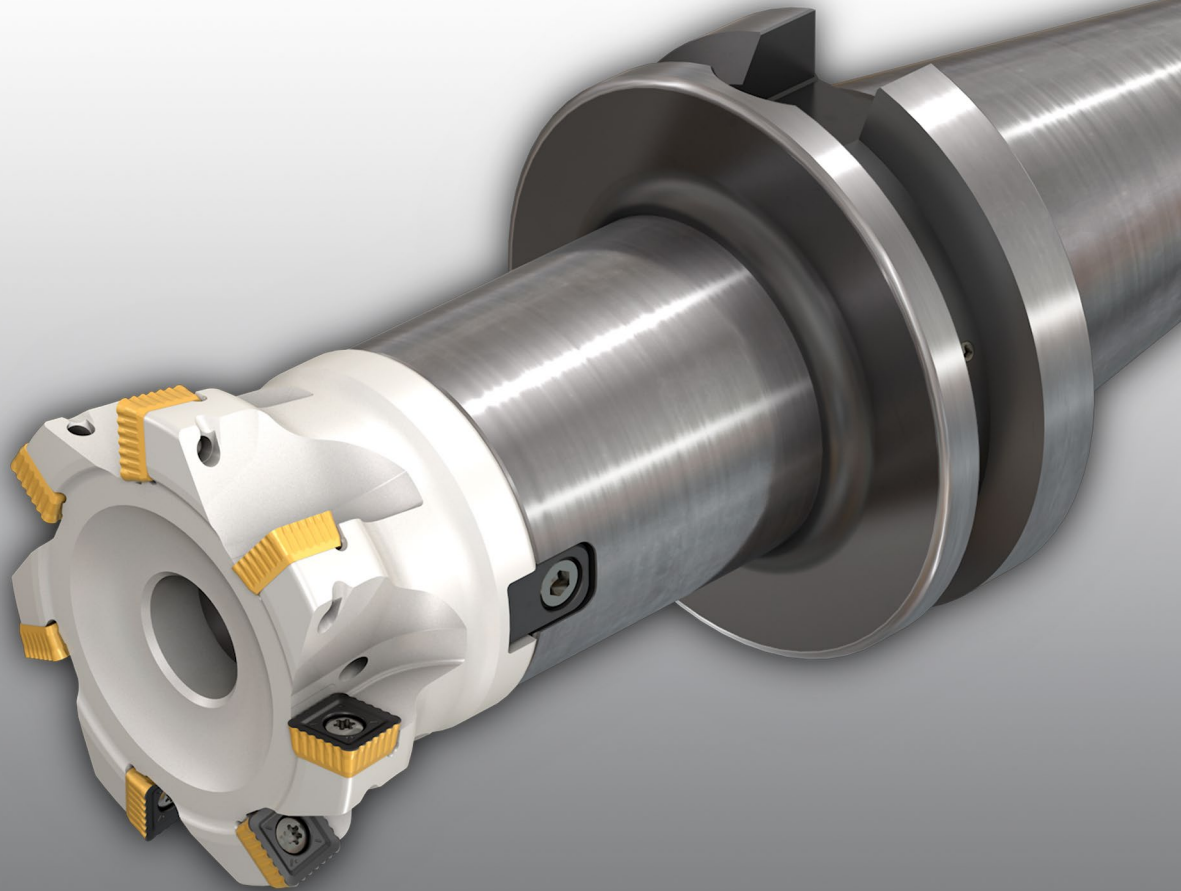
56-2024

OCTOBER 2024

METRIC/IMPERIAL

NPA

New Product Announcement



High Feed



Cost Effective
Inserts



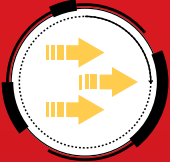
High Productivity



MILL4FEED

HIGH FEED

Shred Shaped Cutting Edge Geometry in MILL-4-FEED Indexable Inserts



High Feed

Cost Effective
Inserts

High Productivity

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New Product Announcement

MILL4FEED
HIGH FEED

Highlights

The Addition of a Shred Shaped Cutting Edge Enhances the Performance of MILL-4-FEED Inserts In Unstable Milling Conditions

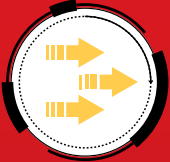
As part of the ongoing efforts to improve the MILL-4-FEED family of high-feed milling cutters, ISCAR is introducing new indexable square inserts with a shred cutting edge.

