LIST OF REFERENCES FOR EQUIPMENT FOR AUTOMATED ULTRASONIC TESTING OF PLATES as of 01.10.2016

№	System / Customer	Contract date	Type of system	Parameters of the Customer's line
1	«Sever-1M-2800» JSC «Severstal» LPC-1 Cherepovets, Russia	1997	In-line	Width –2500 mm Thickness- 6-50 mm Length – 4-18 m Test speed – 0-2 m/s Surface – after hot rolling Temperature: - 30 + 100C Body + edges
2	«Sever-2M-2300» JSC «Severstal» LPC-2 Cherepovets, Russia	1998	In-line	Width –1000-1900 mm Thickness- 5-30 mm Length – coil
3	«Sever-5-32M-1800» JSC «Volzhsky Pipe Plant» Volzhsky, Russia	1998	In-line	Width –1000-1800 mm Thickness- 6-14 mm Length – coil Test speed – 1-2m/s Surface – after hot rolling Temperature: -20 - + 150C Body + edges
4	«Sever-5-32M-1800» JSC «Volzhsky Pipe Plant» Volzhsky, Russia	1998	In-line	Width –1000-1800 mm Thickness- 6-14 mm Length – coil Test speed – 1-2m/min Surface – after hot rolling Temperature: -20 - + 150C Body + edges
5	«Sever-5-32M-1800» JSC «Volzhsky Pipe Plant» Volzhsky, Russia	1998	In-line	Width –1000-1800 mm Thickness- 6-14 mm Length – coil Test speed – 1-2m/s Surface – after hot rolling Temperature: -20 - + 150C Body + edges
6	«Sever-5-32M-1800» JSC «Volzhsky Pipe Plant» Volzhsky, Russia	1998	In-line	Width –1000-1800 mm Thickness- 6-14 mm Length – coil Test speed – 1-2m/min Surface – after hot rolling Temperature: -20 - + 150C Body + edges
7	«Sever-6-08» JSC «Magnitogorsk Iron and Steel Works» (OAO «MMK»)	1999	In-line	Width – 1000- 2350mm Thickness- 5 - 60 mm Length– coil Test speed – 1-2m/s

	Magnitogorsk, Russia			Surface – after hot rolling Temperature: -20 - + 300C Body + edges
8	«Sever-6-08» JSC «Volzhsky Pipe Plant» Volzhsky, Russia	2001	In-line	Width –1000-2300 mm Thickness- 5-30 mm Length – coil Test speed – 0-2m/s Surface – after hot rolling Temperature: -30 - + 300C Body + edges
9	«Sever-6-08-2800» JSC «Magnitogorsk Iron and Steel Works» Magnitogorsk, Russia	2001	In-line	Width –1000- 2750 mm Thickness- 5- 60 mm Length – 4 - 12 m
10	«Sever-6-08-5000» JSC «Severstal» LPC-3 Kolpino, Russia	2001 (2005-modernization)	In-line	Width – 1600- 4800mm Thickness- 10 - 50 mm Length – 8 – 30 m Test speed – 0,2-0,6m/s Surface – after hot rolling and flattening Temperature: -30 - + 650C Body + edges
11	«Sever-10-5000» JSC«Severstal» LPC-3 Kolpino, Russia	2002	Off-line	Width – 1600- 4800mm Thickness- 10 - 50 mm Length– 8 – 30 m
12	«Sever-6-08-2800» JSC «Alchevskiy Iron and Steel Works» Alchevsk, Ukraine	2000	In-line	Width – 1500- 2800mm Thickness- 4 - 50 mm Length – min 2,5 m Test speed – 0,2-1m/s Surface – after hot rolling Temperature: -20 - + 650C Body + edges
13	«Sever-10-3000» JSC «Severstal» LPC-1 Cherepovets, Russia	2003	Off-line	Width – 1500- 2800mm Thickness- 8 - 50 mm Length– up to 15 m Test speed per 1 cycle: two plates 2800x6000– 6-7 min Surface – after hot rolling and heat treatment Temperature: -30 - + 150C Body + edges

