

**STANDARD REFERENCE SAMPLES OF LOW ALLOY STEELS (CHIPS, 100 g BOTTLES)**

No.	% C	% Mn	% Si	% P	% S	% Cr	% Ni	% Cu	% Mo	% V	% W	% Ti	% Al <sub>tot</sub>	% Al <sub>sol.</sub>	% As	% Sn	% Sb	% N
<b>1.1/8</b>	0.12	0.53	0.23	0.012	0.026	0.040	0.036	0.080										
<del>1.2/9</del>	<del>0.41</del>	<del>0.66</del>	<del>0.24</del>	<del>0.025</del>	<del>0.029</del>	<del>0.18</del>	<del>0.071</del>	<del>0.11</del>										
<b>1.3/8</b>	0.85	0.51	0.22	0.012	0.020	0.028	0.035	0.060										
<b>1.4/4</b>	1.21	0.23	0.23	0.013	0.024	0.090	0.049	0.049										
<b>1.5/5</b>	0.19	0.58	0.18	0.020	0.030	0.040	0.023	0.041										
<b>1.6/4</b>	0.146	1.03	0.30	0.112	0.114	0.060	0.062	0.129					0.041					
<b>1.7/4*</b>	0.017	0.13		0.013	0.032	0.004	0.012	0.016	0.0017				0.0040	0.0022	0.0045	0.0021		0.0044
<b>1.8/4</b>	0.35	0.99	1.31	0.020	0.018	1.18	0.16	0.11										
<b>1.9/3</b>	0.38	0.55	0.28	0.025	0.016	1.30	1.62	0.101	0.16									
<b>1.10/2</b>	0.39	0.48	0.24	0.020	0.013	1.46	0.17	0.076	0.20				0.82					
<b>1.11/3</b>	0.35	0.48	0.18	0.025	0.020	1.00	0.12	0.077	0.19									
<b>1.12/4</b>	0.084	1.47	0.30	0.040	0.013	17.41	10.14		1.96			0.52						
<b>1.13/3</b>	0.33	0.38	0.23	0.023	0.007	2.61	1.52	0.13		0.29	8.31							
<b>1.14/4</b>	0.83	0.33	0.35	0.028		4.09	0.16		0.49	1.23	17.30							
<b>1.18/5</b>	0.20	1.43	0.44	0.023	0.030	0.073	0.077	0.11					0.098	0.091				0.0051
<del>1.19/2</del>	<del>0.20</del>	<del>1.00</del>	<del>0.30</del>	<del>0.020</del>	<del>0.017</del>	<del>1.10</del>	<del>0.096</del>	<del>0.11</del>				0.084						
<b>1.21/1</b>	0.058	0.16	1.29	0.013	0.024	0.037	0.056	0.068					0.005	0.003	0.019	0.0067	0.0025	0.0030
<b>1.22/1</b>	0.090	0.24	2.02	0.019	0.026	0.045	0.039	0.071					0.014	0.011	0.020	0.0076	0.0028	0.0039
<b>1.25/3</b>	1.48	0.26	0.28	0.018	0.025	0.48				0.29	4.97							
<b>1.26/2</b>	0.31	0.48	0.29	0.021	0.009	1.87	4.05	0.14	0.11		1.70							

No.	% C	% Mn	% Si	% P	% S	% Cr	% Ni	% Cu	% Mo	% V	% Ti	% Al <sub>tot</sub>	% N
<b>IMZ 195</b>	0.17	1.18	0.29	0.010	0.0008	0.026	0.18	0.11	0.076	(0.005)	(0.012)	(0.017)	0.0061

## STANDARD REFERENCE SAMPLES OF LOW ALLOY STEELS (CHIPS, 100 g BOTTLES)

No.	% C	% Mn	% Si	% P	% S	% Cr	% Ni	% Cu	% Mo	% V	% Ti	% Al <sub>tot.</sub>	% Al <sub>sol.</sub>	% Nb	Zr	% B	% Ce
<b>1.30</b>																0.0002	
<b>1.31</b>	0.14	0.81	0.31	0.022		0.55		0.33	0.50							0.0013	
<b>1.32</b>	0.12	0.80		0.018	0.016	0.55	0.83	0.37	0.53							0.0021	
<b>1.33</b>	0.14	0.69	0.26			0.52	0.88	0.43	0.51							0.0057	
<b>1.34</b>	0.11	0.84	0.31	0.014		0.73	0.65		0.39							0.0084	
<b>1.71/1</b>	0.19	0.50	0.21	0.017	0.024	0.032	0.077	0.041	0.039	0.0100		0.012	0.009				
<b>1.72/1</b>	0.12	0.56	0.55	0.019	0.030	0.45	0.041	0.88				0.032	0.026				
<b>1.73/1</b>	0.18	1.24	0.34	0.014	0.029	0.15	0.095	0.56	0.056	0.073		0.043	0.036	0.088			
<b>1.74/1</b>	0.11	1.95	0.20	0.030	0.024	0.25	0.055	0.31		0.094		0.014					
<b>1.75/1</b>	0.20	1.68	0.53	0.023	0.028	0.048	0.030	0.040		0.20							
<b>1.76/1</b>	0.13	1.39	0.28	0.022	0.032	0.11	0.33	0.058	0.101			0.042	0.036	0.068			
<b>1.77/1</b>	0.11	0.37	0.18	0.029	0.027	0.32	0.051	0.17		0.046	0.021	0.012					
<b>1.81</b>	0.10	0.28	0.28	0.043	0.012	0.58	0.069	0.32				0.017			0.005		
<b>1.82</b>	0.10	1.11	0.27	0.017	0.020	0.21	0.085	0.069	0.060	0.101		0.060		0.058			0.020
<b>1.84</b>	0.14	0.93	0.23	0.013	0.013	0.018	0.025			0.005		0.016	0.013		0.024		0.029
<b>1.85</b>	0.205	1.69	0.51	0.026	0.026	0.27	0.24	0.29	0.007	0.093		(0.064)	0.064		0.026		