The shred cutting-edge design, which has already proven successful in other ISCAR milling families, offers several advantages:

- Increased anti-vibration resistance of the tool.
- Reduced power consumption and heat generation.
- Improved chip evacuation, especially in deep pockets and cavities where chip removal is challenging.

The new inserts, designated as **FFQ4 SOMT... TFW**, are specifically designed for productive rough high-feed milling (HFM) mainly in steel and cast iron (ISO P, K, and H groups of application) under unstable machining conditions, such as high tool overhang, poor work holding, or non-rigid workpiece structures. They are also suitable for use in machine tools with limited main drive power.

Featuring four indexable cutting edges, the inserts are made from the versatile PVD coated carbide grade IC808, which undergoes ISCAR's post-coating SUMO TEC treatment. They are available in two sizes, 12 and 17, and can be mounted in standard pockets of MILL-4-FEED tools.



High Feed



Cost Effective Inserts



High Productivity

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Application remarks

The recommended cutting data for **FFQ4 SOMT ... TFW** inserts can be found in the table below.

To achieve optimal performance, it is recommended to mill with the maximum possible depth of cut.

Shredded MILL-4-FEED: New application capabilities!

[Click for Short Video](#)

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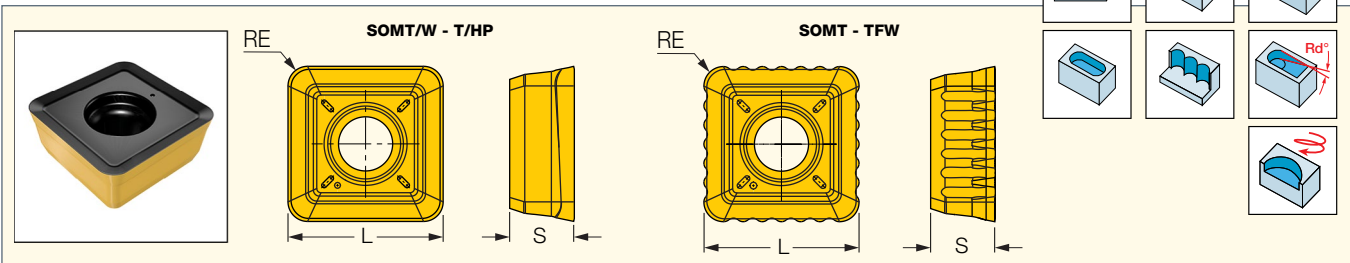
MILL4FEED

HIGH FEED

FFQ4 SOMT/W 1205

Single-Sided Square Inserts with 4 Cutting Edges for Fast Feed Milling

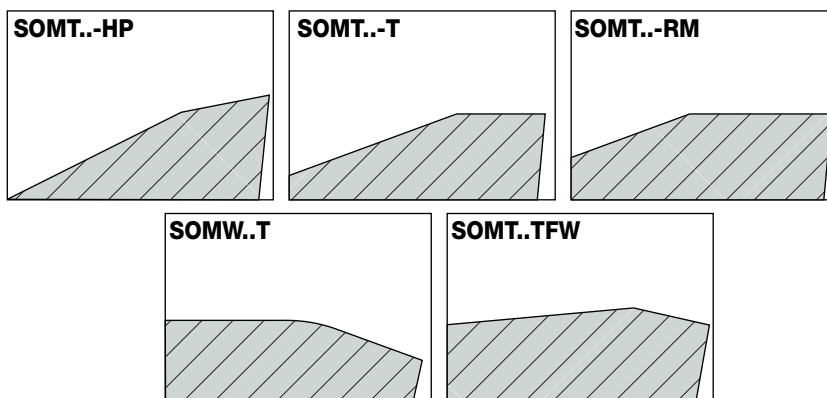
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M E T R I C

