

MATERIAL GRADES

High chromium iron (OLVIT 70,80S,90)



Material Barrel	Chemical composition [%]										Barrel Hardness [HSh“C“]
	C	Mn	Si	P max.	S max.	Cr	Ni	Mo	V	W	
OLVIT 70	2,5/3,0	0,7/1,5	0,4/0,8	0,1	0,05	12/14	1,0/2,0	1,0/1,8	0,1/0,8		60-70
OLVIT 80 S	2,5/3,0	0,7/1,5	0,4/0,8	0,1	0,05	15/18	1,0/2,0	1,0/1,8	0,1/0,8		68-73
OLVIT 90	2,5/3,0	0,7/1,5	0,4/0,8	0,1	0,05	15/20	1,0/2,0	1,0/1,8	0,1/0,8		70-75

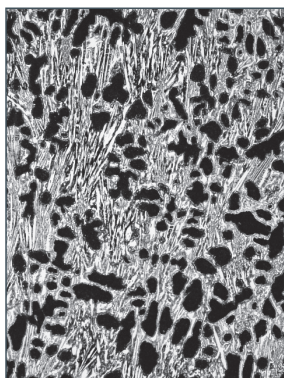
• Dimensional and weight limits:

Ø 550-1050 mm / 6.000 mm // 22.000 kg

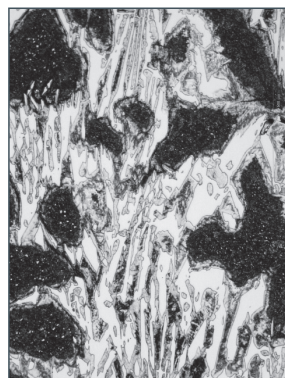
• Barrel Structure

ledeburite - sorbitic

100x



500x



• Heat Treatment

Low tempering and/or stress relieving for obtaining high hardness readings and small structure formations giving high wear resistance parameters

BARREL HARDNESS DECREASE WITH DEPTH MAX. 3 SHORE C. HARDNESS DISTRIBUTION ± 1,5 SHORE C (EACH SURFACE)

• Physical and mechanical properties

	OLVIT 70	OLVIT 80 S	OLVIT 90
TENSILE STRENGTH - Rm [MPa]	600	600	600
BENDING STRENGTH - Rmi [MPa]	800	800	860
YOUNG MODULUS - E.10 ³ [MPa]	220	220	220
COEFFICIENT OF THERMAL EXPANSION [m/K]	13,6 x 10 ⁻⁶		
THERMAL CONDUCTIVITY [W/m °K]	15 - 17		

Shell

Material Core - Neck	Chemical composition [%]									Neck Hardness [HSh“C“]
	C	Mn	Si	P max.	S max.	Cr max.	Ni	Mo	Others	
Lamellar iron	2,9/3,2	0,5/1,0	0,9/2,2	0,1	0,03	0,6	0,70/1,20	0,02/0,20		36 - 43
Nodular iron	2,8/3,5	0,1/1,0	1,5/2,5	0,1	0,02	0,5	0,60/1,00	0,02/0,20	Mg = 0,030 / 0,080	37 - 45

• Core Structure

Lamellar Graphite 100x



Nodular Graphite - 100x



• Physical and mechanical properties

	Lamellar Iron	Nodular Iron
TENSILE STRENGTH - Rm [MPa]	250	350
BENDING STRENGTH - Rmi [MPa]	450	540
YOUNG MODULUS - E.10 ³ [MPa]	115	165

• NON-Destructive testing:

Ultrasonic Test of Shell Depth and Bond Integrity

• Product certificates

- Shell and Core Chemistry
- Mechanical Testing
- Hardness Measurement Report of Barrel and Necks
- Dimensional Inspection of Body and Journal Diameters
- Ultrasonic Report of Shell Depth and Bond Integrity

• Application

Work rolls for finishing stands of hot strip mills



Core