## STANDARD REFERENCE SAMPLES OF HIGH ALLOY STEELS (CHIPS, 100 g BOTTLES)

No.	% C	% Mn	% Si	% P	% S	% Cr	% Ni	% Cu	% Mo	% V	% Ti	% W	% Al	% Nb	% As	% Co
<b>1.38</b>	1.08	1.14	0.94	0.010	0.016	19.12	0.63	0.32		0.033					0.0023	0.021
<b>1.39</b>	0.23	1.75	1.96	0.022	0.009	15.57	35.23									
<b>1.40</b>	0.054	1.60	0.93	0.011	0.017	17.59	16.10	0.098	3.70		0.47					
<b>1.41</b>	0.046	0.48	0.39	0.030	(0.002)	22.62	0.50	0.100					5.09			
<b>1.42</b>	0.114	0.49	1.18	0.013	0.012	17.11	0.53	0.22			0.16		0.88			
<b>1.43</b>	0.14	0.66	0.60	(0.010)	0.013	10.83	1.06		0.82	0.69		0.92		(0.43)		
<b>1.44</b>	0.43	0.86	0.87	0.015	0.013	17.07	1.08	0.077	1.29							
<b>1.45</b>	0.34	0.84	2.67	0.028	0.012	27.89	5.23	0.038	0.59							

**STANDARD REFERENCE SAMPLES OF SLAGS (100 g BOTTLES)**

No.	% MgO	% CaO	% SiO <sub>2</sub>	% Al <sub>2</sub> O <sub>3</sub>	% Mn	% P	% S	% Fe <sub>tot.</sub>	% Zn	% Na <sub>2</sub> O	% K <sub>2</sub> O	% TiO <sub>2</sub>	% FeO	% Ca	% F
<b>2.71</b>	5.03	43.81	41.35	4.76	0.615	(0.011)	0.535	1.57	(0.036)	0.35	0.426	(0.19)			
<b>2.72</b>	5.26	43.85	41.80	4.74	0.608	0.010	0.534	(0.93)	(0.05)	(0.34)	(0.42)	(0.170)			
<b>2.73</b>	1.98	43.45	42.50	7.09	0.882	(0.010)	0.572	1.08	(0.0026)	0.620	0.674	0.258			
<b>2.74</b>	4.67	43.37	38.91	5.25	0.635	(0.011)	0.563	3.35	0.051	0.331	0.456	0.205			
<b>2.75</b>	5.18	44.35	40.99	4.71	0.598	(0.01)	0.368	0.548	(0.003)	(0.82)	1.01	0.160			
<b>2.76</b>	5.75	38.57	10.92	1.02	4.88	0.416	0.076	25.12	(0.009)	(0.017)		(0.17)	22.11		
<b>2.77</b>	6.39	35.65	16.32	1.61	4.04	0.392	0.065	23.63	(0.012)	(0.032)	(0.020)	(0.18)	(21.7)		
<b>2.78</b>	3.24	51.70	17.43	1.49	4.47	0.451	0.139	12.37	(0.003)	(0.026)	(0.013)	(0.18)	10.96		
<b>EZP - 1</b>	(0.85)		2.61	24.85										36.76	31.62
<b>EZP - 2</b>	16.89		5.81	41.38										24.03	(0.89)
<b>EZP - 3</b>	8.44		1.68	19.13										39.53	15.78

**STANDARD REFERENCE SAMPLES OF IRON ORES (100 g BOTTLES)**

No.	% Fe	% SiO <sub>2</sub>	% CaO	% MgO	Al <sub>2</sub> O <sub>3</sub>	% Mn	% P	% S
<b>2.61/1</b>	67.54	3.16	0.30	1.37	0.59	0.16	(0.019)	0.08
<b>2.62/1</b>	59.73	12.34	0.41	(0.81)	0.71	0.044	(0.016)	(0.005)
<b>2.63/1</b>	52.10	22.78	0.17	0.17	1.14	0.045	(0.026)	0.036
<b>2.64/1</b>	44.25	33.56	0.23	0.22	1.14	0.043	0.025	0.055
<b>2.65/1</b>	37.74	37.02	1.50	0.53	3.10	0.056	0.039	0.045
<b>2.66/1</b>	29.04	44.94	3.42	0.95	3.13	0.078	0.030	0.10
<b>2.67/1</b>	19.57	53.72	4.73	1.22	4.05	0.16	0.030	0.17

No.	% Fe	% FeO	% SiO <sub>2</sub>	% CaO	% Mn	% Al <sub>2</sub> O <sub>3</sub>	% TiO <sub>2</sub>	% MgO	% V	% P	% Cr	% K <sub>2</sub> O	% Na <sub>2</sub> O
<b>IMZ 3.40</b>	61.45	3.40	4.20	1.22	0.15	2.37	2.45	2.43	0.30	(0.002)	(0.068)	(0.020)	0.066

No.	% Fe	% FeO	% Mn	% CaO	% SiO <sub>2</sub>	% Al <sub>2</sub> O <sub>3</sub>	% TiO <sub>2</sub>	% MgO	% Na <sub>2</sub> O	% K <sub>2</sub> O	% P	% S	% Zn	% C	% Cr	% Pb	% V	% LOI
<b>IMZ 3.41</b>	47.52		0.021	0.52	28.49	1.22	0.041	0.35	(0.09)	0.11	0.164	0.006		(0.037)				-1.1
<b>IMZ 3.42</b>	60.32	20.1	0.080	4.51	5.93	0.48	0.045	0.86	0.042	0.058	0.017	0.15	0.89		(0.008)	(0.03)	(0.003)	-0.46
<b>IMZ 3.43</b>	55.09	6.37	0.020	10.93	9.31	0.74	0.032	1.21	(0.040)	0.037	0.030	0.021	0.005		0.004			

