

C10 X 15.3
C12 X 20.7

Picsa.
30380-3



A03 Certificate No. 2389/1-2012
Advice No. A120126054 1/6

A02 Mill Test Certificate
according to ASTM A6



A04
A06
Coutinho & Ferrostaal Incorporated
16510 Northchase Drive
77060 Houston, Texas
UNITED STATES OF AMERICA

A01 Stahlwerk Thüringen GmbH
A05 Quality Assurance Department
Kronacher Straße 6
07333 Unterwellenborn
Germany

A08 Our Order No.: 2025194111
A07 Your Order No.: PO 1110092200

B02 Quality: A572 GRADE 50
according to: ASTM A572 GRADE 50

Pos.	Heat No.	Dimension	Length	Pieces	Theoretical Weight
A10	B07	B01	B06	B09	B12
001	18349	C 10X15,3	40 ft	270	74 955 kg
001	18350	C 10X15,3	40 ft	414	114 931 kg
001	18351	C 10X15,3	40 ft	414	114 931 kg
001	18352	C 10X15,3	40 ft	342	94 943 kg
001	18353	C 10X15,3	40 ft	414	114 931 kg
001	18354	C 10X15,3	40 ft	378	104 937 kg
001	18355	C 10X15,3	40 ft	360	99 940 kg
001	18356	C 10X15,3	40 ft	396	109 934 kg
001	18357	C 10X15,3	40 ft	378	104 937 kg
001	18358	C 10X15,3	40 ft	342	94 943 kg
001	18359	C 10X15,3	40 ft	89	24 707 kg
002	18337	C 10X20	40 ft	252	91 440 kg
002	18338	C 10X20	40 ft	266	96 520 kg
002	18339	C 10X20	40 ft	350	127 000 kg
002	18340	C 10X20	40 ft	308	111 760 kg
002	18341	C 10X20	40 ft	285	103 414 kg
003	18384	C 12X20,7	40 ft	26	10 516 kg
003	18385	C 12X20,7	40 ft	98	36 806 kg
003	18389	C 12X20,7	40 ft	140	52 580 kg
003	18390	C 12X20,7	40 ft	126	47 322 kg
003	18391	C 12X20,7	40 ft	280	105 160 kg
003	18392	C 12X20,7	40 ft	266	99 902 kg
003	18393	C 12X20,7	40 ft	294	110 418 kg
003	18394	C 12X20,7	40 ft	280	105 160 kg
003	18395	C 12X20,7	40 ft	266	99 902 kg
003	18396	C 12X20,7	40 ft	294	110 418 kg
003	18397	C 12X20,7	40 ft	266	99 902 kg
003	18398	C 12X20,7	40 ft	294	110 418 kg
003	18399	C 12X20,7	40 ft	185	69 481 kg
004	18376	C 12X25	40 ft	90	40 824 kg
004	18377	C 12X25	40 ft	250	113 400 kg
004	18378	C 12X25	40 ft	210	95 256 kg
004	18379	C 12X25	40 ft	210	95 256 kg
004	18380	C 12X25	40 ft	220	99 792 kg
004	18381	C 12X25	40 ft	56	25 402 kg

Z03 Works inspector
René Merbach

Z02 Jan 27, 2012



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B02 Quality: A572 GRADE 50
according to: ASTM A572 GRADE 50