Designation	Dimensions			Tough ↔ Hard							Recommended Machining Data	
	L	S	RE	IC882	IC28	IC716	IC830	IC5820	IC808	IC810	ap (mm)	fz (mm/t)
FFQ4 SOMT 1205RM-HP	12.70	5.20	1.60	•			•				0.50-1.50	0.40-1.80
FFQ4 SOMT 1205RM-T	12.70	5.20	1.60						•		0.50-1.50	0.40-2.00
FFQ4 SOMT 120516HP	12.70	5.20	1.60	•		•	•	•	•		0.50-1.50	0.40-1.80
FFQ4 SOMT 120516HP-P	12.70	5.20	1.60		•						0.50-1.50	0.40-1.80
FFQ4 SOMT 120516T	12.70	5.20	1.60				•		•		0.50-1.50	0.40-2.00
FFQ4 SOMT 120516TFW	12.70	5.20	1.60						•		0.50-1.50	0.40-1.20
FFQ4 SOMT 120516T20	12.70	5.20	1.60							•	0.50-1.50	0.40-2.00
FFQ4 SOMW 120530T	13.00	5.30	3.00							•	0.50-1.50	0.40-1.50

• For side plunging, the initial cutting feed is 0.1 mm/t • T for steel, ferritic and martensitic stainless steel and cast iron • RM-.. for interrupted cut and machining near straight shoulder walls • HP for austenitic stainless steel and high temperature alloys • HP-P for aluminum (positive rake face) • T20 for grey and nodular cast iron • TFW for unstable cutting conditions • SOMW flat insert for hard material (up to 60 HRC) and uneven surface