## STANDARD REFERENCE SAMPLES OF IRON ORES (100 g BOTTLES)

No.	% Fe	% FeO	% SiO <sub>2</sub>	% CaO	% Mn	% Al <sub>2</sub> O <sub>3</sub>	% TiO <sub>2</sub>	% MgO	% C	% P	% S	% K <sub>2</sub> O	% Na <sub>2</sub> O
PI 3.10	63.25	1.61	6.58	0.30	0.058	1.02	0.035	0.25	0.158	0.034	0.011	0.022	0.054
PI 3.11	58.65	0.78	13.58	0.048	0.018	1.03	0.039	0.06	0.015	0.049	0.015	0.065	0.23
PI 3.12	57.69	(0.72)	14.67	0.057	0.025	1.00	0.039	0.21	0.024	0.027	0.011	0.032	0.27
PI 3.13	55.85	0.68	17.29	0.079	0.030	1.13	0.044	0.31	0.031	0.031	0.0085	0.030	0.23
PI 3.20	67.76	27.37	5.30	0.13	0.029	0.12	0.016	0.30	0.033	0.022	0.012	0.049	0.037
<del>PI 3.21</del>	<del>64.94</del>	<del>25.94</del>	<del>8.33</del>	<del>0.15</del>	<del>0.017</del>	<del>0.20</del>	<del>0.016</del>	<del>0.44</del>	<del>0.18</del>	<del>0.015</del>	<del>0.026</del>	<del>0.029</del>	<del>0.077</del>
PI 3.22	65.50	26.82	7.56	0.26	0.026	0.095	0.012	0.46	0.14	0.015	0.047	0.058	0.069
PI 3.23	68.35	27.65	4.13	0.109	0.043	0.23	0.017	0.28	0.10	0.018	0.052	0.027	0.035
PI 3.24	68.93	28.27	3.96	0.107	0.026	0.11	0.028	0.24	0.052	0.014	0.044	0.026	(0.04)
PI 3.25	67.73	28.03	5.01	0.17	0.031	0.20	0.018	0.27	0.094	0.016	0.077	0.027	(0.03)
PI 3.30	63.09	1.19	8.26	1.04	0.012	0.13	0.010	0.23	0.016	0.013	0.003	0.18	0.073
PI 3.31	63.05	1.55	5.11	3.78	0.028	0.24	0.017	0.21		0.015	0.107	0.092	0.037
PI 3.32	62.10	1.61	9.63	0.39	0.026	0.32	0.027	0.71	0.012	0.010	0.003	0.117	0.050
PI 3.33	61.87	1.65	10.07	0.34	0.034	0.33	0.026	0.73	0.011	0.008	0.001	0.11	0.057

No.	% V	% Cr	% Co	% Ni	% Cu	% Zn	% As	% Pb	% Sn	% Ba	% Cl	% GOI/ LOI
PI 3.10	0.0015	0.005	0.003	0.002	0.0011	0.0019	0.005	0.0013		0.003	0.07	-1.20
PI 3.11	0.0014	0.004	(0.0006)	0.003	0.0012	0.0017	0.0006	0.0014		0.004	0.25	-0.98
PI 3.12	0.0019	0.006	0.0003	0.0022	0.0014	0.0022	(0.0007)	0.0011		0.0022	0.31	-1.20
PI 3.13	(0.001)	0.0067	0.0002	0.0024	0.0015	0.0028	(0.0008)	0.0009		0.0017	(0.29)	-1.31
PI 3.20	0.0015	0.003	(0.003)	(0.0013)	0.0015	0.002		0.0015		0.0019		+2.87
<del>PI 3.21</del>	<del>0.0005</del>	<del>(0.002)</del>	<del>0.0009</del>	<del>0.0024</del>		<del>(0.003)</del>				<del>0.0019</del>	<del>0.083</del>	<del>+1.99</del>
PI 3.22	0.0002	0.0019	0.0008	0.0014		0.0029		0.0011		0.0013	0.047	+2.25
PI 3.23	(0.002)	0.0020	0.0026	0.0002	0.0007	0.0021		0.0015		0.0020	0.027	+2.49
PI 3.24		0.0025	0.003	0.0013	0.0014	(0.003)		0.0002		0.0024		++2.91
PI 3.25	0.0018	0.0023	0.002		0.0010	(0.003)		0.0017		0.0021		2.53
PI 3.30		0.003		0.0017	0.0017	0.002		0.0016		(0.003)		-0.04
PI 3.31	0.003	0.0051	0.001	0.002	0.0016	0.003	(0.0004)	0.002	0.0011	0.0025		-0.22
PI 3.32	(0.001)	0.005		0.002	0.0021	0.0023		0.0016		0.0036		+0.11
PI 3.33	0.001	0.006		0.002	0.002	0.0014		0.0015		0.003		+0.13

**STANDARD REFERENCE SAMPLES OF IRON ORES (100 g BOTTLES)**

No.	% Fe	% Mn	% TiO <sub>2</sub>	% CaO	% K <sub>2</sub> O	% S	% P	% SiO <sub>2</sub>	% Al <sub>2</sub> O <sub>3</sub>	% MgO	% Na <sub>2</sub> O	% FeO
3.50	70.20	0.030	0.021	0.084	0.015	0.097	0.0067	2.51	0.077	0.19	0.033	30.06
3.51	67.55	0.0121	0.010	0.095	0.019	0.023	0.008	5.71	0.132	0.25	0.037	28.52
3.52	67.84	0.032	0.015	0.295	0.020	0.061	0.018	4.56	0.206	0.55	0.030	29.09
3.53	66.42	0.051	0.28	0.098	0.011	0.0049	0.018	4.07	0.40	0.054	0.012	1.41
3.54	62.76	0.390	0.68	1.31	0.145	0.0149	0.028	4.78	1.48	0.49	0.096	1.41
3.55	59.11	0.083	0.057	0.071	0.0072	0.013	0.090	10.06	1.92	(0.030)	0.011	3.86
3.56	64.41	0.765	0.101	0.035	0.021	0.0084	0.040	2.85	1.63	0.057	0.011	(0.47)
3.57	62.79	0.173	0.081	0.060	0.012	0.0064	0.058	7.08	1.07	0.047	0.0093	0.95
3.58	66.08	0.027	0.022	2.61	0.029	0.0103	0.0066	2.60	0.214	0.23	0.032	0.84
3.59	61.74	0.028	0.021	2.93	0.061	0.017	0.0078	7.75	0.25	0.86	0.079	3.17

No.	% Pb	% As	% Zn	% Cu	% Ni	% Co	% Cr	% V	% Cl	% Ba	% C	% GOI/LOI
3.50			(0.0017)	(0.0006)		(0.0024)	0.0031	0.0020		(0.0019)	0.024	+3.09
3.51	(0.0009)	(0.0009)	(0.0016)	0.0012		(0.0027)	0.0014	0.0009	0.043	(0.0019)	0.103	+2.64
3.52	(0.0012)		(0.0013)	(0.0005)			0.0011	0.0009	0.013	(0.0019)	0.124	+2.70
3.53	(0.0011)	(0.0007)	(0.0010)	0.0008	(0.0017)	(0.0018)	0.0045	0.005	(0.0039)		0.011	(-0.086)
3.54	(0.0009)		0.0017	0.0016	(0.0018)	(0.0023)	0.0064	0.013	(0.0046)	(0.0042)	0.251	-0.97
3.55	0.0013		0.0020	(0.0012)			0.0062	0.0013	(0.0043)		0.079	-3.20
3.56	0.0015		0.0066	0.0109		(0.0023)	0.0028	0.0052	0.0087	0.028	0.043	-2.37
3.57	(0.0014)	(0.0006)	0.0019	0.0014	(0.0019)		0.0039	0.0047		(0.0064)	0.054	-2.14
3.58	(0.0011)	(0.0008)	(0.0013)	0.0008	(0.0016)	(0.0016)	0.0034	0.0015			0.030	-0.051
3.59	(0.0010)		0.0018	(0.0006)		(0.0014)	0.0023	0.0009	0.018	(0.0016)	0.036	+0.13

