

Inspection certificate 3.1
DIN EN 10204
 (A02)

 No. (A03) **1166063**
 Page **1/6**
 Date **05.04.2019**

 No. (A07) **PO-002744**
 Purchaser
 (A06)

05.02.2019 No. (A07) **PO-002744**
 Customer
 (A06)

 Product **Heavy plate**
 (B01)

 Works order No. **0000098643**
 (A08)
 Inspection **WS**
 (A05)

 Steel grade and terms of delivery **S355K2+N**
 (B02-B03) **DIN EN 10025-2 -04.2005**
BMcF U.K. Specification Rev.3
EN 10029 Class C -2010
BS 1501: Part 1: 1980
PO-002744

 Marking of the product (B06)
**Trademark/Steelgrade/Heat-No/Product-No/
 inspector's stamp**
Material data (B01-B99)

Item	Quantity (B08)	Product No. (B07)	Heat No. (B07)	Cond. of delivery (B04)	Thickness x Width x Length (B09-B11)	mm x mm x mm
01	1	104695 1	50241	N	6,00 x 2055,0 x 12000	
01	1	104696 1	50241	N	6,00 x 2055,0 x 12000	
01	1	104696 2	50241	N	6,00 x 2055,0 x 12000	
01	1	104697 1	50241	N	6,00 x 2055,0 x 12000	
01	1	104697 2	50241	N	6,00 x 2055,0 x 12000	
02	1	103932 1	50241	N	6,00 x 2500,0 x 12000	
02	1	103933 1	20838	N	6,00 x 2500,0 x 12000	
03	1	104114 1	50241	N	6,00 x 3000,0 x 12000	
03	1	104114 2	50241	N	6,00 x 3000,0 x 11500	
05	1	102906 1	21190	N	8,00 x 2500,0 x 12000	
06	1	106049 1	21190	N	8,00 x 3000,0 x 12000	
07	1	104702 1	50241	N	10,00 x 2055,0 x 12000	
07	1	104702 2	50241	N	10,00 x 2055,0 x 12000	
07	1	104703 1	50241	N	10,00 x 2055,0 x 12000	
07	1	104703 2	50241	N	10,00 x 2055,0 x 12000	
08	1	102894 1	50241	N	10,00 x 2500,0 x 12000	
08	1	102894 2	50241	N	10,00 x 2500,0 x 12000	
08	1	102895 1	50241	N	10,00 x 2500,0 x 12000	
08	1	102895 2	50241	N	10,00 x 2500,0 x 12000	
09	1	106267 1	47214	N	10,00 x 3000,0 x 12000	
09	1	106267 2	47214	N	10,00 x 3000,0 x 12000	
10	1	102373 1	21190	N	12,50 x 2055,0 x 12000	
10	1	102373 2	21190	N	12,50 x 2055,0 x 12000	
10	1	102374 1	21190	N	12,50 x 2055,0 x 12000	
10	1	102374 2	21190	N	12,50 x 2055,0 x 12000	
11	1	103031 1	21190	N	13,00 x 2500,0 x 12000	
11	1	103031 2	21190	N	13,00 x 2500,0 x 12000	
13	1	103491 1	50241	N	16,00 x 2000,0 x 12000	
14	1	105043 1	50241	N	16,00 x 3000,0 x 12000	
15	1	104003 1	47214	N	20,00 x 2055,0 x 11000	
15	1	104003 2	47214	N	20,00 x 2055,0 x 12000	
16	1	103974 1	50241	N	20,00 x 2500,0 x 12000	
16	1	103975 1	50241	N	20,00 x 2500,0 x 12000	
17	1	103717 1	47214	N	20,00 x 3000,0 x 12000	
17	1	103717 2	47214	N	20,00 x 3000,0 x 12000	
				N: normalized		

 We hereby certify that the delivered material complies with the terms of the order.
 (Z01)

QM-System: Certification as per ISO 9001 since 28 February 1990


 Trademark
 (A04)

 Ilsenburger Grobblech GmbH
 Veckenstedter Weg 10
 D-38871 Ilsenburg
 (A01)

 Inspection Stamp
 (Z03)

 Inspection Representative
 (Z02)

Cyron

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(A05)

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(B02-B03) **DIN EN 10025-2 -04.2005**
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BS 1501: Part 1: 1980
PO-002744
Material data (B01-B99)