Heat Analysis [%]										
Heat No.	C	Si	Mn	P	S	N	Al	Nb	V	Cr
B07	C71	C72	C73	C74	C75	C76	C77	C78	C79	C80
max	0.20	0.40		0.040	0.050			0.050		
min								0.005		
18337	0.08	0.20	1.12	0.015	0.021	0.009	0.003	0.014	0.009	0.08
18338	0.08	0.20	1.14	0.018	0.021	0.009	0.003	0.016	0.007	0.10
18339	0.09	0.20	1.14	0.018	0.021	0.008	0.004	0.015	0.008	0.10
18340	0.09	0.19	1.14	0.019	0.026	0.009	0.004	0.016	0.008	0.09
18341	0.08	0.20	1.15	0.020	0.026	0.009	0.003	0.016	0.008	0.11
18349	0.07	0.18	1.14	0.021	0.023	0.007	0.002	0.011	0.008	0.08
18350	0.07	0.17	1.14	0.018	0.025	0.008	0.002	0.012	0.007	0.07
18351	0.08	0.19	1.17	0.020	0.028	0.010	0.002	0.016	0.009	0.09
18352	0.08	0.21	1.14	0.021	0.024	0.009	0.003	0.012	0.008	0.09
18353	0.08	0.20	1.12	0.020	0.023	0.008	0.003	0.012	0.008	0.09
18354	0.07	0.19	1.12	0.021	0.026	0.007	0.005	0.014	0.008	0.08
18355	0.08	0.20	1.15	0.021	0.028	0.008	0.004	0.013	0.007	0.08
18356	0.07	0.19	1.13	0.020	0.027	0.009	0.002	0.015	0.008	0.08
18357	0.07	0.19	1.13	0.020	0.027	0.009	0.002	0.014	0.008	0.07
18358	0.08	0.19	1.11	0.018	0.029	0.007	0.002	0.014	0.008	0.08
18359	0.08	0.20	1.15	0.018	0.022	0.009	0.002	0.013	0.008	0.07
18376	0.07	0.20	1.13	0.023	0.027	0.009	0.003	0.016	0.008	0.10
18377	0.09	0.20	1.10	0.023	0.027	0.009	0.006	0.014	0.009	0.07
18378	0.09	0.20	1.13	0.023	0.025	0.007	0.003	0.012	0.008	0.14
18379	0.06	0.17	1.13	0.026	0.029	0.008	0.002	0.013	0.008	0.12
18380	0.08	0.21	1.14	0.020	0.025	0.010	0.003	0.013	0.008	0.07
18381	0.10	0.21	1.16	0.024	0.023	0.010	0.003	0.014	0.008	0.11
18384	0.08	0.20	1.12	0.024	0.029	0.009	0.004	0.014	0.009	0.11
18385	0.09	0.19	1.18	0.015	0.021	0.009	0.003	0.014	0.009	0.08
18389	0.09	0.19	1.18	0.018	0.025	0.010	0.002	0.014	0.007	0.07
18390	0.09	0.20	1.15	0.026	0.023	0.009	0.004	0.012	0.008	0.10
18391	0.09	0.21	1.14	0.024	0.023	0.008	0.002	0.013	0.008	0.10
18392	0.08	0.21	1.18	0.020	0.024	0.009	0.002	0.014	0.008	0.10
18393	0.08	0.20	1.16	0.018	0.021	0.009	0.002	0.013	0.008	0.11
18394	0.09	0.19	1.12	0.018	0.029	0.007	0.002	0.014	0.008	0.13
18395	0.09	0.20	1.15	0.016	0.024	0.007	0.005	0.014	0.008	0.11
18396	0.09	0.20	1.15	0.016	0.024	0.007	0.005	0.014	0.008	0.11
18397	0.10	0.19	1.15	0.021	0.029	0.009	0.001	0.014	0.008	0.11
18397	0.09	0.19	1.16	0.024	0.024	0.009	0.003	0.015	0.008	0.14
18398	0.09	0.19	1.14	0.022	0.025	0.009	0.003	0.015	0.008	0.14
18399	0.10	0.21	1.16	0.024	0.029	0.009	0.004	0.015	0.008	0.12

Z03 Works Inspector
René Merbach

Z02 Jan 27, 2012



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according to ASTM A6



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B02 Quality: A572 GRADE 50
according to: ASTM A572 GRADE 50

Heat Analysis [%]

Heat No.	Cu	Ni
B07	C71	C72

max		
min		
18337	0.31	0.13
18338	0.31	0.13
18339	0.32	0.12
18340	0.33	0.14
18341	0.35	0.14
18349	0.28	0.13
18350	0.26	0.14
18351	0.26	0.13
18352	0.28	0.14
18353	0.31	0.14
18354	0.30	0.14
18355	0.34	0.17
18356	0.34	0.17
18357	0.35	0.15
18358	0.29	0.14
18359	0.45	0.14
18376	0.47	0.16
18377	0.30	0.15
18378	0.34	0.15
18379	0.38	0.16
18380	0.35	0.18
18381	0.33	0.16
18384	0.31	0.13
18385	0.30	0.14
18389	0.33	0.14
18390	0.34	0.14
18391	0.31	0.16
18392	0.30	0.15
18393	0.28	0.16
18394	0.30	0.18
18395	0.30	0.18
18396	0.30	0.15
18397	0.29	0.15
18398	0.29	0.17
18399	0.33	0.16

Z03 Works inspector
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Z02 Jan 27, 2012



A03 Certificate No. 2389/1-2012 4/6
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B02 Quality: A572 GRADE 50
according to: ASTM A572 GRADE 50