## STANDARD REFERENCE SAMPLES OF IRON ORES (100g BOTTLES)

No.	Fe	Mn	TiO <sub>2</sub>	CaO	K <sub>2</sub> O	S	P	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	MgO	Na <sub>2</sub> O	FeO
3.60	63.36	0.098	0.023	2.77	0.039	0.074	0.019	5.48	0.356	0.64	0.027	25.37
3.61	61.16	0.054	0.072	0.074	0.0059	0.015	0.082	5.60	2.60	0.027	(0.005)	3.45
3.62	65.81	0.0087	0.008	1.69	0.118	0.0021	0.0091	3.79	0.123	0.186	0.058	0.42
3.63	64.90	0.0301	0.032	0.372	0.040	0.004	0.0086	6.08	0.30	0.375	0.112	0.57

No.	Pb	Zn	Cu	Ni	Co	Cr	V	Ba	C	GOI/LOI
3.60	0.011	0.28	0.007	0.0041	(0.0011)	0.0077	(0.0013)	0.0033	0.69	(+0.30)
3.61	0.0015	0.0031	(0.0013)	0.0013	(0.0005)	0.0031	(0.0013)	0.003	0.288	-4.37
3.62	0.0017	0.0010	0.0011	0.0010	0.0005	0.0020	-	(0.003)	(0.016)	-0.13
3.63	(0.0016)	0.0011	(0.0011)	0.0012	(0.0007)	0.0032	-	(0.0011)	(0.013)	(0.073)

## STANDARD REFERENCE SAMPLES OF LOW ALLOY STEELS (ø40 x 40 mm)

No.	% C	% Mn	% Si	% P	% S	% Cr	% Ni	% Cu	% Mo	% V	% Ti	% Al	% Nb	% B	% Co	% N	% Sn	% Sb
51/1	0.40	1.53	0.29	0.023	(0.009)	0.62	0.15	0.45	1.50	(0.013)								
52/1	0.41	0.25	1.38	0.012	(0.009)	0.12	2.35	0.094	(0.041)									
53/1	0.41	0.60	0.104	0.018	0.011	2.85	0.28	0.17	0.13	0.28								
54/1	0.43	0.14	0.17	(0.009)	0.010	0.12	4.01	(0.034)	(0.007)	0.19								
55/1A*	0.401	0.490	0.406	0.019	0.0053	0.998	0.570	0.112	0.247	0.107	0.012	0.006	0.010	0.0018	0.0039	0.0023	0.017	0.0051
56/1	0.41	0.25	1.69	0.011	0.007	0.43	0.69	0.41	0.66	0.19								
57/1	0.46	1.05	0.58	0.028	0.012	1.67	0.15	0.14	0.48	0.34								
58/1	0.40	1.81	0.35	0.026	0.012	0.20	1.44	0.31	0.21	0.079								

\* 55/1A - ø38 x 20 mm

## STANDARD REFERENCE SAMPLES OF CARBON STEELS (ø40 x 40 mm)

No.	% C	% Mn	% Si	% P	% S	% Cr	% Ni	% Cu	% N	% V	% Al	% Ti	% Co	% Sn	% As	% Sb
63/2	0.40	0.63	0.16	0.017	0.009	0.16	0.13	0.14								
64/2	0.75	0.47	0.22	0.012		0.090	0.081	0.12			0.020					
65/2	1.19	0.27	0.13	0.013	0.007	0.079	0.067	0.059			0.030					
68*	0.102	0.346	0.13	0.028	0.015	0.33	0.049	0.166	0.0086	0.046		0.0033	0.008	0.0066	0.0057	0.0020

\* IMZ68 - approx. ø40 x 20 mm only

**STANDARD REFERENCE SAMPLES OF LOW ALLOY STEELS (ø40 x 40 mm)**

No.	% C	% Mn	% Si	% P	% S	% Cr	% Ni	% Cu	% Mo	% V	% Ti
<b>71A**</b>	0.126	0.493	0.494	0.0126	0.0075	0.505	0.036	0.90	0.018	0.055	0.0041
<b>72A*</b>	0.076	0.333	0.282	0.081	0.012	0.530	0.050	0.288	0.021	0.011	0.019
<b>73</b>	0.097	0.68	0.12	0.019	0.013	0.079	0.13	0.17	0.013	0.022	
<b>74B*</b>	0.181	1.15	0.316	0.019	0.014	0.236	0.123	0.245	0.053	0.071	0.021
<b>75A*</b>	0.112	0.394	0.618	0.080	0.016	0.401	0.041	0.428	0.018	0.013	0.023
<b>76</b>	0.129	1.37	0.24	0.022	0.011	0.12	0.033	0.057	0.101		

No.	% Al	% Nb	% B	% Zr	% Co	% W	% N	% Sn	% As	% Sb	Ca
<b>71A**</b>	0.019	0.0100	0.0009	0.0065	0.025	0.023	0.0065	0.015	0.016	0.013	
<b>72A*</b>	0.021		0.0009		0.024	0.023	0.0050	0.014	0.013	0.013	
<b>73</b>	0.010										
<b>74B*</b>	0.018	0.041	0.0009		0.026	0.023	0.0048	0.020	0.013	0.013	
<b>75A*</b>	0.009	0.024	0.0021		0.0037		0.0024	0.023			
<b>76</b>	0.011	0.068									