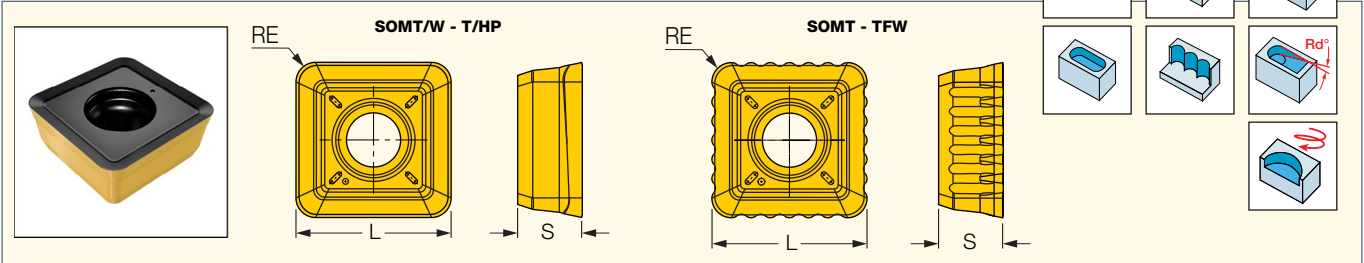
NEW

MILL4FEED HIGH FEED

FFQ4 SOMT/W 1706

Single-Sided Square Inserts with 4 Cutting Edges for Fast Feed Milling

<https://www.iscar.com/eCatalog/Family.aspx?fnum=4181&mapp=ML&GFSTYP=M&srch=1>

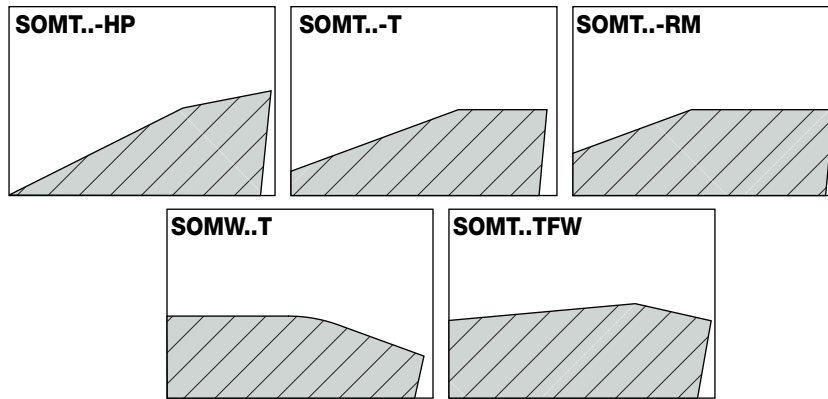


M E T R I C

Designation	Dimensions			Tough ← Hard					Recommended Machining Data	
	L	S	RE	IC882	IC830	IC808	IC810	IC5600	a_p (mm)	f_z (mm/t)
FFQ4 SOMT 1706RM-HP	17.50	6.00	2.50		•				1.20-2.50	0.40-1.20
FFQ4 SOMT 1706RM-T	17.50	6.00	2.50			•			1.20-3.00	0.40-2.00
FFQ4 SOMT 170625HP	17.50	6.00	2.50	•	•	•			1.20-3.00	0.40-1.50
FFQ4 SOMT 170625T	17.50	6.00	2.50		•	•	•	•	1.20-3.00	0.40-2.00
FFQ4 SOMT 170625TFW	17.50	6.00	2.50			•			1.20-3.00	0.40-1.20
FFQ4 SOMW 170640T	18.00	6.10	4.00			•			1.20-3.00	0.40-1.50

NEW

• For side plunging, the initial cutting feed is 0.1 mm/t • T type for steel, ferritic and martensitic stainless steel and cast iron • RM-.. type for interrupted cut and machining near straight shoulder walls • HP type for austenitic stainless steel and high temperature alloys • TFW type for unstable cutting conditions • SOMW- flat insert for hard material (up to 60 HRC) and uneven surface



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METRIC/IMPERIAL

MILL4FEED HIGH FEED

Based on ISO 513 and VDI 3323 standards [METRIC]

ISO	Material	Condition	Hardness HB	Type of Insert	Depth of cut (mm)		Cutting Speed v_c (m/min)	Feed f_z (mm/tooth)	Material Group No.	
					Insert size 12 (mm)	Insert size 17 (mm)				
P	non-alloy steel and cast steel, free cutting steel	<0.25% C	annealed	125	TFW	0.7-1.5	1.5-3.0	0.4-1.2	150-220	1
		≥0.25% C	annealed	190					130-210	2
		<0.55% C	quenched and tempered	250					120-200	3
		annealed	220	120-190					4	
		≥0.55% C	quenched and tempered	300					110-180	5
	low alloy and cast steel (less than 5% of alloying elements)	annealed	200	120-190					6	
		quenched and tempered	275	110-180					7	
		quenched and tempered	300	115-170					8	
		quenched and tempered	350	110-170					9	
		high alloyed steel, cast steel and tool steel	annealed	200					120-170	10
			quenched and tempered	325					100-150	11
		stainless steel and cast steel	ferritic / martensitic	200					110-160	12
			martensitic	240					100-150	13
K	gray cast iron (GG)	ferritic / pearlitic	180	TFW	0.7-1.4	1.5-3.0	0.4-1.2	150-220	15	
		pearlitic / martensitic	260					120-200	16	
	nodular cast iron (GGG)	ferritic	160					120-200	17	
		pearlitic	250					120-200	18	
	malleable cast iron	ferritic	130					130-210	19	
		pearlitic	230					130-210	20	
H	chilled cast iron	Cast	400	TFW	0.7-1.4	1.5-3.0	80-100	0.4-1.2	40	