14	«Sever-6-08-2800» JSC «Ural steel» (NOSTA) Novotroitsk, Russia	2004	In-line	Width– 1500- 2750mm Thickness- 7 - 50 mm Length – 4,5 – 30 m Test speed – 0-2m/s Surface – after hot rolling Temperature: -20 - + 650C Body + edges
15	«Sever-6-08»/Statoson F 2500 Tokyo Steel (via Institut Dr. Foerster GmbH&Co.KG), Kitakyushu, Japan	2005	In-line	Width– 1500- 2500mm Thickness- 6 - 65 mm Length – max 4 - 26 m Test speed – 1,5 m/s Surface – after hot rolling Temperature: max + 650C Body + edges
16	«Sever-6-08» JSC «Amurmetal» Komsomolsk-na-Amure, Russia	2006	In-line	Width– mm Thickness- mm Length – max m Test speed – m/s Surface – after hot rolling Temperature: max + 650C Body + edges
17	«Sever-6-08» JSC «MMK» LPC-4 Magnitogorsk, Russia	2006	In-line	Width– 1000- 2350mm Thickness- 5- 20 mm Length – coil Test speed – 0,1 - 2m/s Surface – after hot rolling Temperature: -40 - + 300C Body + edges
18	«Sever-6-08» JSC «MMK» LPC-8 Magnitogorsk, Russia	2007	In-line	Width– 250- 490mm Thickness- 2-4 mm Length – coil Test speed – up to 2m/s Surface – after hot rolling Temperature: 0 - + 50C Body + edges
19	Coil UST «Sever-6-08» Mitsubishi Corporation for JSC «Uraltrubprom» Pervouralsk, Russia	2008	In-line	Width– 650- 2100mm Thickness- 3 - 22 mm Length – coil m Test speed – 40 m/min Surface – after hot rolling Temperature: -25 - + 150C Body + edges

20	«Sever-6-08» JSC «Severstal» Cherepovets, Russia	2008	In-line	Width– 1000- 1850mm Thickness- 3 - 20 mm Length – 2 – 12 m Surface – after hot rolling Temperature: 0 - + 100C Body + edges
21	«Sever-6-08» JSC «Chelyabinsk Tube-Rolling Plant» Chelyabinsk, Russia	2008	In-line	Width– 1500- 4600mm Thickness- 6 - 50 mm Length – 10,7– 18,3 m Speed – 60m/min Surface – after hot rolling Temperature: -10 - + 30C Body + edges Surface defects
22	«Sever-6-08» ZAO «NKMZ» (Novokramatorsk) for OAO «MMK»	2008	In-line	Width– 1000- 2350mm Thickness- 5 - 25 mm Length – coil Speed – 60m/min Surface – after hot rolling Temperature: -30 - + 100C Body + edges
23	EMATEST-PL-3200/3800 ERDEMIR, Turkey	2008	In-line	Width– 1000- 3800mm Thickness- 5 - 60 mm Length – 4,0 – 26,0 m Speed – 1m/s Surface – after hot rolling Temperature: max + 250C Body + edges
24	EMATEST-PL-5000 Hunan Valin Xiangtan Iron & Steel Co., Ltd. Xiangtan, China	2009	In-line	Width– 1300- 5000mm Thickness- 5 - 100 mm Length – 5,0 – 52,0 m Speed – 0~±2.0m/s Surface – after hot rolling Temperature: max + 100C Body + edges
25	EMATEST-PL-5000 «Sever-6-08» JSC «MMK» Magnitogorsk, Russia	2010	In-line	Width– 1000- 5000mm Thickness- 8-60 mm Length – 3,0 – 18,5 m Speed – 0,1~2,0m/s Surface – after hot rolling Temperature: max+ 300C Body + edges
26	EMATEST-PL-5500 Nippon Steel Corporation,	2011	In-line	Width – 900-5500 mm Thickness - 6-60 mm

	Oita, Japan			Length – 10,0 – 64,0 m Speed – 0,2~2,0 m/s Longitudinal and transversal edges: non-sheared Surface – after hot rolling Temperature: max+ 400C Body + edges
27	EMATEST-PL-4840 HAEUSLER AG for Kuwait Pipe Industries and Oil Services Company (KPIOS), Kuwait	2011	In-line	Width– 1300- 4840 mm Thickness- 6-35 mm Length – 8,0 – 12,2 m Speed – 0,1~2,0m/s Surface – after hot rolling Temperature: max + 100C Body + edges Defects: acc. to API 5L including 44th Edition
28	EMATEST-PL-3500 Nanjing Iron & Steel Co., Ltd. Nanjing, China	2011	In-line	Width– 1600- 3300 mm Thickness- 4-80 mm Length – 4,0 – 52,0 m Speed – 0,1~2,0 m/s Surface – after hot rolling Temperature: max + 350C Body + edges Defects: acc. to API 5L including 44th Edition etc.
29	EMATEST-PL-2800 PAO "AMK" Alchevsk, Ukraine	2012	In-line	Width– 1600- 2800 mm Thickness- 6-60 mm Length – 6,0 – endless Speed – up to 2,0 m/s Surface – after hot rolling Temperature: max + 500C Body + edges Defects: acc. to API Spec 5L, GB/T 2970, JB 4730, ASTM A 435, ASTM A 578, ASME SA 435, ASME SA 578, ISO 12094 JIS G0801 JIS G0901, SEL 072 NF A04-305, BS 5996, EURONORM 160GOST 22 727
30	EMATEST-PL-2800 PAO "NKMZ" for OAO "AMET"	2013	In-line	Width– 1600- 2800 mm Thickness- 6-60 mm Length – 6,0 – endless