\* 72A, 74B, 75A – ø38 x 20 mm only

\*\* 71A – ø35 x 20 mm only

**STANDARD REFERENCE SAMPLES OF LOW ALLOY STEELS (ø40 x 40 mm)**

No.	% C	% Mn	% Si	% P	% S	% Cr	% Ni	% Cu	% Mo	% V	% Ti	% Al	% Nb	% B	% Zr	% Co	% Sn	
<b>101/2</b>	0.033	1.97	(0.092)	0.010	0.007	0.035	2.06	0.46	0.010	0.30		0.036						
<b>102/3</b>	1.11	0.15	1.06	0.014	(0.0045)	1.59	0.021	0.13	0.43	(0.012)		0.017						
<b>103D*</b>	0.54	0.77	0.43	0.060	0.050	0.573	0.59	0.263	0.180	0.187	0.20	0.021	0.042	0.010	0.010	0.0044	0.003	0.005

\* 103D – ø38 x 20 mm only

## STANDARD REFERENCE SAMPLES OF LOW ALLOY STEELS (ø40 x 40 mm, CHIPS – 100 g BOTTLES)

No.	% C	% Mn	% Si	% P	% S	% Cr	% Ni	% Cu	% Mo	% V	% Ti	% Nb	% B	% Al
IMZ 110A*	0.0034	0.067		0.0051	0.0045	0.027	0.021	0.021	0.0035	(0.0014)	(0.0006)			(0.001)
IMZ 111	0.106	0.31	0.56	0.010	0.039	0.072	0.23	0.036	0.084	0.022				(0.017)
IMZ 112A**	0.212	0.471	0.257	0.0055	0.0188	0.099	0.055	0.068	0.054	0.043	0.0138	0.0123	0.0010	0.017
IMZ 112B	0.195	0.43	0.27	0.022	0.016	0.034	0.046	0.055	0.043	0.045	0.010	0.013		(0.03)
IMZ 113	0.24	0.50	0.10	0.022	0.025	1.25	0.13	0.11	0.050	0.039				0.007
IMZ 114A**	0.358	1.156	0.328	0.0235	0.0220	0.423	0.098	0.492	0.112	0.096	0.0088	0.015	0.0019	0.027
IMZ 115	0.36	0.65	0.043	0.045	0.024	0.27	0.35	0.25	0.070	(0.063)		0.009		(0.015)
IMZ 116	0.64	0.94	0.25	0.025	0.035	0.72	0.022	0.33	0.074	0.076	(0.0008)			0.025
IMZ 117	0.49	0.77	0.34	0.038	0.015	0.94	0.29	0.41	0.024	0.087	(0.0014)	0.041		0.023
IMZ 118	0.69	1.72	0.30	0.026	(0.049)	0.14	0.19	0.18	0.058	0.059				(0.014)
IMZ 119	0.93	1.15	0.16	0.018	0.006	0.062	0.049	0.042		0.006	(0.0007)			0.010

No.	% Alsol	% Sn	% Sb	% Pb	% Co	% Ca	% W	% As	% Zn	% N
IMZ 110A*					0.0031					0.0037
IMZ 111	0.007					0.0003				0.0133
IMZ 112A		0.162	0.021	0.008	0.080		0.072	0.023	0.0020	0.0058
IMZ 112B		0.15								0.0100
IMZ 113	0.004									0.0154
IMZ 114A**	W (0.007)	0.014	0.018	0.021	0.0057	As 0.0035				0.0029
IMZ 115	(0.006)									0.0087
IMZ 116	0.012									0.0130
IMZ 117	0.013					(0.0002)				0.0154
IMZ 118	(0.004)	0.22				(0.0002)				0.0120
IMZ 119	0.007					(0.0002)				0.0086

\* 110A – ø43 x 30 mm only

\*\* 112A, 114A – ø38 x 20 mm only

**STANDARD REFERENCE SAMPLES OF FREE CUTTING STEELS (ø40 x 40 mm, CHIPS – 100 g BOTTLES)**

No.	% C	% Mn	% Si	% P	% S	% Cr	% Ni	% Cu	% Sn	% Pb	% As	% Sb	% Al	% N
<b>IMZ 120</b>	0.60	0.40	0.34	(0.049)	0.026	0.20	0.085	0.10	0.008	0.077	0.065	0.031	0.033	0.0115
<b>IMZ 121</b>	0.39	1.18	(0.056)	0.057	0.097	0.036	0.029	0.032	0.059	0.011	0.002	0.017	0.016	0.0125
<b>IMZ 122</b>	0.27	1.33	0.43	0.073	0.21	0.19	0.25	0.25	0.12	(0.020)	0.007	0.019	(0.027)	0.0110
<b>IMZ 123</b>	0.25	1.57	0.23	0.030	0.38	0.16	0.057	0.093	(0.007)	0.030	0.033	0.030	0.032	0.0171
<b>IMZ 124</b>	0.10	0.60	(0.019)	0.082	0.28	0.11	0.046	0.060	0.009	(0.002)	0.004	0.002	0.005	0.0059
<b>IMZ 125</b>	0.029	0.95	0.15	(0.018)	(0.057)	0.18	0.023	0.044	0.002		0.065	0.014	(0.007)	

**STANDARD REFERENCE SAMPLES OF LOW ALLOY STEELS (ø40 X 40 mm, CHIPS 100 G BOTTLES)**

No.	% N	% Al	% Ca
<b>IMZ 130</b>	0.0153	0.0046	0.0024
<b>IMZ 131</b>	0.0333	0.0043	
<b>IMZ 132</b>	0.0097	0.0021	0.0002
<b>IMZ 133</b>	0.0360		
<b>IMZ 134</b>		0.0124	0.0005
<b>IMZ 135</b>	0.0238	0.0274	0.0008
<b>IMZ 136</b>		0.0034	0.00031
<b>IMZ 137</b>	0.0083	0.0017	0.00025
<b>IMZ 138</b>	0.0063	0.0022	
<b>IMZ 139</b>	0.0113	(0.029)	0.0031
<b>IMZ 140</b>	0.0083	0.0307	0.0015
<b>IMZ 141</b>	0.0154	0.0071	