Tensile test Heat No.	Yield stress [PSI] [C11]	Tensile strength [PSI] [C12]	Elongation 2 in [%] [C13]	Ys/Ts [C14]
max	50000	65000	21.0	
min				
18337/1	53795	73515	37.0	0.73
18337/2	54810	72645	42.9	0.75
18338/1	54810	72645	34.3	0.75
18338/2	55390	73515	42.2	0.75
18339/1	53070	71920	37.0	0.74
18339/2	54955	73225	42.2	0.75
18340/1	52635	71630	37.0	0.73
18340/2	55390	73370	42.9	0.75
18341/1	53070	73950	38.3	0.72
18341/2	55970	73515	42.2	0.76
18349/1	53505	73515	39.6	0.73
18349/2	52780	72500	43.6	0.73
18350/1	54085	72210	37.0	0.75
18350/2	53070	72645	43.6	0.73
18351/1	53070	70905	34.3	0.75
18351/2	54810	73950	42.9	0.74
18352/1	52345	72210	34.3	0.72
18352/2	54665	72645	42.9	0.75
18353/1	51765	71195	37.0	0.73
18353/2	55100	72645	42.9	0.76
18354/1	52055	73080	37.0	0.71
18354/2	53940	72500	42.9	0.74
18355/1	51620	73950	34.3	0.70
18355/2	56260	72935	42.9	0.77
18356/1	52635	71775	38.3	0.73
18356/2	55390	72500	43.6	0.76
18357/1	52635	71920	37.0	0.73
18357/2	54810	72500	42.9	0.76
18358/1	52200	70180	37.0	0.74
18358/2	54230	72500	43.6	0.75
18359/1	53215	71775	38.3	0.74
18359/2	55680	72500	42.2	0.77
18376/1	53650	74675	39.6	0.72
18376/2	55680	71340	42.9	0.78
18377/1	53940	72935	37.0	0.74

Z03 Works inspector
René Merbach

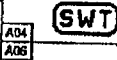
Z02 Jan 27, 2012



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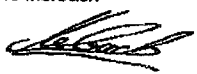


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Tensile test Heat No.	Yield stress [PSI] [C11]	Tensile strength [PSI] [C12]	Elongation 2 in [%] [C13]	Ys/Ts [C14]
max	50000	65000	21.0	
min	55245	73225	42.2	0.75
18377/2	52200	73515	37.0	0.71
18378/1	55535	73080	42.9	0.76
18378/2	51620	71340	37.0	0.72
18379/1	53940	72065	43.6	0.75
18379/2	53215	73225	37.0	0.73
18380/1	56405	73080	42.2	0.77
18380/2	51910	71195	38.3	0.73
18381/1	56985	73370	42.9	0.78
18381/2	54230	74530	38.3	0.73
18384/1	54810	72645	42.9	0.75
18384/2	54955	72935	39.6	0.75
18385/1	54955	73080	43.6	0.75
18385/2	53070	72790	39.6	0.73
18389/1	55245	72645	42.9	0.76
18389/2	53940	73515	38.3	0.73
18390/1	55535	72790	42.9	0.76
18390/2	52925	73225	39.6	0.72
18391/1	55970	73225	42.9	0.76
18391/2	53215	72935	39.6	0.73
18392/1	55245	73370	42.2	0.75
18392/2	53650	71920	38.3	0.75
18393/1	55680	73950	42.9	0.75
18393/2	54375	73080	38.3	0.74
18394/1	56405	73660	42.9	0.77
18394/2	53215	73370	38.3	0.73
18395/1	56405	73660	42.9	0.77
18395/2	52925	73080	38.3	0.72
18396/1	55970	73805	43.6	0.76
18396/2	53940	72935	34.3	0.74
18397/1	55825	74385	42.2	0.75
18397/2	55535	76270	38.3	0.73
18398/1	56405	74095	42.9	0.76
18398/2	52345	74240	38.3	0.71
18399/1	56985	73370	42.9	0.78
18399/2				

Z03 Works Inspector
 René Merbach

 Z02 Jan 27, 2012



A03

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A02

Mill Test Certificate

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A04



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B02

Quality: A572 GRADE 50
according to: ASTM A572 GRADE 50

B14

Description of goods "Prime Steel Channels"

We confirm herewith that the delivered material complies with the terms of the order.

Z03

Works Inspector
René Merbach

Z02

Jan 27, 2012