

Quality	E335 (C40E – C45E)	Structural Steel	<i>Technical card</i> Lucefin Group rev. 2018
According to standards	EN 10025-2: 2004		
Number	1.0060		

Chemical composition

C%	Si%	Mn%	P% max	S% max	N% max	Cu%	
-	-	-	0,045	0,045	0,012 ^{a)}	-	Cast analysis
-	-	-	0,055	0,055	0,014 ^{b)}	-	Product analysis

FN deoxidation method - rimming steel not admitted

^{a)} N max value is not applied if chemical composition shows total Al content of 0.020%

^{b)} N the max value is not applied if chemical composition shows total Al content of 0.015%

Temperature °C

Hot-forming	Supply state +U	Soft annealing +A	Isothermal annealing +I	Temperature values are valid for analysis close to:		
1100-850	natural	690 air	820 furnace cooling to 660 then, air	C% ~ 0.40	Mn% ~ 0.60	Si% ~ 0.30
In some cases, the piece can be normalized and tempered +NT or quenched and tempered +QT				Pre-heating welding		Stress-relieving after welding
Normalizing and tempering	Quenching and tempering	Stress-relieving +SR	End quench hardening	250		slow cooling
870 air	840 water	50° under the temperature of tempering	-	Ac1	Ac3	Ms
550-650 air	550-650 air			730	780	360
						Mf 140

Mechanical properties

Hot-rolled EN 10025-2: 2004 **E335** 1.0060

Testing at room temperature

size mm	R	R _{eH} min	A% (L)	A% (T)	Kv	HB
from to	N/mm ²	N/mm ²	min	min	J min	for information
3 to 16	590-770	335	-	-	-	-
3 to 16	570-710	335	16	14	-	169-218
16 to 40	570-710	325	16	14	-	169-218
40 to 63	570-710	315	15	13	-	169-218
63 to 80	570-710	305	14	12	-	169-218
80 to 100	570-710	295	14	12	-	169-218
100 to 150	550-710	275	12	11	-	159-218
150 to 200	540-710	265	11	10	-	158-218
200 to 250	540-710	255	11	10	-	158-710

+N normalization is suggested. (L) = longitudinal (T) = tangential

Cold-drawn +C EN 10277-2: 2008 **E335GC** 1.0543

Hot rolled – Peeled +SH

size mm		Testing at room temperature (longitudinal)				Testing at room temperature (longitudinal)			
		R ^{b)}	R _{p 0.2} ^{b)}	A%	HB	R	R _{p 0.2}	A%	HB
from	to	N/mm ²	N/mm ² min	min	for inf.	N/mm ²	N/mm ² min	min	
5 ^{c)}	10	700-1050	540	5	213-319	-	-	-	-
10	16	680-970	480	6	208-293	-	-	-	-
16	40	640-930	390	7	198-278	570-710	-	-	169-211
40	63	620-870	340	8	190-260	570-710	-	-	169-211
63	100	570-810	295	8	169-243	570-710	-	-	169-211

^{b)} for flats and special sections, yield point can be – 10% and tensile strength can be ± 10%

^{c)} for thickness < 5 mm, mechanical properties should be agreed before order placement

EUROPE	ITALY	CHINA	GERMANY	FRANCE	U.K.	RUSSIA	USA
EN	UNI	GB	DIN	AFNOR	B.S.	GOST	AISI/SAE
E335	Fe 590	HRB335	St 60-2	A 60-2		St6ps	