## STANDARD REFERENCE SAMPLES OF HIGH-ALLOY AND CONSTRUCTIONAL STEELS (ø40 x 40 mm, CHIPS – 100 g BOTTLES)

No.	% C	% Mn	% Si	% P	% S	% Cr	% Ni	% Cu	% Mo	% V	% Ti	% Nb	% B	% Al	% W	% Co	% N	% Sn	% As
IMZ 150A	0.048	1.35	0.59	0.0064	0.0095	18.89	12.75	0.090	0.12	(0.027)	0.021	0.0026		0.022	0.11	0.125			
IMZ 152	0.065	1.42	0.52	0.010	0.0025	18.04	9.48	0.061	0.017	0.030									
IMZ 152A*	0.065	1.38	0.55	0.0115	0.0072	17.10	8.47	0.065	0.010	0.013	(0.003)	(0.003)	0.0022	(0.004)	(0.004)	(0.006)	0.083	(0.001)	(0.002)
IMZ 153A*	0.037	1.49	0.73	0.021	0.0073	16.45	13.57	0.102	2.61	0.020	0.036	0.034	(0.0005)	0.036	(0.01)	0.015	0.107	(0.003)	(0.003)
IMZ 154	0.076	2.18	0.89	0.040	0.16	17.71	9.86	0.33	2.58	0.073	1.00			(0.16)		0.105			
IMZ 155	0.077	0.84	0.49	0.018	0.012	11.07	0.77	0.084	0.056	0.045	0.19				(0.095)				
IMZ 156	0.101	0.84	1.11	0.031	0.008	16.96	0.64	0.071	0.035	0.073									
IMZ 157	0.096	0.63	0.59	0.015	0.010	9.51	0.50	0.066	0.71	0.26	0.044			0.26			0.051		
IMZ 158	0.092	1.34	2.24	0.015	0.007	25.51	0.21	0.097	0.025	0.078	0.12			1.56					
IMZ 159	0.076	0.39	0.33	0.022	0.005	2.64	0.31	0.42	0.98	0.10				0.024	0.26				
IMZ 160	0.077	0.38	0.34	0.023	0.004	2.64	0.30	0.42	0.98	0.10				0.031	0.26				
IMZ 161	0.074	0.29	0.65	0.023	0.023	12.90	0.55	0.56	1.10	0.33	(0.005)			(0.015)	1.05				
IMZ 162	0.19	1.31	0.59	0.021	0.014	0.91	1.64	0.077	0.52	0.045	0.12			(0.040)					
IMZ 300*	0.020	0.78	0.71	0.032	0.0071	17.20	0.311	0.159	(0.010)	(0.008)	0.165	0.36	(0.0005)	0.012	0.011	(0.004)	0.008	0.007	(0.004)
IMZ 303**	0.105	1.23	0.74	0.038	0.011	19.56	8.26	0.018		0.037	0.60			0.100		0.017	0.0113		

\* IMZ 152A, 153A, 300 – ø38 x 20 mm, chips not available

\*\* IMZ 303 – ø40 x 37 mm, chips not available

## STANDARD REFERENCE SAMPLES OF HIGH ALLOY STEEL (ø37 x 30 mm)

No.	% C	% Si	% Mn	% P	% S	% Cr	% Ni	% Mo	% Cu	% Al	% V	% B	% W	% N	% Co	% Nb
IMZ 196	0.179	0.46	0.42	0.018	0.012	11.04	0.44	0.65	0.080	0.029	0.34	0.065	1.54	0.058	1.55	0.074

## STANDARD REFERENCE SAMPLES OF HIGH-ALLOY AND CONSTRUCTIONAL STEELS (ø40 x 40 mm, CHIPS – 100 g BOTTLES)

	<b>IMZ 163A*</b>	<b>IMZ 164</b>	<b>IMZ 165</b>	<b>IMZ 166A</b>	<b>IMZ 167</b>	<b>IMZ 168</b>	<b>IMZ 169</b>	<b>IMZ 170</b>	<b>IMZ 171</b>
<b>C</b>	0.058	0.100	0.082	0.108	0.175	0.24	0.099	0.155	0.195
<b>Si</b>	0.39	0.82	1.42	2.51	0.755	1.12	0.35	0.32	0.21
<b>Mn</b>	1.38	1.77	0.98	1.99	1.16	1.36	0.54	0.50	0.42
<b>P</b>	0.018	0.019	0.017	0.019	0.016	0.019	0.015	0.018	0.020
<b>S</b>	0.010	0.002	0.007	0.005	0.0025	0.012	0.0155	0.014	0.014
<b>Cr</b>	22.62	20.96	23.28	25.53	13.07	13.91	2.20	8.82	11.44
<b>Mo</b>	2.40	3.48	0.025	(0.025)	0.024	0.026	1.03	0.88	1.23
<b>Ni</b>	4.59	6.75	19.01	21.93	0.16	0.17	0.073	0.63	0.59
<b>V</b>	0.029	0.053	0.042	0.038	0.054	0.053	(0.016)	0.24	0.26
<b>W</b>	(0.016)	(0.025)						(0.19)	
<b>Cu</b>	0.061	0.26	0.040	0.025	0.106	0.093	0.128	0.285	0.116
<b>Nb</b>	0.13	0.049					(0.0045)	0.087	
<b>Ti</b>	(0.002)	(0.003)	(0.002)	0.003	(0.002)	(0.0035)	0.001	(0.002)	(0.001)
<b>Al</b>	0.018	0.040	0.038	0.036	(0.018)	(0.004)	0.075	0.11	0.036
<b>Sn</b>	(0.003)	(0.003)	0.003	(0.0035)	0.009	0.009	0.062	0.007	0.008
<b>Co</b>	(0.020)	0.035	0.029	0.030	(0.021)	(0.019)	0.012	(0.022)	0.024
<b>N</b>	0.221	0.249	0.105	0.077	0.053	(0.057)	0.0193	0.065	0.057
<b>As</b>	(0.0035)	(0.005)	(0.003)	(0.0026)					
<b>Pb</b>	(0.001)	(0.002)	(0.0008)				(0.001)		
<b>Sb</b>								(0.002)	(0.003)

