



Hot rolled smooth steel rebars

Sales office:

Riva Acier - Z.I. de Limay-Porcheville - F-78440 Gargenville

Tel: +33 1.30.98.20.00 - **Fax:** +33 1.30.98.20.21

Email: commercial.france@rivagroup.com

Revision 03/2018





BE 220S - B235C

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CHEMICAL COMPOSITION ON CASTING

Country	Standard/ Specification	Grade	Chemical composition Cast analysis % max (mass)				
			C	P	S	N	CEV
France	NF A 35-015	B 235 C	0.22	0.050	0.050	0.014	0.50
Belgium	NBN A 24-302	BE 220 S	0.21	-	-	-	0.45

$$\text{With: CEV} = \text{C} + \frac{\text{Mn}}{6} + \frac{\text{Cr} + \text{Mo} + \text{V}}{5} + \frac{\text{Ni} + \text{Cu}}{15}$$

Cu max: 0.80

MECHANICAL CHARACTERISTICS

Country	Standard/ Specification	Grade	R _{e.nom} (MPa)	R _{m.nom} / R _{e.nom}	A _{gt} (%)
			Value charact.	Value charact.	Value charact.
France	NF A 35-015	B 235 C	235	1.15	10.0

R_{e.nom} Yield strength or R_{0,02} determined using nominal steel cross-section
R_{m.nom} Tensile strength determined using nominal steel cross-section
A_{gt} Total percent elongation under maximum force

MECHANICAL CHARACTERISTICS

Country	Standard/ Specification	Grade	R _{e.actual} (MPa)	R _{e.actual} (MPa)	R _{m.actual} / R _{e.actual}	A _{gt} (%)	A _{5d} (%)	A _{10d} (%)
			Min. Value					
Belgium	NBN A 24-302	BE 220 S	220	330	1.08	5.0	24.0	18.0

R_{e.actual} Yield strength determined using actual steel cross-section
R_{m.actual} Tensile strength determined using actual steel section
A_{gt} Total percent elongation under maximum force
A_{5d} Elongation after rupture determined on specimen on length between marks equal to 5.d
A_{10d} Elongation after rupture determined on specimen on length between marks equal to 10.d



BE 220S - B235C

Revision: 03/2018 - Page 3 of 4

GEOMETRICAL CHARACTERISTICS

Cylindrical deformation (difference between the maximum and minimum diameter of a same cross-section) is at most equal to:

- 0.5 mm for diameters of 8 to 10 mm
- 0.8 mm for diameters of 12 to 20 mm
- 1.0 mm for diameters of 25 to 40 mm

RANGE OF DIAMETERS

Country	Standard/ Specification	Grade	Nominal Diameter								
France	NF A 35-015	B235C	8	10	12	14	16	20	25	32	40
Belgium	NBN A 24-302	BE 220 S	8	10	12	14	16	20	25	32	40

PACKAGING

Diameter in mm	Length of bars in m
8	5.95 to 18.00
10	5.95 to 18.00
12	5.95 to 18.00
14	5.95 to 18.00
16	6.00 to 24.00
20	6.00 to 24.00
25	6.00 to 24.00
32	6.00 to 24.00
40	6.00 to 24.00



BE 220S - B235C

Revision: 03/2018 - Page 4 of 4

PACKAGING

PACKAGING			
LENGTH	TOLERANCES		PACKING
Standard length of bars	Usual tolerances on length	Cut to specific lengths	Pack weight
5.95	-0/+50 mm	Tolerances to be agreed	~ 1500 kg
6.00	-0/+100 mm	Tolerances to be agreed	~ 1500 kg
7.00	-0/+100 mm	Tolerances to be agreed	~ 1800 kg
8.00	-0/+100 mm	Tolerances to be agreed	~ 1800 kg
9.00	-0/+100 mm	Tolerances to be agreed	~ 1800 kg
10.00	-0/+100 mm	Tolerances to be agreed	2400 kg approx.
11.00	-0/+100 mm	Tolerances to be agreed	2400 kg approx.
12.00	-0/+100 mm	Tolerances to be agreed	2500 kg approx.
13.00	-0/+100 mm	Tolerances to be agreed	2500 kg approx.
14.00	-0/+100 mm	Tolerances to be agreed	2500 kg approx.
15.00	-0/+100 mm	Tolerances to be agreed	2500 kg approx.
16.00	-0/+100 mm	Tolerances to be agreed	2500 kg approx.
17.00	-0/+100 mm	Tolerances to be agreed	2500 kg approx.
18.00	-0/+100 mm	Tolerances to be agreed	2500 kg approx.
21.00	-0/+100 mm	Tolerances to be agreed	2500 kg approx.
24.00	-0/+100 mm	Tolerances to be agreed	2500 kg approx.

ADDITIONAL INFORMATION

Quality Management System: The RIVA ACIER, ALPA and ITON Seine Quality Management Systems are ISO 9001 certified by AFAQ / AFNOR.

Weldability: Grade B235C and BE 220S smooth bars are suitable for current welding processes. Weldability is essentially based on compliance with specifications relating to chemical composition.

CERTIFICATIONS

QUALITY

ALPA: Quality System Certificate ISO 9001
ITON: Quality System Certificate ISO 9001
PARSIDER RIVA ACIER: Multi-site Quality System Certificate ISO 9001