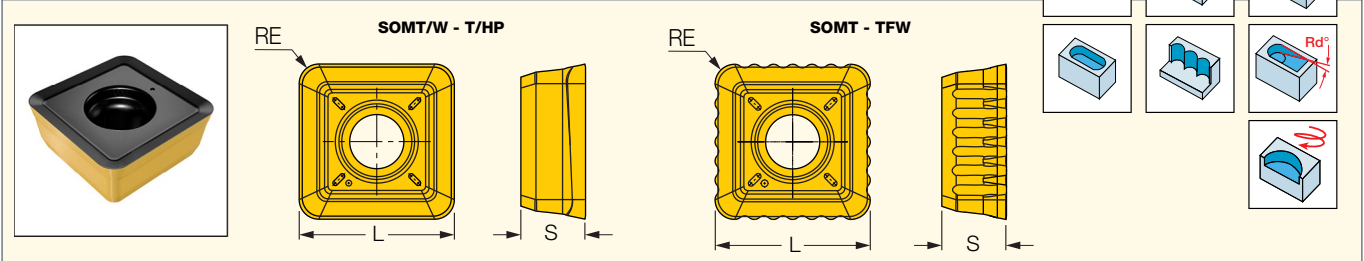
- steel
- cast iron
- hard materials

MILL4FEED HIGH FEED

FFQ4 SOMT/W 1205

Single-Sided Square Inserts with 4 Cutting Edges for Fast Feed Milling

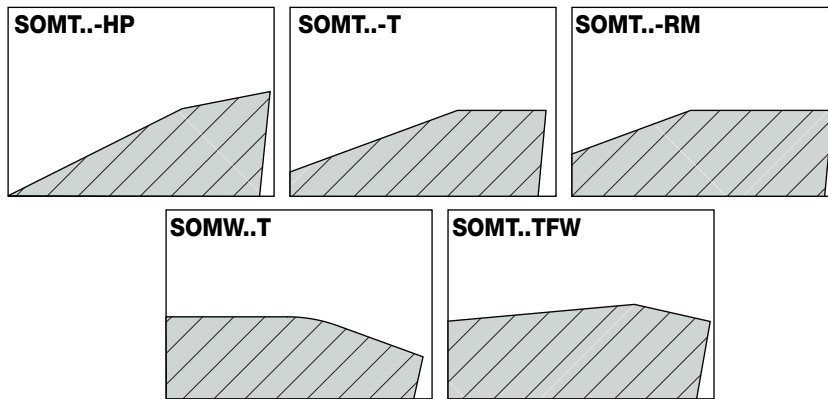
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Designation	I N C H			Tough ↔ Hard				Recommended Machining Data				
	Dimensions							ap (inch)	fz (inch/t)			
	L	S	RE	IC882	IC28	IC716	IC830			IC6620	IC808	IC810
FFQ4 SOMT 1205RM-HP	.500	.205	.0630	•			•		•		.020-.059	.0157-.0709
FFQ4 SOMT 1205RM-T	.500	.205	.0630								.020-.059	.0157-.0787
FFQ4 SOMT 120516HP	.500	.205	.0630	•		•	•	•	•		.020-.059	.0157-.0709
FFQ4 SOMT 120516HP-P	.500	.205	.0630		•						.020-.059	.0157-.0709
FFQ4 SOMT 120516T	.500	.205	.0630				•		•		.020-.059	.0157-.0787
FFQ4 SOMT 120516TFW	.500	.205	.0630						•		.020-.059	.0157-.0472
FFQ4 SOMT 120516T20	.500	.205	.0630							•	.020-.059	.0157-.0787
FFQ4 SOMW 120530T	.512	.209	.1181						•		.020-.059	.0157-.0590

NEW

- For side plunging, the initial cutting feed is .004 inch/t
- T for steel, ferritic and martensitic stainless steel and cast iron
- RM-.. for interrupted cut and machining near straight shoulder walls
- HP for austenitic stainless steel and high temperature alloys
- HP-P for aluminum (positive rake face)
- T20 for grey and nodular cast iron
- TFW for unstable cutting conditions
- SOMW flat insert for hard material (up to 60 HRC) and uneven surface