\* ø36 x 40 mm

## STANDARD REFERENCE SAMPLES TOOL AND CONSTRUCTIONAL STEELS (ø40 x 40 mm, CHIPS 100 g BOTTLES)

	IMZ 172	IMZ 173	IMZ 174	IMZ 175	IMZ 176A	IMZ 177A	IMZ 178	IMZ 179
<b>C</b>	1.03	0.30	0.33	0.099	0.150	0.076	0.29	0.114
<b>Si</b>	0.21	1.15	0.93	0.22	0.35	0.24	0.28	0.375
<b>Mn</b>	0.71	0.43	0.32	0.25	0.75	0.32	0.65	0.83
<b>P</b>	0.018	0.029	0.029	0.016	0.018	0.013	0.016	0.016
<b>S</b>	0.047	0.020	0.023	0.0039	0.0032	0.0029	0.0034	0.0028
<b>Cr</b>	4.47	5.52	5.10	0.515	0.41	0.18	1.26	0.20
<b>Mo</b>	0.96	1.50	1.24	0.025	0.027	0.022	0.20	0.12
<b>Ni</b>	0.12	0.42	0.13	3.12	3.62	8.33	2.09	9.98
<b>V</b>	0.20	0.47	0.98	0.014	0.061	0.010	0.011	0.023
<b>W</b>	(0.011)	0.10	0.021	(0.019)	(0.015)		0.017	(0.023)
<b>Cu</b>	0.128	0.32	0.17	0.130	0.103	0.110	0.140	0.164
<b>Nb</b>							0.105	(0.004)
<b>Ti</b>	(0.002)	(0.002)						(0.001)
<b>Al</b>	0.062	0.060	0.080	0.043	(0.058)		0.051	0.061
<b>Sn</b>	0.010	0.012	0.010	0.011	0.0090	0.008	0.011	0.010
<b>Co</b>	(0.012)	(0.013)	0.011		(0.010)	(0.017)	0.015	0.016
<b>N</b>	0.0188	0.034	0.0288	0.0099	0.0129	0.0089	0.0160	0.0108
<b>As</b>								(0.007)

## STANDARD REFERENCE MATERIALS OF HIGH ALUMINIUM AND HIGH ALUMINIUM-MANGANESE STEELS (BULK SAMPLES)

No.	% Mn	% Al	% C	% Si	% P	% S	% Cr	% Mo	% Ni	% Cu	% Ti	% V	% Nb	% B	% Sn	% N	% Co	% As
<b>IMZ 197</b>	0.45	8.45	0.130	0.47	0.021	0.007	0.20	(0.011)	0.053	0.11	0.025	0.025	(0.011)	(0.007)	0.015			
<b>IMZ 198</b>	16.10	2.80	0.44	0.423	0.031	0.0094	0.30	(0.008)	0.058	0.104	(0.005)							
<b>IMZ 199</b>	28.74	8.65	0.90	0.294	0.022	(0.0006)	0.134	0.43	0.20	0.110	(0.004)	0.026	0.43	(0.001)				
<b>IMZ 204</b>	0.36	4.21	0.085	0.40	0.014	0.008	0.111	(0.007)	0.034	0.075	0.035					(0.0052)		
<b>IMZ 301</b>	17.12		0.45	0.56	0.013	0.013	1.14		0.244	0.021	0.0015	0.006				0.028	0.009	0.0030

The approximate sizes of samples:

IMZ 197 – Discs 37 mm in diameter and 15 mm high.

IMZ 198 – Discs 56 mm in diameter and 15 mm high.

IMZ 199 – Discs 50 mm in diameter and 15 mm high.

IMZ 204 – Discs 36 mm in diameter and 20 mm high.

IMZ 301 – Discs 44 mm in diameter and 35 mm high.

**STANDARD REFERENCE SAMPLES OF MARAGING STEELS (BULK SAMPLES,  $\phi$ 38 x 20 mm)**

No.	% C	%Si	% Mn	% P	% S	% Co	% Cr	% Ni	% Mo	% V	% W	% Cu	% Ti	% Nb
<b>IMZ 520</b>	0.011	0.094	0.070	0.0043	0.019	17.66	0.242	10.10	4.92	4.03	4.90	0.080		
<b>IMZ 521</b>	0.015	0.072	0.039	0.0031	0.0058	20.25	0.040	8.63	4.84	3.97	5.22	0.027		
<b>IMZ 522</b>	0.009	0.048	0.032		0.0043	18.72	0.022	11.47	6.45	2.21	2.26	0.019	0.54	
<b>IMZ 523</b>	0.010	0.043	0.051		0.0039	14.44	0.048	15.94	6.67	2.01	1.87	0.059	0.70	
<b>IMZ 524</b>	0.012	0.13	0.68		0.004	12.25	0.085	13.75	4.95	3.02	1.85	0.024	0.85	(0.007)

No.	% N	% Sn	%As	% B
<b>IMZ 520</b>	0.0105			
<b>IMZ 521</b>	0.0113			
<b>IMZ 522</b>	0.0045			
<b>IMZ 523</b>	0.0037			
<b>IMZ 524</b>	0.0038			

## STANDARD REFERENCE MATERIALS OF NICKEL AND COBALT ALLOYS (BULK SAMPLES)

No.	% C	% Al	% Co	% Cr	% Fe	% Mn	% Mo	% Nb	% Ta	% Ti	% W	% Zr	% Hf
IMZ 180	0.107	6.00	9.95	7.98	0.073		5.93	0.024	4.26	1.02	(0.05)	0.075	
IMZ 202A	0.148	5.62	10.04	8.43	0.060		0.64		3.24	1.01	10.02	0.033	1.39
IMZ 182	0.169	5.69	13.52	8.63	(0.04)		3.10			4.69		0.031	
IMZ 183A	0.107	3.45	8.23	15.99	0.063		1.63	0.747	1.56	3.39	2.62	0.033	0.020
IMZ 184	0.086	4.37	14.32	14.16			4.30	(0.032)		3.43		(0.012)	
IMZ 185	0.152	5.56	4.47	9.91	(0.022)		3.92			2.73	5.12	(0.014)	
IMZ 186	0.59	0.28	rest	23.14	0.10				3.78	0.19	7.17	0.40	
IMZ 187A	0.110	4.93	9.75	8.85	0.11		1.86	0.011	3.75	2.35	6.91	0.030	1.55
IMZ 188	0.526	(0.005)	51.64	26.44	1.14	0.68	0.42	0.045	(0.011)	(0.007)	7.46	(0.0004)	
IMZ 203	0.061	6.13	(0.024)	11.80	0.032		4.32	2.04		0.62		0.059	
IMZ 205	0.040	4.97	5.35	10.07	0.013	0.0020	0.015	0.013	11.92	1.34	4.13	0.003	0.007
IMZ 206	0.035	4.99	5.37	9.78	0.036	(0.002)	0.064	0.023	11.95	1.36	4.08	0.004	0.36

