

STAINLESS STEEL
MARTENSITIC GRADE _ HIGH STRENGTH
DSM 1.2.5

Martensitic: (400 series)

- Corrosion resistance, inferior to Austenitic grades.
- Magnetic in all conditions.
- Can be hardened and strengthened by heat treatment.
- Fabrication methods must allow for poor weldability.
- Max. service temp. 500°C

Definition:

440C Martensitic Stainless Steel: The high carbon content offers high strength, moderate corrosion resistance (attained only in the hardened condition) with good hardness & wear-resistance. Once heat treated ($\leq 60\text{RC}$) this type is capable of attaining the highest strength, hardness & wear resistance of all the stainless alloys; including a service temp up to 500°C.

Features:

This is a very hard & abrasion resistant grade, which offers good machining properties in the annealed state. There is evidence of a limited loss of strength at high temperatures and a loss of ductility at negative temperatures. Because of its high yield strength, this grade is not readily cold worked. Not easily welded.

ASM (DEK) Applications:

Prime applications include bearing assemblies, ball-screw & rollers.

These values are representative and should not be considered as definitive. For critical applications, refer to material data-sheet.

TYPICAL MECHANICAL PROPERTIES @25°C	
DENSITY:	7650 Kg/m ³
YOUNGS MODULUS:	200 GPa
POISSONS RATIO:	0.28
YIELD STRENGTH	448 MPa
Max. TENSILE STRENGTH	758 MPa

Issue	01	02	03	04	05	06	07	08	09
DCR	40479	44682							



STAINLESS STEEL
MARTENSITIC GRADE _ HIGH STRENGTH
DSM 1.2.5

CHEMICAL ANALYSIS		BENEFIT
Chrome	16.0/18.0	Increases corrosion resistance.
Molybd.	0.75 max	Increases the hardness at higher tempering temp.
Carbon	0.95/1.2	Increases hardness & strength.
Mang.	1.0 max	Improves the hardening process.
Silicon	1.0 max	Increases resistance to oxidation.
Sulphur	0.03 max	Good for machining.

CURRENT INTERNATIONAL SPECIFICATION COMPARISON	
GERMAN: DIN	X105CrMo17
AMERICAN: AISI	440C
EUROPEAN STEEL No.	1.4125
EUROPEAN STEEL NAME	X105CrMo17
EUROPEAN STANDARD	EN10088
JAPANESE GRADE	JIS SUS 440C
CHINA GRADE	GB 108Cr17

Alternatives:

Alternative materials are allowed only with the express written permission of ASMPT. Please email details of your request to engineering_enquiries@asmpt.com

Issue	01	02	03	04	05	06	07	08	09
DCR	40479	44682							

STAINLESS STEEL**MARTENSITIC GRADE _ HIGH STRENGTH****DSM 1.2.5**

These sizes are given in good faith and should not be considered as definitive

Rounds (mm)									
6.4	8	10	13	16	20	23	25.6	29	32
35	40	42	45	48	51	57	64	70	77
80	85	90	95	103	112	121	135	154	170
190	205	222	242	260	282	312	370	460	

Issue	01	02	03	04	05	06	07	08	09
DCR	40479	44682							