01	5	Weight	5.805	kgs
02	2	(B12)	2.826	
03	2		3.321	
05	1		1.884	
06	1		2.261	
07	4		7.744	
08	4		9.420	
09	2		5.652	
10	4		9.680	
11	2		6.124	
13	1		3.014	
14	1		4.522	
15	2		7.421	
16	2		9.420	
17	2		11.304	
Σ	35		90.398	

Dimensional check and visual examination of the surface condition:
without objection

Heat treatment: Temperature : 910 +/-10°C
Soaking time: 30 min/inch
Cooling in still air

Ladle analysis (C70-C99)

Manufacturer standard

Heat No. (B07)	C %	Si %	Mn %	P %	S %	N %	Al %	Cu %	Cr %	Ni %
	≤ 0,20	≤ 0,55	≤ 1,60	≤ 0,025	≤ 0,003		≥ 0,020	≤ 0,55	≤ 0,30	≤ 0,30
20838	0,14	0,22	1,42	0,020	0,001	0,004	0,035	0,02	0,05	0,17
21190	0,14	0,20	1,46	0,013	0,001	0,003	0,032	0,01	0,04	0,18
Heat No. (B07)	Mo %	V %	Nb %	Ti %	B %	Ca %	Sn %	Cr+Mo %	EV1 1) %	EV2 2) %
	≤ 0,08	≤ 0,10	≤ 0,02	≤ 0,05						≤ 0,41
20838	0,003	0,01	0,02	0,004	0,0000	0,002	0,01	0,05	0,24	0,40
21190	0,001	0,004	0,02	0,005	0,0000	0,002	0,004	0,04	0,23	0,41

1) EV1: Cr+Cu+Mo+Ni

2) EV2: CEV=C+Mn/6+Mo/5+Ni/15+Cr/5+V/5+Cu/15

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(A04)

Ilseburger Grobblech GmbH
Veckenstedter Weg 10
D-38871 Ilseburger
(A01)

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Ladle analysis (C70-C99)
Manufacturer standard

Heat No. (B07)	C %	Si %	Mn %	P %	S %	N %	Al %	Cu %	Cr %	Ni %
	≤ 0,20	≤ 0,55	≤ 1,60	≤ 0,025	≤ 0,003		≥ 0,020	≤ 0,55	≤ 0,30	≤ 0,30
47214 50241	0,14 0,15	0,18 0,19	1,48 1,44	0,013 0,011	0,001 0,002	0,004 0,004	0,037 0,038	0,02 0,02	0,03 0,04	0,17 0,17
Heat No. (B07)	Mo %	V %	Nb %	Ti %	B %	Ca %	Sn %	Cr+Mo %	EV1 1) %	EV2 2) %
	≤ 0,08	≤ 0,10	≤ 0,02	≤ 0,05						≤ 0,41
47214 50241	0,01 0,01	0,003 0,003	0,02 0,02	0,004 0,003	0,0002 0,0002	0,001 0,001	0,002 0,01	0,04 0,05	0,23 0,24	0,41 0,41

1) EV1: Cr+Cu+Mo+Ni

2) EV2: CEV=C+Mn/6+Mo/5+Ni/15+Cr/5+V/5+Cu/15

Steel making: Basic oxygen process
(C70)

vacuum degassed and Ca-treated

Tensile test (C10-C29)

Specimen No. (C00)	Heat No. (B07)	Location (C01)	Direct. (C02)	Cond. (B05)	Type (C10)	Yield point (C11) ReH N/mm2	Tensile strength (C12) Rm N/mm2 470 - 630	ReH/Rm	Elongation (C13) A5 7) %
		1) 2) 3)	4)	5)	6)				≥ 20
102373	21190	K4G	Q	N	P	382	522	0,73	33
103717	47214	K4G	Q	N	P	384	520	0,74	32
103933	20838	K4G	Q	N	P	454	551	0,82	31
103974	50241	K4G	Q	N	P	386	518	0,75	30
104695	50241	K4G	Q	N	P	439	540	0,81	26
106267	47214	K4G	Q	N	P	439	540	0,81	31

1) K: Top

2) 4: 1/4 Width

3) G: Thickness of product

4) Q: transversal

5) N: normalized

6) P: prismatic

7) A5: $Lo=5,65 \sqrt{So}$

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Impact test (C40-C49)