No.	% B	% Ni	% Pt	% Re	% V	% Si	% P	% S	% Cu	% Mg
IMZ 180	(0.017)	rest				(0.026)	(0.003)			
IMZ 202A	0.015	59.1				0.026				
IMZ 182	0.013	rest			0.81					
IMZ 183A	0.0108	rest				0.021				0.0013
IMZ 184	0.016	rest				(0.018)	(0.001)			
IMZ 185	0.015	rest								
IMZ 186	(0.007)	10.22								
IMZ 187A	0.015	59.7				(0.011)	(0.0006)	(0.0002)	(0.001)	
IMZ 188	0.0009	10.76			(0.011)	0.69	0.011	(0.0002)		
IMZ 203	0.0077					(0.019)		(0.0006)		
IMZ 205	(0.0006)	(62.44)				0.009	(0.0006)	(0.0003)	(0.0007)	(0.0007)
IMZ 206	(0.001)	(62.24)				0.028	0.0007	(0.0003)	(0.0003)	(0.0003)

The sizes of Ni/Co samples:

IMZ 180 – 1/4 section of 80 mm cylinder and 30 mm high.  
 IMZ 202A – 1/4 section of 88 mm cylinder and 20 mm high.  
 IMZ 182 – 1/4 section of 64 mm cylinder and 45 mm high.  
 IMZ 183A – 1/4 section of 88 mm cylinder and 20 mm high.  
 IMZ 184 – 1/4 section of 80 mm cylinder and 30 mm high.  
 IMZ 185 – 1/4 section of 64 mm cylinder and 45 mm high.  
 IMZ 186 – 1/4 section of 78 mm cylinder and 30 mm high.

IMZ 187A – 1/4 section of 88 mm cylinder and 20 mm high.  
 IMZ 188 – 1/4 section of 75 mm cylinder and 20 mm high.  
 IMZ 203 – 1/4 section of 90 mm cylinder and 20 mm high.  
 IMZ 205 – 1/4 section of 88 mm cylinder and 20 mm high.  
 IMZ 206 – 1/4 section of 88 mm cylinder and 20 mm high.

## SET-UP SAMPLES OF STEELS (BULK SAMPLES)

% m/m	IMZ S 04	IMZ S 06A	IMZ S 07	IMZ S 10	IMZ S 11	IMZ S 13	IMZ S 15	IMZ S 16	IMZ S 21	IMZ S 22	IMZ S 24
<b>C</b>	0.5	0.2	0.18	0.12	0.095	0.14	0.32	0.10	0.26	1.1	0.13
<b>Mn</b>	0.8	1.4	0.23	0.65	0.35	0.6	0.7	0.65	0.50	1.1	0.7
<b>Si</b>	0.2	0.4	1.7	0.32	1.8	0.6	2.0	1.3	0.44	0.94	0.95
<b>P</b>	0.03	0.01	0.06	0.01	0.01	0.01	0.01	0.015	0.02	0.01	0.01
<b>S</b>	(0.2)	0.01	0.1	0.01	0.015	0.01	0.01	0.01	0.02	0.02	0.02
<b>Cr</b>	4.3	10.8	2.1	28	6.5	10.8	11.9	14.3	18.3	19.1	26.8
<b>Ni</b>	0.53	20	2.0	1.1	0.66	1.1	7.3	0.59	2.2	0.63	0.76
<b>V</b>	1.5		0.15			0.7			0.25	0.033	
<b>Mo</b>	6.5	0.5	0.12			0.8			0.4		
<b>Ti</b>			0.02	1.4		0.02		0.20	0.12	0.02	
<b>Cu</b>		0.04	0.17	2.4		0.05		0.12	0.30	0.03	
<b>Al</b>								0.5			
<b>W</b>		0.4	2.3			0.9			0.4		
<b>Co</b>	10.6		0.02							0.02	
<b>Nb</b>		1.5		0.6		0.45					
<b>As</b>										0.002	
<b>B</b>										0.001	
<b>Zr</b>								0.01			
sample size	ø 43 mm, 35 mm high	ø 45 mm, 20–30 mm high	ø 40 mm, 30 mm high	ø 45 mm, 30 mm high	ø 40 mm, 20–30 mm high	ø 40 mm, 23–35 mm high	ø 40 mm, 23 mm high	ø 40 mm, 30 mm high	ø 40 mm, 30 mm high	ø 45 mm, 23–35 mm high	ø 40 mm, 30 mm high

## SET-UP SAMPLES OF STEELS (BULK SAMPLES)

% m/m	IMZ-S-25	IMZ-S-27	IMZ S 28	IMZ S 30	IMZ S 31	IMZ S 33	IMZ S 34	IMZ-S-36	IMZ S 501	IMZ S 502	IMZ S 503	IMZ S 504
<b>C</b>	0.2	0.23	0.03	0.20	0.03	<u>0.10</u>	0.11	0.06	0.15	0.31	0.14	0.03
<b>Mn</b>	1.1	1.7	1.6	1.6	1.5	<u>1.2</u>	1.7	2.0	0.32	0.47	0.47	1.43
<b>Si</b>	2.5	2.0	0.75	0.93	0.30	<u>0.75</u>	0.62	0.9	0.40	2.8	0.37	0.56
<b>P</b>	0.03	0.02	0.01	0.02	0.01	<u>0.03</u>	0.015	0.01	0.02	0.02	0.03	0.02
<b>S</b>	0.01	0.01	0.01	0.01	0.01	<u>0.01</u>	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
<b>Cr</b>	28	15.5	16.3	18.7	17.6	<u>19.6</u>	20.8	25.5	13.2	12.8	11.4	18.2
<b>Ni</b>	4.5	35	14.3	12.6	11.0	<u>8.3</u>	9.1	29.0	0.11	6.7	0.19	11.1
<b>V</b>	0.18							0.05			0.30	
<b>Mo</b>	0.6		2.25				1.6	3.1			0.62	
<b>Ti</b>						<u>0.6</u>	0.5	0.8				
<b>Cu</b>	0.04							3.0				
<b>Al</b>						<u>0.1</u>						
<b>W</b>	0.5						0.5					
<b>Co</b>								0.03				
<b>Nb</b>				1.0								
<b>Zr</b>			0.005									
<b>B</b>			0.005		0.005							
<b>N</b>												0.17
sample size	<del>ø 45 mm,</del> 25–45 mm high	ø 40 mm, 20–25 mm high	ø 40 mm, 30 mm high	ø 40 mm, 23 mm high	ø 40 mm, 30 mm high	<del>ø 40 mm,</del> <u>35 mm high</u>	ø 40 mm, 30 mm high	<del>ø 40 mm,</del> 35 mm high	ø 47 mm, 23 mm high	ø 47 mm, 25 mm high	ø 47 mm, 25 mm high	<del>ø 50 mm,</del> 23 mm high