

NFA 33-101 AF60-C45 steel plate high carbon steel

AF60-C45 steel plate, NFA 33-101 AF60-C45 steel plate, under NFA 33-101 standard, we can regard AF60-C45 steel plate as high carbon steel.

AF60-C45 steel plate is one mainly of high carbon steel, NFA 33-101 AF60-C45 steel plate is medium Carbon Steels are similar to low carbon steel except that the carbon ranges from 0.30 to 0.60% & the manganese from 0.50 to 1.65%. Increasing the carbon content is approximately 0.5% with an accompanying increase in manganese allows medium carbon steels to be used in the quenched & tempered conditions. This steels are of particular importance because of unique combination of strength & toughness after heat treat treatment.

AF60-C45 NFA 33-101 Number: 1.0511	Comparison of steel grades	
	JUS	Č.14341
	DIN	C40
	BS	080M40, EN8
	GOST	40
	AISI	1040
	UNI	C40,
	NF	(AF60C40), (1C40)

Chemical analysis -% by mass

Chemical elements	C	Si max.	Mn	P max.	S max.	Cr max.	Mo max.	Ni max.	Cr+Mo+Ni max.	
%, by mass	0,37-0,44	0,40	0,50-0,80	0,045	0,045	0,40	0,10	0,40	0,63	-
Permissible deviation	± 0,02	+ 0,03	± 0,04	+ 0,005	+ 0,005	+ 0,05	+ 0,03	+ 0,05		-

At the option of the manufacturer the elements aluminium, titanium, vanadium and niobium may be added singly or in combination for grain size control purposes.

Elements not quoted in table shall not be added to the steel without the agreement of the purchaser, except for the purpose of finishing the heat.

Mechanical properties in the normalized conditions

Thickness of ruling section t_R				
Diameter in mm	$t_R \leq 100\text{mm}$	$100 < t_R \leq 250\text{mm}$	$250 < t_R \leq 500\text{mm}$	$500 < t_R \leq 1000\text{mm}$
$R_e \text{ min (N/mm}^2\text{)}$	290	260	-	-
$R_m \text{ min (N/mm}^2\text{)}$	550	530	-	-
A %	1-	17	-	-

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min.	longitudinal				
	tr - transverse	-	-	-	-
KV min * (J)	l- longitudinal	-	-	-	-
	tr - transverse	-	-	-	-

1N/mm²=1MPa**Heat treatment conditions**

Quenching Temperature, °C	Cooling medium	Tempering Temperature, °C	Normalizing temperature, °C
830 to 870	Water or oil	550 to 660	850 to 890

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