



**VANGUARD FOUNDRY**

manufacturers of high integrity ductile castings

# MATERIAL SPECIFICATIONS FOR AUSTENITIC CAST IRONS

## BS3468: 1986 Austenitic Iron Specifications

### Chemical and Mechanical Properties

Type	Grade	C (max) %	Si %	Mn %	Ni %	Cu %	Cr %	Nb %	P (Max) %	Mg %	Tensile Strength N/mm <sup>2</sup> Minimum	0.2% Proof Stress N/mm <sup>2</sup> Minimum	Elongation %	Charpy Impact Strength (min) J @ 20 ± 5° C
Flake Graphite	F1	3.0	1.5 to 2.8	0.5 to 1.5	13.5 to 17.5	5.5 to 7.5	1.0 to 2.5		0.2		170	-	-	-
	F2	3.0	1.5 to 2.8	0.5 to 1.5	18.0 to 22.0	0.5 max	1.0 to 2.5		0.2		170	-	-	-
	F3	2.5	1.5 to 2.8	0.5 to 1.5	28.0 to 32.0	0.5 max	2.5 to 3.5		0.2		190	-	-	-
Spheroidal Graphite	S2	3.0	1.5 to 2.8	0.5 to 1.5	18.0 to 22.0	0.5 max	1.5 to 2.5		0.08		370	210	7	
	S2W	3.0	1.5 to 2.2	0.5 to 1.5	18.0 to 22.0	0.5 max	1.5 to 2.5	0.12 to 0.2	0.08	0.06 max	370	210	7	
	S2B	3.0	1.5 to 2.8	0.5 to 1.5	18.0 to 22.0	0.5 max	2.5 to 3.5		0.08		370	210	7	4
	S2C	3.0	1.5 to 2.8	0.5 to 2.5	21.0 to 24.0	0.5 max	0.5 max		0.08		370	170	20	20
	S2M	3.0	1.5 to 2.5	4.0 to 4.5	21.0 to 24.0	0.5 max	0.2 max		0.08		420	200	25	15
	S3	2.5	1.5 to 2.8	0.5 to 1.5	28.0 to 32.0	0.5 max	2.5 to 3.5		0.08		370	210	7	
	S5S	2.2	4.8 to 5.4	1.0 max	34.0 to 36.0	0.5 max	1.5 to 2.5		0.08		370	210	7	
S6	3.0	1.5 to 2.8	6.0 to 7.0	12.0 to 14.0	0.5 max	0.2 max		0.08		390	200	15		

#### Notes

1 N/mm<sup>2</sup> = 1 Mpa

Flake graphite specifications are shown for interest only. Vanguard Foundry only produce the spheroidal graphite grades.

Austenitic irons have greater resistance to heat and corrosion when compared with standard grades. Other properties including thermal expansion, magnetic permeability, impact value at low temperatures and erosion resistance will vary with the grade of austenitic iron. Vanguard foundry has both the expertise and the experience to successfully produce these technically demanding materials.

See over for International  
Specifications Equivalent to  
BS3468: 1986



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## International Specifications Equivalent to BS3468: 1986

BS 3468: 1986	UK BS3468: 1974 & ISO 2892: 1973	France NFA 32-301	Germany DIN 1694	USA ASTM A436 & ASTM A439	Sweden SIS
F1	L-NiCuCr 15 6 2	L-NUC 15 6 2	GGL-NiCuCr 15 6 2	A436 Type 1	
	L-NiCuCr 15 6 3	L-NUC 15 6 3	GGL-NiCuCr 15 6 3	A436 Type 1B	
F2	L-NiCr 20 2	L-NC 20 2	GGL-NiCr 20 2	A436 Type 2	14.05.23
	L-NiCr 20 3	L-NC 20 3	GGL-NiCr 20 3		
F3	L-NiCr 30 3	L-NC 30 3	GGL-NiCr 30 3	A436 Type 3	
S2	S-NiCr 20 2	S-NC 20 2	GGG-NiCr 20 2	A439 Type D 2	14.07.72
	S-NiCr 20 3	S-NC 20 3	GGG-NiCr 20 3		
S2W			GGG-NiCrNb 20 2		
S2B	S-NiCr 20 3	S-NC 20 3	GGG-NiCr 20 3	A439 Type D 2B	
S2C	S-Ni 22	S-N 22	GGG-Ni 22	A439 Type D 2C	
S2M	S-NiMn 23 4	S-NM 23 4	GGG-NiMn 23 4	A439 Type D 2M	
S3	S-NiCr 30 1	S-NC 30 1	GGG-NiCr 30 1	A439 Type D 3	
	S-NiCr 30 3	S-NC 30 3	GGG-NiCr 30 3		
S5S			GGG-NiSiCr 35 5 2	A439 Type D5S	
S6	S-NiMn 13 7	S-NM 13 7	GGG-NiMn 13 7		

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