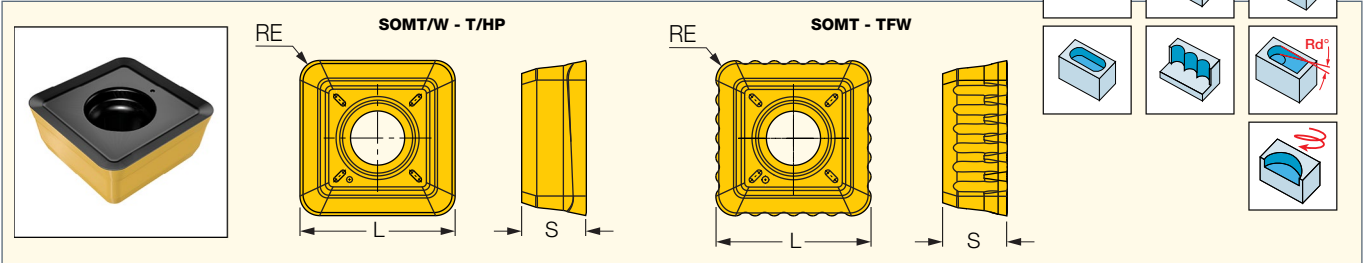


MILL4FEED HIGH FEED

FFQ4 SOMT/W 1706

Single-Sided Square Inserts with 4 Cutting Edges for Fast Feed Milling

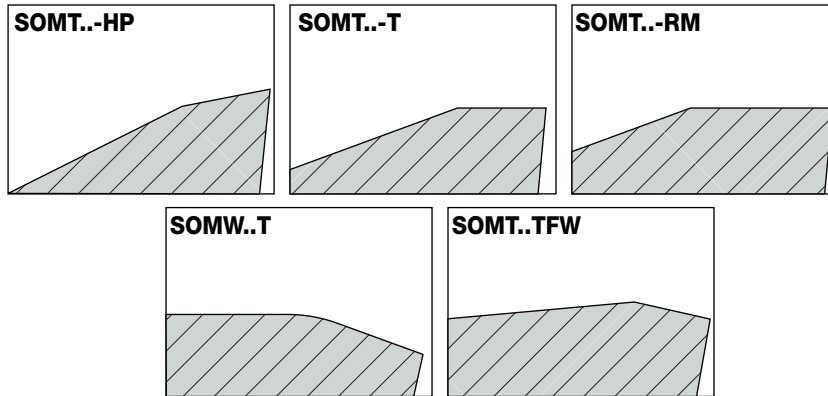
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Designation	I N C H			Tough ↔ Hard					Recommended Machining Data	
	Dimensions			IC882	IC830	IC808	IC810	IC5600	a _p (inch)	f _z (inch/t)
	L	S	RE							
FFQ4 SOMT 1706RM-HP	.689	.236	.0984		•				.047-.098	.0157-.0472
FFQ4 SOMT 1706RM-T	.689	.236	.0984			•			.047-.118	.0157-.0787
FFQ4 SOMT 170625HP	.689	.236	.0984	•	•	•			.047-.118	.0157-.0590
FFQ4 SOMT 170625T	.689	.236	.0984		•	•	•	•	.047-.118	.0157-.0787
FFQ4 SOMT 170625TFW	.689	.236	.0984			•			.047-.118	.0157-.0472
FFQ4 SOMW 170640T	.709	.240	.1575			•			.047-.118	.0157-.0590

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METRIC/IMPERIAL

MILL4FEED HIGH FEED

Based on ISO 513 and VDI 3323 standards [INCH]

ISO	Material	Condition	Hardness HB	Type of Insert	Depth of cut (Inch)		Cutting Speed v _c (sfm)	Feed f _z (ipt)	Material Group No.
					Insert size 12 (Inch)	Insert size 17 (Inch)			
P	non-alloy steel and cast steel, free cutting steel	<0.25% C	annealed	125	TFW	.028-.058	.028-.118	.016-.039	1
		≥0.25% C	annealed	190					2
		<0.55% C	quenched and tempered	250					3
		≥0.55% C	annealed	220					4
		≥0.55% C	quenched and tempered	300					5
	low alloy and cast steel (less than 5% of alloying elements)	annealed	200	6					
		quenched and tempered	275	7					
		quenched and tempered	300	8					
		quenched and tempered	350	9					
		quenched and tempered	325	10					
		high alloyed steel, cast steel and tool steel	annealed	200					11
		high alloyed steel, cast steel and tool steel	quenched and tempered	325					12
		high alloyed steel, cast steel and tool steel	quenched and tempered	325					13
K	gray cast iron (GG)	ferritic / pearlitic	180	15					
		pearlitic / martensitic	260	16					
	nodular cast iron (GGG)	ferritic	160	17					
		pearlitic	250	18					
	malleable cast iron	ferritic	130	19					
		pearlitic	230	20					
H	chilled cast iron	Cast	400	TFW	.028-.058	.028-.118	262-328	.016-.039	40

- steel
- cast iron
- hard materials