Specimen No. (C00)	Heat No. (B07)	Location (C01)	Direct. (C02)	Cond. (B05)	Type of specimen (C40-C41)	Temperature (C03) °C	Impact energy (C42-C43)			
							1	2	3	MW 6) J
102373	21190	K40	L	N	Charpy V-notch	-050	196	234	223	218
103717	47214	K40	L	N	Charpy V-notch	-050	208	212	208	209
103933	20838	K40	L	N	Charpy V-notch	-050	103	100	94	99
103974	50241	K40	L	N	Charpy V-notch	-050	180	195	210	195
104695	50241	K40	L	N	Charpy V-notch	-050	107	104	77	96
106267	47214	K40	L	N	Charpy V-notch	-050	197	184	200	194

 1) K: Top
 2) 4: 1/4 Width
 3) 0: near surface

 4) L: longitudinal
 5) N: normalized
 6) MW: Average

Specimen size:

 5,0 x 10 x 55 mm (from 5,00 mm up to 8,99 mm plate thickness)
 7,5 x 10 x 55 mm (from 9,00 mm to 10,99 mm plate thickness)
 10 x 10 x 55 mm (from 11,00 mm plate thickness)

Other tests (C50-C69)

Specimen No. (C00)	Heat No. (B07)	Location (C01)	Direct. (C02)	Cond. (B05)	Hardness test (C30-C39) HB30			
102373	21190	K4		N	156			
103717	47214	K4		N	155			
103933	20838	K4		N	163			
103974	50241	K4		N	154			
104695	50241	K4		N	159			
106267	47214	K4		N	161			

 1) K: Top
 2) 4: 1/4 Width

5) N: normalized

 This material complies with NACE MR0175/ISO 15156-2:2009
 Annex A-A.2.1.2.

We hereby certify that the delivered material complies with the terms of the order.

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(B02-B03)

DIN EN 10025-2 -04.2005

BMcF U.K. Specification Rev.3

EN 10029 Class C -2010

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Our products are free of radioactive substances and do not exceed the clearing limit value of 100 Bq/kg, which guarantees the compliance with limit values given in the Radiation Protection Ordinance (StrlSchV) for the unrestricted clearance of solid material (StrlSchV Annex III, Section 5) for ferrous nuclides.

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0045

Ilseburger Grobblech GmbH
Veckenstedter Weg 10
D-38871 Ilseburg

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0045-CPR-0673
DoP: ILGS355K2-CPR-10025-01072013

EN 10025-1 2004

Warmgewalzte Baustahlprodukte
Hot rolled structural steel products
Produits en acier de construction laminé à chaud

Vorgesehene Verwendungen:	Hochbauten und Ingenieurbauwerke
Intended uses:	Building constructions or civil engineering
Usages prévus:	Construction de bâtiments ou génie civil

Grenzabmaße und Formtoleranzen:	Warmgewalztes Grobblech
Tolerances on dimensions and shape:	Hot rolled heavy plates
Tolérances sur les dimensions et la forme:	Tôles fortes
	refendues laminées à chaud: EN 10029

Dehnung / Elongation / Élongation:	
Zugfestigkeit / Tensile strength /	
Résistance à la traction:	
Streckgrenze / Yield strenght / Limite d'élasticité:	S355K2+N
Kerbschlagarbeit / Impact strenght /	DIN EN 10025-2 -04.2005
Résistance au choc:	
Schweißseignung / Weldability / Soudabilité:	

Dauerhaftigkeit:	Keine Leistung festgestellt
Durability:	No performance determined
Durabilité:	Aucune performance déterminée

Regulierter Stoff:	Keine Leistung festgestellt
Regulated substance:	No performance determined
Substance Réglementée:	Aucune performance déterminée

Die Leistungserklärung (DoP) gemäß EU-Verordnung 305/2011, Anhang III kann unter www.ilseburger-grobbblech.de/de/produkte/qualitaetsphilosophie-ims/zertifikate abgerufen werden.

The Declaration of Performance (DoP) in acc. with EU-Regulation 305/2011, Annex III is available under www.ilseburger-grobbblech.de/en/produkte/qualitaetsphilosophie-ims/zertifikate