	Asha, Russia			Speed – up to 2,0 m/s Surface – after hot rolling Temperature: max + 500C Body + edges Defects: acc. to API Spec 5L, GB/T 2970, JB 4730, ASTM A 435, ASTM A 578, ASME SA 435, ASME SA 578, ISO 12094 JIS G0801 JIS G0901, SEL 072 NF A04-305, BS 5996, EURONORM 160GOST 22 727
31	«Sever-6-08-2800» JSC «Ural steel» (NOSTA) Novotroitsk, Russia EMAT, electronics and software overhaul	2013	In-line	Width– 1500- 2800mm Thickness- 7 - 50 mm Length – 4,5 – 36 m Test speed – 1 m/s Surface – after hot rolling Temperature: -30 - + 650C Body + edges Defects: acc. to GOST 22727, EN 10160, ISO 12094, ASTM, API 5L, JIS G0901, JIS G0801
32	EMATEST-PL-3750 SMS Siemag AG for EPSSN, Venezuela	2014	In-line	Width – 1500- 3500mm Thickness - 8 - 50 mm Length – up to 38 m Test speed – 1 m/s Surface – after hot rolling Temperature: up to + 100C Body + edges Defects: acc. to EN 10160, SEL-072/1977, EURONORM EU-160/1984, BS5996 /1993, JIS G0801, JIS G0901, ASTM A 578 Level I, II, III, ASME SA 578 Level I, II, III, ASTM A 435, ASME SA 435, NF A04-305, GB/T2970-2004, JB4730-2005, ISO 12094.

33	RIDER POSCO Pohang, Korea	2014	Mechanized Off-line carriage-based scanner	Width – from 400 mm Thickness - from 5 mm Length – unlimited Surface – after hot and cold rolling, edges – rolled or sheared Temperature: from – 20 to + 150C Body + edges Defects: Surface and subsurface defects Sensitivity: For surface: rectangular notch 1 mm in depth and 5 mm in length; For sub-surface: rectangular notch made from the other side of the reference plate (H mm thick) to the depth of H - 3 mm, not less than 5 mm long.
34	RIDER POSCO Gwangyang, Korea	2014	Mechanized Off-line carriage-based scanner	Width – from 400 mm Thickness - from 5 mm Length – unlimited Surface – after hot and cold rolling, edges – rolled or sheared Temperature: from – 20 to + 150C Body + edges Defects: Surface and subsurface defects Sensitivity: For surface: rectangular notch 1 mm in depth and 5 mm in length; For sub-surface: rectangular notch made from the other side of the reference plate (H mm thick) to the depth of H - 3 mm, not less than 5 mm long.
35	ALUTEST-PL Tianjin Zhongwang Aluminium Co., Ltd., China	2015	Off-line robot-based scanner	Material: aluminium ingots Thickness - 390 ~ 810 mm Width - 1200 ~ 2700 mm

				Length - 2200 ~ 8000 mm Surface – after milling process for both sites Temperature: up to 40 ^{0}C Body + edges Defects: Internal, surface and sub-surface defects Sensitivity: -FBH Φ0.8 mm, -Drilling (cylindrical) 0.6 mm in diameter, 25 mm long along the plate's main axis, located between 0 - 10mm under the surface. -Longitudinal notch 0.2(D)x0.1(W)x25(L) mm
36	EMATEST-PL-3500 Zhangjiagang Shajing Heavy Plates Co., Ltd., China	2015	In-line	Width – 1500- 3500mm Thickness - 6 - 100 mm Length – up to 33 m Test speed – up to 2 m/s Surface – after hot rolling Temperature: up to + 300C Body + edges Defects: acc. to API5L, ASTM A578/A578M, BS 5996, DNV-OS-F101 (2007), EN 10160, EN 10246-15, ISO 12094, GB/T 2970, JIS G0801, JIS G0901, GOST 22727, SEL 072, SCHELL, JB/T 47013, GB/T 9711, GB/T 3091, SY/T 5768, GB/T 21835, JIS G3444, ASTMA53, ASTMA.
37	NORDISCAN-PL-4200 NLMK Dansteel A/S, Denmark	2016	Off-line	Width – 1000- 4200mm Thickness - 6 - 250 mm Length – up to 50 m Test speed – 0,5 m/s Surface – after hot rolling Temperature: 0 C^o ~ +80C^o Body + edges Defects: acc. to API5L, GB/T 2970, ASTM A578/A578M, JIS G0801, GB/t3091, BS

				5996, JIS G0901, SY/T5768, DNV-OS-F101 (2007), GOST 22727, GB/T21835, EN 10160, SEL 072, JIS G3444, EN 10246-15, ASTM, A453, ISO 12094, JB 4730.